CENTRAL EL DORADO HILLS SPECIFIC PLAN REVISED FINAL ENVIRONMENTAL IMPACT REPORT – VOLUME III (APPENDICES)

SCH # 2013022044

PREPARED FOR:

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ICF. 2022. *Central El Dorado Hills Specific Plan Revised Final Environmental Impact Report, Volume III*. March. (ICF 00668.12/00108.21.) Sacramento, CA. Prepared for El Dorado County, Placerville, CA.

Appendix A

Notice of Preparation and Comment Matrix

County of El Dorado

Notice of Preparation of a Draft Environmental Impact Report

and Notice of Public Scoping Meeting for the

Central El Dorado Hills Specific Plan

Date: February 20, 2013

To: Interested Parties

From: Rommel (Mel) Pabalinas, Senior Planner, County of El Dorado

Subject: Notice of Preparation of a Draft Environmental Impact Report and Notice of Public Scoping Meeting for the Central El Dorado Hills Specific Plan (File No. SP12-0002)

The County of El Dorado (County) will be the lead agency under the California Environmental Quality Act (CEQA) for preparation of an Environmental Impact Report (EIR) for the Central El Dorado Hills Specific Plan in El Dorado County. The purpose of this 30-day Notice of Preparation (NOP) and notice of public scoping meeting is to solicit comments from public agencies and interested persons regarding the scope and content of the environmental information and analyses, including the significant environmental impacts, reasonable alternatives, and mitigation measures that should be included in the Draft EIR (pursuant to CEQA Guidelines Section 15082). The location, project description, proposed entitlement requests, and potential environmental effects of the proposed Central El Dorado Hills Specific Plan are summarized in the attached materials.

Please provide written comments to **Mr. Rommel (Mel) Pabalinas, Senior Planner, at the address shown, by 5:00 p.m. on March 22, 2013**. Keep in mind that there will be another opportunity to submit detailed comments when the draft EIR is released for public review. Please mail, email or fax your comments to:

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Development Services Department, Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
Email: rommel.pabalinas@edcgov.us
Fax: (530) 642-0508

The County will hold a public scoping meeting to provide additional information about the project and to receive verbal and written comments.

Date: Thursday, March 14, 2013
Time: 6:30 p.m. to 8:30 p.m.
Where: Oak Meadow Elementary School, Multipurpose Room, 7701 Silva Valley Parkway, El Dorado Hills, CA 95762

The scoping meeting format will be an open house; interested parties may arrive at any time during the 2-hour window to receive information on the project or provide comments.

NOTICE OF PREPARATION OF

A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR)
AND NOTICE OF PUBLIC SCOPING MEETING
FOR THE
CENTRAL EL DORADO HILLS SPECIFIC PLAN

Project Information

Location: The proposed project is located in El Dorado Hills, California, an unincorporated area of El Dorado County (County) that is approximately 23 miles east of Sacramento and 20 miles west of Placerville (Figure 1, Regional Location). The proposed Central El Dorado Hills Specific Plan (CEDHSP) (project) includes two planning areas, as shown in Figure 2, Project Location: the Serrano Westside planning area east of the intersection of El Dorado Hills Boulevard and Serrano Parkway, and the Pedregal planning area west of El Dorado Hills Boulevard between Wilson and Olson Way, adjacent to the Ridgeview subdivision.

Serrano Westside is immediately north of U.S. Highway 50 (US 50) and less than 2 miles south of Folsom Lake. Existing land uses adjacent to the Serrano Westside planning area include office and retail uses to the south and west (Raley's and La Borgata) and single-family residential uses at the Serrano Community to the east. The proposed Serrano Westside development would surround the El Dorado Hills Fire Station (located on Wilson Way east of El Dorado Hills Boulevard) to the north, east, and south. Undeveloped land, an archery range, and two schools (Oak Ridge High School and Silva Valley Elementary School) are located north of the project.

The Pedregal planning area is less than 1 mile north of US 50 and less than 2 miles south of Folsom Lake. The Pedregal planning area is immediately adjacent to low-density residential uses (the existing Ridgeview neighborhood) to the west and three existing multi-family developments (the Copper Hill Apartments, El Dorado Village Apartments, and Sterling Ranch Apartments) along El Dorado Hills Boulevard to the east.

Project Description: The proposed CEDHSP, which would occur in the Serrano Westside Planning Area and Pedregal Planning Area, includes the development of up to 1,028 dwelling units, 11 acres of public facility/recreational use or 50,000 square feet of commercial use, 15 acres of public village park, and 85 acres of public parks and open space in the center of the El Dorado Hills Community. The proposed project also includes implementation of the CEDHSP and an amendment to the existing El Dorado Hills Specific Plan (EDHSP) approved in 1987 to transfer the density at Serrano Village D-1, Lots C and D to the proposed project. The approximately 155-acre Serrano Westside planning area would be an extension of the existing Serrano development with gated residential neighborhoods and would include approximately 763 dwelling units, civic or commercial, and village park development. The approximately 102-acre Pedregal planning area would include residential neighborhoods of approximately 265 dwelling units, which may or may not be gated. Table 1 shows the proposed land use designations in the Serrano Westside and Pedregal planning areas. These designations are also shown in Figure 3, Proposed Land Use Designations.

Table 1. Proposed Land Use Summary (Acres)

Land Use	Serrano Westside (% of total area)	Pedregal (% of total area)
Residential		
LDR: Low-Density Residential (1.5 Du/Ac)	-	43 (17%)
MDR-L: Medium-Density Residential – Low (5 - 8 average Du/Ac)	23 (9%)	-
MDR-H: Medium-Density Residential – High (9 - 14 average Du/Ac)	36 (14%)	-
HDR: High-Density Residential (15 - 24 average Du/Ac)	16 (6%)	13 (5%)
Civic – Limited Commercial		
C-LC: Civic Limited Commercial	11 (4%)	-
Public Facilities		
VP: Village Park	15 (6%)	-
Open Space		
OS: Open Space	46 (18%)	39 (15%)
Roads and Landscaped Lots	8 (3%)	6 (2%)
Total	256 (100%)	
Du/Ac = dwelling units per acre - = no acres		

The proposed project includes onsite and offsite infrastructure to serve the development. The EIR will analyze any related offsite infrastructure. Buildout will likely occur over several years and ultimately the timeframe be determined by housing market conditions.

Proposed Entitlement Requests: The proposed project includes an amendment to the existing EDHSP to transfer the density at Serrano Village D-1, Lots C and D to the project. Specifically, the proposed entitlements that would be required to implement the CEDHSP include: amendments to the EDHSP and County general plan, adoption and implementation of the CEDHSP, and rezoning. In addition, the project would require the County's approval of a development agreement, financing plan, and subsequent development permits and entitlements including a Development Plan and Tentative Maps. The proposed CEDHSP consists of the following requests.

- Amendment to the El Dorado Hills Specific Plan (EDHSP) consisting of: A) Transfer a total of 58.53 acres and associated EDHSP-vested density affecting portions of APN 121-040-20, 121-040-29, 121-040-31 and 121-120-22 from EDHSP area to CEDHSP area; B) Transfer a total of 1.89 acres affecting portions of APN 121-160-03 from CEDHSP area to EDHSP area.
- General Plan Amendment to:
    - Amend the General Plan Land Use Map designation of subject lands within CEDHSP from High-Density Residential (HDR) (1 - 5 Du/Ac), Multi-Family Residential (MFR) (5 - 24 Du/Ac), Commercial (C), Open Space (OS) and AP-EDHSP to Adopted Plan-Central El

Dorado Hills Specific Plan (AP-CEDHSP) and CEDHSP land use designations Low-Density Residential (LDR) (1.5 average Du/Ac), Open Space (OS), High-Density Residential (HDR) (15 - 24 average Du/Ac), Medium-Density Residential-High (MDR-H) (9 - 14 average Du/Ac), Medium-Density Residential-Low (MDR-L) (5 - 8 Du/Ac), Civic-Limited Commercial (C-LC), and Village Park (VP).
    - Amend General Plan Land Use Map designation of transferred lands within AP-EDHSP as Open Space (OS).
- Rezoning to:
    - Amend zone districts from One-Family Residential District (R1), One-Family Residential-Planned Development District (R1-PD), Limited-Multi-Family Residential District (R2), Recreational Facility (RF), and Open Space (OS) to CEDHSP zone districts Multi residential-Planned Development (RM1-PD, RM2-PD, RM3-PD), One-Family Residential-Planned Development District (R1-PD), Civic-Limited Commercial-Planned Development (C1-PD), Village Park-Planned Development (RF1-PD), Private Open Space- Planned Development (OS1-PD) and Corps Restricted-Planned Development (OS2-PD).
    - Amend zone designation of transferred lands within AP-EDHSP as Open Space (OS).
- Specific Plan for the proposed Central El Dorado Hills Specific Plan for the development of a 256-acre project site consisting of up to 1,028 dwelling units, 11 acres of public facility/recreational use or 50,000 square foot of commercial use, 15 acres of public village park, and 85 acres of private parks and open space.

Environmental Effects

Probable Environmental Effects: Based on a preliminary environmental analysis of the CEDHSP, the County has determined that the full range of issues identified in the CEQA Guidelines, listed below, shall be addressed in the EIR.

- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, Minerals, and Paleontology
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology, Water Quality, and Water Resources
- Land Use Planning and Agricultural Resources
- Noise and Vibration
- Population and Housing
- Public Services and Utilities
- Recreation
- Traffic and Circulation
- Visual Resources

In addition to the above areas, the Draft EIR will also evaluate the potential cumulative and growth-inducing effects of the project, as required by CEQA. Reasonably foreseeable future projects will be considered in the Draft EIR, including, but not limited to, the proposed Village of Marble Valley Specific Plan, the proposed Lime Rock Valley Specific Plan, and the proposed Dixon Ranch Residential Project. Applications have been submitted to the County for these projects, and they are currently undergoing CEQA review.

Comments and suggestions are requested regarding the environmental issues that will be analyzed in the EIR during the 30-day public comment period for the NOP.

Potential Alternatives to be addressed in the EIR: In accordance with section 15126.6 of the State CEQA Guidelines, an EIR must "describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most the basic objectives of the Project, but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives." As required by CEQA, the EIR will evaluate a No Project Alternative, which will assume development of the proposed project site under the currently adopted general plan and zoning designations. Aside from the no project alternative, the County has not yet determined what additional alternatives to the project will be evaluated in the EIR. These will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.

Public Scoping Meeting

The County will hold a public scoping meeting to provide additional information about the project and to receive verbal and written input on Thursday, March 14, 2013 from 6:30 p.m. to 8:30 p.m. at Oak Meadow Elementary School, Multipurpose Room, 7701 Silva Valley Parkway, El Dorado Hills, CA 95762. The scoping meeting format will be an open house; interested parties may arrive at any time during the 2-hour window to receive information on the project or provide input.

Requests for Additional Information

If you have any questions, please contact Rommel (Mel) Pabalinas at the County of El Dorado, Development Services Department, Planning Division, 2850 Fairlane Court, Building C, Placerville, CA 95667, by telephone at (530) 621-5363, or by email to rommel.pabalinas@edcgov.us.

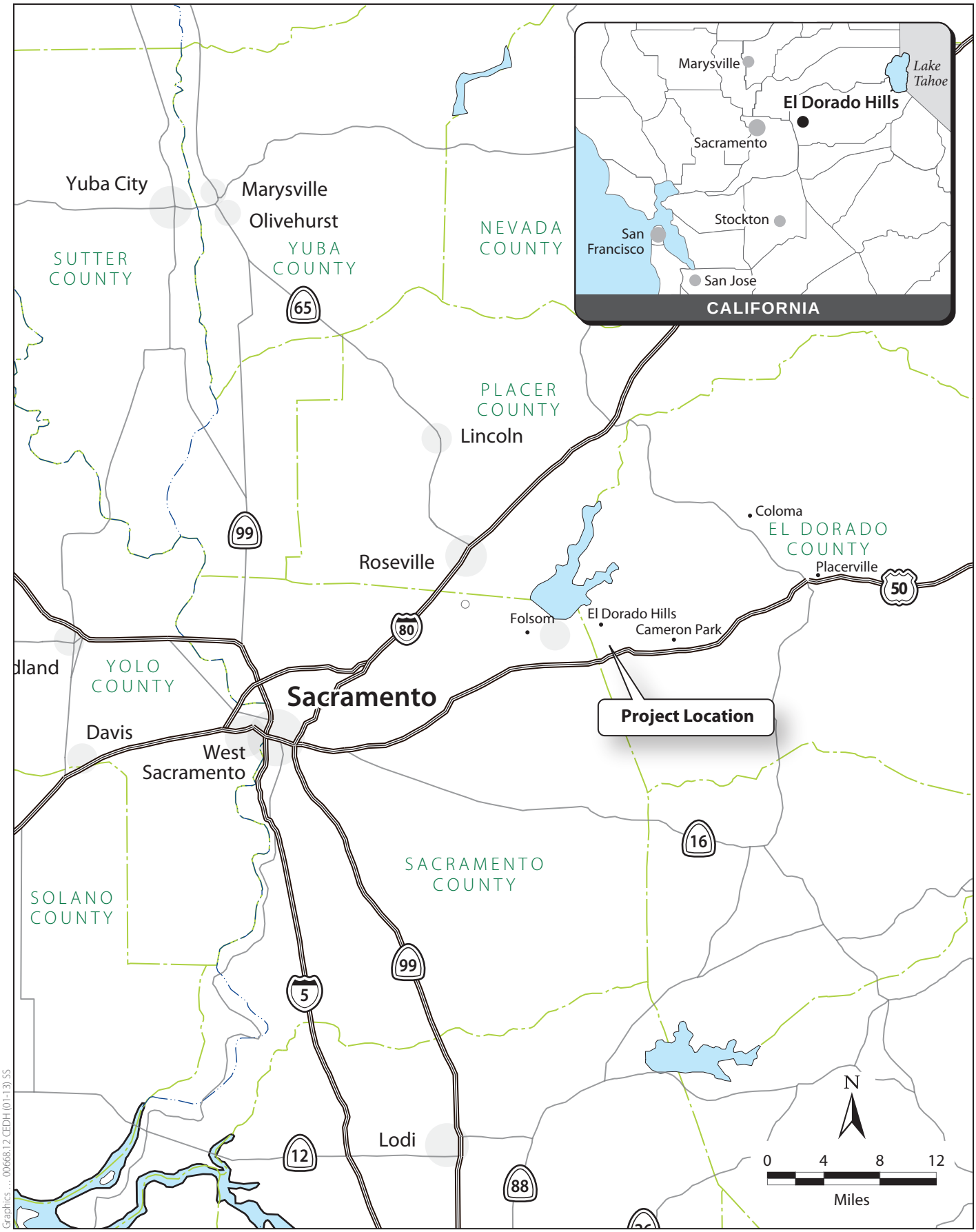

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Figure 1
Regional Location

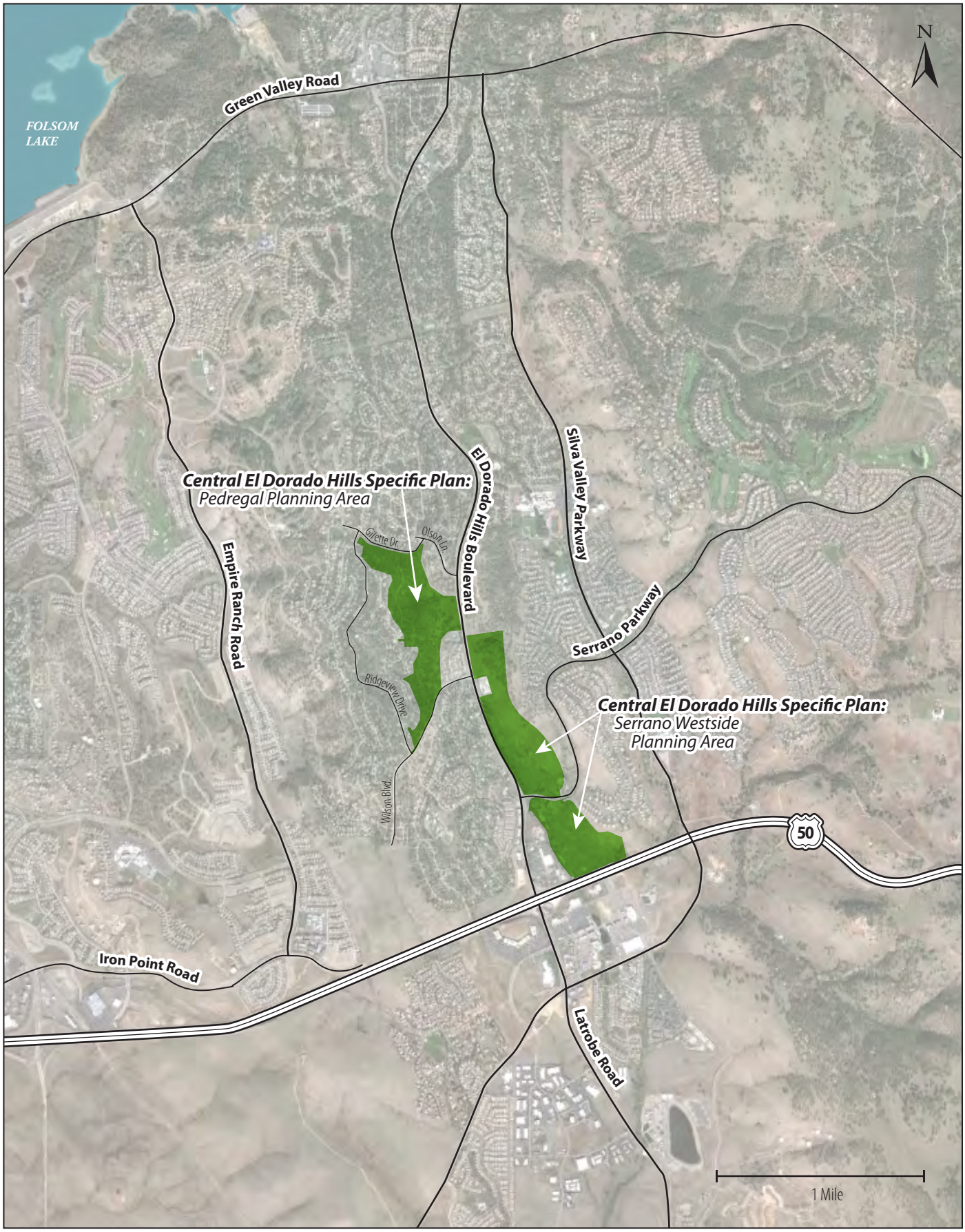

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Figure 2
Project Location

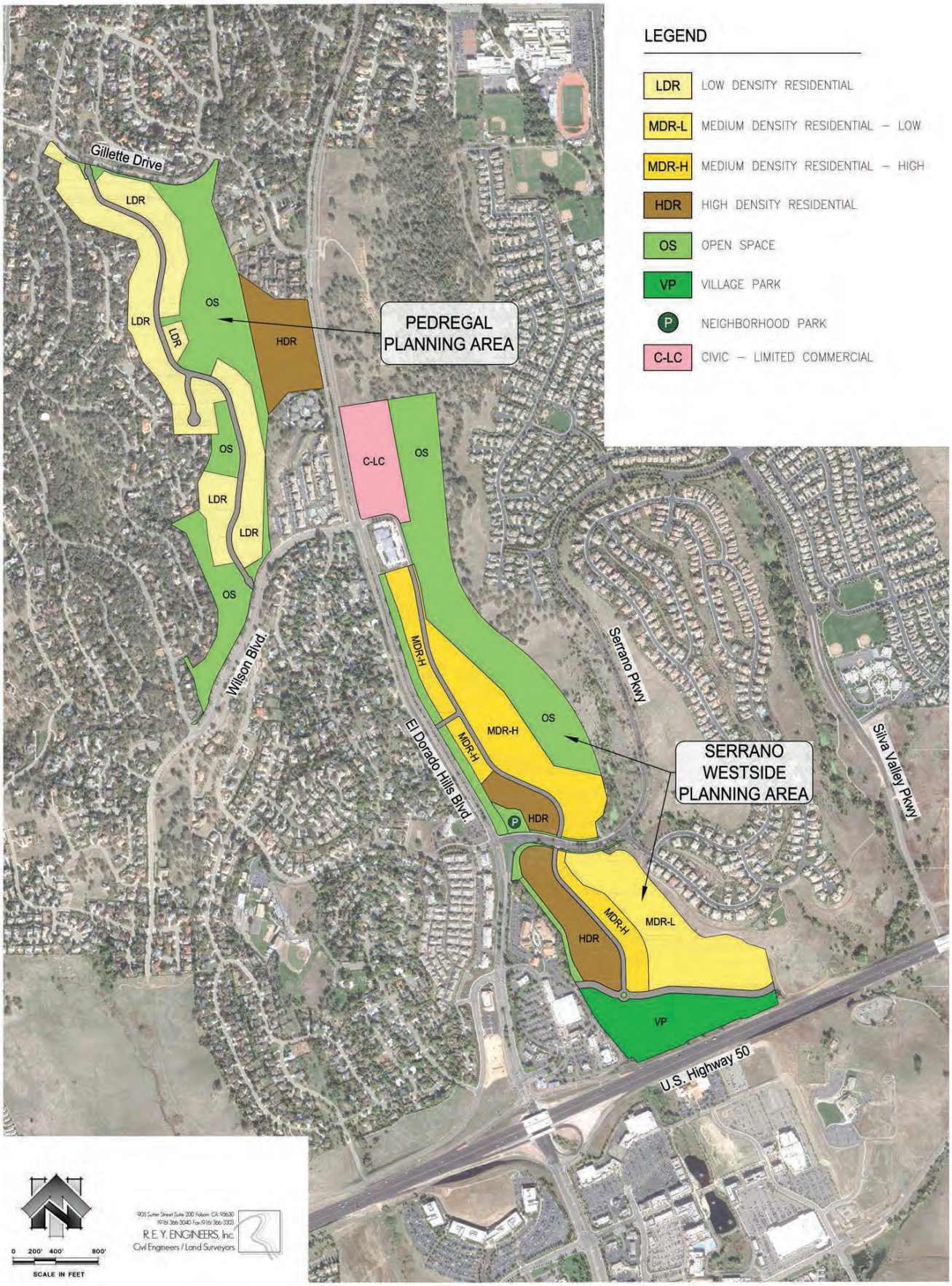

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Figure 3
Proposed Land Use Designations

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Aguilar, Alicia	Aguilar, Alicia	5/8/2013	IP132	Economy	smaller market means homes will take longer to sell/rent	Not a CEQA issue	
	Aguilar, Alicia	5/8/2013	IP132	Public Services	concern there are not enough fire/police - and lack thereof will increase insurance rates	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Insurance rates are not a CEQA issue.	
	Aguilar, Alicia	5/8/2013	IP132	Public Services	schools already filled to capacity	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Aguilar, Alicia	5/8/2013	IP132	Transportation	increased schools cause increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Aguilar, Alicia	5/8/2013	IP132	Public Services	thinks developer will need to pay for services and wonders where money will come from	Not a CEQA issue	
	Aguilar, Alicia	5/8/2013	IP132	Quality of Life	prefers open spaces, parks, trails to residential developemnt	The project includes 16 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. See **Section 3.13** Recreation for discussion of parks.	
Adams Hoppe, Laura	Adams Hoppe, Laura	3/22/2013	IP061	Form Letter A		See below	
Adams, Dan	Adams, Dan	3/22/2013	IP030	Biological Resources	new housing will displace wildlife	Mitigation for impacts to any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Adams, Dan	3/22/2013	IP030	Public Services	schools are already over capacity and project will make it worse	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Adams, Dan	3/22/2013	IP030	Public Services	already stretched, will make it worse	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Adams, Dan	3/22/2013	IP030	Crime	increased crime	Not a CEQA issue	
	Adams, Dan	3/22/2013	IP030	Recreation	green space will be reduced	The proposed project will establish open space and active recreational opportunities. Impacts to aesthetics of open space are addressed in **Section 3.1**, Aesthetics (Impact AES-3). The project includes 16 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails.	Mitigation Measure AES-2
	Adams, Dan	3/22/2013	IP030	Transportation	traffic will increase to unacceptable levels	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Adams, Dan	3/22/2013	IP030	Visual/Aesthetics	negative aesthetic effects	Addressed in Section 3.1, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5) CANT FIND LETTER?	Mitigation Measure AES-2
Aguilar, Lisa	Aguilar, Lisa	3/19/2013	IP024	Zoning	concerned about change in zoning		
	Aguilar, Lisa	3/19/2013	IP024	Notification	requesting notice of this review be mailed to all EDH residents and an additional 60 days response time be added	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA	
	Aguilar, Lisa	3/19/2013	IP024	Public Services	HDR will result in overuse of schools and emergency services	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Aguilar, Lisa	3/19/2013	IP024	Quality of Life	HDR will negatively affect quality of life	Not a CEQA issue	
	Aguilar, Lisa	3/19/2013	IP024	Transportation	HDR will result in increased congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Aguilar, Lisa	3/19/2013	IP024	Visual/Aesthetics	HDR will result in negative aesthetics	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	Mitigation Measure AES-2

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Aguilar, Lisa	Aguilar, Lisa	3/21/2013	IP024a	Notification	The right thing to do would be individual notification to all EDH residents; because it isn't the law, doesn't mean it shouldn't be done	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA; individuals requesting individual notification will be notified.	
	Aguilar, Lisa	3/21/2013	IP024a	Notification	500 feet was inadequate radius	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA; individuals requesting individual notification will be notified.	
	Aguilar, Lisa	3/21/2013	IP024a	Notification	would like to be notified of future meetings	Individuals requesting individual notification will be added to the email list and notified.	
	Andrews, Rita R.	3/20/2013	IP127	Public Services	schools not conducive to apts/houses being built behind Raley's	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
Andrews, Rita R.	Andrews, Rita R.	3/20/2013	IP127	Transportation	traffic not conducive to apartments/homes being built behind Raley's	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Atkinson, Chrys and Doug	Atkinson, Chrys and Doug	3/22/2013	IP031	Biological Resources	loss of open space and animal habitat	The project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. See **Section 3.13**, Recreation. Impacts to animals and habitat addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
Avanova, Pavel and Ericka	Avanova, Pavel and Ericka	3/22/2013	IP032	Form Letter A		See below	
Bean, Jacob	Bean, Jacob	3/22/2013	IP034	Form Letter A		See below	
Bean, Wes	Bean, Wes	3/22/2013	IP033	Zoning	opposed to medium and high density dwellings	A reduced density alternative was considered. See Chapter 4.	
	Bean, Wes			Fiscal Impact	Add to fiscal burden	Not a CEQA issue	
Bean, Wes and Sue	Bean, Wes and Sue	3/22/2013	IP033a	Zoning	will only consider single family dwellings	A reduced density alternative was considered. See Chapter 4.	
Bertram, Chris	Bertram, Chris	3/22/2013	IP035	Form Letter A		See below	
Bluette, Jennifer	Bluette, Jennifer	3/22/2013	IP036	Biological Resources	wildlife would be affected	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Bluette, Jennifer	3/22/2013	IP036	Visual/aesthetics	HDR in the project will change EDH to undesirable cookie cutter image like Folsom and Roseville	Impacts to Visual Resources are addressed in **Section 3.1**, Aesthetics (Impact AES-2, AES 3).	
	Bluette, Jennifer	3/22/2013	IP036	Design/Zoning	suggests encouraging LDR development that preserves trees and landscaping	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in **Section 3.3**, Biological Resources (Impact BIO-1 and BIO-11).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c
Bodas, Amit	Bodas, Amit	3/20/2013	IP026	Public Services	concerned about impact on schools	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Bodas, Amit	3/20/2013	IP026	Visual/aesthetics	concerned about beauty, rolling hills	Addressed in **Section 3.1**, Aesthetics (Impact AES-3)	Mitigation Measure AES-2
	Bodas, Amit	3/20/2013	IP026	Transportation	concerned about increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Braile, William and Margaret	Braile, William and Margaret	3/22/2013	IP037	Economy	project would reduce property values	Not a CEQA issue	
	Braile, William and Margaret	3/22/2013	IP037	Public Services/Utilities	existing services are stretched thin	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Braile, William and Margaret	3/22/2013	IP037	Quality of Life	moved to EDH because it was an upscale neighborhood NOT in proximity to apartment complexes	Not a CEQA issue	
	Braile, William and Margaret	3/22/2013	IP037	Transportation	project would have traffic impacts, creating bottleneck on EDH Blvd and Serrano Pkwy	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Braile, William and Margaret	3/22/2013	IP037	Visual/Aesthetics	project would have negative aesthetic impacts	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	Mitigation Measure AES-2
Brandon, Eric and Becky	Brandon, Eric and Becky	3/22/2013	IP038	Cutlural Resources	have Native Americans been contacted and will Parker pay for this or will the County?	In order to comply with SB 18 and Section 106 of the NHPA, consultation with Native Americans regarding the project has been ongoing since 2005. See **Section 3.4**, Cutlural Resources for discussion. Funding is not a CEQA issue	
	Brandon, Eric and Becky	3/22/2013	IP038	Haz/AQ	potential exposure to asbestos?	Addressed in **Section 3.2**, Air Quality (Impact AQ-5)	Mitigation Measure AQ-4a
	Brandon, Eric and Becky	3/22/2013	IP038	Noise/Pollution	[nothing further]	Pollution is addressed in **Section 3.2**, Air Quality. Noise is addressed in **Section 3.10**, Noise (Impact NOI-1 and NOI-3)	Mitigation Measures NOI-1a and NOI-1b
	Brandon, Eric and Becky	3/22/2013	IP038	Notification	Developers have not shared plan openly with and ellicted input from the entire community	This EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA	
	Brandon, Eric and Becky	3/22/2013	IP038	Public Services	Oak Ridge HS is already over capacity; response at public meeting from Parker was that the new HS was built in wrong location. Will Parker fund another HS.	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Brandon, Eric and Becky	3/22/2013	IP038	Public Services	with new housing "units" there is bound to be additional crime - can Sheriff's Dept handle this	Police protection is addressed in **Section 3.12**, Public Services and Utilites (Impact PSU-1)	
	Brandon, Eric and Becky	3/22/2013	IP038	Public Services	who will fund additional police and fire services?	Impacts to police and fire services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Police and fire services are usually funded through local taxes.	
	Brandon, Eric and Becky	3/22/2013	IP038	Recreation	Park location is next to freeway - kids playing next to freeway - smog and traffic?	Air quality and pollutant impacts from construction and operation are addressed in **Section 3.2**, Air Quality (Impact AQ-1 - AQ-5)	
	Brandon, Eric and Becky	3/22/2013	IP038	Taxes	[nothing further]	Not a CEQA issue	
	Brandon, Eric and Becky	3/22/2013	IP038	Transportation	Increased population will increase already congested roads and highway ramps; intersection of EDH Blvd and Serrano Parkway is dangerous	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Brandon, Eric and Becky	3/22/2013	IP038	Visual/Aesthetics	EDH Blvd will become an eyesore with multiple apartment complexes and townhomes	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
	Brandon, Eric and Becky	3/22/2013	IP038	Water	[nothing further]	This comment is unclear; not able to address. Water quality is addressed in **Section 3.8**, Hydrology, Water Quality, and Water Resources. Water supply is addressed in **Section 3.12**, Public Services and Utilities.	
	Brandon, Eric and Becky	3/22/2013	IP038	Biological Resources	impact on wildlife	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Brandon, Eric and Becky	3/22/2013	IP038	County responsibility	As reps of community, county is obliged to hold their best interests above all others - Developers plan is not in the best interest of the citizens	Not a CEQA issue	
Brown, Dale	Brown, Dale	3/22/2013	IP039	Notification	requests to be notified of public meetings and when DEIR is released	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA; individuals requesting individual notification will be notified.	
	Brown, Dale	3/22/2013	IP039	Transportation	construction equipment and materials will have a negative impact on roadways	Impacts from construction on roadways will be minimized. Impacts on traffic during construction are addressed in **Section 3.14**, Traffic and Circulation.	
	Brown, Dale	3/22/2013	IP039	Design/Zoning	densities greater than 8Du/ac should not be allowed - would impact security and housing value	Not a CEQA issue	
Brown, Karen	Brown, Karen	3/22/2013	IP040	General	proposed zoning changes would have negative impact on environmental degradation	This document discusses environmental impacts and includes discussions of all resource areas required by CEQA.	
	Brown, Karen	3/22/2013	IP040	Noise	proposed zoning changes would have negative impact on noise	Addressed in **Section 3.10**, Noise (Impact NOI-1 and NOI-3)	Mitigation Measure NOI-1b
	Brown, Karen	3/22/2013	IP040	Public Services	proposed zoning changes would have negative impact on schools	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Brown, Karen	3/22/2013	IP040	Crime	proposed zoning changes would have negative impact on crime	Not a CEQA issue	
	Brown, Karen	3/22/2013	IP040	Recreation	proposed zoning changes would have negative impact on loss of opportunity ot create a community space	The CEDHSP includes development of 15 acres of parks for the recreational enjoyment of the community. Impacts related to parks are discussed in **Section 3.13**, Recreation.	
	Brown, Karen	3/22/2013	IP040	Transportation	proposed zoning changes would have negative impact on traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Brown, Karen	3/22/2013	IP040	Visual/Aesthetics	proposed zoning changes would have negative impact on aesthetics	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
	Brown, Karen	3/22/2013		Notification	requests to be notified of public meetings and when DEIR is released	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA; individuals requesting individual notification will be notified.	
Buckmaster, David	Buckmaster, David	3/25/2013	IP119	Biological Resources	this area is one of the last dense oak population in EDH and is habitat to deer, turkeys, hawks; mitigation planting elsewhere has failed in the past.	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in Chapter 3.3, Biological Resources (Impact BIO-1 and BIO-11).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c
	Buckmaster, David	3/25/2013	IP119	General	strongly against Pedregal proposal	Comment noted	
	Buckmaster, David	3/25/2013	IP119	Transportation	Vehicle Circulation Plan is unsafe for drivers and pedestrians - access point at Gillette is unsafe.	No new access is proposed at Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
	Buckmaster, David	3/25/2013	IP119	Transportation	additional traffic will overload intersection of Olson and EDH Blvd.	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Burke, Paul	Burke, Paul	3/22/2013	IP041	Form Letter A			
Canez, Marilyn	Canez, Marilyn	3/25/2013	IP118	Biological Resources	wildlife has been forced into populated areas in the last 34 years	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Canez, Marilyn	3/25/2013	IP118	Transportation	HDR will lead to increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Canez, Marilyn	3/25/2013	IP118	Visual/Aesthetics	consider effect of HDR on beautiful area	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Clanton, Heather	Clanton, Heather	3/22/2013	IP042	Public Services	EDH already has a problem with schools being close to capacity and additional housing would make it worse	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Clanton, Heather			Transportation	traffic on EDH Blvd is already bad, development would make this worse	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Cortez, Anthony and Lori	Cortez, Anthony and Lori	3/19/2013	IP023	Design	stongly oppose specific plan; no more building in the Ridgeview area	Comment noted	
Costello, Stacy	Costello, Stacy	3/22/2013	IP017	Design/Transportation	if project is approved, require developer to put in sidewalks, bikepaths,etc	The project proposes pedestrian and bicycle facilities that will connect and integrate with existing and planned facilities adjacent to the project. In addition, elements of the proposed project will complete planned pedestrian and bicycle facilities. Impacts and mitigation are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-6)	Mitigation Measure TRA-6
	Costello, Stacy	3/22/2013	IP017	Quality of Life	development and HDR took away charm/sense of community/increase crime in Los Banos	Not a CEQA issue	
	Costello, Stacy	3/22/2013	IP017	Utilities	Additional residences will add more stress to water supply, with climate change - dreading increase in EID rates	Impacts to water supply are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-5).	
	Costello, Stacy	3/22/2013	IP017	Visual/Aesthetics	open space is attractive - people want to invest in existing homes with good views	The project includes approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. Impacts to aesthetics addressed in **Section 3.1**, Aesthetics (Impact AES-3)	
	Costello, Stacy	3/22/2013	IP017	Design/Zoning	recommends alternative uses for space - equestrian facility, sand volleyball courts, tennis courts, ped trails, dog park	Several project alternatives that were considered but not taken forward for evaluation in this document are discussed in **Chapter 4**.	
	Costello, Stacy	3/22/2013	IP017		request right to apply future damages to developer if studies are inadequate	Not a CEQA issue	
Crockett, John H.	Crockett, John H.	3/21/2013	IP044	Recreation	Golf course was marketed as an amenity; developers should not be allowed to modify the use	Not a CEQA issue	
	Crockett, John H.			Visual/Economy	Plan would have negative impact on home values and aesthetics	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Czernedi, Katherine and David	Czernedi, Katherine and David	3/21/2013	IP126	Biological Resources	what about wildlife using open space?	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Czernedi, Katherine and David	3/21/2013	IP126	Design	why not build at top of Serrano Pkwy - traffic can use Bass Lake Road?	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Czernedi, Katherine and David	3/21/2013	IP126	Transportation	will increase traffic - already bad	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Davis, Linda	Davis, Linda	3/21/2013	IP124	Design	HDR should be senior housing - low crime, lower traffic, proximity of services	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	

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	Davis, Linda	3/21/2013	IP124	Design	HDR for all ages should be on south side of 50.	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Davis, Linda	3/21/2013	IP124	Transportation	No HDR until Silva Valley Parkway interchange is complete	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	
DiMauro, Rich	DiMauro, Rich	3/4/2013	IP008	Quality of Life	Q of L will be diminished	Not a CEQA issue	
	DiMauro, Rich	3/4/2013	IP008	Transportation	suggests on/off ramps at SR 50/Silva Pkwy to mitigate traffic on EDH Blvd	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	
Doyel, Pat and Bob	Doyel, Pat and Bob	3/22/2013	IP045	Form Letter A			
Dryer, David	Dryer, David	3/22/2013	IP046	supports plan	Looks great, well planned out	Comment noted	
	Dryer, David			General	forwarded Brandon e-mail - NIMBY problem	Comment noted.	
Eide, Mr. and Mrs. Keith	Eide, Mr. and Mrs. Keith	3/14/2013	IP022	Design	suggest senior center, healthcare, community facility - not apartments	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Eide, Mr. and Mrs. Keith	3/14/2013	IP022	Visual/aesthetic	HDR will be a blight on open space	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5). Additionally, the project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails.	
	Eide, Mr. and Mrs. Keith	3/14/2013	IP022	Transportation	HDR will increase traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Eitel, Joe	Eitel, Joe	3/22/2013	IP048	Noise	sound levels are above allowed decibels and no mitigation was done during last round of building; sound walls and noise dampening pavement should be required for entire length of development on both sides EDH Blvd	Exterior and interior noise levels at new proposed uses will be in compliance with County noise standards. Impacts related to noise are addressed in **Section 3.10**, Noise (Impact NOI-1)	Mitigation Measures NOI-1a and NOI-1b
	Eitel, Joe	3/22/2013	IP048	Recreation	loss of opportunity to develop regional park; need a park for EDH residents	The CEDHSP includes development of 15 acres of parks for the recreational enjoyment of the community. Parks are discussed in **Section 3.13**, Recreation.	
	Eitel, Joe	3/22/2013	IP048	Transportation	Interchange at Silva Valley must be completed before any buildings are allowed on EDH Blvd	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	
	Eitel, Joe	3/22/2013	IP048	Design/Transportation	only outlet for any housing on Wilson should be on the north end and not on Wilson; sidewalks should be constructed and ditches must be covered on both sides of EDH Blvd; pkg lot should be required for Bowmen's park	Comment noted. Traffic and Circulation is discussed in **Section 3.14**.	
	Eitel, Joe	3/22/2013	IP048	Design/Visual/zoning	no 2-story HDR should be allowed; should be 1-story 2 or 4-plex with large lawns	Comment noted.	
	Eitel, Joe	3/22/2013	IP048	Design/Zoning	last flat open space north of US50, should be preserved as zoned	The project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails.	
	Eitel, Joe	3/22/2013	IP048	Form Letter A +	additional comments above		

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Evans, Chris and Mimi	Evans, Chris and Mimi	3/22/2013	IP049	Form Letter A			
Fair, Letha	Fair, Letha	3/22/2013	IP116	Design	concerned about a gate on Gillette - road is poorly maintained, noise and light would increase	The Pedregal planning area may or may not be gated and no access from Gillette Drive is proposed. See figure 3.14-1 in **Section 3.14**, Traffic and Circulation. Noise impacts are addressed in **Section 3.10**, Noise, and light impacts are addressed in **Section 3.1**, Aesthetics	
	Fair, Letha	3/22/2013	IP116	Hydrology	drainage issues	Drainage issues are addressed in **Section 3.8**, Hydrology and Water Quality (Impact WQ-3, WQ-4, WQ-5)	Mitigation Measure WQ-3 and WQ-4
	Fair, Letha	3/22/2013	IP116	Transportation	would increase traffic congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Fair, Letha	3/22/2013	IP116	Visual/Aesthetics	Serrano West would be an eyesore - should be open space or parks - already have blighted commercial space in the business parks	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5). Additionally, the project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails.	
	Fair, Letha	3/22/2013	IP116	Design/Zoning	HDR is not appropriate use of such a visual and busy area	Comment noted.	
Forbes, Michael	Forbes, Michael	3/22/2013	IP050	Form Letter A			
Frisch, Thomas	Frisch, Thomas	3/20/2013	IP051	Transportation	would expect that this development would trigger completion of the Silva Valley I/C	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	
Fultz, Jeff	Fultz, Jeff	3/22/2013	IP015	Economy	HDR would diminish home values	Not a CEQA issue	
Gallo, Sherie	Gallo, Sherie	3/21/2013	IP052	Public Services	impacts on Oakridge HS and elementary schools; suggests maybe building a high school and park on property	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Gallo, Sherie	3/21/2013	IP052	Quality of Life	need to consider impact holistically, family, culture, values	Not a CEQA issue	
	Gallo, Sherie	3/21/2013	IP052	Transportation	congestion on EDH Blvd, Serrano Parkway, Bass Lake Road	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Geddes, Jennifer	Geddes, Jennifer	3/22/2013	IP053	Form Letter A			
Ghio, Jenny and Dominic	Ghio, Jenny and Dominic	3/22/2013	IP054	Form Letter A			
Gomann, Stephen	Gomann, Stephen	3/22/2013	IP055	Quality of Life	project in middle of this community will ruin it	Not a CEQA issue	
	Gomann, Stephen	3/22/2013	IP055	Taxes	taxes will leave the community; more than will be generated from this project	Not a CEQA issue	
Gretzinger, Dale	Gretzinger, Dale	3/22/2013	IP112	Transportation	No development should be reviewed or proposed until current traffic conds are resolved	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Gretzinger, Dale	3/22/2013	IP112	Transportation	50/Silva Valley Pkwy interchange should be completed prior to any further development	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	
	Gretzinger, Dale	3/22/2013	IP112	Visual/Aesthetics	this zoning (below) would provide more aesthetic entry point to EDH	Comment noted	
	Gretzinger, Dale	3/22/2013	IP112	Design/Zoning	HDR is okay south of Serrano Pkwy and east of Raley's but the other 2 should be MDR-L; larger parcel should be LDR - densities more appropriate to surrounding area.	Comment noted	

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Gunter, Tanya and Del	Gunter, Tanya and Del	3/22/2013	IP056	Form Letter A			
Haney, Ikey Sal	Haney, Ikey Sal	3/22/2013	IP057	Crime	stongly opposed to apartments; crime will go up; already have Section 8 on south side of 50	Not a CEQA issue	
	Haney, Ikey Sal	3/22/2013	IP057	Economy	taxes will go up	Not a CEQA issue	
	Haney, Ikey Sal	3/22/2013	IP057	Public Services	sheriff dept, schools, water department, roadways will be impacted	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
Hauser, Nancy	Hauser, Nancy	3/25/2013	IP058	Form Letter A			
Heaphy, Bob	Heaphy, Bob	3/23/2013	IP059	Public Services	roads and schools and public services would be impacted by increased population	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Heaphy, Bob	3/23/2013	IP059	Quality of Life	increased population will decrease quality of life	Not a CEQA issue	
Holloway, Mark and Jean	Holloway, Mark and Jean	3/22/2013	IP060	Transportation	Access off Gillette doesn't seem reasonable	No new access is proposed at Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
	Holloway, Mark and Jean	3/22/2013	IP060	Transportation	Gillette is a 2-lanes, dangerous, in lousy shape	No new access is proposed at Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
	Holloway, Mark and Jean	3/22/2013	IP060	Transportation	Olson is in terrible shape	No new access is proposed at Olson Lane or Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
	Holloway, Mark and Jean	3/22/2013	IP060	Transportation	Olson and Gillette are county maintained roads; cannot support additional wear and tear; would need to be improved	No new access is proposed at Olson Lane or Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
	Holloway, Mark and Jean	3/22/2013	IP060	Transportation	access point at Gillette would be dangerous	No new access is proposed at Gillette Drive. Access is proposed from Wilson. See Figure 3.14-1. Traffic and Circulation are discussed in **Section 3.14**.	
Howard, Eric and Heidi	Howard, Eric and Heidi	3/21/2013	IP062	Public Services	consider negative impact on already crowded schools	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Howard, Eric and Heidi	3/21/2013	IP062	Quality of Life	unsightly housing on former golf course would diminish QoL	Not a CEQA issue	
	Howard, Eric and Heidi	3/21/2013	IP062	Transportation	concerned about traffic, noise, air pollution	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic. Noise impacts are addressed in **Section 3.10**, Noise and Vibration and air quality impacts are addressed in **Section 3.2** Air Quality.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Hughey, Shirley	Hughey, Shirley	3/22/2013	IP063	Form Letter A			
Immer, Diane	Immer, Diane	3/22/2013	IP064	Form Letter A			
Jain, Vijay	Jain, Vijay	3/21/2013	IP029	everything	HDR will have negative effects on - traffic, public resources, noise, air quality, water, wildlife, recreation, taxes	This document discusses environmental impacts and includes discussions of all resource areas required by CEQA. See responses to comments on Letter IP 25	* see IP25 - From Eric and Becky Brandon e-mail
	Jain, Vijay	3/21/2013	IP029	Public Services/Utilities	ensure adequate infrastructure exists	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1, PSU-3, PSU-4, PSU-6, PSU-7)	
	Jain, Vijay	3/21/2013	IP029	Recreation	already limited supply of parks will be overcrowded	The CEDHSP includes proposed development of 15 acres of parks. Impacts related to parks are discussed in **Section 3.13**, Recreation.	
	Jain, Vijay	3/21/2013	IP029	Transportation	off-highway roads to Folsom should be prioritized	Not within the scope of this EIR	
	Jain, Vijay	3/21/2013	IP029	Transportation	schools have horrible traffic for pick up and drop off	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2

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	Jain, Vijay	3/21/2013	IP029	Transportation	traffic will be worse - and crime, noise, etc	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic. Noise impacts are discussed in **Section 3.10**, Noise and Vibration. Crime is speculative and is not a CEQA issue.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Jain, Vijay	3/21/2013	IP029	N/A	forwarding e-mail from Rebecca Brandon encouraging public participation to oppose project	Not a comment on this project.	
Johnson, Denise M.	Johnson, Denise M.	3/22/2013	IP065	Form Letter A			
Johnson, Rod (Capitol Partners Developm	Johnson, Rod (Capitol Partners Developm	3/22/2013	IP066	Design/Public Services	density level should be reduced to limit impact on schoold and services	Impacts to schools and services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1, PSU-3, PSU-4, PSU-6, PSU-7)	
	Johnson, Rod (Capitol Partners Developm	3/22/2013	IP066	Quality of Life	PD needs to be more reflective on quality of life and environment	Not a CEQA issue	
	Johnson, Rod (Capitol Partners Developm	3/22/2013	IP066	Design/Transportation	density level should be reduced to limit impact on traffic	Impacts to traffic are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2)	Mitigation Measure TRA-1 and TRA-2
Joseph, Victoria	Joseph, Victoria	3/22/2013	IP067	Biological Resources	would disturb wildlife	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Joseph, Victoria	3/22/2013	IP067	Crime	Crime in the area is increasing; apartment complexes attract crime; Sheriff's dept not getting more funding	Not a CEQA issue. Speculative; law enforcement partially funded through taxes	
	Joseph, Victoria	3/22/2013	IP067	Public Services	schools are at capacity - not getting funding	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). The school district will determine impact fees.	
	Joseph, Victoria	3/22/2013	IP067	Transportation	EDH doesn't need more traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Joseph, Victoria	3/22/2013	IP067	Visual/Aesthetics	don't replace rolling hills with concrete jungle	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Joyer, Rick	Joyer, Rick	3/21/2013	IP068	Air Quality	Pollution from increased traffic	Existing (2012) and cumulative (2035) traffic conditions were modeled to evaluate CO concentrations relative to the state and federal air quality standards (see Table 3.2-4). Impacts to air quality are addressed in **Section 3.2** (Impact AQ-1, AQ-3, and AQ-5)	
	Joyer, Rick	3/21/2013	IP068	Biological Resources	impacts on wildlife	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9)	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Joyer, Rick	3/21/2013	IP068	Demand	doesn't seem like housing is in short supply	Not a CEQA issue	
	Joyer, Rick	3/21/2013	IP068	Economy	reduced property values	Not a CEQA issue	
	Joyer, Rick	3/21/2013	IP068	Noise	Noise from increased traffic	The applicant will coordinate with the construction contractor and/or engineering team to ensure that exterior and interior noise levels at new proposed uses are in compliance with County noise standards. Impacts from noise are addressed in **Section 3.10**, Noise (Impact NOI-1, NOI-3)	Mitigation Measure NOI-1b

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	Joyer, Rick	3/21/2013	IP068	Public Services	EDH doesn't have capacity to accommodate more students into schools; at public meeting, Parker said "you'll have to build new schools"; no funding is available	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). The school distric will determine impact fees.	
	Joyer, Rick	3/21/2013	IP068	Transportation	increased traffic from 1000+ new housing units, each with 1-3 cars	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Joyer, Rick	3/21/2013	IP068	County responsibility	County is "obligated to hold our best interests above all others"	Not a CEQA issue.	
Kaur, Kiren	Kaur, Kiren	3/31/2013	IP133	Transportation	EDH Blvd can not handle more traffic from HDR. Don't see how it is possible to add lanes	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	
	Kaur, Kiren	3/31/2013	IP133	Economy	Don't see demand for more housing. Not many jobs in the area.	Not a CEQA issue	
	Kaur, Kiren	3/31/2013	IP133	Design	Not enough greenery proposed - at corner of EDH and Serrano. Houses should be moved back so they are not as visible to the street.	**Section 3.1**, Aesthetics, addresses aesthetic impacts.	
	Kaur, Kiren	3/31/2013	IP133	Design	Condos for empty nesters and new families is good, but not as many as are proposed	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Kaur, Kiren	3/31/2013	IP133	Recreation	including park is a good idea	Comment noted. The CEDHSP includes proposed development of 15 acres of parks for the community.	
	Kaur, Kiren	3/31/2013	IP133	Transportation	walking area and pedestrian access is a good idea	Comment noted.	
	Kaur, Kiren	3/31/2013	IP133	Design	Leaving C&D as open space and adding new development is a good idea	Comment noted	
Keenan, Larry	Keenan, Larry	3/21/2013	IP122	Design	project is too big - 1000 units is unacceptable	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Keenan, Larry	3/21/2013	IP122	General	approve this plan and you will rue the day as voter will not stand for it	Comment noted	
	Keenan, Larry	3/21/2013	IP122	Public Services	schools are at peak enrollment	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Keenan, Larry	3/21/2013	IP122	Transportation	traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Keenan, Larry	3/21/2013	IP122	Design	way too much density	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
Kelley, Teresa	Kelley, Teresa	3/22/2013	IP069	Form Letter A			
Kernazitskas, David	Kernazitskas, David	3/7/2013	IP009	Alternatives	wants reasonable alternatives proposed - but they don't exist	CEQA requires that an EIR contain a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant impacts of the project. CEQA Section 15126.6 defines a reasonable range. **Chapter 4** describes the alternatives to the proposed project.	
	Kernazitskas, David	3/7/2013	IP009	Biological Resources	oak trees (heritage oaks)	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in **Chapter 3.3**, Biological Resources (Impact BIO-1 and BIO-11).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c

Party Name (Last name, First name; Agency or Organization name)	Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Kernazitskas, David	3/7/2013	IP009	Biological Resources	wildlife; particularly address migration corridors, birds, road kill, driving habits of MDR and HDR dwellers	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9). Impacts to midgratory wildlife are discussed in Impact BIO-10.	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
Kernazitskas, David	3/7/2013	IP009	Biological Resources	heritage oak mitigation - no removal of heritage trees or permitting cutting of only 5%	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in **Chapter 3.3**, Biological Resources (Impact BIO-1 and BIO-11).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c
Kernazitskas, David	3/7/2013	IP009	Design	reduce planned expansion	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
Kernazitskas, David	3/7/2013	IP009	Design	limit single family homes to 10-20 per year; create more retail space instead of HDR	Comment noted.	
Kernazitskas, David	3/7/2013	IP009	Economy	economy can't support more home building	Not a CEQA issue	
Kernazitskas, David	3/7/2013	IP009	General	developer is trying to sneak in impacts - env impacts should be evaluated as if all units will be available now	CEQA requires that the full project be analyzed - that the project not be "piecemealed" (Section 21159.27). The analysis presented here assumes full build out.	
Kernazitskas, David	3/7/2013	IP009	Recreation	consult City to determine if pool can be upgraded or if additional pool/parks will be necessary	Impacts related to park are discussed in **Section 3.13**, Recreation. Alternatives considered but not carried forward are discussed in **Chapter 4**.	
Kernazitskas, David	3/7/2013	IP009	Transportation	increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Kernazitskas, David	3/7/2013	IP009	Transportation	increased traffic on highways	Results for freeway facilities, which are presented in Table 3.14-9, indicate that all studied freeway facility segments will operate acceptably. Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2).	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Kernazitskas, David	3/7/2013	IP009	Design/Transportation	add lanes to accommodate increase traffic; make ped and bike lanes safer	Analysis of traffic impacts and discussion of pedestrian and bicycle circulation, is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	
Kernazitskas, David	3/7/2013	IP009	Design/Transportation	extend trains and widen freeway	Not within the scope of this EIR	
Kernazitskas, David	3/7/2013	IP009	Utilities	are sewers, waste management, utilities designed to handle an additional 5000 people	Addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-2, PSU-3, PSU-6)	
Kernazitskas, David	3/7/2013	IP009	Utilities	developer should be responsible for upgrading phone, sewer, electric, gas, telecom	Utilities are discussed in **Section 3.12**, Public Services and Utilities. Connections to infrastructure are presented as part of the project.	
Kernazitskas, David	3/22/2013	IP009a	Public Services	how will this affect schools, crime, infrastructure	Impacts to schools and infrastructure are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1, PSU-2, PSU-3, PSU-4, PSU-6). Crime, however, is subjective and not a CEQA issue.	
Kernazitskas, David	3/22/2013	IP009a	Transportation	will put 2000 more cars on EDH Blvd - already congested	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Kernazitskas, David	3/22/2013	IP009a	Visual/aesthetic	will destroy look and feel of EDH, replace open space with tracts and apts.	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5). Additionally, the project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails.	
Killian, Jaenalyn Jarvis	Killian, Jaenalyn Jarvis	3/2/2013	IP136	Notification	requested addition to mailing list	Added to list	
Kiskinen, Michael and Virgina Young	Kiskinen, Michael and Virgina Young	3/22/2013	IP070	Form Letter A			
Koontz, Eric	Koontz, Eric	3/21/2013	IP071	Economy	tax increase	Not a CEQA issue	
	Koontz, Eric	3/21/2013	IP071	Public Services	impact on schools; funding to build additional schools	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). The school district will determine impact fees.	
	Koontz, Eric	3/21/2013	IP071	Crime	HDR brings increase of crime	Speculative; not a CEQA issue	
	Koontz, Eric	3/21/2013	IP071	Transportation	no proposal to address traffic increase on EDH Blvd	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in Section 3.14.	Mitigation Measure TRA-1a
Koontz, Eric	Koontz, Eric	3/21/2013	IP071a	Design/Transportation	On vehicle circulation plan, roads highlighted blue are not adequate for construction and new home traffic and many are private roads which are not accessible to the general public	Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation	
Kriz, Patricia	Kriz, Patricia	3/27/2013	IP113	Notification	requests to receive future updates	Added to list	
Lauren, Nadine	Lauren, Nadine	12/18/2012	IP004	Haz/AQ	NOA	Impacts and mitigation proposed for Naurally Occuring Asbestosare addressed in **Section 3.2**, Air Quality (Impact AQ-4)	Mitigation Measure AQ-4a
Learned, Drew and Denise	Learned, Drew and Denise	3/22/2013	IP072	Form Letter A			
Lee, David	Lee, David		IP115	Economy	HDR will adversely affect property values	Not a CEQA issue	
	Lee, David		IP115	Land Use	HDR will destroy open space	The project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. Parks are discussed in **Section 3.13**, Recreation.	
	Lee, David	3/22/2013	IP115	Transportation	HDR will increase traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Lee, David		IP115	Visual/Aesthetics	HDR will negatively affect the beauty of the area	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Lieber, Joe	Lieber, Joe	3/22/2013	IP073	Form Letter A			
Link, Doug	Link, Doug	3/21/2013	IP121	Design/Recreation	more public activity greenspace or recreation space should be placed at gateway to EDH	The project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. Parks are discussed in **Section 3.13**, Recreation.	
	Link, Doug	3/21/2013	IP121	Visual/aesthetic	wall of apartments/rowhouse is not pleasing to eye/does not a good representation of EDH	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Long, Scott	Long, Scott	3/22/2013	IP074	Form Letter A			
Lowrence, Kate	Lowrence, Kate	3/22/2013	IP075	Form Letter A			
Marcale, Susan and Marcel	Marcale, Susan and Marcel	3/20/2013	IP025	everything	HDR will have negative effects on - traffic, public resources, noise, air quality, water, wildlife, recreation, taxes	Impacts to these resources are addressed in **Section 3.14** (Traffic and Circulation), **3.12** (Public Services and Utilities), **3.10** (Noise), **3.2** (Air Quality), 3.8	
	Marcale, Susan and Marcel	3/20/2013	IP025	Quality of Life	opposed to seeing small town ruined like Elk Grove	Speculative; not a CEQA issue	
	Marcale, Susan and Marcel	3/20/2013	IP025	Crime	more population = more crime; HDR correlated with crime	Speculative; not a CEQA issue	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Matson, Gregory	Matson, Gregory	3/22/2013	IP077	Form Letter A+	additional comments below		
	Matson, Gregory	3/22/2013	IP077	Crime	already seeing an increase in petty crime - scoping out houses, unlicensed solicitors; will need to move to more secure area	Speculative; not a CEQA issue	
McIntosh, Patrick and Toby	McIntosh, Patrick and Toby	3/22/2013	IP076	Form Letter A			
Miesner, Michele and Todd	Miesner, Michele and Todd	3/22/2013	IP078	Form Letter A+	additional comments below		
	Mienser, Michele	3/22/2013	IP078	Recreation/Visual	open air area that this project impacts is the last beautiful piece of land left in the city; could be our own little Central Park	The CEDHSP includes proposed development of 15 acres of parks for the community. Aesthetic impacts are addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5).	Mitigation Measure AES-2
Misso, Paul	Misso, Paul	3/21/2013	IP123	Economy	development would be first thing visitors see - need to rebuild and maintain property values	Not a CEQA issue	
	Misso, Paul	3/21/2013	IP123	Public Services	schools - has capacity analysis been done	School capacity is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Misso, Paul	3/21/2013	IP123	Transportation	traffic - any plans must addess and remediate	Mitigation for traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2).	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Mitchell, Winifred & Roy T. Nielsen	Mitchell, Winifred & Roy T. Nielsen	3/22/2013	IP043	Biological Resources	concerned about tree removal; animal habitat - deer and smaller creatures	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in **Section 3.3**, Biological Resources (Impact BIO-1 and BIO-11). Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Mitchell, Winifred & Roy T. Nielsen	3/22/2013	IP043	Construction Impacts	concerned about construction disruptions; noise, traffic, views	Noise impacts from construction are addressed in **Section 3.10**, Noise (Impact NOI-1, NOI-2, NOI-4, and NOI-7), aesthetic impacts from construction are addressed in **Section 3.1**, Aesthetics (Impact AES-1). Impacts on traffic from construction are temporary and is expected to have a less that significant impacton emergency access (Impact TRA-5). See **Section 3.14**, Traffic and Circulation for complete discussion.	Mitigation Measures NOI-1a, AES-1
	Mitchell, Winifred & Roy T. Nielsen	3/22/2013	IP043	Public Services	concerned about impacts on schools	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Mitchell, Winifred & Roy T. Nielsen	3/22/2013	IP043	Transportation	concerned about increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Mitchell, Winifred & Roy T. Nielsen	3/22/2013	IP043	Visual/Aesthetics	concerned about destruction of the rural environment; removal of trees and impacts to existing views	Impacts to scenic resources includeing trees are addressed in **Section 3.1**, Aesthetics (Impact AES-3)	Mitigation Measure AES-2
Moreno, John	Moreno, John	3/19/2013	IP021	Biological Resources	suggests "shading/tree mitigation - 50% coverage within 5 yrs of all roadways and rooftops"	Mitigation for removal of blue oak woodland is discussed in **Section 3.3**, Biological Resources (Impact BIO-1, BIO-11 and BIO-13). County General Plan policy requires replacement for the loss of up to 14.15 acres of oak woodland at a 1:1 ratio.	Mitigation measure BIO-1a, BIO-1b, BIO-1c
	Moreno, John	3/19/2013	IP021	Design	suggests keeping club house as equestrian center	Alternatives considered but not carried forward for analysis in the EIR are discussed in C**hapter 4**.	

Party Name (Last name, First name; Agency or Organization name)	Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Moreno, John	3/19/2013	IP021	Design	suggests Senior living north of Serrano Parkway	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
Moreno, John	3/19/2013	IP021	Phasing	Require phasing of development	Buildout of the project would likely occur over several years and would ultimately be dictated by housing market conditions. It is anticipated construction would be phased within each planning area.	
Moreno, John	3/19/2013	IP021	Design	suggests studying HDR on EDH Blvd vs. other development sites (Marble Valley)	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
Moreno, John	3/19/2013	IP021	Phasing	Phasing plans to include 75 -80% buildout	Buildout of the project would likely occur over multiple years and would ultimately be dictated by housing market conditions. It is anticipated construction would be phased within each planning area. The EIR addresses full build out of the Specific Plan.	
Moreno, John	3/19/2013	IP021	Design	suggests LEED, CalGreen and Title 24	Comment noted. See Sustainability Section of Specific Plan.	
Moreno, John	3/19/2013	IP021	Design	would like to see "sketch up" model including plan view and elevation	Plans and elevations will be available at a later date. General plans and guidelines are in the Specific Plan and have been used for evaluation of impacts in this EIR.	
Moreno, John	3/19/2013	IP021	Crime	suggests crime rate study	Not a CEQA issue	
Moreno, John	3/19/2013	IP021	Public Services	will there be a school impact fee?	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1); however, fees are determined by the school district and are not addressed in this document.	
Moreno, John	3/19/2013	IP021	Quality of Life	suggests keeping rural living	Not a CEQA issue	
Moreno, John	3/19/2013	IP021	Transportation	suggests maintenance of streets impacted	The County remains responsible for maintenance of streets	
Moreno, John	3/19/2013	IP021	Design/Transportation	suggests realign Wilson Blvd; include turn lanes and bike lanes	Comment noted. Transportation and bicycle lanes are addressed in **Section 3.14**, Traffic and Circulation.	
Moreno, John	3/19/2013	IP021	Design/Utilities	suggests undergrounding all utilities	According to the Specific Plan, all new distribution facilities will be underground, with the exception of facilities such as transformers, switches, and other pedestal and pad-mounted equipment.	
Moreno, John	3/29/2013	IP021a	Form Letter B+ attached			
Moreno, John	3/29/2013	IP021a	Zoning	existing zoning has ided park use only east of Knight Lane - verify protocol for rezoning to housing	The existing zoning of the Pedragal planning area is residential and is discussed in **Section 3.9**, Land Use and Agriculture, and in the project description, **Chapter 2**.	
Moreno, John	3/29/2013	IP021a	Cumulative	assure CEQA reports will include new developments within 10 mile radius - using Wilson, EDH Blvd, Green Valley	Cumulative conditions addressed in the EIR are General Plan Buildout, plus reasonably forseeable projects. See **Section 5.2.1**, Cumulative Scenario for discussion.	
Moreno, John	3/29/2013	IP021a	Request for info	requests info on how to have plan come to a public vote; # of signatures needed; process to get public ballot	Not a CEQA issue	
Moreno, John	3/29/2013	IP021a	Design	Consider green design standards	Not a CEQA issue, but see Sustainability Chapter of Specific Plan.	
Moreno, John	3/29/2013	IP021a	Economy	high resident turn over will not result in taxes/fees to County; will shop at convenience - in Folsom	Speculative; not a CEQA issue	
Moreno, John	3/29/2013	IP021a	Economy	Can they request a study on tax base implications of plan?	Not a CEQA issue.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Moreno, John	3/31/2013	IP021b	General	List of issues to discuss with Sup. Mikulaco - including process to put all development plans (current and future) on November ballot; economic impact report; revenue generation; taxes	Not a CEQA issue	
Mulligan, Robert	Mulligan, Robert	3/11/1988	IP129	Form Letter B			
Narnajo, Edward and Nancy	Narnajo, Edward and Nancy	3/22/2013	IP079	Form Letter A			
Neher, Donn	Neher, Donn	12/27/2012	IP005	Biological Resources	negative effect on wildlife - owls, hawks, turkeys, etc	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2 - BIO-10, BIO-15 - BIO-21).	Mitigation Measure BIO-1a, BIO-1b, BIO-1c, BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9, BIO-15a, BIO-15b, BIO-16a, BIO-16-b, BIO-17a, BIO-17b)
	Neher, Donn	12/27/2012	IP005	Noise	increased traffic leads to more noise	Addressed in **Section 3.10**, Noise (Impact NOI-1 and NOI-3)	Mitigation Measure NOI-1b
	Neher, Donn	12/27/2012	IP005	Public Services	overcrowded schools	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Neher, Donn	12/27/2012	IP005	Public Services	stress on emergency services	Impacts to fire and police protection is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Neher, Donn	12/27/2012	IP005	Transportation	increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Neher, Donn	12/27/2012	IP005	Air Quality	increased pollution	Addressed in **Section 3.2**, Air Quality (Impact AQ-1, AQ-2, AQ-3, AQ-4)	Mitigation Measure AQ-2a, AQ-2b, AQ-2c, AQ-4a)
Neher, Donn	Neher, Donn	3/14/2013	IP005a	Design	suggests open space on north and south sides of Serrano Parkway intersection for visibility/aesthetics	Visual resources are discussed in **Section 3.1**, Aesthetics	
	Neher, Donn	3/14/2013	IP005a	Design/Zoning	Replace MDRH on EDH Blvd with HDR to keep consistent with other apts on EDH Blvd	Comment noted.	
Neher, Donn	Neher, Donn	3/15/2013	IP005b	General	requests number of units	The Specific Plan proposes a total of 1,000 residential units. See **Chapter 2**.	
	Neher, Donn	3/15/2013	IP005b	Public Services	school overcrowding; funds should be set aside	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1); however, fees are determined by the school district and are not addressed in this document.	
	Neher, Donn	3/15/2013	IP005b	Public Services	police/medical/fire; funds should be set aside	Impacts to fire and police protection is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). These services are generally funded through taxes.	
	Neher, Donn	3/15/2013	IP005b	Design/Transportation	suggests right-hand turn pocket from EB Serrano Pkwy to Vila Flor Pl.	This intersection is outside of the project area. Not within the scope of this EIR.	
Nielsen, Lorene	Nielsen, Lorene	3/20/2013	IP027	Form Letter B+	comment sheet with instructions for use attached		
	Nielsen, Lorene			Zoning	Pedregal not zoned for residential units - per CC&Rs; land use atty says CC&Rs stand at the County level and must be followed	The Pedregral planning area is currently zoned for residential uses. See Table 3.9-1 in **Section 3.9**, Land Use and Agriculture.	
O'Bryan, Mike and Kay	O'Bryan, Mike and Kay	3/22/2013	IP080	Form Letter A			
Otero, Eddie and Tonita	Otero, Eddie and Tonita	3/22/2013	IP081	Form Letter A			
Palmer, Heather	Palmer, Heather	3/22/2013	IP082	Form Letter A+	additional comments below		
	Palmer, Heather	3/22/2013	IP082	Public Services	schools already overcrowded; growth will be a burden on law enforcement;	Impacts to schools and police services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Palmer, Heather	3/22/2013	IP082	Quality of Life	dense construction will make EDH like everywhere else	Not a CEQA issue	

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	Palmer, Heather	3/22/2013	IP082	Recreation	zone changes and building will limit recreation and open space opportunities	The CEDHSP includes proposed development of 15 acres of parks for the community and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. See **Section 3.13**, Recreation for discussion.	
	Palmer, Heather	3/22/2013	IP082	Transportation	traffic is already bad	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Palmer, Heather	3/22/2013	IP082	Zoning	fast growth of previously carefully planned community is not good - see Natomas	Comment noted.	
Patane, Lenny	Patane, Lenny	3/14/2013	IP013	Zoning	opposes high density development	Comment noted.	
	Patane, Lenny	3/14/2013	IP013	Notification	suggestion to expand notification of residents	The EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals who request to be notified will be notified of any meetings and when the EIR is available for public review.	
	Patane, Lenny	3/14/2013	IP013	Transportation/Noise	increased traffic and noise on EDH Blvd	Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (TRA-1 and TRA-2), Noise impacts are addressed in **Section 3.10,** Noise (Impact NOI-1, NOI-3, and NOI-7)	
Patane, Teresa	Patane, Teresa	3/24/2013	IP130	Design	Horrible Plans, no high density please	Comment noted.	
	Patane, Teresa	3/24/2013	IP130	Traffic	EDH has too much traffic already; new residents would be driving on EDH Blvd, not just getting on hwy at Silva Valley	The interchange at Silva Valley/White Rock Road is included in the cumulative conditions transportation analysis. The US 50/Silva Parkway/White Rock Road interchange will be constructed over the next few years. Traffic and Circulation is discussed in **Section 3.14**.	Mitigation Measure TRA-1a
	Patane, Teresa	3/24/2013	IP130	Public Services	Oak Ridge HS Is already impacted; don't need more residents in the area	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Patane, Teresa	3/24/2013	IP130	Public Services	More crime, more police needed, more fire services	Impacts to fire and police services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Crime is not a CEQA issue; speculative.	
	Patane, Teresa	3/24/2013	IP130	Open space	Loss of open space	The project includes 15 acres of parks and approximately 169 acres of open space, Class I bikeways, and paved and unpaved trails. See **Chapter 2**, Project Description, and **Section 3.13**, Recreation.	
	Patane, Teresa	3/24/2013	IP130	Design	Ugly plans including med and high density	Subjective. Aesthetic impacts are addressed in **Section 3.1**, Aesthetics (Impact AES-2 and AES-4).	Mitigation Measure AES-2
	Patane, Teresa	3/24/2013	IP130	Biological Resources	wildlife being pushed out	Mitigation for impacts to on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9).	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Patane, Teresa	3/24/2013	IP130	Haz/AQ	health risk to residents with construction	Air quality and pollutant impacts from construction are addressed in **Section 3.2**, Air Quality (Impact AQ-1 - AQ-5)	Mitigation Measure AQ-2a, AQ-2b, AQ-2c, AQ-4a)
	Patane, Teresa	3/24/2013	IP130	General	what is the environmental impact?	This EIR addresses the full range of impacts outlined in the CEQA guidelines.	
	Patane, Teresa	3/24/2013	IP130	Notification	Expand notification area - 500 feet not far enough	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Paullin, Suzanne and Art	Paullin, Suzanne and Art	3/21/2013	IP083	Transportation	Traffic on EDH Blvd and surrounding streets would be unacceptable.	Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (TRA-1 and TRA-2).	
Plachy, Kris	Plachy, Kris	3/21/2013	IP084	Transportation	traffic patterns can't accept additional burden	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	
	Plachy, Kris	3/21/2013	IP084	Schools	schools and services can't accept additional burden; concerned about school overcrowding	Impacts to schools and other public servies are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Plachy, Kris	3/21/2013	IP084	QOL	Came to EDH for quiet neighborhoods and close community; additional housing would compromise these qualities	Not a CEQA issuel	
	Plachy, Kris	3/21/2013	IP084	Notification	concerned this project has not been widely communities.	There have been various meetings with the County andthe devlopers. EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	
Platt, John	Platt, John	3/22/2013	IP085	Transportation	apartment complexes will have a negative impact on traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Platt, John	3/22/2013	IP085	Visual/Aesthetics	apartment complexes will be the first thing that visitors see - negative visual impact	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Plummer, Lisa	Plummer, Lisa	11/26/2012	IP003	Biological Resources	need more open space	Impacts to biological resources are addressed in **Section 3.3**, Biological Resources (Impacts BIO-1 - BIO-22); however, larger lots and lower density do not reduce impacts on wildlife or their habitat. The project includes 16 acres of parks and approximately 169 acres of open space.	
	Plummer, Lisa	11/26/2012	IP003	Economy	loss of tax revenue	Not a CEQA issue; speculative	
	Plummer, Lisa	11/26/2012	IP003	Economy	housing market unstable	Not a CEQA issue: speculative	
	Plummer, Lisa	11/26/2012	IP003	Economy	new people will shop outside County	Not a CEQA issue; speculative	
	Plummer, Lisa	11/26/2012	IP003	Haz/AQ	NOA	Impacts and mitigation proposed for Naurally Occuring Asbestos are addressed in **Section 3.2**, Air Quality (Impact AQ-4)	Mitigation Measure AQ-4a
	Plummer, Lisa	11/26/2012	IP003	Public Services	increased need for police	Impacts to fire and police protection is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Increase in need for police is speculative and not a CEQA issue.	
	Plummer, Lisa	11/26/2012	IP003	Transportation	traffic safety/congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Plummer, Lisa	11/26/2012	IP003	Transportation	road maintenance/car speeds	Road maintenance remains the responsibiliy of the County.	
Price, Jamie	Price, Jamie	3/21/2013	IP135	Public Services	how will high school accommodate all these students?	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Price, Jamie	3/21/2013	IP135	Transportation	traffic is already bad	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Price, Jamie	3/21/2013	IP135	Quality of Life	things he loved about EDH (no big tacky bldgs or signs, natural landscape, community founded on single-family homes) will be ruined by this project	Not a CEQA issue	
	Price, Jamie	3/21/2013	IP135		Not in favor of the project	Comment noted	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Price, Lindell	Price, Lindell	3/22/2013	IP086	Air Quality	suggests reviewing environmental impacts of gated communities on air quality, greenhouse gas emissions	This is outside the scope of the project; impacts on air quality for the project are addressed in **Section 3.2**, Air Quality (Impacts AQ-1 - AQ-5)	Mitigation Measure AQ-2a, AQ-2b, AQ-2c, AQ-4a)
	Price, Lindell	3/22/2013	IP086	Design	requests an alternative that provides more housing, jobs, retail and services while perserving usable open space and providing public amenities - for Open Space area	Alternatives are discussed in **Chapter 4**. The No-Project Alternative and the Reduced-Wetland-Impact Alternative result in more open space.	
	Price, Lindell	3/22/2013	IP086	Design	consider alternative that reduce the need to travel out of county	Alternatives and those considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Price, Lindell	3/22/2013	IP086	Economy	analyze arrangement of proposed Civic-Limited commercial for long-term economic viability	Not a CEQA issue.	
	Price, Lindell	3/22/2013	IP086	Pop and Housing	Address impacts to jobs/housing balance - where will residents work	Housing is addressed in **Section 3.11**, Population and Housing. Where residents will work is not a CEQA issue.	
	Price, Lindell	3/22/2013	IP086	Public Services	suggests reviewing environmental impacts of gated communities on mail delivery, emergency response, etc	Impacts of the proposed project on fire and police protection is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Emergency access is addressed in **Section 3.14**, Traffic (Impact TRA-5) Mail delivery is not a CEQA issue.	
	Price, Lindell	3/22/2013	IP086	Transportation	suggests reviewing environmental impacts of gated communities on traffic and circulation; assess potential of project to preclude future traffic circulation	The traffic analysis included gated communities where they are proposed. Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (TRA-1 and TRA-2)	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Price, Lindell	3/22/2013	IP086	Transportation	address year round pre-dawn and after dark, low-stress pedestrian and bicycle access to public transit	Bicycle and pedestrian circulation and public transportation are addressed in **Section 3.14**, Traffic and Circulation.	
Price, Stanley	Price, Stanley	3/22/2013	IP087	Cultural	Include cultural resources in EIR	Cultural resources are addressed in **Section 3.4**, Cultural Resources	
	Price, Stanley	3/22/2013	IP087	Land Use	review community benefits/disadvantages of transfer of density	**Section 3.9**, Land Use discusses zoning	
	Price, Stanley	3/22/2013	IP087	Public Services	review water supply and sewer availability; include responsible party for infrastructure and ongoing costs	Impacts to water supply and sewers are addressed in **Section 3.12**, Public Services and Utilites (Impact PSU-2, PSU-3, PSU-5, PSU-6).	
	Price, Stanley	3/22/2013	IP087	Recreation	community value of closing municipal golf course; references report prepared by Florida Golf Course Consultant; consider if use of recycled water would make a difference in viability of the golf course	The golf course has been closed for 10 years and is currently not in use.	
	Price, Stanley	3/22/2013	IP087	Design/Recreation	Consider alternative community recreation use - skateboard park, velodrome, etc.	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Price, Stanley	3/22/2013	IP087	Transportation	review pedestrian, bicycle, and traffic circulation plan; determine good connectivity	The project proposes pedestrian and bicycle facilities that will connect and integrate with existing and planned facilities adjacent to the project. In addition, elements of the proposed project will complete planned pedestrian and bicycle facilities. More detail is located in **Section 3.14**, Traffic and Circulation.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Price, Stanley	3/22/2013	IP087	Transportation??	Where would employees of build-out (retail employees, gardeners, child care, home-care) would live, where they can afford to live and VMT; consider vehicle/fuel costs and compare to projected wages	Not a CEQA issue - speculative	
Price, Travis	Price, Travis	3/21/2013	IP088	Air Quality	will add to emission	Addressed in **Section 3.2**, Air Quality (Impact AQ-1, AQ-2, AQ-3, AQ-4)	Mitigation Measure AQ-2a, AQ-2b, AQ-2c, AQ-4a
	Price, Travis	3/21/2013	IP088	Alternatives	Interested in the no-project and other alternatives	Alternatives are addressed in **Chapter 4**.	
	Price, Travis	3/21/2013	IP088	Economy	would have a negative impact on local housing market	Not a CEQA issue	
	Price, Travis	3/21/2013	IP088	Public Services	schools currently at capacity; how does county plan to handle additional infrastructure requirements?	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Price, Travis	3/21/2013	IP088	Transportation	will add to traffic congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Price, Travis	3/21/2013	IP088	Pop and Housing	no new jobs for HDR residents	In 2008, the county's west slope had a jobs/housing ratio of 0.7 job per housing unit, indicating that many residents work outside El Dorado County (El Dorado County 2013).	
	Price, Travis	3/21/2013	IP088		If this is not approved, 1998 Marble Valley Master Plan should be reevaluated	Comments appears to be on Village of Marble Valley project	
Rahim, Claudia	Rahim, Claudia	3/22/2013	IP089	Form Letter A			
Rahim, Nazir	Rahim, Nazir	3/22/2013	IP090	Form Letter A			
Rausch, Dan	Rausch, Dan	3/14/2013	IP016	Design/Biological Resources	protection of spring so wildlife will still have access	Biological resources are addressed in **Section 3.3**.	
	Rausch, Dan	3/14/2013	IP016	Cultural	concern for archaeo site; preservation for public	Addressed in **Section 3.4**, Cultural Resources (Impacts CUL-1 - CUL-4)	Mitigation Measure CUL-1a, CUL-1b, CUL-1c, CUL-3 and CUL-4
	Rausch, Dan	3/14/2013	IP016	Design/Transportation	suggests traffic from HDR be routed to EDH Blvd to avoid Olson Lane; concerned about LOS on Olson Lane	Traffic is addressed in **Section 3.14**, Traffic and Circulation. LOS on Olson Lane is projected to remain acceptable (Table 3.14-7).	
	Rausch, Dan	3/14/2013	IP016	Transportation/Rec	concerned about parking for open space if it open to the public	Open Space will be undeveloped and will not be fenced. See discussion in **Section 3.13**, Recreation.	
Raveling, Paul	Raveling, Paul	3/20/2013	IP028	Transportation	possible that development will produce enough trips to triggler GP policies associated with TC-X (Measure Y)	All impacts on traffic can be mitigated to a less than significant level with road improvements or through traffic impact mitigation fees. See **Section 3.14**, Traffic and Circulation for discussion.	
	Raveling, Paul	3/20/2013	IP028	Transportation	concerned about traffic in the Green Valley Corridor	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Raveling, Paul	3/20/2013	IP028	Transportation	County should recognize minimum standards of GP are not entirely sufficient	Not in the scope of this EIR	
	Raveling, Paul	3/20/2013	IP028	Transportation	EIR should include other metrics,including delay time per vehicle and percentage of time spent following	Delays (measured in seconds) per vehicle with and without the project are depicted in **Section 3.4**, Traffic and Circulation, Table 3.14-7. These are standard measures for discussin traffic impacts.	
Rogers, Kristen A.	Rogers, Kristen A.	3/22/2013	IP092	Form Letter A			
Rogers, Sean	Rogers, Sean	3/22/2013	IP093	Form Letter A			
Rollins, Dave	Rollins, Dave	3/22/2013	IP094	Form Letter A			
Rollins, Jennie	Rollins, Jennie	3/22/2013	IP095	Form Letter A			
Rose, Art and Pam	Rose, Art and Pam	3/21/2013	IP125	Air Quality	what are plans for dust and asbestos mitigation during construction?	Mitigation for dust and asbestos during construction is addressed in **Section 3.2**, Air Quality (Mitigation Measure AQ-2c and AQ-4a, respectively)	Mitigation Measure AQ-2c and AQ-4a

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Rose, Art and Pam	3/21/2013	IP125	Biological Resources	plans to preserve oak trees?	The project is required by the County General Plan oak protection polices to retain 85% of the existing canopy and replace the loss of up to 14.15 acres of oak woodland. Impacts and mitigation measures are discussed in **Section 3.3**, Biological Resources (Impact BIO-1 and BIO-11).	Mitigation Measures BIO-1a, BIO-1b, BIO-1c
	Rose, Art and Pam	3/21/2013	IP125	Construction Impacts	mitigation for noise? Parking limitations? Fencing requirements?	Mitigation for noise from construction is addressed in **Section 3.10**, Noise (Impact NOI-1, NOI-4, and NOI-7)	Mitigation Measure NOI-1a
	Rose, Art and Pam	3/21/2013	IP125	Design	will Pedregal adopt Ridgeview East CC&Rs?	Not within the scope of this EIR. Adoption of Ridgeview East CC&Rs is likely.	
	Rose, Art and Pam	3/21/2013	IP125	Design	concerned about gate community to prevent traffic from Wilson to Olsen	There is currently no direct route between Wilson and Olsen and none is proposed. **Section 3.14** addresses Traffic and Circulation.	
	Rose, Art and Pam	3/21/2013	IP125	Design	add to CC&Rs - limits on solar panels, no composition roofs, no block walls	Comment noted. Not a CEQA issue.	
	Rose, Art and Pam	3/21/2013	IP125	Hydrology	they are at top of hill; how will drainage from their property be handled?	Drainage issues are addressed in **Section 3.8**, Hydrology and Water Quality (Impact WQ-3, WQ-4, WQ-5)	Mitigation Measure WQ-3 and WQ-4
	Rose, Art and Pam	3/21/2013	IP125	Notification	Everyone in EDH is affected and should be included in meetings	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA	
	Rose, Art and Pam	3/21/2013	IP125	Phasing	what part of project would start first?	It is likely the area south of Serrano Parkway would be the first portion of the project to be constructed. See Figure 9.1 in the Specific Plan.	
	Rose, Art and Pam	3/21/2013	IP125	Transportation	what are plans to mitigate traffic on EDH Blvd?	Mitigation for traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2). T	Mitigation Measure TRA-1
	Rose, Art and Pam	3/21/2013	IP125	Utilities	what are the easements?	Most new utility lines that would be required within the planning areas would be placed within the rights-of-way of existing roads in the planning areas, future roads that would be built as part of the proposed project, or within dedicated easements. Off-site improvements are addressed at a programmatic level. See **Chapter 2**, Project Description.	
	Rose, Art and Pam	3/21/2013	IP125	Design/Visual/aesthetic	what will be landscape requirements?	Impacts to the scenic vista are addressed in **Section 3.1**, Aesthetics (Impact AES-2).	Mitigation Measure AES-2
	Rose, Art and Pam	3/21/2013	IP125	Design/Zoning	recommend minimum lot size of 1 acre - to minimize traffic, preserve trees, reduce impacts	Comment noted. Impacts to traffic are addressed in **Section 3.14**, Traffic and Circulation, and impacts to oak trees are addressed in **Section 3.3**, Biological Resources	
Ruddy, David and Karen	Ruddy, David and Karen	3/22/2013	IP096	Crime	oppose project because of crime and below	Speculative; not a CEQA issue	
	Ruddy, David and Karen	3/22/2013	IP096	Economy	negative effects on home values	Not a CEQA issue	
	Ruddy, David and Karen	3/22/2013	IP096	Public Services	overcrowded schools	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Ruddy, David and Karen	3/22/2013	IP096	Transportation	increased traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Ruddy, David and Karen	3/22/2013	IP096	Visual/Aesthetics	negative effects on community aesthetics	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Sanders, Melissa	Sanders, Melissa	3/21/2013	IP097	Public Services	overcrowded high school	Impacts to schools is addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
	Sanders, Melissa	3/21/2013	IP097	Visual/Aesthetics	EDH is most beautiful community in Sacramento area - please protect and preserve the beauty of the area	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Santos, Roger and Laura	Santos, Roger and Laura	3/22/2013	IP098	Form Letter A			

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Schaefer, Adam and Colleen	Schaefer, Adam and Colleen	3/20/2013	IP128	Notification	request to be notified	Added to list	
Schultz, Kim	Schultz, Kim	3/22/2013	IP099	Form Letter A			
Sedgwick, Steve	Sedgwick, Steve	3/25/2013	IP117	Zoning	opposed to apartments where old golf course was located	Comment noted.	
Selk, Greg & Tricia	Selk, Greg & Tricia	2/18/2013	IP007	Design	rear setback limits; why 40 feet (20 feet less) adjacent to their property	Not a CEQA issue.	
	Selk, Greg & Tricia	2/18/2013	IP007	Design	height setback; their view may be impeded with the smaller setback	Not a CEQA issue.	
Selk, Greg & Tricia	Selk, Greg & Tricia	3/14/2013	IP007a	Design	rear setback limits; why 40 feet (20 feet less) adjacent to their property	Not a CEQA issue.	
	Selk, Greg & Tricia	3/14/2013	IP007a	Design	height setback; their view may be impeded with the smaller setback	Not a CEQA issue.	
	Selk, Greg & Tricia	3/14/2013	IP007a	Design	will electrical lines be placed underground?	Yes - see Specific Plan, Section 7.7, Dry Utilities	
	Selk, Greg & Tricia	3/14/2013	IP007a	Design	would like to see a rendering	Not a CEQA issue. Visual impacts are addressed in **Section 3.1**, Aesthetics.	
	Selk, Greg & Tricia	3/14/2013	IP007a	Fines	Can developer pay for damages/fines if studies are inadequate?	Not a CEQA issue.	
Shaw, Rita K	Shaw, Rita K	3/22/2013	IP091	Form Letter A+	Forwarded husband's e-mail; additional comments below		
	Shaw, Rita K	3/22/2013	IP091	Crime	already seeing an increase in petty crime - scoping out houses, unlicensed solicitors; will need to move to more secure area	Speculative; not a CEQA issue	
Simonelli, James	Simonelli, James	3/22/2013	IP100	General	concerned about proposed development of old golf course	Comment noted	
	Simonelli, James	3/22/2013	IP100	Notification	would like to be notified of future meetings; feels all residents of EDH on the north side of US 50 will be affected by proposed project	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	
Smith, Geoff	Smith, Geoff	3/22/2013	IP101	Economy/Quality of Life	property values and quality of life will be significantly impacted	Not a CEQA issue	
	Smith, Geoff	3/22/2013	IP101	Notification	would like to be able to view full EIR	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	
	Smith, Geoff	3/22/2013	IP101	Public Services	Proposed development will result in impacts to schools, grocery stores	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). Impacts to grocery stores are not a CEQA issue.	
	Smith, Geoff	3/22/2013	IP101	Recreation	Proposed development will result in impacts to sports fields	The 15 acres of VP land use designation and Recreational Facilities High zoning is applied to an area for a formal, developed active village park to be maintained by the El Dorado Hills CSD. **Section 3.13** addressed Recreation facilities.	
	Smith, Geoff	3/22/2013	IP101	Transportation	proposed development will make traffic intolerable	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Sturch, Bill	Sturch, Bill	3/14/2013	IP014	Design/Transportation	EDH Blvd. 3 lanes both ways?	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a
	Sturch, Bill	3/14/2013	IP014	Design/Transportation	Unclear on Pedregal unit access; safety concerns	VRLH is located on El Dorado Hills Boulevard. Operation of driveways providing access is discussed in **Section 3.14**, Traffic and Circulation.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Sturch, Bill	3/14/2013	IP014	Design/Transportation	suggests possibly ungating new connector between Gilette and Wilson	No connection between Gillette and Wilson is proposed. See **Section 3.14**, Traffic and Circulation.	
	Sturch, Bill	3/14/2013	IP014	Design/Transportation	Suggestions for traffic circulation in Serrano Westside	A local residential street is proposed parallelling El Dorado Hills Blvd. See **Section 3.14**, Traffic and Circulation for discussion and analysis.	
	Sturch, Bill	3/14/2013	IP014	Transportation/Noise	increased traffic/noise, soundwalls	Noise related to increased traffic is discussed in **Section 3.10**, Noise, Impact NOI-1.	Mitigation Measure NOI-1b
Stead, Karen	Stead, Karen	3/22/2013	IP102	Crime	Crime would increase	Speculative; not a CEQA issue	
	Stead, Karen	3/22/2013	IP102	Economy	these problems would lead to increased funding in supporting the effects of new buildings	Not a CEQA issue	
	Stead, Karen	3/22/2013	IP102	Transportation	Traffic congestion would increase	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Stone, John and LaDawn	Stone, John and LaDawn	3/22/2013	IP114	Public Services	High school is already impacted and has limited budget	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1). The school district will determine impact fees.	
	Stone, John and LaDawn	3/22/2013	IP114	Recreation	not what community wants, especially when it takes the place of a recreaton area, green belt or open land	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
	Stone, John and LaDawn	3/22/2013	IP114	Socio-economic	will bring socio-economic diversity that will have a negative impact	Speculative; not a CEQA issue	
	Stone, John and LaDawn	3/22/2013	IP114	Transportation	HDR will increase traffic	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Stone, John and LaDawn	3/22/2013	IP114	Visual/Aesthetics	HDR will not aesthetically cheapen EDH	Comment noted.	
	Stone, John and LaDawn	6/7/2013		Notification	Requested addition of 10 people to notification list	Added to list	
Swanson, Dolores	Swanson, Dolores	3/26/2013	IP120	General	has impact to ecology been considered	Impacts to biological resources are addressed in **Section 3.3**, Biological Resources	
	Swanson, Dolores	3/26/2013	IP120	Transportation	1000 residences in DH and 30,000 south of 50 - has impact to traffic been considered	Traffic impacts resulting from the project are addressed in **Seciton 3.14**, Traffic and Circulation. Traffic impacts resulting from this proposed project, the full build out of the General Plan, and reasonbly forseeable development and transportation projects are discussed in **Chapter 5**, Other CEQA Considerations, **Section 5.2.2**.	
Tam, Mary Kay	Tam, Mary Kay	3/22/2013	IP103	Form Letter A+	additional comments below		
	Tam, Mary Kay	3/22/2013	IP103	Crime	apartment type housing tends to attract lower income individuals - which has a correlation to increased crime	Speculative; not a CEQA issue	
	Tam, Mary Kay	3/22/2013	IP103	Public Services	Sheriff's dept is already under-resources.	Impacts to fire and police services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1).	
Thompson, Robert	Thompson, Robert	6/13/2013	IP134	Zoning/Recreation	Opposed to rezoning, there are not enough recreational fields in EDH	The project proposes a 15-acre park that will include athletic fields. See **Section 3.13**, Recreation for a discussion of impacts to recreational facilities and parks.	
Tierney, David and Maura	Tierney, David and Maura	3/19/2013	IP020	General	Opposes rezoning of golf course for high density housing; would like to see design that is more consistent with historical recreational use	The project proposes constructing a park with athletic fields on part of the golf course parcel. See **Chapter 2**, Project Description. Also see **Section 3.13**, Recreation for a discussion of impact to recreational facilities and parks.	
	Tierney, David and Maura	3/19/2013	IP020	Demand	Is there a need for HDR units and if so, are there more appropriate locations?	Not a CEQA issue.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Tierney, David and Maura	3/19/2013	IP020	Public Services	Impact on school enrollment?	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Tierney, David and Maura	3/19/2013	IP020	Transportation	effects on traffic?	Traffic impacts are addressed in **Section 3.14**, Traffic and Circulation (TRA-1 and TRA-2).	Mitigation Measure TRA-1 and TRA-2
	Tierney, David and Maura	3/19/2013	IP020	Visual/Aesthetics	concerned about character of EDH - HDR next to highway	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	Mitigation Measure AES-2
Tuttle, Greg	Tuttle, Greg	11/22/2012	IP002	Biological Resources	increase in displaced predators	Mitigation for impacts to any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are addressed in **Section 3.3**, Biological Resources (Impact BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9). Impacts to midgratory wildlife are discussed in Impact BIO-10.	Mitigation Measure BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-5b, BIO-5c, BIO-6, BIO-7, BIO-8a, BIO-8b, BIO-9)
	Tuttle, Greg	11/22/2012	IP002	Land Use	goes agains EDH Master Plan	Most of the proposed project is outside of the EDH Specific Plan, and all development is outside the plan area. A discussion of the relationship of the CEDHSP to other plans is presented in **Section 3.9**, Land Use and Agriculture and in **Chapter 2**, Project Description.	
	Tuttle, Greg	11/22/2012	IP002	Quality of Life	general diminished Q of L	Not a CEQA issue	
Vakil, David and Karen	Vakil, David and Karen	3/22/2013	IP104	Form Letter A			
Van Dyke, Ellen	Van Dyke, Ellen	3/21/2013	IP105	Request for info	not much specific info in NOP - is there a plan/ difficult to compare what is proposed - is there a graphic?	More specific information can be found in the CEDH Specific Plan and this DEIR	
Van Dyke, Ellen and Don	Van Dyke, Ellen and Don	3/22/2013	IP106	General	graphics in NOP do not clearly represent was trade is proposed; also a lot of detail in text that is not clarified in graphics	More specific information can be found in the CEDH Specific Plan and this DEIR	
	Van Dyke, Ellen and Don	3/22/2013	IP106	Land Use	assume that 155-acre extension of Serrano Westside planning means physically-would otherwise have issues additional acreage being used to offset oak tree and open space req. in original development agreement	Comment noted. **Chapter 2**, Project Description, includes figures and text describing the project. Oak mitigation is discussed in **Section 3.3**, Biological Resources, Impact BIO-1.	BIO-1d
	Van Dyke, Ellen and Don	3/22/2013	IP106	Land Use	commercial and HDR near freeway and other commercial uses makes sense	Comment noted	
	Van Dyke, Ellen and Don	3/22/2013	IP106	Transportation	increased traffic should be addressed in EIR	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Van Dyke, Ellen and Don	6/11/2013		Notification	requested addition of Green Valley Alliance to the mailing list	Added to list	
Vanderwall, Coleen	Vanderwall, Coleen	3/22/2013	IP107	General	Opposes development on old golf course	Comment noted	
	Vanderwall, Coleen	3/22/2013	IP107	Public Services	will make schools more overcrowded	Impacts to schools are addressed in Section 3.12, Public Services and Utilities (Impact PSU-1)	*
	Vanderwall, Coleen	3/22/2013	IP107	Transportation	will make streets more congested	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Vanderwall, Coleen	3/22/2013	IP107	Visual/Aesthetics	will replace beautiful land; discourage people from locating in EDH and encourage current residents to leave	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-3, AES-4, and AES-5)	
Vanderwall, Mitch	Vanderwall, Mitch	3/22/2013	IP108	Form Letter A			
Vegh, Barbara	Vegh, Barbara	4/22/2013	IP131	Notification	requests future mailings	Added to list	
Vorster, Daniel	Vorster, Daniel	3/22/2013	IP047	Design/Zoning	HDR should be MDR	Comment noted.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Vorster, Daniel	3/22/2013	IP047	Design	project should be designed around pedestrian access	The project proposes the bicycle and pedestrian facilities. See Figure 2-7 and associated text in **Chapter 2**, Project Description. Impacts related to pedestrian circulation are addressed in **Section 3.14**, Traffic and Circulation, Impacts TRA-1 and TRA-6.	
	Vorster, Daniel	3/22/2013	IP047	Design/Recreation	Develop funded parks - sand volleyball courts	Comment noted.	
	Vorster, Daniel	3/22/2013	IP047	Quality of Life	don't compromise quality of life/vision	Not a CEQA issue	
	Vorster, Daniel	3/22/2013	IP047	Visual/Aesthetics	would like to see renderings of what EDH Blvd would look like	More specific information can be found in the CEDH Specific Plan and this DEIR	
	Vorster, Daniel	3/22/2013	IP047	Design/Zoning	please do not rezone open space for residential	Comment noted. **Section 3.9**, Land Use Planning and Agricultural Resources addressed impacts related to the rezoning of parcels.	
	Vorster, Daniel	3/22/2013	IP047	Design/Zoning	CEDH will remove open space at entrance to EDH; make it an overdeveloped suburb	The proposed project will result in no net loss of open space. See **Section 3.9**, Land Use Planning and Agricultural Resources, and **Section 3.1**, Aesthetics.	
	Vorster, Daniel	3/22/2013	IP047		commenter requests the right to apply future damages to the developer if the studies are inadequate	Not a CEQA issue	
Wagner, Leslie	Wagner, Leslie	1/9/2013	IP006	Economy	decreased home values	Not a CEQA issue	
	Wagner, Leslie	1/9/2013	IP006	Haz/AQ	NOA	Impacts and mitigation proposed for Naurally Occuring Asbestosare addressed in **Section 3.2**, Air Quality (Impact AQ-4)	Mitigation Measure AQ-4a
	Wagner, Leslie	1/9/2013	IP006	Noise	construction noise	Noise impacts from construction are addressed in **Section 3.10**, Noise (Impact NOI-1, NOI-2, NOI-4, and NOI-7)	Mitigation Measure NOI-1a
	Wagner, Leslie	1/9/2013	IP006	Transportation	increased traffic; or construction traffic?	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1, TRA-2, and TRA-5 address operational and construction traffic impacts.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
Waller, Thomas and Carole	Waller, Thomas and Carole	3/22/2013	IP109	Form Letter A			
Walters, Tammy & Jeremy	Walters, Tammy & Jeremy	3/18/2013	IP018	Quality of Life	moved to EDH to get away from low-income housing	Not a CEQA issue	
Wells, Michael	Wells, Michael	11/15/2012	IP001	Economy	decreased home values	Not a CEQA issue	
	Wells, Michael	11/15/2012	IP001	Public Services	school overcrowding	Impacts to schools are addressed in Section 3.12, Public Services and Utilities (Impact PSU-1)	
	Wells, Michael	11/15/2012	IP001	Transportation	increased accidents and traffic congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	
Wilde, Martin and Betsy	Wilde, Martin and Betsy	3/22/2013	IP110	Form Letter A			
Wise, Dawn	Wise, Dawn	3/22/2013	IP111	Form Letter A			
Wiseman, Dylan	Wiseman, Dylan	3/13/2013	IP011	Design	Pedergal CC&Rs would still allow for non-structures such as pools or sports courts to be built immediately adjacent to existing properties	Not a CEQA issue	
	Wiseman, Dylan	3/13/2013	IP011	Design	Pedergal residents might not adhere to CC&Rs; legal challenge would be only recourse	Not a CEQA issue	
	Wiseman, Dylan	3/13/2013	IP011	Design	proposes open space buffer on west side of Pedregal	Alternatives, including one that would reduce development along the western edge of the Pedregal planning area, are discussed in **Chapter 4**.	
Wornick, Michael	Wornick, Michael	3/12/2013	IP010	Economy	opposes density increase, unfair to him and other property owners	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
	Wornick, Michael	3/12/2013	IP010	Demand	already empty apartments in EDH, EDH 5% excess supply of apts.	Project housing needs are discussed in **Section 3.11**, Population, Table 3.11-3.	
Yamaguchi, Bob	Yamaguchi, Bob	3/19/2013	IP019	General	requests topographic map of proposed development east of EDH Blvd.	Comment noted.	
	Yamaguchi, Bob	3/19/2013	IP019	Hydrology	will creek along EDH Blvd be natural and what about drainage?	Drainage issues are addressed in **Section 3.8**, Hydrology and Water Quality (Impact WQ-3, WQ-4, WQ-5). **Section 3.3**, Biological Resources, discusses impacts on biological resources.	
	Yamaguchi, Bob	3/19/2013	IP019	Notification	Why did this not receive more publicity? Should be noticed in local newspaper	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	
	Yamaguchi, Bob	3/19/2013	IP019	Public Services	does Brooks elementary have capacity?	Impacts to schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Yamaguchi, Bob	3/19/2013	IP019	Public Services	will additional capacity for sewer be necessary and will developer pay for it?	Addressed in **Section 3.12**, Public Services and Utilites (Impact PSU-2, PSU-3, and PSU-6).	
	Yamaguchi, Bob	3/19/2013	IP019	Public Services	adequate law enforcement to respond to any type of criminal activity?	Impacts on fire and police services are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
	Yamaguchi, Bob	3/19/2013	IP019	Transportation	what are current traffic counts and how will this affect traffic flow to elementary school?	Traffic counts and traffic impacts are addressed in **Section 3.14**, Traffic and Circulation	
	Yamaguchi, Bob	3/19/2013	IP019	Transportation	will there be ped/bicycle access to Raley's?	Offsite improvements include two new pedestrian access points along the southwestern border of the Serrano Westside planning area to connect to the existing office and retail uses at Raley's and La Borgata. See **Chapter 2**, Project Description.	
	Yamaguchi, Bob	3/25/2013	IP019a	Notification	requests deadline for comments be extended to March 29, 2013; membership in their Google group exceeds 200.	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals requesting notification will be notified of any meetings and when the EIR is available for review.	
	Yamaguchi, Bob	3/26/2013	IP019b	Design	upon examination of topographic maps provided by the County, Mr. Yamaguchi has the the following questions:	See below	
	Yamaguchi, Bob	3/26/2013	IP019b	Design	elevation of MDR-H north of Serrano Pkwy?	Design standards provided in CEDH SP.	
	Yamaguchi, Bob	3/26/2013	IP019b	Design	how tall would building be for MDH-H and the C-LC - in feet, or if that's not avaiable, in stories?	Design standards provided in CEDH SP	
	Yamaguchi, Bob	3/26/2013	IP019b	Design	Do Serrano CC&Rs include restrictions on height of cell towers or signage?	Design standards provided in CEDH SP	

Party Name (Last name, First name; Agency or Organization name)		Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Cal Fire	Cal Fire	2/25/2013	PA1	Fire Safety	road width requirements	Impacts to emergency access are addressed in **Section 3.14**, Traffic and Circulation (Impact TRA-5). Road widths are provided in the Transportation and Circulation section of the Specific Plan.	
Sacramento Co. DWR	Sacramento Co. DWR	3/5/2013	PA2	WQ/Hydro	Deer Creek drainage; County of Sacto will want to comment on drainage section of CEQA doc	Comment Noted	
CVRWQCB	CVRWQCB	3/8/2013	PA3	WQ/Hydro	SWPPP	Comment Noted	
	CVRWQCB	3/8/2013	PA3	WQ/Hydro	storm water permits	Comment Noted	
	CVRWQCB	3/8/2013	PA3	WQ/Hydro	industrial storm permits	Comment Noted	
	CVRWQCB	3/8/2013	PA3	WQ/Hydro	404 permit	Comment Noted	
	CVRWQCB	3/8/2013	PA3	WQ/Hydro	401 permit	Comment Noted	
	CVRWQCB	3/8/2013	PA3	WQ/Hydro	waste dischrge requirements	Comment Noted	
Caltrans, D03	Caltrans D03	3/27/2013	PA4	Transportation	anticipates potential significant impacts to US 50; anticipates project will generate enough trips to require Traffic Impact Study	This study was performed in accordance with the El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures, and the scope for analysis was developed in collaboration with Caltrans. Impacts to traffic are discussed in **Section 3.14**, Traffic and Circulation	
	Caltrans D03	3/27/2013	PA4	Transportation	would like opportunity to comment on scope of work for TIS prior to beginning of study; provides list of requests for study scope.	Comment Noted	
	Caltrans D03	3/27/2013	PA4	Transportation	requests inclusion of traffic analysis for cumulative scenarios	Cumulative impacts are discussed in **Chapter 5**, Other CEQA Considerations.	
	Caltrans D03	3/27/2013	PA4	Transportation	County should consider studying potential new local road connectsion to 50 to reduce impacts	Results for freeway facilities, which are presented in Table 3.14-9, indicate that all studied freeway facility segments will operate acceptably. This analysis is presented in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2).	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Caltrans D03	3/27/2013	PA4	Hydrology	requests hydrological analyses be conducted including review of topos, Drainage Master Plan and requests a copy of Drainage Master Plan with back up calculations	Hydrological analysis conducted	
	Caltrans D03	3/27/2013	PA4	Transportation	Traffic Mgmt Plan may be required if traffic restrictions or detours are needed on or affect state highways.	Results for freeway facilities, which are presented in Table 3.14-9, indicate that all studied freeway facility segments will operate acceptably. This analysis is presented in **Section 3.14**, Traffic and Circulation (Impact TRA-1 and TRA-2).	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
	Caltrans D03	3/27/2013	PA4	Permits	Transportation Permit is necessary if project work requires oversize or excessive load vehicles on state roadways	Comment Noted	
	Caltrans D03	3/27/2013	PA4	Permits	Encroachment permit is necessary if any work or traffic control would encroach on state ROW	Comment Noted	
	Caltrans D03	3/27/2013	PA4	Advertising	advises that no advertising signs are allowed within state ROW	Comment Noted	
	Caltrans D03	3/27/2013	PA4	Notification	Requests to be notified of further actions; provided copies	Added to list	

Party Name (Last name, First name; Agency or Organization name)	Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Form Letter A						
			Noise	large amount of MDR and HDR will result in increased noise	Addressed in **Section 3.10**, Noise (Impact NOI-1 and NOI-3)	Mitigation Measure NOI-1b
			Notification	requests developer be asked to inform all residents who live north of US 50 within 95762 zip code of meetings by US mail.	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA. Individuals who request to be notified will be notified of any meetings and of the availability of the DEIR.	
			Notification	requests to be notified of public meetings and when DEIR is released	Individuals added to list	
			Quality of Life	large amount of medium and high multifloor dwellings will negatively affect quality of life, property values, rural/suburban character of EDH	Not a CEQA issue	
			Recreation	negative impact to community as a result of the loss of the opportunity to build a regional park/rec center	The project proposes a park that includes athletic fields - see **Chapter 2**. **Section 3.13**, Recreation addresses impacts on parks and recreational facilities.	
			Transportation	large amount of MDR and HDR will result in increased traffic congestion	Analysis of traffic impacts is presented in **Section 3.14**, Traffic and Circulation. Impacts TRA-1 and TRA-2 address operational traffic.	Mitigation Measure TRA-1a, TRA-1b, and TRA-2
			Visual/Aesthetics	large amount of MDR and HDR will result in increased light pollution	Addressed in **Section 3.1**, Aesthetics (Impact AES-5)	
			Visual/Aesthetics	large amount of medium and high multifloor dwellings will negatively affect aesthetic appeal	Addressed in **Section 3.1**, Aesthetics (Impact AES-1, AES-2, AES-4, and AES-5)	
			Zoning	Opposes zoning change especially HDR west of EDH Blvd and north of Wilson	Comment noted	
			Design/Zoning	this land should be developed as open space/recreation as it was originally zoned	Alternatives considered but eliminated from further analysis are addressed in **Chapter 4**, Alternatives.	

Party Name (Last name, First name; Agency or Organization name)	Date Received	Party Type/ Letter	Comment Topic	Refined Topic	Section	Mitigation Measure (if applicable)
Form Letter B						
			Design	suggests requiring developer to abide by Cal Green Standards Tier 1 and/or 2	CEDH Specific Plan Section 8 addresses CALGreen and objectives.	
			Phasing	suggests phasing requirements	Buildout of the project would likely occur over several years and would ultimately be dictated by housing market conditions. It is anticipated construction would be phased within each planning area. See Phasing Plan in Setion 9 of the Specific Plan for details.	
			Transportation	suggests deferred maintenance program re roadways	Suggestion noted	
			Design/Transportation	suggests realign Wilson Blvd; include turn lanes and bike lanes	Suggestion noted	
			Utilities/Design	suggests all utilities be underground	All new distribution facilities will be underground, with the exception of facilities such as transformers, switches, and other pedestal and pad-mounted equipment, per Section 7 of the Specific Plan.	
			Public Services	suggests crime rate study, identifying cost and placing it on responsible party	Speculative; not a CEQA issue	
				suggests requesting right to apply future damages to developer if studies are inadequate	Not a CEQA issue	
			Public Services	concerned about school overcrowding	Impacts on schools are addressed in **Section 3.12**, Public Services and Utilities (Impact PSU-1)	
			Design/Zoning	suggests alternative - not allowing HDR within 5 miles of US 50	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
			Design/Zoning	suggests alternative - equestrian facility south of Serrano Parkway	Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
			Design/Zoning	suggests HDR zoned for senior living only to reduce traffic and crime	Crime is speculative and not a CEQA issue. Alternatives considered but not carried forward for analysis in the EIR are discussed in **Chapter 4**.	
			N/A - instruction	reach out to all neighbors and supervisors	EIR will be advertised in local newspaper and on County website; notification is in compliance with letter and intent of CEQA.	
			General	don't let EDH be a view of rooftops as Serrano	Comment noted	
			Visual/aesthetic	request renderings	Design standards are provided in the CEDH Specific Plan	
			N/A - instruction	don't let vultures compromise Quality of Life	Not a CEQA issue	
			Economy	future burden will raise taxes not property values	Not a CEQA issue	
			N/A - instruction	deadline is March 22	Noted	
			Zoning	Pedregal not zoned for residential units - per CC&Rs; land use atty says CC&Rs stand at the County level and must be followed	The Pedregral planning area is currently zoned for residential uses. See Table 3.9-1 in **Section 3.9**, Land Use and Agriculture.	

Appendix B

Consistency with El Dorado County General Plan Policies

Policy Number	Policy	Project Consistency
LAND USE ELEMENT		
Goal 2.1: Land Use. Protection and conservation of existing communities and rural centers; creation of new sustainable communities; curtailment of urban/suburban sprawl; location and intensity of future development consistent with the availability of adequate infrastructure; and mixed and balanced uses that promote use of alternate transportation systems.		
Objective 2.1.1: Community Regions		
2.1.1.1	The Communities within the County are identified as: Camino/Pollock Pines, El Dorado Hills, Cameron Park, El Dorado, Diamond Springs, Shingle Springs, and the City of Placerville and immediate surroundings.	The project site is in the El Dorado Hills Community Region.
2.1.1.2	Establish Community Regions to define those areas which are appropriate for the highest intensity of self-sustaining compact urban-type development or suburban type development within the County based on the municipal spheres of influence, availability of infrastructure, public services, major transportation corridors and travel patterns, the location of major topographic patterns and features, and the ability to provide and maintain appropriate transitions at Community Region boundaries. These boundaries shall be shown on the General Plan land use map.	The project site is in the El Dorado Hills Community Region.
2.1.1.7	Development within Community Regions, as with development elsewhere in the County, may proceed only in accordance with all applicable General Plan Policies, including those regarding infrastructure availability as set forth in the Transportation and Circulation and the Public Services and Utilities Elements. Accordingly, development in Community Regions and elsewhere will be limited in some cases until such time as adequate roadways, utilities, and other public service infrastructure become available and wildfire hazards are mitigated as required by an approved Fire Safe Plan.	The proposed project includes a Specific Plan with a plan provisions for roadway improvements, infrastructure, and public services (community park), and requires (implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32)..
Objective 2.2.5: General Policy Section		
2.2.5.21	Development projects shall be located and designed in a manner that avoids incompatibility with adjoining land uses that are permitted by the policies in effect at the time the development project is proposed. Development projects that are potentially incompatible with existing adjoining uses shall be designed in a manner that avoids any incompatibility or shall be located on a different site.	The proposed project is an infill site in El Dorado Hills. Proposed land uses are similar to surrounding developed land uses (residential commercial, and public). Open space areas are proposed as a part of the Serrano Westside planning area to the east between the project residential uses and the existing land uses to the east of the project site. For these reasons, the proposed land uses are compatible with adjoining land uses. The proposed land uses are compatible with adjoining land uses and consistent

Policy Number	Policy	Project Consistency
		with this policy.
Goal 2.3: Natural Landscape Features. Maintain the characteristic natural landscape features unique to each area of the County.		
Objective 2.3.2: Hillsides and Ridgelines		
2.3.2.1	Disturbance of slopes thirty (30) percent or greater shall be discouraged to minimize the visual impacts of grading and vegetation removal.	The proposed Specific Plan does not allow development on slopes greater than thirty (30) percent, and therefore is consistent with this policy.
Goal 2.8: Lighting. Elimination of high intensity lighting and glare consistent with prudent safety practices.		
Objective 2.8.1: Lighting Standards		
2.8.1.1	Development shall limit excess nighttime light and glare from parking area lighting, signage, and buildings. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, sport field lighting, and other significant light sources, that could reduce effects from nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features in rural areas to further reduce excess nighttime light.	The proposed Specific Plan Design Guidelines limit excess nighttime light and glare from parking areas, signage, and buildings. Specific Plan policies 8.20 and 8.21. The proposed Specific Plan is consistent with this policy.
TRANSPORTATION & CIRCULATION ELEMENT		
Roads and Highways Goal TC-1: To plan for and provide a unified, coordinated, and cost-efficient countywide road and highway system that ensures the safe, orderly, and efficient movement of people and goods.		
TC-1s	Notwithstanding Policy TC-1r, the County shall only add new local roads into the existing County-maintained road system if maintenance for these local roads will be provided for through a County Service Area Zone of Benefit or other similar means acceptable to the Board of Supervisors.	The proposed project includes a Specific Plan with a plan for provision of and funding for infrastructure and public services. New public roads would consist of the extension of Park Drive (also referred to as the Country Club Drive extension – CIP project number 36105007). The proposed Specific Plan is consistent with this policy.

Policy Number	Policy	Project Consistency
Levels of Service and Concurrency		
Goal TC-X: To coordinate planning and implementation of roadway improvements with new development to maintain adequate levels of service on County roads.		
TC-Xa	Except as otherwise provided, the following TC-Xa policies shall remain in effect indefinitely, unless amended by voters: 1. Traffic from residential development projects of five or more units or parcels of land shall not result in, or worsen, Level of Service F (gridlock, stop-and-go) traffic congestion during weekday, peak-hour periods on any highway, road, interchange or intersection in the unincorporated areas of the county. 2. The County shall not add any additional segments of U.S. Highway 50, or any other highways and roads, to the County's list of roads from the original Table TC-2 of the 2004 General Plan that are allowed to operate at Level of Service F without first getting the voters' approval. 3. *intentionally blank* 4. *intentionally blank* 5. The County shall not create an Infrastructure Financing District unless allowed by a 2/3rds majority vote of the people within that district. 6. *intentionally blank* 7. Before giving approval of any kind to a residential development project of five or more units or parcels of land, the County shall make a finding that the project complies with the policies above. If this finding cannot be made, then the County shall not approve the project in order to protect the public's health and safety as provided by state law to assure that safe and adequate roads and highways are in place as such development occurs.	Consistency with these policies is addressed in Section 3.14, *Traffic and Circulation,* Impacts TRA-1 and TRA-2 Transportation Improvements TRA-1a, TRA-1b, TRA-1c, and CUM-A would require required roadway improvements to be in place prior to deficient LOS operations consistent with Policy TC-Xf. The proposed Specific Plan is consistent with this policy.
TC-Xd	Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table. Level of Service will be as defined in the latest edition of the Highway Capacity Manual (Transportation Research Board, National Research Council) and calculated using the methodologies	Consistency with this policy is addressed in Section 3.14, *Traffic and Circulation,* Impacts TRA-1 and TRA-2. Transportation Improvements TRA-1a, TRA-1b, TRA-1c, and CUM-A would require roadway improvements to be in place prior to deficient LOS operations and maintain consistency with LOS standards. The proposed Specific Plan is consistent with this policy.

Policy Number	Policy	Project Consistency
	contained in that manual. Analysis periods shall be based on the professional judgment of the Department of Transportation which shall consider periods including, but not limited to, Weekday Average Daily Traffic (ADT), AM Peak Hour, and PM Peak hour traffic volumes.	
TC-Xe	For the purposes of this Transportation and Circulation Element, "worsen" is defined as any of the following number of project trips using a road facility at the time of issuance of a use and occupancy permit for the development project: • A 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or • The addition of 100 or more daily trips, or • The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.	Consistency with this policy is addressed in Section 3.14, *Traffic and Circulation,* Impacts TRA-1 and TRA-2. Transportation Improvements TRA-1a, TRA-1b, TRA-1c, and CUM-A would require roadway improvements to be in place prior to deficient LOS operations or worsening of operations by the project. The proposed Specific Plan is consistent with this policy.
TC-Xf	At the time of approval of a tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County's 10-year CIP. For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element; or (2) ensure the construction of the necessary road improvements are included in the County's 20-year CIP.	Consistency with these policies is addressed in Section 3.14, *Traffic and Circulation,* impacts TRA-1 and TRA-2. Transportation Improvements TRA-1a, TRA-1b, TRA-1c, and CUM-A would require roadway improvements to be in place prior to deficient LOS operations or worsening of operations by the project.. The proposed Specific Plan is consistent with this policy.
TC-Xg	Each development project shall dedicate right-of-way, design and construct or fund improvements necessary to mitigate the effects of traffic from the project. The County shall require an analysis of impacts of traffic from the development project, including impacts from truck traffic, and require dedication of needed right-of-way and construction of	Consistency with this policy is addressed in Section 3.14, *Traffic and Circulation,* Impacts TRA-1 and TRA-2. Transportation Improvements TRA-1a, TRA-1b, TRA-1c, and CUM-A would require roadway improvements to be in place prior to deficient LOS operations or worsening of operations by the project. The proposed Specific Plan is consistent with this policy.

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	road facilities as a condition of the development.This policy shall remain in effect indefinitely unless amended by voters.	
Transportation Systems Management Goal TC-3: To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities.		
TC-3c	The County shall encourage new development within Community Regions and Rural Centers to provide appropriate on-site facilities that encourage employees to use alternative transportation modes. The type of facilities may include bicycle parking, shower and locker facilities, and convenient access to transit, depending on the development size and location.	See Specific Plan policies 4.1, 4.4, 4.5, and 4.6 which accommodate and encourage bicycle use. In addition, Policy 4.13 has been added to the CEDHSP (implementation of Mitigation Measure TRA-1b in the Revised FEIR) to ensure provision of park and ride facilities. The proposed Specific Plan is consistent with this policy.
Non-motorized Transportation Goal TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.		
TC-4i	Within Community Regions and Rural Centers, all development shall include pedestrian/bike paths connecting to adjacent development and to schools, parks, commercial areas and other facilities where feasible. In Rural Regions, pedestrian/bike paths shall be considered as appropriate.	The proposed Specific Plan includes a comprehensive bikeway and trail system connecting the different land uses within the project site and in El Dorado Hills. See Specific Plan policies 4.3, 4.4, 4.5, and 4.6. The proposed Specific Plan is consistent with this policy.
Goal TC-5: To provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.		
TC-5a	Sidewalks and curbs shall be required throughout residential subdivisions, including land divisions created through the parcel map process, where any residential lot or parcel size is 10,000 square feet or less.	The proposed Specific Plan residential roadway sections include sidewalks and curbs. The proposed Specific Plan is consistent with this policy.
TC-5c	Roads adjacent to schools or parks shall have curbs and sidewalks.	The proposed Specific Plan roadway sections adjacent to parks include sidewalks and curbs. The proposed Specific Plan is consistent with this policy.

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HOUSING ELEMENT		
General Housing Policies		
Goal HO-1: To provide for housing that meets the needs of existing and future residents in all income categories.		
HO-1.1	When adopting or updating programs, procedures, or Specific Plans or other planning documents, the County shall ensure that the goals, policies, and implementation programs are developed with the consideration of achieving and maintaining the County's regional housing allocation.	The proposed Specific Plan includes high density residential development opportunities to help to meet County RHNA goals. The proposed Specific Plan is consistent with this policy.
HO-1.5	The County shall direct higher density residential development to Community Regions and Rural Centers.	The proposed Specific Plan includes higher density residential development and the project site is located in the El Dorado Hills Community Region, and is consistent with this policy.
HO-1.24	The County shall encourage 2nd Dwelling Units to provide housing that is affordable to very low-, low-, and moderate-income households.	Second (accessory) dwelling units are allowed in the proposed Specific Plan as identified in Table A.4. The proposed Specific Plan is consistent with this policy.
Goal HO-5: Energy Conservation. To increase the efficiency of energy and water use in new and existing homes.		
HO-5.1	The County shall require all new dwelling units to meet current state requirements for energy efficiency and shall encourage the retrofitting of existing units.	Specific Plan includes policies related to energy efficiency (Specific Plan policies 8.11, 8.14, 8.15, 8.16, 8.19, 8.22, and 8.23). The proposed Specific Plan is consistent with this policy.
PUBLIC SERVICES & UTILITIES ELEMENT		
Goal 5.1: Provision of Public Services. Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.		
Objective 5.1.2: Concurrency		
5.1.2.1	Prior to the approval of any discretionary development, the approving authority shall make a determination of the adequacy of the public services and utilities to be impacted by that development. Where, according to the purveyor responsible for the service or utility as provided in Table 5-1, demand is determined to exceed capacity, the approval of the development shall be conditioned to require expansion of the impacted facility or service to be available concurrent with the demand, mitigated, or a finding made that a CIP project is funded and	Section 3.12, *Public Services and Utilities,* Impacts PSU-1 through PSU-10 present information supporting the type of finding required by this policy, including the project's proximity to existing sheriff and fire facilities in El Dorado Hills. As identified in RFEIR Volume I Impact PSU-1, the Sherriff's Department had an eight-minute response to 40 percent of the population, which does not currently meet standards in Table 5-1. The RFEIR identifies that no additional facilities are required to provide law enforcement services associated with the project. The proposed Development Agreement would include provisions requiring that the project provide

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	authorized which will increase service capacity.	adequate funding for County services and avoid negative fiscal impacts to the County that could impact services. The proposed Specific Plan is consistent with this policy.
5.1.2.2	Provision of public services to new discretionary development shall not result in a reduction of service below minimum established standards to current users, pursuant to Table 5-1.	Section 3.12, *Public Services and Utilities,* Impacts PSU-1 through PSU-10 present information supporting the type of finding required by this policy, including the project's proximity to existing sheriff and fire facilities in El Dorado Hills. As identified in RFEIR Volume I Impact PSU-1, the Sherriff's Department had an eight-minute response to 40 percent of the population, which does not currently meet standards in Table 5-1. The RFEIR identifies that no additional facilities are required to provide law enforcement services associated with the project. The proposed Development Agreement would include provisions requiring that the project provide adequate funding for County services and avoid negative fiscal impacts to the County that could impact services. The proposed Specific Plan is consistent with this policy.
Goal 5.2: Water Supply. The development or acquisition of an adequate water supply consistent with the geographical distribution or location of future land uses and planned developments.		
Objective 5.2.1: County-wide Water Resources Program		
5.2.1.2	An adequate quantity and quality of water for all uses, including fire protection, shall be provided for with discretionary development.	There is adequate water supply based on the 2013 Water Supply Assessment approved by the El Dorado Irrigation District (EID) (RFEIR Appendix K-1) and the 2021 Tully and Young Revalidation of Previously Adopted Water Supply Assessments for the Village of Marble Valley, Lime Rock Valley, and Central El Dorado Hills Specific Plans (RFEIR Appendix K-2). Anticipated water supply infrastructure to support the project (including for fire protection) is identified and evaluated in RFEIR Volume I Impact PSU-4 and PSU-6.The Specific Plan is consistent with this policy.
5.2.1.3	All medium-density residential, high-density residential, multifamily residential, commercial, industrial and research and development projects shall be required to connect to public water systems when located within Community Regions and to either a public water system or to an approved private water systems in Rural Centers.	The proposed Specific Plan will be served by the El Dorado Irrigation District. The Specific Plan is consistent with this policy.
5.2.1.4	Rezoning and subdivision approvals in Community Regions or other areas dependent on public water supply shall be subject to the availability of a permanent and reliable water supply.	There is adequate water supply based on the 2013 Water Supply Assessment approved by the El Dorado Irrigation District (EID) (RFEIR Appendix K-1) and the 2021 Tully and Young Revalidation of Previously

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		Adopted Water Supply Assessments for the Village of Marble Valley, Lime Rock Valley, and Central El Dorado Hills Specific Plans (RFEIR Appendix K-2). Anticipated water supply infrastructure to support the project (including for fire protection) is identified and evaluated in RFEIR Volume I Impact PSU-4 and PSU-6.The Specific Plan is consistent with this policy.
5.2.1.6	Priority shall be given to discretionary developments that are infill or where there is an efficient expansion of the water supply delivery system.	The project site is an infill site. The proposed Specific Plan is consistent with this policy.
5.2.1.9	In an area served by a public water purveyor or an approved private water system, the applicant for a tentative map or for a building permit on a parcel that has not previously complied with this requirement must provide a Water Supply Assessment that contains the information that would be required if a water supply assessment were prepared pursuant to Water Code section 10910. In order to approve the tentative map or building permit for which the assessment was prepared the County must (a) find that by the time the first grading or building permit is issued in connection with the approval, the water supply from existing water supply facilities will be adequate to meet the highest projected demand associated with the approval on the lands in question; and (b) require that before the first grading permit or building permit is issued in connection with the approval, the applicant will have received a sufficient water meters or a comparable supply guarantee to provide adequate water supply to meet the projected demand associated with the entire approval. A water supply is adequate if the total entitled water supplies available during normal, single, dry, and multiple dry years within a 20-year projection will meet the highest projected demand associated with the approval, in addition to existing and 20-year projected future uses within the area served by the water supplier, including but not limited to, fire protection, agricultural, and industrial uses, 95% of the time, with cutbacks calculated not to exceed 20% in the remaining 5% of the time.	There is adequate water supply based on the 2013 Water Supply Assessment approved by the El Dorado Irrigation District (EID) (RFEIR Appendix K-1) and the 2021 Tully and Young Revalidation of Previously Adopted Water Supply Assessments for the Village of Marble Valley, Lime Rock Valley, and Central El Dorado Hills Specific Plans (RFEIR Appendix K-2).The proposed Specific Plan is consistent with this policy.
5.2.1.11	The County shall direct new development to areas where public water service already exists. In Community Regions, all new development shall connect to a public water system. In Rural Centers, all new development shall connect either to a public water system or to an approved private water system.	The proposed project is proposed to be connected to a public water system maintained by El Dorado Irrigation District. The Specific Plan is consistent with this policy.

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5.2.1.12	The County shall work with the El Dorado Irrigation District (EID) to support the continued and expanded use of recycled water, including wet-season use and storage, in new subdivisions served by the Deer Creek and El Dorado Hills Wastewater Treatment Plants. To avoid the construction impacts of installing recycled water facilities, the County shall encourage the construction of distribution lines at the same time as other utilities are installed. Facilities to consider are recycled water lines for residential landscaping, parks, schools, and other irrigation needs, and if feasible, wet-irrigation-season storage facilities.	The project may use recycled water if made available. Consistency with this policy is addressed in Section 3.12, *Public Services and Utilities*, Impact PSU-4. The proposed Specific Plan is consistent with this policy.
Goal 5.3: Wastewater Collection and Treatment. An adequate and safe system of wastewater collection, treatment, and disposal to serve current and future County residents.		
Objective 5.3.1: Wastewater Capacity		
5.3.1.1	High-density and multifamily residential, commercial, and industrial projects may be required to connect to public wastewater collection facilities if reasonably available as a condition of approval. In the Rural Centers of Camino/Cedar Grove/Pollock Pines, the long term development of public sewer service shall be encouraged.	The project is proposed to be served by a public wastewater system maintained by El Dorado Irrigation District. The proposed Specific Plan is consistent with this policy.
5.3.1.7	In Community Regions, all new development shall connect to public wastewater treatment facilities. In Community Regions where public wastewater collection facilities do not exist project applicants must demonstrate that the proposed wastewater disposal system can accommodate the highest possible demand of the project.	The project is proposed to be served by a public wastewater system maintained by El Dorado Irrigation District. The proposed Specific Plan is consistent with this policy.
Goal 5.4: Storm Drainage. Manage and control storm water runoff to prevent flooding, protect soils from erosion, prevent contamination of surface waters, and minimize impacts to existing drainage infrastructure.		
Objective 5.4.1: Drainage and Flood Management Program		
5.4.1.1	Require storm drainage systems for discretionary development that protect public health and safety, preserve natural resources, prevent erosion of adjacent and downstream lands, prevent the increase in potential for flood hazard or damage on either adjacent, upstream or downstream properties, minimize impacts to existing facilities, meet the National Pollution Discharge Elimination System (NPDES) requirements, and preserve natural resources such as wetlands and riparian areas.	The Specific Plan includes policies related to water quality and storm drainage systems (Specific Plan policies 5.2, 5.3, 5.5, 7.5, 7.6, 8.48). The *Central El Dorado Hills Specific Plan Drainage Analysis* was prepared for the project (Watermark Engineering 2014). No increased flooding or water quality impacts to waterways would occur. The proposed Specific Plan is consistent with this policy.
5.4.1.2	Discretionary development shall protect natural drainage patterns,	The Specific Plan protects the corridor of the onsite creek feature in the

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	minimize erosion, and ensure existing facilities are not adversely impacted while retaining the aesthetic qualities of the drainage way.	Serrano Westside Planning Area. The Specific Plan includes policies related to drainage and erosion (Specific Plan policies 5.2, 5.5, 8.48). The *Central El Dorado Hills Specific Plan Drainage Analysis* was prepared for the project (Watermark Engineering 2014). The proposed Specific Plan is consistent with this policy
Goal 5.5: Solid Waste. A safe, effective and efficient system for the collection and processing of recyclable and transformable materials and for the disposal of residual solid wastes which cannot otherwise be recycled or transformed.		
Objective 5.5.2: Recycling, Transformation, and Disposal Facilities		
5.5.2.1	Concurrent with the approval of new development, evidence will be required that capacity exists within the solid waste system for the processing, recycling, transformation, and disposal of solid waste.	As described in detail in Section 3.12, *Public Services and Utilities*, Impact PSU-8, solid waste capacity exists to serve the proposed project. The proposed Specific Plan is consistent with this policy.
Goal 5.6: Gas, Electric, and Other Utility Services. Sufficient utility service availability consistent with the needs of a growing community.		
Objective 5.6.1: Provide Utility Services		
5.6.1.1	Promote and coordinate efforts with utilities for the undergrounding of existing and new utility distribution lines in accordance with current rules and regulations of the California Public Utility Commission and existing overhead power lines within scenic areas and existing Community Regions and Rural Centers.	The proposed Specific Plan (Section 7.7, Dry Utilities) requires that all utility distribution lines be located underground and is consistent with this policy.
5.6.1.2	Reserve adequate rights-of-way to facilitate expansion of services in a timely manner.	Irrevocable offers of dedication of right-of-way will offered to the County after the proposed Specific Plan is approved and parcel and/or subdivision maps are submitted. The Specific Plan is consistent with this policy.
Objective 5.6.2: Encourage Energy-Efficient Development		
5.6.2.1	Require energy conserving landscaping plans for all projects requiring design review or other discretionary approval.	To save energy and water, the proposed Specific Plan (Section 8, Sustainability) requires the use of drought tolerant landscaping. The Specific Plan is consistent with this policy.
5.6.2.2	All new subdivisions should include design components that take advantage of passive or natural summer cooling and/or winter solar access, or both, when possible.	The proposed Specific Plan (Section 8, Sustainability) encourages passive natural summer cooling and winter solar access, or both, when feasible. The Specific Plan is consistent with this policy.
Goal 5.7: Emergency Services. Adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services.		
Objective 5.7.1: Fire Protection (Community Regions)		

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5.7.1.1	Prior to approval of new development, the applicant will be required to demonstrate that adequate emergency water supply, storage, conveyance facilities, and access for fire protection either are or will be provided concurrent with development.	The Specific Plan addresses this requirement in policy 6.19. There is adequate water supply based on the 2013 Water Supply Assessment approved by the El Dorado Irrigation District (EID) (RFEIR Appendix K-1) and the 2021 Tully and Young Revalidation of Previously Adopted Water Supply Assessments for the Village of Marble Valley, Lime Rock Valley, and Central El Dorado Hills Specific Plans (RFEIR Appendix K-2). and the Specific Plan is consistent with this policy.
Objective 5.7.3: Law Enforcement		
5.7.3.1	Prior to approval of new development, the Sheriff's Department shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.	Section 3.12, *Public Services and Utilities* presents information on the Sheriff's department review of the ability to provide protection services. Impact PSU-1 notes that the Sherriff's Department had an eight-minute response to 40 percent of the population, which does not currently meet standards in Table 5-1. The RFEIR identifies that no additional facilities are required to provide law enforcement services associated with the project. The proposed Development Agreement would include provisions requiring that the project provide adequate funding for County services and avoid negative fiscal impacts to the County that could impact services. The proposed Specific Plan is consistent with this policy.
Objective 5.7.4: Medical Emergency Services		
5.7.4.1	Prior to approval of new development, the applicant shall be required to demonstrate that adequate medical emergency services are available and that adequate emergency vehicle access will be provided concurrent with development.	Section 3.12, *Public Services and Utilities,* Impact PSU-1, presents information regarding the adequacy of emergency services. The El Dorado Hills Fire Department has reviewed the project and provided recommended changes that have been incorporated into the CEDHSP that include edits to road design (see Attachment 2 to the Staff Report). An analysis of conflicts with evacuation and emergency response plans is provided in FREIR Volume I Impact HAZ-7. The proposed CEDHSP circulation system provides multiple points of access for use during emergencies. Final design and construction standards are subject to approval by affected agencies including El Dorado County Transportation Department and El Dorado Hills Fire Department. RFEIR Volume I Impact PSU-1 presents information regarding the adequacy of emergency services. The proposed Specific Plan is consistent with this policy.

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5.7.4.2	Prior to approval of new development, the Emergency Medical Services Agency shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.	Section 3.12, *Public Services and Utilities*, Impact PSU-1, presents information regarding the adequacy of emergency services. The El Dorado Hills Fire Department has reviewed the project and provided recommended changes that have been incorporated into the CEDHSP that include edits to road design (see Attachment 2 to the Staff Report). An analysis of conflicts with evacuation and emergency response plans is provided in FREIR Volume I Impact HAZ-7. The proposed CEDHSP circulation system provides multiple points of access for use during emergencies. Final design and construction standards are subject to approval by affected agencies including El Dorado County Transportation Department and El Dorado Hills Fire Department. RFEIR Volume I Impact PSU-1 presents information regarding the adequacy of emergency services.The proposed Specific Plan is consistent with this policy.
Goal 5.8: School Services. An adequate, high-quality school system consistent with the needs of current and future residents.		
Objective 5.8.1: School Capacity		
5.8.1.1	School districts affected by a proposed development shall be relied on to evaluate the development's adverse impacts on school facilities or the demand therefor. No development that will result in such impacts shall be approved unless: 1. To the extent allowed by State law, the applicant and the appropriate school district(s) have entered into a written agreement regarding the mitigation of impacts to school facilities; or 2. The impacts to school facilities resulting from the development are mitigated, through conditions of approval, to the greatest extent allowed by State law.	Impacts to school facilities are discussed in Section 3.12, *Public Services and Utilities*, Impact PSU-1. . Development would be required to provide funding for school facilities. The proposed Specific Plan is consistent with this policy.
Objective 5.8.3: Child and Other Care and Day Care Programs		
5.8.3.1	Child day care facilities shall be allowed by right in commercial/office projects, in multiple family housing developments, in mixed use developments in specific plans, in employment centers, and near transit facilities.	The proposed Specific Plan allows child day care facilities by right. The proposed Specific Plan is consistent with this policy.

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PUBLIC HEALTH, SAFETY & NOISE ELEMENT		
Goal 6.2: Fire Hazards. Minimize fire hazards and risks in both wildland and developed areas.		
Objective 6.2.2: Limitations to Development		
6.2.2.1	Fire Hazard Severity Zone Maps shall be consulted in the review of all projects so that standards and mitigation measures appropriate to each hazard classification can be applied. Land use densities and intensities shall be determined by mitigation measures in areas designated as high or very high fire hazard.	The Specific Plan (Section 9.2.4, Fire Protection District Approval) requires the development and implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32) prior to the submittal of the first small lot tentative subdivision map. This issue is discussed in Section 3.7, *Hazards and Hazardous Materials*, Impact HAZ-8. The proposed Specific Plan is consistent with this policy.
6.2.2.2	The County shall preclude development in areas of high and very high wildland fire hazard or in areas identified as "urban wildland interface communities within the vicinity of Federal lands that are a high risk for wildfire," as listed in the Federal Register of August 17, 2001, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a Fire Safe Plan prepared by a Registered Professional Forester (RPF) and approved by the local Fire Protection District and/or California Department of Forestry and Fire Protection.	The Specific Plan (Section 9.2.4, Fire Protection District Approval) requires the development and implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32) prior to the submittal of the first small lot tentative subdivision map. This issue is discussed in Section 3.7, *Hazards and Hazardous Materials*, Impact Haz-8. The proposed Specific Plan is consistent with this policy.
Objective 6.2.3: Adequate Fire Protection		
6.2.3.1	As a requirement for approving new development, the County must find, based on information provided by the applicant and the responsible fire protection district that, concurrent with development, adequate emergency water flow, fire access, and firefighting personnel and equipment will be available in accordance with applicable State and local fire district standards.	The project is located adjacent to El Dorado Hills Fire Department Station 85. The El Dorado Hills Fire Department has reviewed the project and provided recommended changes that have been incorporated into the Specific Plan. Discussions of this issues are provided in Section 3.7, *Hazards and Hazardous Materials*, impact HAZ-8 and in Section 3.12, *Public Services and Utilities,* Impact PSU-1.The proposed Specific Plan is consistent with this policy.
6.2.3.2	As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.	The El Dorado Hills Fire Department has reviewed the project and provided recommended changes that have been incorporated into the Specific Plan that include edits to road design. An analysis of conflicts with evacuation and emergency response plans is provided in Impact HAZ-7. The proposed Specific Plan circulation system provides multiple points of access for use during emergencies. Final design and construction standards are subject to approval by affected agencies including El Dorado County Transportation Department and El Dorado Hills Fire Department. The

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		proposed Specific Plan is consistent with this policy.
6.2.3.4	All new development and public works projects shall be consistent with applicable State Wildland Fire Standards and other relevant State and federal fire requirements.	The Specific Plan (Section 9.2.4, Fire Protection District Approval) requires the development and implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32) prior to the submittal of the first small lot tentative subdivision map. The Specific Plan will also be subject to state and El Dorado Hills Fire Department development and building standards that address fire hazards. Impact HAZ-8 addresses this issue. The proposed Specific Plan is consistent with this policy.
Objective 6.2.4: Area-wide Fuel Management Program		
6.2.4.1	Discretionary development within high and very high fire hazard areas shall be conditioned to designate fuel break zones that comply with fire safe requirements to benefit the new and, where possible, existing development.	The Specific Plan (Section 9.2.4, Fire Protection District Approval) requires the development and implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32) prior to the submittal of the first small lot tentative subdivision map. Section 3.7, Hazards and Hazardous Materials identifies the fire hazard severity for both planning areas and Impact HAZ-8 addresses this issue. The proposed Specific Plan is consistent with this policy .
6.2.4.2	The County shall cooperate with the California Department of Forestry and Fire Protection and local fire protection districts to identify opportunities for fuel breaks in zones of high and very high fire hazard either prior to or as a component of project review.	The Specific Plan (Section 9.2.4, Fire Protection District Approval) requires the development and implementation of a Wildfire Safety Plan (CEDHSP Policy 5.32) prior to the submittal of the first small lot tentative subdivision map. The El Dorado Hills Fire Department has reviewed the project and provided recommended changes that have been incorporated into the Specific Plan. Section 3.7, Hazards and Hazardous Materials identifies the fire hazard severity for both planning areas. Impact HAZ-8 addresses this issue. The proposed Specific Plan is consistent with this policy.

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Goal 6.3: Geologic and Seismic Hazards. Minimize the threat to life and property from seismic and geologic hazards.		
Objective 6.3.1: Building and Site Standards		
6.3.1.1	The County shall require that all discretionary projects and all projects requiring a grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods. The County shall amend the Erosion and Sediment Control Ordinance to include a section that addresses the reduction of thresholds to an appropriate level for grading permits in areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC). The Department of Transportation and the County Air Quality Management District shall consider the requirement of posting a warning sign at the work site in areas likely to contain naturally occurring asbestos based on the mapping developed by the DOC.	The proposed Specific Plan area has been inspected by a California registered geologist to determine if asbestos containing soils are present on the site. Consistency with this policy is addressed in Section 3.2, *Air Quality*, Impact AQ-4d and mitigation measure AQ-4 and Section 3.7, *Hazards and Hazardous Materials,* Impacts HAZ-2 and HAZ-3. The proposed Specific Plan is consistent with this policy.
Objective 6.3.2: County-wide Seismic Hazards		
6.3.2.5	Applications for development of habitable structures shall be reviewed for potential hazards associated with steep or unstable slopes, areas susceptible to high erosion, and avalanche risk. Geotechnical studies shall be required when development may be subject to geological hazards. If hazards are identified, applicants shall be required to mitigate or avoid identified hazards as a condition of approval. If no mitigation is feasible, the project will not be approved.	The proposed Specific Plan would restrict development on slopes 30% and greater. No significant seismic hazards are present on the site. A discussion is provided in Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*, Impact GEO-1. The proposed Specific Plan is consistent with this policy.
Goal 6.4: Flood Hazards. Protect the residents of El Dorado County from flood hazards.		
Objective 6.4.1: Development Regulations		
6.4.1.2	The County shall identify and delineate flood prone study areas discovered during the completion of the master drainage studies or plans.	A preliminary hydrologic and hydraulic study was prepared for the project (Watermark Engineering 2014). This study found that implementation of the Specific Plan does not result in any new flooding. The proposed Specific Plan is consistent with this policy.
6.4.1.3	No new critical or high occupancy structures (e.g., schools, hospitals)	No structures in the proposed Specific Plan are proposed for areas within

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	shall be located in the 100-year floodplain of any river, stream, or other body of water.	the 100-year flood plain. The proposed Specific Plan is consistent with this policy.
6.4.1.4	Creation of new parcels which lie entirely within the 100-year floodplain as identified on the most current version of the flood insurance rate maps provided by FEMA or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County shall be prohibited.	The proposed Specific Plan does not propose development within the 100-year flood plain. The proposed Specific Plan is consistent with this policy.
6.4.1.5	New parcels which are partially within the 100-year floodplain or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County must have sufficient land available outside the FEMA or County designated 100-year floodplain or the dam inundation areas for construction of dwelling units, accessory structures, and septic systems. Discretionary applications shall be required to determine the location of the designated 100-year floodplain and identified dam failure inundation areas on the subject property.	The proposed Specific Plan does not propose development within the 100-year flood plain. The proposed Specific Plan is consistent with this policy.
Objective 6.4.2: Dam Failure Inundation		
6.4.2.2	No new critical or high occupancy structures (e.g., schools, hospitals) should be located within the inundation area resulting from failure of dams identified by the State Department of Water Resources Division of Safety of Dams.	The proposed Specific Plan is not located in any dam failure inundation zone. The proposed Specific Plan is consistent with this policy.
Goal 6.5: Acceptable Noise Levels. Ensure that County residents are not subjected to noise beyond acceptable levels.		
Objective 6.5.1: Protection of Noise-Sensitive Development		
6.5.1.1	Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-1 or the performance standards of Table 6-2, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.	Consistency with this policy is addressed in the acoustical analysis provided in Section 3.10, *Noise*, Impacts NOI-1b and NOI-1c. Consistency with this policy can be attained with implementation of mitigation measures NOI-1b and NOI-1c.
6.5.1.2	Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 6-2 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.	Consistency with this policy is addressed in the acoustical analysis provided in Section 3.10, *Noise*, Impacts NOI-1b and NOI-1c. Consistency with this policy can be attained with implementation of mitigation measures NOI-1b and NOI-1c.

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6.5.1.3	Where noise mitigation measures are required to achieve the standards of Tables 6-1 and 6-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.	Consistency with this policy is addressed in the acoustical analysis provided in Section 3.10, *Noise*, Impacts NOI-1b and NOI-1c. Implementation of mitigation measures NOI-1b and NOI-1c reduce impacts. Visual effects of noise barriers are discussed in Section 3.1, Aesthetics, Impact AES-4 and mitigation measure AES-4. The proposed Specific Plan is consistent with this policy.
6.5.1.5	Setbacks shall be the preferred method of noise abatement for residential projects located along U.S. Highway 50. Noise walls shall be discouraged within the foreground viewshed of U.S. Highway 50 and shall be discouraged in favor of less intrusive noise mitigation (e.g., landscaped berms, setbacks) along other high volume roadways.	Consistency with this policy is addressed in Section 3.10, *Noise*, Impact NOI-3. No residential uses are proposed along US 50 and mitigation is not required. The proposed Specific Plan is consistent with this policy.
6.5.1.6	New noise-sensitive uses shall not be allowed where the noise level, due to non-transportation noise sources, will exceed the noise level standards of Table 6-2 unless effective noise mitigation measures have been incorporated into the development design to achieve those standards.	Consistency with this policy is addressed in Section 3.10, *Noise*, Impacts NOI-1a and NOI-1b and mitigation measures NOI-1b and NOI-1c. The proposed Specific Plan is consistent with this policy.
6.5.1.7	Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 6-2 for noise-sensitive uses.	Consistency with this policy is addressed in Section 3.10, *Noise*, Impact NOI-1c and mitigation measure NOI-1c. The proposed Specific Plan is consistent with this policy.
6.5.1.8	New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1.	Consistency with this policy is addressed in Section 3.10, *Noise*, Impact NOI-1b. Impacts associated with noise levels from transportation sources can be mitigated with implementation of mitigation measure NOI-1b. The proposed Specific Plan is consistent with this policy.
6.5.1.9	Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 6-1 at existing noise-sensitive land uses.	Consistency with this policy is addressed in Section 3.10, *Noise*, Impacts NOI-1b and NOI-3. Implementation of mitigation measure NOI-1b ensures that impacts associated with new transportation noise associated with the proposed project would not exceed specified levels. The proposed Specific Plan is consistent with this policy.
6.5.1.11	The standards outlined in Tables 6-3, 6-4, and 6-5 shall apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday	Section 3.10, *Noise*, mitigation measure NOI-1a, addresses a noise control plan and hours of construction. The proposed Specific Plan is consistent with this policy.

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	through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally recognized holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.	
6.5.1.12	When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant; Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.	Section 3.10, *Noise*, Impacts NOI-1b and NOI-1c, presents the evaluation required by this policy, using these standards. With implementation of mitigation measures NOI-1b and NOI-1c, the proposed Specific Plan is consistent with this policy.
6.5.1.13	When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration: • In areas in which ambient noise levels are in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 5 dBA shall be considered significant; and • In areas in which ambient noise levels are not in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 3 dBA shall be considered significant. The construction noise standards for community regions and adopted plan areas outlined in County General Plan Table 6-4 would be applicable to the project because the project area is surrounded by primarily residential land uses, and the project site is in a community region. The	Section 3.10, *Noise*, Impacts NOI-1a and NOI-1c and associated mitigation measures, present the evaluation required by this policy, using these standards. The proposed Specific Plan is consistent with this policy.

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	standards outlined in County General Plan Table 6-4 are summarized in Table 3.10-7.	
Goal 6.6: Management of Hazardous Materials. Recognize and reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials.		
Objective 6.6.1: Regulation of Hazardous Materials		
6.6.1.2	Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, a site investigation, performed by a Registered Environmental Assessor or other person experienced in identifying potential hazardous wastes, shall be submitted to the County for any subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the Environmental Management Department as provided by the State of California and federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit.	The proposed Specific Plan is consistent with this policy; a discussion is provided in Section 3.7, *Hazards and Hazardous Materials*, Impact HAZ-1.
Goal 6.7: Air Quality Maintenance. A. Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board. B. Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.		
Objective 6.7.1: El Dorado County Clean Air Plan		
6.7.1.1	Improve air quality through land use planning decisions.	While the RFEIR identified significant and unavoidable air quality impacts (Impacts AQ-1 and AQ-1 CUM, AQ-2 and AQ-2 CUM, AQ-3 and AQ-3 CUM), Specific Plan policies 8.3, 8.4, and 8.5 encourage the use of alternative fuel vehicles by providing parking and encouraging charging stations. In addition, the project is infill that would promote pedestrian and bicycle use that would provide opportunities to improve air quality as compared to development outside of the El Dorado Hills Community Region. The Specific Plan is consistent with this policy.
Objective 6.7.2: Vehicular Emissions		
6.7.2.5	Upon reviewing projects, the County shall support and encourage the use of, and facilities for, alternative-fuel vehicles to the extent feasible. The County shall develop language to be included in County contract procedures to give preference to contractors that utilize low-emission	Specific Plan policies 8.3, 8.4, and 8.5 encourage the use of alternative fuel vehicles by providing parking and encouraging charging stations. Section 3.2, *Air Quality*, Impact AQ-2b facilitates reduced emissions and Mitigation Measure AQ-2b requires that alternatively fueled (e.g., biodiesel, electric,

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	heavy-duty vehicles.	ARB approved low carbon fuel, such as renewable diesel) construction vehicles/equipment make up at least 15 percent of the fleet. The proposed Specific Plan is consistent with this policy.
Objective 6.7.4: Project Design and Mixed Uses		
6.7.4.1	Reduce automobile dependency by permitting mixed land use patterns which locate services such as banks, child care facilities, schools, shopping centers, and restaurants in close proximity to employment centers and residential neighborhoods.	The proposed Specific Plan includes residential uses located in close proximity to existing commercial land uses offsite, consistent with this policy.
6.7.4.2	Promote the development of new residential uses within walking or bicycling distance to the County's larger employment centers.	The proposed Specific Plan includes residential uses located in close proximity to existing commercial land uses offsite (El Dorado Hill Business Park) and provides bicycle and pedestrian routes, consistent with this policy.
6.7.4.4	All discretionary development applications shall be reviewed to determine the need for pedestrian/bike paths connecting to adjacent development and to common service facilities (e.g., clustered mail boxes, bus stops, etc.).	Bike paths are proposed in the Specific Plan to be provided and connect to adjacent development.
		Policies 8.50 and 8.51 of the proposed Specific Plan limit the use of wood burning devices and require that they comply with US EPA Phase II emission limits and local standards The proposed Specific Plan is consistent with this policy.
Objective 6.7.6: Air Pollution-Sensitive Land Uses		
6.7.6.1	Ensure that new facilities in which sensitive receptors are located (e.g., schools, child care centers, playgrounds, retirement homes, and hospitals) are sited away from significant sources of air pollution.	The proposed Specific Plan is consistent with this policy; a discussion is provided in Section 3.2, *Air Quality* Impact AQ-4a, 4b, and 4c, which concluded that impacts to sensitive receptors is less than significant
6.7.6.2	New facilities in which sensitive receptors are located (e.g. residential subdivisions, schools, childcare centers, playgrounds, retirement homes, and hospitals) shall be sited away from significant sources of air pollution.	The proposed Specific Plan is consistent with this policy; a discussion is provided in Section 3.2, *Air Quality* Impact AQ-4a, 4b, and 4c, which concluded that impacts to sensitive receptors is less than significant.

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Objective 6.7.7: Construction Related, Short-Term Emissions		
6.7.7.1	The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the El Dorado County Air Quality Management (AQMD) Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.	The proposed Specific Plan is consistent with this policy; a discussion is provided in Impact AQ-1 and AQ-2a through AQ-2c in Section 3.2, *Air Quality*.
CONSERVATION & OPEN SPACE ELEMENT		
Goal 7.1: Soil Conservation		
Objective 7.1.1: Soils		
7.1.1.1	Conserve and maintain important agricultural soils for existing and potential agricultural and forest uses by limiting non-agricultural/non-forestry development on those soils.	The proposed Specific Plan contains no important agricultural soils (Impact LU-4 and LU-5) and is consistent with this policy.
Objective 7.1.2: Erosion/Sedimentation		
7.1.2.1	Development or disturbance of slopes over 30% shall be restricted. Standards for implementation of this policy, including but not limited to exceptions for access, reasonable use of the parcel, and agricultural uses shall be incorporated into the Zoning Ordinance.	The proposed Specific Plan prohibits development on slopes of 30 percent (30%) or greater. The proposed Specific Plan is consistent with this policy.
7.1.2.2	Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.	Development of the proposed Specific Plan will include the preparation of a Stormwater Pollution Prevention Plan. Specific Plan policy 5.5 addresses BMPs that will prevent impacts associated with grading and earthwork. The proposed Specific Plan is consistent with this policy.

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Goal 7.3: Water Quality and Quantity. Conserve, enhance, and manage water resources and protect their quality from degradation.		
Objective 7.3.2: Water Quality		
7.3.2.1	Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity.	A creek is located on the project site. Section 3.8, *Hydrology, Water Quality, and Water Resources*, Impacts WQ-3 and WQ-6 address impacts to the creek and water quality. The proposed Specific Plan is consistent with this policy.
7.3.2.2	Projects requiring a grading permit shall have an erosion control program approved, where necessary.	A Stormwater Pollution Prevention Plan will be prepared for the proposed Specific Plan (See Policy 5.5). The proposed Specific Plan is consistent with this policy.
7.3.2.3	Where practical and when warranted by the size of the project, parking lot storm drainage shall include facilities to separate oils and salts from storm water in accordance with the recommendations of the Storm Water Quality Task Force's California Storm Water Best Management Practices Handbooks (1993).	The proposed Specific Plan Stormwater Master Plan complies with all state and federal mandates regarding water quality. See Specific Plan policy 5.5. The proposed Specific Plan is consistent with this policy.
Objective 7.3.3: Wetlands		
7.3.3.1	For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual.	All wetlands within the Specific Plan area have been delineated using the procedures outlined in the U.S. Army Corps of Engineers manual. More information is available in Section 3.3, *Biological Resources*, Impacts BIO-3 and mitigation measures BIO-1a, BIO-1b, BIO-1c, BIO-3a, and BIO-3b. The proposed Specific Plan is consistent with this policy.
7.3.3.4	The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas and wetlands. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas. Exceptions to riparian and wetland buffer and setback requirements shall be provided to permit necessary road and bridge repair and construction, trail construction, and other recreational access structures such as docks and piers, or where such buffers deny reasonable use of the property, but only when appropriate mitigation measures and Best Management Practices are incorporated into the project. Exceptions shall also be provided for horticultural and grazing activities on agriculturally zoned lands that utilize "best management practices (BMPs)" as	Several of the on-site seasonal wetlands, perennial streams, and delineated wetlands are proposed to be included in the open space preserves or public trail corridor as a part of the Specific Plan, including policies 3.9 and 5.7, which place wetlands in open space to the greatest extent feasible. The land uses in the Specific Plan maintain the Carson Creek tributary in open space. Also discussed Section 3.3, *Biological Resources*, Impacts BIO-3 and BIO-4. Development would be subject to the Zoning Ordinance setback standards in addition to the mitigation measures for the anticipated loss of wetland resources. The proposed Specific Plan is consistent with this policy.

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	recommended by the County Agricultural Commission and adopted by the Board of Supervisors. Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue. For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.	
7.3.3.5	Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.	Several of the on-site seasonal wetlands, perennial streams, and delineated wetlands are proposed to be included in the open space preserves or public trail corridor to the extent feasible as a part of the Specific Plan, including policies 3.9 and 5.7, which place wetlands in open space to the greatest extent feasible. The land uses in the Specific Plan maintain the Carson Creek tributary in open space. Also discussed Section 3.3, *Biological Resources*, Impacts BIO-3 and BIO-4. Development would be subject to the Zoning Ordinance setback standards in addition to the mitigation measures for the anticipated loss of wetland resources. The proposed Specific Plan is consistent with this policy.

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Objective 7.3.4: Drainage		
7.3.4.1	Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.	Several of the on-site seasonal wetlands, perennial streams, and delineated wetlands would be included in the open space preserves or public trail corridor as a part of the Specific Plan, including policies 3.9 and 5.7, which place wetlands in open space to the greatest extent feasible. The land uses in the Specific Plan maintain the Carson Creek tributary in open space. Also discussed in Section 3.3, *Biological Resources*, Impacts BIO-3 and BIO-4. Development would be subject to the Zoning Ordinance setback standards in addition to the mitigation measures for the anticipated loss of wetland resources. The proposed Specific Plan is consistent with this policy.
7.3.4.2	Modification of natural stream beds and flow shall be regulated to ensure that adequate mitigation measures are utilized.	Seasonal wetlands, perennial streams, and delineated wetlands are proposed to be included in the open space preserves or public trail corridor as a part of the Specific Plan, including policies 3.9 and 5.7, which place wetlands in open space to the greatest extent feasible. The land uses in the Specific Plan maintain the Carson Creek tributary in open space. Also discussed in Section 3.3, *Biological Resources*, Impacts BIO-3 and BIO-4 and in Section 3.8, *Hydrology, Water Quality and Water Resources*, Impact WQ-3. The proposed Specific Plan is consistent with this policy.
Objective 7.3.5: Water Conservation		
7.3.5.1	Drought-tolerant plant species, where feasible, shall be used for landscaping of commercial development. Where the use of drought-tolerant native plant species is feasible, they should be used instead of non-native plant species.	The proposed Specific Plan requires the use of drought tolerant plant species where feasible (Policy 8.45). The proposed Specific Plan is consistent with this policy.
7.3.5.4	Require efficient water conveyance systems in new construction. Establish a program of ongoing conversion of open ditch systems shall be considered for conversion to closed conduits, reclaimed water supplies, or both, as circumstances permit.	The proposed Specific Plan proposes the use of both potable and recycled water systems (Policies 7.1 and 7.2). The proposed Specific Plan is consistent with this policy.
7.3.5.5	Encourage water reuse programs to conserve raw or potable water supplies consistent with State Law.	The proposed Specific Plan includes the use of recycled water for parks and landscaped corridors (Policy 8.40). The proposed Specific Plan is consistent with this policy.

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Goal 7.4: Wildlife and Vegetation Resources. Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.		
Objective 7.4.2: Identify and Protect Resources		
7.4.2.3	Consistent with Policy 9.1.3.1 of the Parks and Recreation Element, low impact uses such as trails and linear parks may be provided within river and stream buffers if all applicable mitigation measures are incorporated into the design.	Impacts and mitigation for impacts on riparian areas and creeks within the trail system are discussed in Section 3.3, *Biological Resources*, Impacts BIO-2 and BIO-4 and in Section 3.8, *Hydrology, Water Quality and Water Resources*, Impact WQ-3. The proposed Specific Plan is consistent with this policy.
7.4.2.4	Protect and preserve wildlife habitat corridors within public parks and natural resource protection areas to allow for wildlife use. Recreational uses within these areas shall be limited to those activities that do not require grading or vegetation removal.	The proposed Specific Plan Open Space Plan provides wildlife habitat corridors. The proposed Specific Plan is consistent with this policy.
Objective 7.4.4: Forest and Oak Woodland Resources		
7.4.4.3	Utilize the clustering of development to retain the largest contiguous areas possible in wildland (undeveloped) status.	The proposed Specific Plan provides open space areas for the retention of oak woodlands. The proposed Specific Plan is consistent with this policy.
7.4.4.4	For all new development projects or actions that result in impacts to oak woodlands and/or individual native oak trees, including Heritage Trees, the County shall require mitigation as outlined in the El Dorado County Oak Resources Management Plan (ORMP). The ORMP functions as the oak resources component of the County's biological resources mitigation program, identified in Policy 7.4.2.8.	The open space designated areas would retain approximately 124 acres of the CEDHSP's approximately 153 acres oak woodland canopy (approximately 81 percent retention). The County adopted the Oak Resources Management Plan (ORMP) as provided under General Plan Implementation Measure Policy 7.4.4.4 and codified under Chapter 130.39 (Oak Resources Conservation). The ORMP consists of oak woodland mitigation ratios based on the loss of on-site oak woodlands and mitigation for loss certain sized individual native oak trees ("heritage trees"). Consistent with the ORMP, oak woodland impacts outside of the 81 percent retention would be mitigated at a 1:1 ratio through a combination of on-site re-planting (50 percent of mitigation) and payment of the in-lieu fee payment to the County (50 percent of mitigation). The proposed Specific Plan is consistent with this policy.

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Goal 7.5: Cultural Resources. Ensure the preservation of the County's important cultural resources.		
Objective 7.5.1: Protection of Cultural Heritage		
7.5.1.3	Cultural resource studies (historic, prehistoric, and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.	Cultural resource studies have been prepared for the proposed Specific Plan. Cultural resources studies are summarized in Section 3.4, *Cultural Resources,* Impact CUL-1 and mitigation measures CUL-1a, CUL-1b, and CUL-1c. The proposed Specific Plan is consistent with this policy.
Goal 7.6: Open Space Conservation. Conserve open space land for the continuation of the County's rural character, commercial agriculture, forestry and other productive uses, the enjoyment of scenic beauty and recreation, the protection of natural resources, for protection from natural hazards, and for wildlife habitat.		
Objective 7.6.1: Importance of Open Space		
7.6.1.4	The creation of new open space areas, including Ecological Preserves, common areas of new subdivisions, and recreational areas, shall include wildfire safety planning.	The proposed Specific Plan requires the preparation of a Wildfire Safe Plan (Policy 5.3.2). The proposed Specific Plan is consistent with this policy.
PARKS & RECREATION ELEMENT		
Goal 9.1: Parks and Recreation Facilities. Provide adequate recreation opportunities and facilities including developed regional and community parks, trails, and resource-based recreation areas for the health and welfare of all residents and visitors of El Dorado County.		
Objective 9.1.1: Park Acquisition and Development		
9.1.1.1	The County shall assist in the development of regional, community, and neighborhood parks, ensure a diverse range of recreational opportunities at a regional, community, and neighborhood level, and provide park design guidelines and development standards for park development. The following national standards shall be used as guidelines for the acquisition and development of park facilities:	The proposed Specific Plan provides a 15-acre Village Park as well as 1-acre neighborhood park site and the potential for an 11-acre park site at the limited commercial/civic designated site. The proposed Specific Plan is consistent with this policy.

Guidelines For Acquisition and Development of Park Facilities	
Park Types	Developed
Regional Parks	1.5 ac/1,000 population
Community Parks	1.5 ac/1,000 population
Neighborhood Parks	2.0 ac/1,000 population

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	Specific Standards (Neighborhood and Community Parks) Cameron Park Community Services District: 5.0 ac/1,000 population El Dorado Hills Community Services District: 5.0 ac/1,000 population Planned Communities: 5.0 ac/1,000 population The parkland dedication/in-lieu fees shall be directed towards the purchase and funding of neighborhood and community parks.	
9.1.1.2	Neighborhood parks shall be primarily focused on serving walk-to or bike-to recreation needs. When possible, neighborhood parks should be adjacent to schools. Neighborhood parks are generally 2 to 10 acres in size and may include a playground, tot lot, turf areas, and picnic facilities.	The Specific Plan provides for a village park and a neighborhood park, which meet General Plan criteria, adjacent to residential development. The proposed Specific Plan is consistent with this policy.
9.1.1.3	Community parks and recreation facilities shall provide a focal point and gathering place for the larger community. Community parks are generally 10 to 44 acres in size, are for use by all sectors and age groups, and may include multi-purpose fields, ball fields, group picnic areas, playground, tot lot, multi-purpose hardcourts, swimming pool, tennis courts, and a community center.	The Specific Plan includes a village park of approximately 15 acres that includes active and passive recreational facilities. The proposed Specific Plan is consistent with this policy.
9.1.1.5	Parkland dedicated under the Quimby Act must be suitable for active recreation uses and: • Shall have a maximum average slope of 10 percent; • Shall have sufficient access for a community or neighborhood park; and • Shall not contain significant constraints that would render the site unsuitable for development.	The proposed Specific Plan park site meets the criteria outlined in Policy 9.1.1.5. More discussion is provided in Section 3.13, *Recreation,* Impact REC-1. The proposed Specific Plan is consistent with this policy.
Objective 9.1.2: County Trails		
9.1.2.4	Evaluate every discretionary application as well as public facilities planning with regard to their ability to implement the *Hiking and Equestrian Trails Master Plan and the Bikeway Master Plan*.	Bike and pedestrian paths are proposed in the Specific Plan to be provided. More discussion of this issue is provided in Section 3.14, *Traffic and Circulation* (Impacts TRA-1 and TRA-6) and in the Bikeway and Trail Network in Section 4.7, Chapter 4 of the Specific Plan. The proposed Specific Plan is consistent with this policy.
9.1.2.8	Integrate and link, where possible, existing and proposed National, State, regional, County, city and local hiking, bicycle, and equestrian trails for public use.	The proposed Specific Plan provides an extensive trail system including Class I and II bikeways and paved and unpaved trails. A Class I bikeway will connect to the existing bikeway to provide continuity. More discussion of

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		this issue is provided in Section 3.14, *Traffic and Circulation*, Impacts TRA-1 and TRA-6 and in the Bikeway and Trail Network in Section 4.7, Chapter 4 of the proposed Specific Plan. The proposed Specific Plan is consistent with this policy.
Objective 9.1.3: Incorporation of Parks and Trails		
9.1.3.1	Linear parks and trails may be incorporated along rivers, creeks, and streams wherever possible.	The proposed Specific Plan provides a trail system along the riparian corridor adjacent to the Serrano Westside planning area. The proposed Specific Plan is consistent with this policy.
Goal 9.2: Funding. Secure an adequate and stable source of funding to implement a comprehensive County-wide parks and recreation plan.		
Objective 9.2.2: Quimby Act		
9.2.2.2	New development projects creating community or neighborhood parks shall provide mechanisms (e.g., homeowners associations, or benefit assessment districts) for the ongoing development, operation, and maintenance needs of these facilities if annexation to an existing parks and recreation service district/provider is not possible.	A Specific Plan and its Public Facilities Financing Plan identifies funding mechanism options. The proposed Specific Plan is consistent with this policy.
Objective 9.2.3: Grants, Fees and Contributions		
9.2.3.5	The County will encourage private sector development, operation, and maintenance of recreation facilities.	The Specific Plan includes development, operation, and maintenance of the private neighborhood park site. The proposed Specific Plan is consistent with this policy.
ECONOMIC DEVELOPMENT ELEMENT		
Goal 10.2: Public and Civic Facilities Investment. Provide adequate levels of public services and infrastructure for existing residents and targeted industries and establish equitable methods to assure funding of needed improvements to existing infrastructure and services and new facilities to further economic development consistent with the County's custom, culture, and economic stability.		
Objective 10.2.1: Public and Civic Facilities Investment		
10.2.1.4	Require new discretionary development to pay its fair share of the costs of all civic and public and community facilities it utilizes based upon the demand for these facilities which can be attributed to new development.	The Specific Plan will include a Public Facilities Financing Plan that identifies funding mechanism options (including fair share provisions) for infrastructure and facilities. The Specific Plan is consistent with this policy.

Policy Number	Policy	Project Consistency
10.2.1.5	A public facilities and services financing plan that assures that costs burdens of any civic, public, and community facilities, infrastructure, ongoing services, including operations and maintenance necessitated by a development proposal, as defined below, are adequately financed to assure no net cost burden to existing residents shall be submitted with the following development applications: • Specific plans; and • All residential, commercial, and industrial projects located within a Community Region or Rural Center which exceed the following thresholds: ○ Residential.....50 units ○ Commercial.....20 acres or 100,000 square feet ○ Industrial.....20 acres or 250,000 square feet	The Specific Plan will include a Public Facilities Financing Plan that identifies funding mechanism options (including fair share provisions) for infrastructure and facilities. The project proposes a draft Development Agreement that is planned to provide a mutually acceptable financing mechanism to generate annual revenues to the County sufficient to eliminate the identified negative fiscal impact to both the County General Fund and the County Road Fund. The Specific Plan is consistent with this policy.
10.2.1.6	Provision of new infrastructure and facilities shall be coordinated with existing infrastructure and facilities and shall maximize use of existing facilities capacity to the extent that any exists.	The County has been in contact with and will coordinate with infrastructure providers (such as EID) to maximize use of existing capacity of facilities. Off-site infrastructure needs are addressed throughout the EIR. The Specific Plan is consistent with this policy.
Objective 10.2.2: Equitable Financing Methods for Public Improvements		
10.2.2.2	Stress financing strategies that maximize the use of pay-as-you-go methods to gain the most benefit from available revenue without placing unreasonable burdens on new development. Program 10.2.2.2.1: When a project directly or indirectly impacts existing public services and/or infrastructure, it shall provide for and finance improvements consistent with the degree of impact to public services and/or infrastructure directly or indirectly attributed to the project. Cost to be borne by the project proponent shall be determined on the basis of the above described nexus and other pre-existing legally binding agreements such as development agreements.	The proposed Specific Plan includes a Public Facilities Financing Plan with a plan for provision of and funding for infrastructure and public services. The Specific Plan is consistent with this policy.

Appendix C

Air Quality Model Output (Construction Output/Emissions)

Construction Outputs

2018 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2018	11/16/2018	5	230	
2	Architectural Coating	Architectural Coating	11/17/2018	12/14/2018	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	2.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.939	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.939**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0108	0.0778	0.1732	2.1000e-	6.4900e-	1.0200e-	7.5100e-	1.8400e-	9.4000e-	2.7800e-		19.8633	19.8633	1.4000e-		19.8663
Worker	6.9200e-	6.4900e-	0.0835	2.1000e-	0.0164	1.2000e-	0.0166	4.3600e-	1.1000e-	4.4700e-		15.9471	15.9471	7.1000e-		15.9620
Total	**0.0177**	**0.0843**	**0.2567**	**4.2000e-**	**0.0229**	**1.1400e-**	**0.0241**	**6.2000e-**	**1.0500e-**	**7.2500e-**		**35.8103**	**35.8103**	**8.5000e-**		**35.8283**

3.3 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.0788					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**14.3774**	**2.0058**	**1.8542**	**2.9700e-**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

2029 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
Apartments Low Rise	150.00	Dwelling Unit	8.00	150,000.00	429

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.15	11.00
tblLandUse	LotAcreage	9.38	8.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2029	12/28/2029	5	260	
2	Architectural Coating	Architectural Coating	12/1/2029	12/28/2029	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	124.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.890	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.890**	**2,545.8905**	**0.5975**		**2,558.4386**

1.75

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1569	0.9468	2.7414	5.1600e-	0.1574	0.0172	0.1746	0.0449	0.0158	0.0607		481.3255	481.3255	3.2800e-		481.3944
Worker	0.2358	0.2165	2.8835	0.0128	1.0186	7.5000e-	1.0261	0.2702	6.9600e-	0.2772		820.4403	820.4403	0.0283		821.0351
Total	**0.3927**	**1.1633**	**5.6249**	**0.0180**	**1.1760**	**0.0247**	**1.2007**	**0.3151**	**0.0228**	**0.3379**		**1,301.765**	**1,301.7658**	**0.0316**		**1,302.4295**

3.3 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	292.5844					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**292.7552**	**1.1455**	**1.8091**	**2.9700e-**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

293
11.9

Unmitigated Construction Off-Site

AC Re
10
250

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0437	0.5814	2.5900e-	0.2054	1.5100e-	0.2069	0.0545	1.4000e-	0.0559		165.4114	165.4114	5.7100e-		165.5313
Total	**0.0475**	**0.0437**	**0.5814**	**2.5900e-**	**0.2054**	**1.5100e-**	**0.2069**	**0.0545**	**1.4000e-**	**0.0559**		**165.4114**	**165.4114**	**5.7100e-**		**165.5313**

96%

####

2028 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	10.00	Dwelling Unit	1.00	10,000.00	29

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	0.63	1.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2028	5/19/2028	5	100	
2	Architectural Coating	Architectural Coating	5/20/2028	5/26/2028	5	5	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	6.00	226	0.29

Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	7	7.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3195	10.3614	12.4112	0.0220		0.3903	0.3903		0.3765	0.3765		1,993.080	1,993.0806	0.3240		1,999.8837
Total	**1.3195**	**10.3614**	**12.4112**	**0.0220**		**0.3903**	**0.3903**		**0.3765**	**0.3765**		**1,993.080**	**1,993.0806**	**0.3240**		**1,999.8837**

1.3401

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.6900e-	0.0398	0.1165	2.1000e-	6.5500e-	7.1000e-	7.2700e-	1.8700e-	6.6000e-	2.5200e-		19.9958	19.9958	1.4000e-		19.9987
Worker	0.0139	0.0127	0.1681	7.2000e-	0.0575	4.2000e-	0.0579	0.0153	3.9000e-	0.0156		46.6044	46.6044	1.6400e-		46.6388
Total	**0.0206**	**0.0524**	**0.2846**	**9.3000e-**	**0.0641**	**1.1300e-**	**0.0652**	**0.0171**	**1.0500e-**	**0.0182**		**66.6002**	**66.6002**	**1.7800e-**		**66.6375**

3.3 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.5725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**62.7434**	**1.1455**	**1.8091**	**2.9700e-**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

62.745
2.6758

Unmitigated Construction Off-Site

AC Redu
10
250
96%
4.00%

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	1.9800e-	1.8100e-	0.0240	1.0000e-	8.2100e-	6.0000e-	8.2800e-	2.1800e-	6.0000e-	2.2300e-		6.6578	6.6578	2.3000e-		6.6627
Total	**1.9800e-**	**1.8100e-**	**0.0240**	**1.0000e-**	**8.2100e-**	**6.0000e-**	**8.2800e-**	**2.1800e-**	**6.0000e-**	**2.2300e-**		**6.6578**	**6.6578**	**2.3000e-**		**6.6627**

2025 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	2.00	Dwelling Unit	2.00	3,600.00	6
Single Family Housing	5.00	Dwelling Unit	1.00	9,000.00	14
Condo/Townhouse	24.00	Dwelling Unit	3.00	24,000.00	69

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	0.65	2.00
tblLandUse	LotAcreage	1.62	1.00
tblLandUse	LotAcreage	1.50	3.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2025	11/18/2025	5	230	
2	Architectural Coating	Architectural Coating	11/19/2025	12/16/2025	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	20.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.890	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.890**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0219	0.1227	0.3808	6.4000e-	0.0196	2.1100e-	0.0218	5.5900e-	1.9400e-	7.5400e-		59.6128	59.6128	4.0000e-		59.6213
Worker	0.0449	0.0408	0.5347	2.0700e-	0.1643	1.1800e-	0.1655	0.0436	1.1000e-	0.0447		136.5321	136.5321	5.0500e-		136.6382
Total	**0.0667**	**0.1635**	**0.9155**	**2.7100e-**	**0.1839**	**3.2900e-**	**0.1872**	**0.0492**	**3.0400e-**	**0.0522**		**196.1449**	**196.1449**	**5.4500e-**		**196.2595**

3.3 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.2538					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**57.4247**	**1.1455**	**1.8091**	**2.9700e-**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	8.9700e-	8.1600e-	0.1069	4.1000e-	0.0329	2.4000e-	0.0331	8.7200e-	2.2000e-	8.9400e-		27.3064	27.3064	1.0100e-		27.3277
Total	**8.9700e-**	**8.1600e-**	**0.1069**	**4.1000e-**	**0.0329**	**2.4000e-**	**0.0331**	**8.7200e-**	**2.2000e-**	**8.9400e-**		**27.3064**	**27.3064**	**1.0100e-**		**27.3277**

2024 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	16.00	Dwelling Unit	3.00	28,800.00	46
Condo/Townhouse	24.00	Dwelling Unit	3.00	24,000.00	69

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	5.19	3.00
tblLandUse	LotAcreage	1.50	3.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2024	12/27/2024	5	260	
2	Architectural Coating	Architectural Coating	11/27/2024	12/24/2024	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	25.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774	16.1332	0.0268		0.6106	0.6106		0.5744	0.5744		2,545.115	2,545.1154	0.6009		2,557.7349
Total	**1.4653**	**13.3774**	**16.1332**	**0.0268**		**0.6106**	**0.6106**		**0.5744**	**0.5744**		**2,545.115**	**2,545.1154**	**0.6009**		**2,557.7349**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0385	0.2075	0.6654	1.0700e-	0.0327	3.4900e-	0.0362	9.3100e-	3.2100e-	0.0125		99.1287	99.1287	6.7000e-		99.1427
Worker	0.0586	0.0535	0.6980	2.5900e-	0.2054	1.4700e-	0.2068	0.0545	1.3600e-	0.0558		172.5426	172.5426	6.5200e-		172.6794
Total	**0.0972**	**0.2609**	**1.3633**	**3.6600e-**	**0.2381**	**4.9600e-**	**0.2430**	**0.0638**	**4.5700e-**	**0.0684**		**271.6713**	**271.6713**	**7.1900e-**		**271.8222**

3.3 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	96.6745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.7809
Total	**96.8553**	**1.2188**	**1.8101**	**2.9700e-**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.7809**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0117	0.0107	0.1396	5.2000e-	0.0411	2.9000e-	0.0414	0.0109	2.7000e-	0.0112		34.5085	34.5085	1.3000e-		34.5359
Total	**0.0117**	**0.0107**	**0.1396**	**5.2000e-**	**0.0411**	**2.9000e-**	**0.0414**	**0.0109**	**2.7000e-**	**0.0112**		**34.5085**	**34.5085**	**1.3000e-**		**34.5359**

2023 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	16.00	Dwelling Unit	3.00	28,800.00	46
Condo/Townhouse	48.00	Dwelling Unit	6.00	48,000.00	137

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	5.19	3.00
tblLandUse	LotAcreage	3.00	6.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2023	12/29/2023	5	260	
2	Architectural Coating	Architectural Coating	11/30/2023	12/27/2023	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	42.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557		2,544.626	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**		**2,544.626**	**2,544.6262**	**0.6044**		**2,557.3191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0555	0.2937	0.9614	1.4800e-	0.0457	4.8100e-	0.0505	0.0130	4.4300e-	0.0175		137.9825	137.9825	9.3000e-		138.0019
Worker	0.1036	0.0948	1.2319	4.3500e-	0.3450	2.4600e-	0.3475	0.0915	2.2800e-	0.0938		293.4800	293.4800	0.0114		293.7184
Total	**0.1591**	**0.3885**	**2.1934**	**5.8300e-**	**0.3908**	**7.2700e-**	**0.3980**	**0.1045**	**6.7100e-**	**0.1113**		**431.4625**	**431.4625**	**0.0123**		**431.7203**

3.3 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.2180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8017
Total	**134.4097**	**1.3030**	**1.8111**	**2.9700e-**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0197	0.0181	0.2347	8.3000e-	0.0657	4.7000e-	0.0662	0.0174	4.3000e-	0.0179		55.9010	55.9010	2.1600e-		55.9464
Total	**0.0197**	**0.0181**	**0.2347**	**8.3000e-**	**0.0657**	**4.7000e-**	**0.0662**	**0.0174**	**4.3000e-**	**0.0179**		**55.9010**	**55.9010**	**2.1600e-**		**55.9464**

2022 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	16.00	Dwelling Unit	3.00	28,800.00	46
Condo/Townhouse	48.00	Dwelling Unit	6.00	48,000.00	137

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	5.19	3.00
tblLandUse	LotAcreage	3.00	6.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/30/2022	12/25/2022	5	20	
2	Building Construction	Building Construction	1/1/2022	12/30/2022	5	260	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	42.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.2180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057
Total	**134.4602**	**1.6838**	**1.8314**	**2.9700e-**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0232	0.0217	0.2803	8.3000e-	0.0657	4.7000e-	0.0662	0.0174	4.3000e-	0.0179		58.4988	58.4988	2.4600e-		58.5505
Total	**0.0232**	**0.0217**	**0.2803**	**8.3000e-**	**0.0657**	**4.7000e-**	**0.0662**	**0.0174**	**4.3000e-**	**0.0179**		**58.4988**	**58.4988**	**2.4600e-**		**58.5505**

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581		2,543.749	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**		**2,543.749**	**2,543.7497**	**0.6085**		**2,556.5286**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0589	0.3217	1.0127	1.4800e-	0.0457	5.0200e-	0.0507	0.0130	4.6200e-	0.0176		137.6243	137.6243	9.7000e-		137.6448
Worker	0.1092	0.1004	1.3036	4.3500e-	0.3450	2.4500e-	0.3475	0.0915	2.2800e-	0.0938		297.5500	297.5500	0.0118		297.7980
Total	**0.1681**	**0.4221**	**2.3163**	**5.8300e-**	**0.3907**	**7.4700e-**	**0.3982**	**0.1045**	**6.9000e-**	**0.1114**		**435.1743**	**435.1743**	**0.0128**		**435.4427**

2021 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	10.00	Dwelling Unit	7.00	18,000.00	29
Condo/Townhouse	62.00	Dwelling Unit	7.00	62,000.00	177

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	3.25	7.00
tblLandUse	LotAcreage	3.88	7.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/20/2021	12/15/2021	5	20	
2	Building Construction	Building Construction	1/1/2021	12/30/2021	5	260	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	50.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	139.2238					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**139.5561**	**2.1850**	**1.8681**	**2.9700e-**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

139.6
5.941

Unmitigated Construction Off-Site

AC Rec
10
250
96%
4.00%

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0393	0.0364	0.4698	1.0500e-	0.0822	6.3000e-	0.0828	0.0218	5.8000e-	0.0224		82.8644	82.8644	3.9000e-		82.9464
Total	**0.0393**	**0.0364**	**0.4698**	**1.0500e-**	**0.0822**	**6.3000e-**	**0.0828**	**0.0218**	**5.8000e-**	**0.0224**		**82.8644**	**82.8644**	**3.9000e-**		**82.9464**

3.3 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.781	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.781**	**2,542.7817**	**0.6126**		**2,555.6462**

2.103

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0728	0.4088	1.2218	1.6900e-	0.0522	5.8100e-	0.0580	0.0148	5.3500e-	0.0202		156.9081	156.9081	1.0900e-		156.9309
Worker	0.1372	0.1271	1.6456	5.1800e-	0.4107	2.9100e-	0.4137	0.1090	2.7000e-	0.1117		359.6239	359.6239	0.0147		359.9321
Total	**0.2100**	**0.5359**	**2.8674**	**6.8700e-**	**0.4629**	**8.7200e-**	**0.4716**	**0.1238**	**8.0500e-**	**0.1318**		**516.5319**	**516.5319**	**0.0158**		**516.8629**

2020 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	40.00	Dwelling Unit	7.00	72,000.00	114
Condo/Townhouse	84.00	Dwelling Unit	10.00	84,000.00	240
Apartments Low Rise	115.00	Dwelling Unit	6.00	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	12.99	7.00
tblLandUse	LotAcreage	5.25	10.00
tblLandUse	LotAcreage	7.19	6.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2020	12/29/2020	5	260	
2	Architectural Coating	Architectural Coating	11/10/2020	12/28/2020	5	35	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	159.00	26.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.479	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.479**	**2,542.4799**	**0.6194**		**2,555.4880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2467	1.6136	4.1562	5.4700e-	0.1693	0.0216	0.1909	0.0482	0.0198	0.0680		507.3307	507.3307	3.5400e-		507.4049
Worker	0.4618	0.4320	5.5715	0.0165	1.3062	9.2600e-	1.3154	0.3465	8.5800e-	0.3550		1,162.664	1,162.6644	0.0489		1,163.6919
Total	**0.7085**	**2.0456**	**9.7277**	**0.0220**	**1.4755**	**0.0308**	**1.5063**	**0.3946**	**0.0284**	**0.4230**		**1,669.995**	**1,669.9950**	**0.0525**		**1,671.0968**

3.3 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	250.2900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057
Total	**250.5322**	**1.6838**	**1.8314**	**2.9700e-**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0929	0.0869	1.1213	3.3200e-	0.2629	1.8600e-	0.2647	0.0697	1.7300e-	0.0715		233.9954	233.9954	9.8500e-		234.2021
Total	**0.0929**	**0.0869**	**1.1213**	**3.3200e-**	**0.2629**	**1.8600e-**	**0.2647**	**0.0697**	**1.7300e-**	**0.0715**		**233.9954**	**233.9954**	**9.8500e-**		**234.2021**

2019 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14
Single Family Housing	20.00	Dwelling Unit	4.00	36,000.00	57
Condo/Townhouse	20.00	Dwelling Unit	2.00	20,000.00	57
Apartments Low Rise	115.00	Dwelling Unit	6.00	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.62	6.00
tblLandUse	LotAcreage	6.49	4.00
tblLandUse	LotAcreage	1.25	2.00
tblLandUse	LotAcreage	7.19	6.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2019	12/2/2019	5	240	
2	Architectural Coating	Architectural Coating	12/3/2019	12/30/2019	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	106.00	17.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.761	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.761**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1707	1.2451	2.8260	3.5500e-	0.1105	0.0163	0.1268	0.0314	0.0150	0.0464		335.9199	335.9199	2.4100e-		335.9704
Worker	0.3321	0.3121	4.0203	0.0110	0.8708	6.2200e-	0.8770	0.2310	5.7600e-	0.2367		806.7963	806.7963	0.0346		807.5232
Total	**0.5028**	**1.5572**	**6.8463**	**0.0145**	**0.9812**	**0.0225**	**1.0037**	**0.2624**	**0.0207**	**0.2831**		**1,142.716**	**1,142.7161**	**0.0370**		**1,143.4936**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	281.5763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**281.8427**	**1.8354**	**1.8413**	**2.9700e-**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0618	0.7965	2.1800e-	0.1725	1.2300e-	0.1737	0.0458	1.1400e-	0.0469		159.8370	159.8370	6.8600e-		159.9810
Total	**0.0658**	**0.0618**	**0.7965**	**2.1800e-**	**0.1725**	**1.2300e-**	**0.1737**	**0.0458**	**1.1400e-**	**0.0469**		**159.8370**	**159.8370**	**6.8600e-**		**159.9810**

2030 Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	140.00	Dwelling Unit	7.00	140,000.00	400

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	8.75	7.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2030	11/18/2030	5	230	
2	Architectural Coating	Architectural Coating	11/19/2030	12/16/2030	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	226	0.29

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Building Construction	9	101.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.830	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.830**	**2,884.8300**	**0.1158**		**2,887.2617**

1.5841

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0959	0.5865	1.6793	3.2300e-	0.0984	0.0108	0.1092	0.0281	9.9100e-	0.0380		301.0841	301.0841	2.0600e-		301.1273
Worker	0.1841	0.1701	2.2794	0.0105	0.8297	6.1200e-	0.8358	0.2201	5.6800e-	0.2258		664.6920	664.6920	0.0226		665.1657
Total	**0.2800**	**0.7566**	**3.9586**	**0.0137**	**0.9281**	**0.0169**	**0.9450**	**0.2481**	**0.0156**	**0.2637**		**965.7761**	**965.7761**	**0.0246**		**966.2930**

3.3 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	219.0038					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.6873
Total	**219.1345**	**0.8563**	**1.7977**	**2.9700e-**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.6873**

219.17
8.9275

Unmitigated Construction Off-Site

AC Red
10
250
96%
4.00%

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0365	0.0337	0.4514	2.0700e-	0.1643	1.2100e-	0.1655	0.0436	1.1300e-	0.0447		131.6222	131.6222	4.4700e-		131.7160
Total	**0.0365**	**0.0337**	**0.4514**	**2.0700e-**	**0.1643**	**1.2100e-**	**0.1655**	**0.0436**	**1.1300e-**	**0.0447**		**131.6222**	**131.6222**	**4.4700e-**		**131.7160**

Pedregal Mult-Family In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	200.00	Dwelling Unit	11.00	200,000.00	572

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2028 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	75.00	11.00
tblLandUse	LotAcreage	12.50	11.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2028	1/14/2028	5	10	
2	Grading	Grading	1/15/2028	2/25/2028	5	30	
3	Underground Utilties	Trenching	2/26/2028	7/12/2028	5	98	
4	Paving	Paving	7/13/2028	8/9/2028	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Scrapers	2	8.00	361	0.48
Underground Utilties	Excavators	4	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Underground Utilties	Rubber Tired Loaders	3	8.00	199	0.36

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilties	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.5083	23.5257	24.8879	0.0392		1.0293	1.0293		0.9470	0.9470		3,793.840	3,793.8403	1.2270		3,819.6074
Total	**2.5083**	**23.5257**	**24.8879**	**0.0392**	**18.0663**	**1.0293**	**19.0956**	**9.9307**	**0.9470**	**10.8776**		**3,793.840**	**3,793.8403**	**1.2270**		**3,819.6074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0326	0.4322	1.8600e-	0.1479	1.0800e-	0.1490	0.0392	1.0100e-	0.0402		119.8400	119.8400	4.2100e-		119.9284
Total	**0.0357**	**0.0326**	**0.4322**	**1.8600e-**	**0.1479**	**1.0800e-**	**0.1490**	**0.0392**	**1.0100e-**	**0.0402**		**119.8400**	**119.8400**	**4.2100e-**		**119.9284**

3.3 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4109	0.0000	6.4109	3.3522	0.0000	3.3522			0.0000			0.0000
Off-Road	3.0022	27.2606	31.3515	0.0618		1.1867	1.1867		1.0918	1.0918		5,982.352	5,982.3526	1.9348		6,022.9837
Total	**3.0022**	**27.2606**	**31.3515**	**0.0618**	**6.4109**	**1.1867**	**7.5976**	**3.3522**	**1.0918**	**4.4440**		**5,982.352**	**5,982.3526**	**1.9348**		**6,022.9837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0397	0.0362	0.4802	2.0700e-	0.1643	1.2000e-	0.1655	0.0436	1.1200e-	0.0447		133.1556	133.1556	4.6800e-		133.2537
Total	**0.0397**	**0.0362**	**0.4802**	**2.0700e-**	**0.1643**	**1.2000e-**	**0.1655**	**0.0436**	**1.1200e-**	**0.0447**		**133.1556**	**133.1556**	**4.6800e-**		**133.2537**

3.4 Underground Utilties - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3645	10.5289	17.7837	0.0398		0.4314	0.4314		0.3969	0.3969		3,852.249	3,852.2493	1.2459		3,878.4131
Total	**1.3645**	**10.5289**	**17.7837**	**0.0398**		**0.4314**	**0.4314**		**0.3969**	**0.3969**		**3,852.249**	**3,852.2493**	**1.2459**		**3,878.4131**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3000e-	2.4300e-	8.3900e-	1.0000e-	3.4000e-	5.0000e-	3.9000e-	9.0000e-	4.0000e-	1.4000e-		1.1808	1.1808	1.0000e-		1.1810
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0326	0.4322	1.8600e-	0.1479	1.0800e-	0.1490	0.0392	1.0100e-	0.0402		119.8400	119.8400	4.2100e-		119.9284
Total	**0.0360**	**0.0350**	**0.4406**	**1.8700e-**	**0.1482**	**1.1300e-**	**0.1493**	**0.0393**	**1.0500e-**	**0.0404**		**121.0208**	**121.0208**	**4.2200e-**		**121.1094**

3.5 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.796	2,159.7967	0.6985		2,174.4656
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8973**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.796**	**2,159.7967**	**0.6985**		**2,174.4656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0297	0.0272	0.3602	1.5500e-	0.1232	9.0000e-	0.1241	0.0327	8.4000e-	0.0335		99.8667	99.8667	3.5100e-		99.9403
Total	**0.0297**	**0.0272**	**0.3602**	**1.5500e-**	**0.1232**	**9.0000e-**	**0.1241**	**0.0327**	**8.4000e-**	**0.0335**		**99.8667**	**99.8667**	**3.5100e-**		**99.9403**

Pedregal Single Family Custom In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	37.00	Dwelling Unit	45.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - Scaled days to 2016-2017 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	145.00
tblConstructionPhase	NumDays	55.00	107.00
tblConstructionPhase	NumDays	30.00	58.00
tblGrading	AcresOfGrading	362.50	45.00
tblLandUse	LotAcreage	12.01	45.00
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.45
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Excavators
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	VendorTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2016	3/22/2016	5	58	
2	Grading	Grading	3/23/2016	10/11/2016	5	145	
3	Underground Utilities	Trenching	10/12/2016	2/24/2017	5	98	
4	Paving	Paving	2/25/2017	7/25/2017	5	107	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Underground Utilities	Rubber Tired Loaders	3	8.00	199	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Underground Utilities	Excavators	4	8.00	162	0.45

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	7	18.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000

Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.005	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.005**	**4,065.0053**	**1.2262**		**4,090.7544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0806	0.0738	0.9563	1.8900e-	0.1479	1.1800e-	0.1491	0.0392	1.0800e-	0.0403		155.2844	155.2844	7.7500e-		155.4472
Total	**0.0806**	**0.0738**	**0.9563**	**1.8900e-**	**0.1479**	**1.1800e-**	**0.1491**	**0.0392**	**1.0800e-**	**0.0403**		**155.2844**	**155.2844**	**7.7500e-**		**155.4472**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3512	0.0000	6.3512	3.3458	0.0000	3.3458			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.980	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.3512**	**3.5842**	**9.9355**	**3.3458**	**3.2975**	**6.6433**		**6,414.980**	**6,414.9807**	**1.9350**		**6,455.6154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0895	0.0820	1.0625	2.1000e-	0.1643	1.3100e-	0.1656	0.0436	1.2000e-	0.0448		172.5383	172.5383	8.6100e-		172.7191
Total	**0.0895**	**0.0820**	**1.0625**	**2.1000e-**	**0.1643**	**1.3100e-**	**0.1656**	**0.0436**	**1.2000e-**	**0.0448**		**172.5383**	**172.5383**	**8.6100e-**		**172.7191**

3.4 Underground Utilities - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3708	40.9157	21.8972	0.0440		1.7124	1.7124		1.5754	1.5754		4,567.027	4,567.0278	1.3776		4,595.9569
Total	**3.3708**	**40.9157**	**21.8972**	**0.0440**		**1.7124**	**1.7124**		**1.5754**	**1.5754**		**4,567.027**	**4,567.0278**	**1.3776**		**4,595.9569**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0271	0.1801	0.3996	4.1000e-	0.0129	2.7600e-	0.0157	3.6700e-	2.5400e-	6.2100e-		40.2789	40.2789	3.3000e-		40.2858
Worker	0.0806	0.0738	0.9563	1.8900e-	0.1479	1.1800e-	0.1491	0.0392	1.0800e-	0.0403		155.2844	155.2844	7.7500e-		155.4472
Total	**0.1077**	**0.2539**	**1.3559**	**2.3000e-**	**0.1608**	**3.9400e-**	**0.1647**	**0.0429**	**3.6200e-**	**0.0465**		**195.5633**	**195.5633**	**8.0800e-**		**195.7330**

3.4 Underground Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1677	37.5508	21.7261	0.0440		1.5672	1.5672		1.4418	1.4418		4,496.009	4,496.0093	1.3776		4,524.9382
Total	**3.1677**	**37.5508**	**21.7261**	**0.0440**		**1.5672**	**1.5672**		**1.4418**	**1.4418**		**4,496.009**	**4,496.0093**	**1.3776**		**4,524.9382**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0244	0.1669	0.3785	4.1000e-	0.0130	2.3900e-	0.0154	3.6800e-	2.2000e-	5.8800e-		40.1602	40.1602	3.1000e-		40.1667
Worker	0.0708	0.0655	0.8456	1.8900e-	0.1479	1.1300e-	0.1490	0.0392	1.0400e-	0.0403		149.1559	149.1559	7.0300e-		149.3035
Total	**0.0952**	**0.2324**	**1.2241**	**2.3000e-**	**0.1608**	**3.5200e-**	**0.1644**	**0.0429**	**3.2400e-**	**0.0461**		**189.3161**	**189.3161**	**7.3400e-**		**189.4701**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.058	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.058**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0546	0.7046	1.5700e-	0.1232	9.4000e-	0.1242	0.0327	8.7000e-	0.0336		124.2966	124.2966	5.8600e-		124.4196
Total	**0.0590**	**0.0546**	**0.7046**	**1.5700e-**	**0.1232**	**9.4000e-**	**0.1242**	**0.0327**	**8.7000e-**	**0.0336**		**124.2966**	**124.2966**	**5.8600e-**		**124.4196**

Trails-Wetlands

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
Land Use - Acres from PD
Construction Phase - -
Off-road Equipment - -
Off-road Equipment - -

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.4713	4.2592	5.1901	8.0800e-	0.1479	0.2673	0.4152	0.0392	0.2459	0.2851	0.0000	733.1594	733.1594	0.2001	0.0000	737.3613
2021	0.4239	3.8374	5.1129	8.0800e-	0.1479	0.2246	0.3725	0.0392	0.2066	0.2459	0.0000	731.2647	731.2647	0.1999	0.0000	735.4630
2024	0.3301	2.9350	4.9737	8.1000e-	0.1479	0.1340	0.2819	0.0392	0.1233	0.1625	0.0000	727.7641	727.7641	0.1999	0.0000	731.9618
2025	0.3046	2.7069	4.9405	8.1100e-	0.1479	0.1093	0.2571	0.0392	0.1005	0.1398	0.0000	726.9906	726.9906	0.1999	0.0000	731.1891
Total	**2.2533**	**20.2448**	**30.2425**	**0.0486**	**0.8872**	**1.0691**	**1.9563**	**0.2353**	**0.9836**	**1.2190**	**0.0000**	**4,378.108**	**4,378.1083**	**1.1997**	**0.0000**	**4,403.3015**

6 acres of roads north of Serrano Parkway

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving

Land Use - Acres from PD - Changed on 8/26/2015. Revisions to phasing table by Alice Tackett, from 10 acres to 12 acres. Assuming 6 acres in 2016-2017 and 6 acres in 2019, per previous schedule.

Construction Phase - 2019 schedule

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Paving	Paving	6/1/2019	7/12/2019	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9499**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0442	0.5689	1.5500e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		114.1693	114.1693	4.9000e-003		114.2721
Total	**0.0470**	**0.0442**	**0.5689**	**1.5500e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**114.1693**	**114.1693**	**4.9000e-003**		**114.2721**

6 acres of roads

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving

Land Use - Acres from PD - Changed on 8/26/2015. Revisions to phasing table by Alice Tackett, from 10 acres to 12 acres. Assuming 6 acres in 2016-2017 and 6 acres in 2019, per previous schedule.

Construction Phase - 2016-2017 schedule

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Paving	Paving	12/15/2016	1/25/2017	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.6138**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0671	0.0615	0.7969	1.5700e-003	0.1232	9.9000e-004	0.1242	0.0327	9.0000e-004	0.0336		129.4037	129.4037	6.4600e-003		129.5393
Total	**0.0671**	**0.0615**	**0.7969**	**1.5700e-003**	**0.1232**	**9.9000e-004**	**0.1242**	**0.0327**	**9.0000e-004**	**0.0336**		**129.4037**	**129.4037**	**6.4600e-003**		**129.5393**

3.2 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4314**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0546	0.7046	1.5700e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		124.2966	124.2966	5.8600e-003		124.4196
Total	**0.0590**	**0.0546**	**0.7046**	**1.5700e-003**	**0.1232**	**9.4000e-004**	**0.1242**	**0.0327**	**8.7000e-004**	**0.0336**		**124.2966**	**124.2966**	**5.8600e-003**		**124.4196**

Village Park

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	15.00	Acre	15.00	653,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Acres from PD

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	250.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2022	5/16/2023	5	250	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.2212	32.6496	29.9722	0.0391		1.5473	1.5473		1.4236	1.4236		3,791.755	3,791.7552	1.2263		3,817.5081
Total	**3.2212**	**32.6496**	**29.9722**	**0.0391**	**18.0663**	**1.5473**	**19.6136**	**9.9307**	**1.4236**	**11.3542**		**3,791.755**	**3,791.7552**	**1.2263**		**3,817.5081**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0468	0.0430	0.5587	1.8600e-	0.1479	1.0500e-	0.1489	0.0392	9.8000e-	0.0402		127.5214	127.5214	5.0600e-		127.6277
Total	**0.0468**	**0.0430**	**0.5587**	**1.8600e-**	**0.1479**	**1.0500e-**	**0.1489**	**0.0392**	**9.8000e-**	**0.0402**		**127.5214**	**127.5214**	**5.0600e-**		**127.6277**

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.0157	29.9342	28.8193	0.0392		1.3907	1.3907		1.2795	1.2795		3,793.953	3,793.9535	1.2270		3,819.7214
Total	**3.0157**	**29.9342**	**28.8193**	**0.0392**	**18.0663**	**1.3907**	**19.4570**	**9.9307**	**1.2795**	**11.2102**		**3,793.953**	**3,793.9535**	**1.2270**		**3,819.7214**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0444	0.0406	0.5280	1.8600e-	0.1479	1.0500e-	0.1489	0.0392	9.8000e-	0.0402		125.7772	125.7772	4.8600e-		125.8793
Total	**0.0444**	**0.0406**	**0.5280**	**1.8600e-**	**0.1479**	**1.0500e-**	**0.1489**	**0.0392**	**9.8000e-**	**0.0402**		**125.7772**	**125.7772**	**4.8600e-**		**125.8793**

Westside - Condo - Townhome North In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	84.00	Dwelling Unit	10.00	84,000.00	240

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2019 schedule
Off-road Equipment - Equipment from client

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	50.00	10.00
tblLandUse	LotAcreage	5.25	10.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/14/2019	5	10	
2	Grading	Grading	1/15/2019	2/11/2019	5	20	
3	Underground Utilities	Trenching	2/12/2019	6/27/2019	5	98	
4	Paving	Paving	6/28/2019	7/25/2019	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Excavators	4	8.00	162	0.38
Underground Utilities	Rubber Tired Loaders	3	8.00	199	0.36
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784		3,876.723	3,876.7233	1.2266		3,902.4810
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**		**3,876.723**	**3,876.7233**	**1.2266**		**3,902.4810**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0530	0.6827	1.8700e-	0.1479	1.0600e-	0.1489	0.0392	9.8000e-	0.0402		137.0031	137.0031	5.8800e-		137.1266
Total	**0.0564**	**0.0530**	**0.6827**	**1.8700e-**	**0.1479**	**1.0600e-**	**0.1489**	**0.0392**	**9.8000e-**	**0.0402**		**137.0031**	**137.0031**	**5.8800e-**		**137.1266**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045		6,111.312	6,111.3121	1.9336		6,151.9167
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.5523**	**2.5049**	**9.0573**	**3.3675**	**2.3045**	**5.6720**		**6,111.312**	**6,111.3121**	**1.9336**		**6,151.9167**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0627	0.0589	0.7586	2.0700e-	0.1643	1.1700e-	0.1655	0.0436	1.0900e-	0.0447		152.2257	152.2257	6.5300e-		152.3629
Total	**0.0627**	**0.0589**	**0.7586**	**2.0700e-**	**0.1643**	**1.1700e-**	**0.1655**	**0.0436**	**1.0900e-**	**0.0447**		**152.2257**	**152.2257**	**6.5300e-**		**152.3629**

3.4 Underground Utilities - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2533	25.3188	18.4120	0.0398		1.0114	1.0114		0.9305	0.9305		3,935.679	3,935.6794	1.2452		3,961.8287
Total	**2.2533**	**25.3188**	**18.4120**	**0.0398**		**1.0114**	**1.0114**		**0.9305**	**0.9305**		**3,935.679**	**3,935.6794**	**1.2452**		**3,961.8287**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0000e-	4.1200e-	0.0120	1.0000e-	3.4000e-	4.0000e-	3.8000e-	9.0000e-	4.0000e-	1.3000e-		1.1373	1.1373	1.0000e-		1.1375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0530	0.6827	1.8700e-	0.1479	1.0600e-	0.1489	0.0392	9.8000e-	0.0402		137.0031	137.0031	5.8800e-		137.1266
Total	**0.0569**	**0.0571**	**0.6947**	**1.8800e-**	**0.1482**	**1.1000e-**	**0.1493**	**0.0393**	**1.0200e-**	**0.0403**		**138.1405**	**138.1405**	**5.8900e-**		**138.2641**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.973**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0442	0.5689	1.5500e-	0.1232	8.8000e-	0.1241	0.0327	8.1000e-	0.0335		114.1693	114.1693	4.9000e-		114.2721
Total	**0.0470**	**0.0442**	**0.5689**	**1.5500e-**	**0.1232**	**8.8000e-**	**0.1241**	**0.0327**	**8.1000e-**	**0.0335**		**114.1693**	**114.1693**	**4.9000e-**		**114.2721**

Westside - Single Family Detached Product In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	123.00	Dwelling Unit	23.00	221,400.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2017-2018 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	2/9/2018	2/8/2018
tblConstructionPhase	PhaseStartDate	9/27/2017	9/26/2017
tblGrading	AcresOfGrading	87.50	23.00
tblLandUse	LotAcreage	39.94	23.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Underground Utiltiies
tblOffRoadEquipment	PhaseName		Underground Utiltiies
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/26/2017	8/8/2017	5	10	
2	Grading	Grading	8/9/2017	9/26/2017	5	35	
3	Underground Utiltiies	Trenching	9/26/2017	2/8/2018	5	98	
4	Paving	Paving	2/9/2018	3/8/2018	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utiltiies	Excavators	4	8.00	162	0.38
Underground Utiltiies	Rubber Tired Loaders	3	8.00	199	0.36
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utiltiies	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.085	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.085**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0708	0.0655	0.8456	1.8900e-	0.1479	1.1300e-	0.1490	0.0392	1.0400e-	0.0403		149.1559	149.1559	7.0300e-		149.3035
Total	**0.0708**	**0.0655**	**0.8456**	**1.8900e-**	**0.1479**	**1.1300e-**	**0.1490**	**0.0392**	**1.0400e-**	**0.0403**		**149.1559**	**149.1559**	**7.0300e-**		**149.3035**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7190	0.0000	6.7190	3.3855	0.0000	3.3855			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.369	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.7190**	**3.3172**	**10.0362**	**3.3855**	**3.0518**	**6.4373**		**6,313.369**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0787	0.0727	0.9395	2.1000e-	0.1643	1.2600e-	0.1656	0.0436	1.1500e-	0.0447		165.7288	165.7288	7.8100e-		165.8927
Total	**0.0787**	**0.0727**	**0.9395**	**2.1000e-**	**0.1643**	**1.2600e-**	**0.1656**	**0.0436**	**1.1500e-**	**0.0447**		**165.7288**	**165.7288**	**7.8100e-**		**165.8927**

3.4 Underground Utiltiies - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8616	34.0904	19.0561	0.0396		1.4045	1.4045		1.2921	1.2921		4,044.964	4,044.9649	1.2394		4,070.9917
Total	**2.8616**	**34.0904**	**19.0561**	**0.0396**		**1.4045**	**1.4045**		**1.2921**	**1.2921**		**4,044.964**	**4,044.9649**	**1.2394**		**4,070.9917**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7000e-	4.6100e-	0.0133	1.0000e-	4.5000e-	5.0000e-	5.0000e-	1.2000e-	4.0000e-	1.6000e-		1.1382	1.1382	1.0000e-		1.1383
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0708	0.0655	0.8456	1.8900e-	0.1479	1.1300e-	0.1490	0.0392	1.0400e-	0.0403		149.1559	149.1559	7.0300e-		149.3035

Total	**0.0714**	**0.0701**	**0.8589**	**1.9000e-**	**0.1483**	**1.1800e-**	**0.1495**	**0.0393**	**1.0800e-**	**0.0404**		**150.2941**	**150.2941**	**7.0400e-**		**150.4418**

3.4 Underground Utiltiies - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4499	28.3570	18.5381	0.0396		1.1469	1.1469		1.0552	1.0552		3,980.369	3,980.3697	1.2391		4,006.3917
Total	**2.4499**	**28.3570**	**18.5381**	**0.0396**		**1.1469**	**1.1469**		**1.0552**	**1.0552**		**3,980.369**	**3,980.3697**	**1.2391**		**4,006.3917**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.2000e-	4.3200e-	0.0124	1.0000e-	9.8000e-	4.0000e-	1.0200e-	2.5000e-	4.0000e-	2.9000e-		1.1323	1.1323	1.0000e-		1.1325
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0584	0.7513	1.8900e-	0.1479	1.0900e-	0.1490	0.0392	1.0100e-	0.0402		143.5236	143.5236	6.4100e-		143.6583
Total	**0.0628**	**0.0627**	**0.7637**	**1.9000e-**	**0.1489**	**1.1300e-**	**0.1500**	**0.0395**	**1.0500e-**	**0.0405**		**144.6559**	**144.6559**	**6.4200e-**		**144.7907**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.269	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.269**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0519	0.0487	0.6261	1.5700e-	0.1232	9.1000e-	0.1241	0.0327	8.4000e-	0.0335		119.6030	119.6030	5.3500e-		119.7152
Total	**0.0519**	**0.0487**	**0.6261**	**1.5700e-**	**0.1232**	**9.1000e-**	**0.1241**	**0.0327**	**8.4000e-**	**0.0335**		**119.6030**	**119.6030**	**5.3500e-**		**119.7152**

Westside Mult-Familv South In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2018 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	75.00	13.00
tblLandUse	LotAcreage	14.38	13.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	1/12/2018	5	10	
2	Grading	Grading	1/13/2018	2/23/2018	5	30	
3	Underground Utilties	Trenching	2/24/2018	7/11/2018	5	98	
4	Paving	Paving	7/12/2018	8/8/2018	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilties	Rubber Tired Loaders	3	8.00	199	0.36
Underground Utilties	Excavators	4	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilties	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.2921	45.6088	36.2346	0.0391		2.3654	2.3654		2.1762	2.1762		3,939.773	3,939.7731	1.2265		3,965.5297
Total	**4.2921**	**45.6088**	**36.2346**	**0.0391**	**18.0663**	**2.3654**	**20.4317**	**9.9307**	**2.1762**	**12.1069**		**3,939.773**	**3,939.7731**	**1.2265**		**3,965.5297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0584	0.7513	1.8900e-	0.1479	1.0900e-	0.1490	0.0392	1.0100e-	0.0402		143.5236	143.5236	6.4100e-		143.6583
Total	**0.0623**	**0.0584**	**0.7513**	**1.8900e-**	**0.1479**	**1.0900e-**	**0.1490**	**0.0392**	**1.0100e-**	**0.0402**		**143.5236**	**143.5236**	**6.4100e-**		**143.6583**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4816	0.0000	6.4816	3.3599	0.0000	3.3599			0.0000			0.0000
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650		6,212.804	6,212.8042	1.9341		6,253.4209
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.4816**	**2.7880**	**9.2697**	**3.3599**	**2.5650**	**5.9248**		**6,212.804**	**6,212.8042**	**1.9341**		**6,253.4209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0649	0.8347	2.1000e-	0.1643	1.2100e-	0.1655	0.0436	1.1200e-	0.0447		159.4706	159.4706	7.1300e-		159.6203
Total	**0.0692**	**0.0649**	**0.8347**	**2.1000e-**	**0.1643**	**1.2100e-**	**0.1655**	**0.0436**	**1.1200e-**	**0.0447**		**159.4706**	**159.4706**	**7.1300e-**		**159.6203**

3.4 Underground Utilties - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4622	28.4988	18.6308	0.0398		1.1526	1.1526		1.0604	1.0604		4,000.271	4,000.2716	1.2453		4,026.4237
Total	**2.4622**	**28.4988**	**18.6308**	**0.0398**		**1.1526**	**1.1526**		**1.0604**	**1.0604**		**4,000.271**	**4,000.2716**	**1.2453**		**4,026.4237**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.2000e-	4.3200e-	0.0124	1.0000e-	3.4000e-	4.0000e-	3.8000e-	9.0000e-	4.0000e-	1.3000e-		1.1323	1.1323	1.0000e-		1.1325
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0584	0.7513	1.8900e-	0.1479	1.0900e-	0.1490	0.0392	1.0100e-	0.0402		143.5236	143.5236	6.4100e-		143.6583
Total	**0.0628**	**0.0627**	**0.7637**	**1.9000e-**	**0.1482**	**1.1300e-**	**0.1493**	**0.0393**	**1.0500e-**	**0.0404**		**144.6559**	**144.6559**	**6.4200e-**		**144.7907**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.269	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.269**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0519	0.0487	0.6261	1.5700e-	0.1232	9.1000e-	0.1241	0.0327	8.4000e-	0.0335		119.6030	119.6030	5.3500e-		119.7152
Total	**0.0519**	**0.0487**	**0.6261**	**1.5700e-**	**0.1232**	**9.1000e-**	**0.1241**	**0.0327**	**8.4000e-**	**0.0335**		**119.6030**	**119.6030**	**5.3500e-**		**119.7152**

Westside Mult-Familv North In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	100.00	Dwelling Unit	5.00	100,000.00	286

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2027 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	4.00	5.00
tblLandUse	LotAcreage	6.25	5.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2027	1/7/2027	5	5	
2	Grading	Grading	1/8/2027	1/19/2027	5	8	
3	Underground Utiltiies	Trenching	1/20/2027	6/4/2027	5	98	
4	Paving	Paving	6/5/2027	6/30/2027	5	18	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Underground Utiltiies	Excavators	4	8.00	162	0.38
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Underground Utiltiies	Rubber Tired Loaders	3	8.00	199	0.36
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utiltiies	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.5083	23.5257	24.8879	0.0392		1.0293	1.0293		0.9470	0.9470		3,793.840	3,793.8403	1.2270		3,819.6074
Total	**2.5083**	**23.5257**	**24.8879**	**0.0392**	**18.0663**	**1.0293**	**19.0956**	**9.9307**	**0.9470**	**10.8776**		**3,793.840**	**3,793.8403**	**1.2270**		**3,819.6074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0339	0.4466	1.8600e-	0.1479	1.0800e-	0.1489	0.0392	1.0000e-	0.0402		120.7075	120.7075	4.3100e-		120.7980
Total	**0.0371**	**0.0339**	**0.4466**	**1.8600e-**	**0.1479**	**1.0800e-**	**0.1489**	**0.0392**	**1.0000e-**	**0.0402**		**120.7075**	**120.7075**	**4.3100e-**		**120.7980**

3.3 Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6849	0.0000	6.6849	3.3818	0.0000	3.3818			0.0000			0.0000
Off-Road	1.6413	14.8099	19.6541	0.0298		0.6861	0.6861		0.6312	0.6312		2,883.114	2,883.1144	0.9325		2,902.6960
Total	**1.6413**	**14.8099**	**19.6541**	**0.0298**	**6.6849**	**0.6861**	**7.3710**	**3.3818**	**0.6312**	**4.0130**		**2,883.114**	**2,883.1144**	**0.9325**		**2,902.6960**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0310	0.0282	0.3722	1.5500e-	0.1232	9.0000e-	0.1241	0.0327	8.3000e-	0.0335		100.5896	100.5896	3.5900e-		100.6650
Total	**0.0310**	**0.0282**	**0.3722**	**1.5500e-**	**0.1232**	**9.0000e-**	**0.1241**	**0.0327**	**8.3000e-**	**0.0335**		**100.5896**	**100.5896**	**3.5900e-**		**100.6650**

3.4 Underground Utiltiies - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3645	10.5289	17.7837	0.0398		0.4314	0.4314		0.3969	0.3969		3,852.249	3,852.2493	1.2459		3,878.4131
Total	**1.3645**	**10.5289**	**17.7837**	**0.0398**		**0.4314**	**0.4314**		**0.3969**	**0.3969**		**3,852.249**	**3,852.2493**	**1.2459**		**3,878.4131**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.3000e-	2.4500e-	8.5500e-	1.0000e-	3.4000e-	5.0000e-	3.9000e-	9.0000e-	4.0000e-	1.3000e-		1.1728	1.1728	1.0000e-		1.1730
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0339	0.4466	1.8600e-	0.1479	1.0800e-	0.1489	0.0392	1.0000e-	0.0402		120.7075	120.7075	4.3100e-		120.7980
Total	**0.0375**	**0.0363**	**0.4552**	**1.8700e-**	**0.1482**	**1.1300e-**	**0.1493**	**0.0393**	**1.0400e-**	**0.0404**		**121.8803**	**121.8803**	**4.3200e-**		**121.9710**

3.5 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.796	2,159.7967	0.6985		2,174.4656
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8973**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.796**	**2,159.7967**	**0.6985**		**2,174.4656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0310	0.0282	0.3722	1.5500e-	0.1232	9.0000e-	0.1241	0.0327	8.3000e-	0.0335		100.5896	100.5896	3.5900e-		100.6650
Total	**0.0310**	**0.0282**	**0.3722**	**1.5500e-**	**0.1232**	**9.0000e-**	**0.1241**	**0.0327**	**8.3000e-**	**0.0335**		**100.5896**	**100.5896**	**3.5900e-**		**100.6650**

Westside Half Plex In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	142.00	Dwelling Unit	17.00	142,000.00	406

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2019 schedule
Off-road Equipment - Equipment from client

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	75.00	17.00
tblLandUse	LotAcreage	8.88	17.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/24/2019	6/6/2019	5	10	
2	Grading	Grading	6/7/2019	7/18/2019	5	30	
3	Underground Utilities	Trenching	7/19/2019	12/3/2019	5	98	
4	Paving	Paving	12/4/2019	12/31/2019	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Excavators	4	8.00	162	0.38
Underground Utilities	Rubber Tired Loaders	3	8.00	199	0.36
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784		3,876.723	3,876.7233	1.2266		3,902.4810
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**		**3,876.723**	**3,876.7233**	**1.2266**		**3,902.4810**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0530	0.6827	1.8700e-	0.1479	1.0600e-	0.1489	0.0392	9.8000e-	0.0402		137.0031	137.0031	5.8800e-		137.1266
Total	**0.0564**	**0.0530**	**0.6827**	**1.8700e-**	**0.1479**	**1.0600e-**	**0.1489**	**0.0392**	**9.8000e-**	**0.0402**		**137.0031**	**137.0031**	**5.8800e-**		**137.1266**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6230	0.0000	6.6230	3.3751	0.0000	3.3751			0.0000			0.0000
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045		6,111.312	6,111.3121	1.9336		6,151.9167
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.6230**	**2.5049**	**9.1280**	**3.3751**	**2.3045**	**5.6797**		**6,111.312**	**6,111.3121**	**1.9336**		**6,151.9167**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0627	0.0589	0.7586	2.0700e-	0.1643	1.1700e-	0.1655	0.0436	1.0900e-	0.0447		152.2257	152.2257	6.5300e-		152.3629
Total	**0.0627**	**0.0589**	**0.7586**	**2.0700e-**	**0.1643**	**1.1700e-**	**0.1655**	**0.0436**	**1.0900e-**	**0.0447**		**152.2257**	**152.2257**	**6.5300e-**		**152.3629**

3.4 Underground Utilities - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2533	25.3188	18.4120	0.0398		1.0114	1.0114		0.9305	0.9305		3,935.679	3,935.6794	1.2452		3,961.8287
Total	**2.2533**	**25.3188**	**18.4120**	**0.0398**		**1.0114**	**1.0114**		**0.9305**	**0.9305**		**3,935.679**	**3,935.6794**	**1.2452**		**3,961.8287**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.0000e-	4.1200e-	0.0120	1.0000e-	3.4000e-	4.0000e-	3.8000e-	9.0000e-	4.0000e-	1.3000e-		1.1373	1.1373	1.0000e-		1.1375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0530	0.6827	1.8700e-	0.1479	1.0600e-	0.1489	0.0392	9.8000e-	0.0402		137.0031	137.0031	5.8800e-		137.1266
Total	**0.0569**	**0.0571**	**0.6947**	**1.8800e-**	**0.1482**	**1.1000e-**	**0.1493**	**0.0393**	**1.0200e-**	**0.0403**		**138.1405**	**138.1405**	**5.8900e-**		**138.2641**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973	2,208.9731	0.6989		2,223.6499
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4259**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.973**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0442	0.5689	1.5500e-	0.1232	8.8000e-	0.1241	0.0327	8.1000e-	0.0335		114.1693	114.1693	4.9000e-		114.2721
Total	**0.0470**	**0.0442**	**0.5689**	**1.5500e-**	**0.1232**	**8.8000e-**	**0.1241**	**0.0327**	**8.1000e-**	**0.0335**		**114.1693**	**114.1693**	**4.9000e-**		**114.2721**

Westside - Condo - Townhome Product In Tract

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	84.00	Dwelling Unit	10.00	84,000.00	240

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - site preparation, grading, underground utilities, and paving
Land Use - Acres from PD
Construction Phase - 2018 schedule
Off-road Equipment - Equipment from client
Grading - Acres from PD

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	50.00	10.00
tblLandUse	LotAcreage	5.25	10.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblProjectCharacteristics	OperationalYear	2014	2025
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/9/2018	3/22/2018	5	10	
2	Grading	Grading	3/23/2018	4/19/2018	5	20	
3	Underground Utilities	Trenching	4/20/2018	9/4/2018	5	98	
4	Paving	Paving	9/5/2018	10/2/2018	5	20	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Underground Utilities	Excavators	4	8.00	162	0.38
Underground Utilities	Rubber Tired Loaders	3	8.00	199	0.36
Grading	Excavators	2	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Underground Utilities	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.2921	45.6088	36.2346	0.0391		2.3654	2.3654		2.1762	2.1762		3,939.773	3,939.7731	1.2265		3,965.5297
Total	**4.2921**	**45.6088**	**36.2346**	**0.0391**	**18.0663**	**2.3654**	**20.4317**	**9.9307**	**2.1762**	**12.1069**		**3,939.773**	**3,939.7731**	**1.2265**		**3,965.5297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0584	0.7513	1.8900e-	0.1479	1.0900e-	0.1490	0.0392	1.0100e-	0.0402		143.5236	143.5236	6.4100e-		143.6583
Total	**0.0623**	**0.0584**	**0.7513**	**1.8900e-**	**0.1479**	**1.0900e-**	**0.1490**	**0.0392**	**1.0100e-**	**0.0402**		**143.5236**	**143.5236**	**6.4100e-**		**143.6583**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650		6,212.804	6,212.8042	1.9341		6,253.4209
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.5523**	**2.7880**	**9.3404**	**3.3675**	**2.5650**	**5.9325**		**6,212.804**	**6,212.8042**	**1.9341**		**6,253.4209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0649	0.8347	2.1000e-	0.1643	1.2100e-	0.1655	0.0436	1.1200e-	0.0447		159.4706	159.4706	7.1300e-		159.6203
Total	**0.0692**	**0.0649**	**0.8347**	**2.1000e-**	**0.1643**	**1.2100e-**	**0.1655**	**0.0436**	**1.1200e-**	**0.0447**		**159.4706**	**159.4706**	**7.1300e-**		**159.6203**

3.4 Underground Utilities - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4499	28.3570	18.5381	0.0396		1.1469	1.1469		1.0552	1.0552		3,980.369	3,980.3697	1.2391		4,006.3917
Total	**2.4499**	**28.3570**	**18.5381**	**0.0396**		**1.1469**	**1.1469**		**1.0552**	**1.0552**		**3,980.369**	**3,980.3697**	**1.2391**		**4,006.3917**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.2000e-	4.3200e-	0.0124	1.0000e-	3.4000e-	4.0000e-	3.8000e-	9.0000e-	4.0000e-	1.3000e-		1.1323	1.1323	1.0000e-		1.1325
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0584	0.7513	1.8900e-	0.1479	1.0900e-	0.1490	0.0392	1.0100e-	0.0402		143.5236	143.5236	6.4100e-		143.6583
Total	**0.0628**	**0.0627**	**0.7637**	**1.9000e-**	**0.1482**	**1.1300e-**	**0.1493**	**0.0393**	**1.0500e-**	**0.0404**		**144.6559**	**144.6559**	**6.4200e-**		**144.7907**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.269	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.269**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0519	0.0487	0.6261	1.5700e-	0.1232	9.1000e-	0.1241	0.0327	8.4000e-	0.0335		119.6030	119.6030	5.3500e-		119.7152
Total	**0.0519**	**0.0487**	**0.6261**	**1.5700e-**	**0.1232**	**9.1000e-**	**0.1241**	**0.0327**	**8.4000e-**	**0.0335**		**119.6030**	**119.6030**	**5.3500e-**		**119.7152**

Annual Operational Outputs

2030 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
City Park	15.00	Acre	15.00	653,400.00	0
Apartments Low Rise	390.00	Dwelling Unit	21.00	390,000.00	1115
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	160.00	Dwelling Unit	68.00	288,000.00	458

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	1.00
tblConstructionPhase	PhaseEndDate	1/1/2016	10/6/2016
tblFireplaces	NumberGas	214.50	234.00
tblFireplaces	NumberGas	170.50	186.00
tblFireplaces	NumberGas	88.00	118.00

tblFireplaces	NumberWood	136.50	156.00
tblFireplaces	NumberWood	108.50	124.00
tblFireplaces	NumberWood	56.00	79.00
tblLandUse	LotAcreage	1.15	11.00
tblLandUse	LotAcreage	24.38	21.00
tblLandUse	LotAcreage	19.38	37.00
tblLandUse	LotAcreage	51.95	68.00
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	27.92	11.04
tblVehicleTrips	WD_TR	9.57	9.05

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	52.9892	0.8159	70.8652	3.7500e-		1.5965	1.5965		1.5839	1.5839	0.0000	19,123.06	19,123.063	0.4858	0.3483	19,241.222
Energy	0.4671	4.0032	1.7857	0.0255		0.3227	0.3227		0.3227	0.3227		5,095.274	5,095.2743	0.0977	0.0934	5,126.2833
Mobile	18.8706	25.7778	158.4622	0.6430	45.1463	0.5727	45.7190	12.0506	0.5293	12.5798		44,818.16	44,818.163	1.2886		44,845.223
Total	**72.3269**	**30.5969**	**231.1131**	**0.6723**	**45.1463**	**2.4919**	**47.6382**	**12.0506**	**2.4359**	**14.4864**	**0.0000**	**69,036.50**	**69,036.501**	**1.8721**	**0.4417**	**69,212.729**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.8706	25.7778	158.4622	0.6430	45.1463	0.5727	45.7190	12.0506	0.5293	12.5798		44,818.16	44,818.163	1.2886		44,845.223
Unmitigated	18.8706	25.7778	158.4622	0.6430	45.1463	0.5727	45.7190	12.0506	0.5293	12.5798		44,818.16	44,818.163	1.2886		44,845.223

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,429.70	2,429.70	2429.70	6,959,979	6,959,979
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Condo/Townhouse	2,805.50	2,805.50	2805.50	8,036,474	8,036,474
Government (Civic Center)	552.00	0.00	0.00	753,731	753,731
Single Family Housing	1,448.00	1,448.00	1448.00	4,147,858	4,147,858
Total	7,783.45	7,231.45	7,231.45	21,068,475	21,068,475

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.469477	0.079991	0.186504	0.151219	0.071320	0.011060	0.012674	0.000972	0.001429	0.000748	0.009138	0.000721	0.004747

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.4671	4.0032	1.7857	0.0255		0.3227	0.3227		0.3227	0.3227		5,095.274	5,095.2743	0.0977	0.0934	5,126.2833
NaturalGas	0.5346	4.5821	2.0461	0.0292		0.3693	0.3693		0.3693	0.3693		5,831.653	5,831.6534	0.1118	0.1069	5,867.1439

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	18610	0.2007	1.7150	0.7298	0.0110		0.1387	0.1387		0.1387	0.1387		2,189.4143	2,189.414	0.0420	0.0401	2,202.7388
Government (Civic	2369.86	0.0256	0.2323	0.1952	1.3900e-		0.0177	0.0177		0.0177	0.0177		278.8074	278.8074	5.3400e-	5.1100e-	280.5042

Single Family	14093.9	0.1520	1.2989	0.5527	8.2900e-		0.1050	0.1050		0.1050	0.1050		1,658.1090	1,658.109	0.0318	0.0304	1,668.2000
Apartments Low	14495.2	0.1563	1.3358	0.5684	8.5300e-		0.1080	0.1080		0.1080	0.1080		1,705.3226	1,705.322	0.0327	0.0313	1,715.7009
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.5346**	**4.5821**	**2.0461**	**0.0292**		**0.3693**	**0.3693**		**0.3693**	**0.3693**		**5,831.6534**	**5,831.653**	**0.1118**	**0.1069**	**5,867.1438**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	16.1945	0.1747	1.4924	0.6351	9.5300e-		0.1207	0.1207		0.1207	0.1207		1,905.2315	1,905.231	0.0365	0.0349	1,916.8264
Government (Civic	2.02404	0.0218	0.1984	0.1667	1.1900e-		0.0151	0.0151		0.0151	0.0151		238.1225	238.1225	4.5600e-	4.3700e-	239.5717
Single Family	12.37	0.1334	1.1400	0.4851	7.2800e-		0.0922	0.0922		0.0922	0.0922		1,455.2944	1,455.294	0.0279	0.0267	1,464.1511
Apartments Low	12.7213	0.1372	1.1724	0.4989	7.4800e-		0.0948	0.0948		0.0948	0.0948		1,496.6259	1,496.625	0.0287	0.0274	1,505.7341
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4671**	**4.0032**	**1.7858**	**0.0255**		**0.3227**	**0.3227**		**0.3227**	**0.3227**		**5,095.2743**	**5,095.274**	**0.0977**	**0.0934**	**5,126.2833**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	52.9892	0.8159	70.8652	3.7500e-		1.5965	1.5965		1.5839	1.5839	0.0000	19,123.06	19,123.063	0.4858	0.3483	19,241.222
Unmitigated	1,616.8267	21.5030	1,967.126	0.6370		265.9386	265.9386		265.9310	265.9310	27,585.27	11,520.71	39,105.987	22.1888	2.2305	40,263.400

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	12.9348					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	36.1960					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,565.5787	20.6871	1,896.355	0.6333		265.5451	265.5451		265.5375	265.5375	27,585.27	11,392.94	38,978.217	22.0671	2.2305	40,133.074
Landscaping	2.1172	0.8158	70.7702	3.7500e-		0.3935	0.3935		0.3935	0.3935		127.7692	127.7692	0.1218		130.3261
Total	**1,616.8267**	**21.5030**	**1,967.126**	**0.6371**		**265.9386**	**265.9386**		**265.9310**	**265.9310**	**27,585.27**	**11,520.71**	**39,105.987**	**22.1888**	**2.2305**	**40,263.400**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural	12.9348					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	36.1960					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7412	8.0000e-	0.0950	0.0000		1.2030	1.2030		1.1904	1.1904	0.0000	18,995.29	18,995.294	0.3641	0.3483	19,110.896
Landscaping	2.1172	0.8158	70.7702	3.7500e-		0.3935	0.3935		0.3935	0.3935		127.7692	127.7692	0.1218		130.3261
Total	**52.9892**	**0.8159**	**70.8652**	**3.7500e-**		**1.5965**	**1.5965**		**1.5839**	**1.5839**	**0.0000**	**19,123.06**	**19,123.063**	**0.4858**	**0.3483**	**19,241.222**

2029 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	240.00	Dwelling Unit	13.00	240,000.00	686
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	160.00	Dwelling Unit	68.00	288,000.00	458
City Park	15.00	Acre	15.00	653,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	1.00
tblFireplaces	NumberGas	132.00	144.00
tblFireplaces	NumberGas	170.50	186.00
tblFireplaces	NumberGas	88.00	118.00
tblFireplaces	NumberWood	84.00	96.00
tblFireplaces	NumberWood	108.50	124.00

tblFireplaces	NumberWood	56.00	79.00
tblLandUse	LotAcreage	15.00	13.00
tblLandUse	LotAcreage	19.38	37.00
tblLandUse	LotAcreage	51.95	68.00
tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	1.59	36.55

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.4548	0.6742	58.6010	3.0900e-		1.3266	1.3266		1.3160	1.3160	0.0000	15,924.29	15,924.299	0.4042	0.2900	16,022.690
Energy	0.3925	3.3539	1.4272	0.0214		0.2712	0.2712		0.2712	0.2712		4,281.526	4,281.5265	0.0821	0.0785	4,307.5832
Mobile	17.5463	26.5713	149.7405	0.5315	37.2572	0.4899	37.7471	9.9441	0.4526	10.3967		38,080.56	38,080.560	1.2100		38,105.968
Total	**64.3936**	**30.5993**	**209.7687**	**0.5560**	**37.2572**	**2.0877**	**39.3448**	**9.9441**	**2.0398**	**11.9839**	**0.0000**	**58,286.38**	**58,286.385**	**1.6962**	**0.3685**	**58,436.243**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.5463	26.5713	149.7405	0.5315	37.2572	0.4899	37.7471	9.9441	0.4526	10.3967		38,080.56	38,080.560	1.2100		38,105.968
Unmitigated	17.5463	26.5713	149.7405	0.5315	37.2572	0.4899	37.7471	9.9441	0.4526	10.3967		38,080.56	38,080.560	1.2100		38,105.968

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,495.20	1,495.20	1495.20	4,283,064	4,283,064
Condo/Townhouse	2,805.50	2,805.50	2805.50	8,036,474	8,036,474
Single Family Housing	1,448.00	1,448.00	1448.00	4,147,858	4,147,858

City Park	548.25	548.25	548.25	1,170,433	1,170,433
Total	6,296.95	6,296.95	6,296.95	17,637,829	17,637,829

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.466229	0.079815	0.185269	0.155747	0.072128	0.010996	0.012034	0.000950	0.001399	0.000772	0.009087	0.000733	0.004841

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.3925	3.3539	1.4272	0.0214		0.2712	0.2712		0.2712	0.2712		4,281.526	4,281.5265	0.0821	0.0785	4,307.5832
NaturalGas	0.4489	3.8360	1.6323	0.0245		0.3101	0.3101		0.3101	0.3101		4,896.952	4,896.9527	0.0939	0.0898	4,926.7547

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	18610	0.2007	1.7150	0.7298	0.0110		0.1387	0.1387		0.1387	0.1387		2,189.4143	2,189.414	0.0420	0.0401	2,202.7388
Single Family	14093.9	0.1520	1.2989	0.5527	8.2900e-		0.1050	0.1050		0.1050	0.1050		1,658.1090	1,658.109	0.0318	0.0304	1,668.2000
Apartments Low	8920.15	0.0962	0.8221	0.3498	5.2500e-		0.0665	0.0665		0.0665	0.0665		1,049.4293	1,049.429	0.0201	0.0192	1,055.8160
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4489**	**3.8359**	**1.6323**	**0.0245**		**0.3101**	**0.3101**		**0.3101**	**0.3101**		**4,896.9527**	**4,896.952**	**0.0939**	**0.0898**	**4,926.7547**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	16.1945	0.1747	1.4924	0.6351	9.5300e-		0.1207	0.1207		0.1207	0.1207		1,905.2315	1,905.231	0.0365	0.0349	1,916.8264
Single Family	12.37	0.1334	1.1400	0.4851	7.2800e-		0.0922	0.0922		0.0922	0.0922		1,455.2944	1,455.294	0.0279	0.0267	1,464.1511
Apartments Low	7.8285	0.0844	0.7215	0.3070	4.6100e-		0.0583	0.0583		0.0583	0.0583		921.0006	921.0006	0.0177	0.0169	926.6056
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.3925**	**3.3539**	**1.4272**	**0.0214**		**0.2712**	**0.2712**		**0.2712**	**0.2712**		**4,281.5265**	**4,281.526**	**0.0821**	**0.0785**	**4,307.5832**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	46.4548	0.6742	58.6010	3.0900e-		1.3266	1.3266		1.3160	1.3160	0.0000	15,924.29	15,924.299	0.4042	0.2900	16,022.690
Unmitigated	1,348.7709	17.8807	1,636.523	0.5259		221.2582	221.2582		221.2518	221.2518	22,940.86	9,592.534	32,533.397	18.3207	1.8577	33,494.008

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	11.3316					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	31.9160					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,303.7662	17.2066	1,578.001	0.5228		220.9334	220.9334		220.9271	220.9271	22,940.86	9,487.058	32,427.922	18.2197	1.8577	33,386.412
Landscaping	1.7572	0.6741	58.5219	3.0900e-		0.3247	0.3247		0.3247	0.3247		105.4754	105.4754	0.1010		107.5966
Total	**1,348.7709**	**17.8807**	**1,636.523**	**0.5259**		**221.2582**	**221.2582**		**221.2518**	**221.2518**	**22,940.86**	**9,592.534**	**32,533.397**	**18.3207**	**1.8577**	**33,494.008**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	11.3316					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	31.9160					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4501	7.0000e-	0.0791	0.0000		1.0019	1.0019		0.9913	0.9913	0.0000	15,818.82	15,818.823	0.3032	0.2900	15,915.094
Landscaping	1.7572	0.6741	58.5219	3.0900e-		0.3247	0.3247		0.3247	0.3247		105.4754	105.4754	0.1010		107.5966
Total	**46.4548**	**0.6742**	**58.6010**	**3.0900e-**		**1.3266**	**1.3266**		**1.3160**	**1.3160**	**0.0000**	**15,924.29**	**15,924.299**	**0.4042**	**0.2900**	**16,022.690**

2026-2028 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	160.00	Dwelling Unit	68.00	288,000.00	458
City Park	15.00	Acre	15.00	653,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	1.00
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	170.50	186.00
tblFireplaces	NumberGas	88.00	118.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	108.50	124.00

tblFireplaces	NumberWood	56.00	79.00
tblLandUse	LotAcreage	14.38	13.00
tblLandUse	LotAcreage	19.38	37.00
tblLandUse	LotAcreage	51.95	68.00
tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	1.59	36.55

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.1110	0.6647	57.7757	3.0500e-		1.3086	1.3086		1.2982	1.2982	0.0000	15,711.04	15,711.048	0.3987	0.2861	15,808.122
Energy	0.3890	3.3238	1.4144	0.0212		0.2687	0.2687		0.2687	0.2687		4,243.151	4,243.1515	0.0813	0.0778	4,268.9746
Mobile	17.3715	26.3031	148.2302	0.5261	36.8802	0.4850	37.3652	9.8435	0.4480	10.2915		37,695.47	37,695.471	1.1977		37,720.623
Total	**63.8714**	**30.2916**	**207.4203**	**0.5504**	**36.8802**	**2.0623**	**38.9425**	**9.8435**	**2.0150**	**11.8584**	**0.0000**	**57,649.67**	**57,649.671**	**1.6778**	**0.3639**	**57,797.719**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.3715	26.3031	148.2302	0.5261	36.8802	0.4850	37.3652	9.8435	0.4480	10.2915		37,695.47	37,695.471	1.1977		37,720.623
Unmitigated	17.3715	26.3031	148.2302	0.5261	36.8802	0.4850	37.3652	9.8435	0.4480	10.2915		37,695.47	37,695.471	1.1977		37,720.623

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603

Condo/Townhouse	2,805.50	2,805.50	2805.50	8,036,474	8,036,474
Single Family Housing	1,448.00	1,448.00	1448.00	4,147,858	4,147,858
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Total	6,234.65	6,234.65	6,234.65	17,459,368	17,459,368

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.466229	0.079815	0.185269	0.155747	0.072128	0.010996	0.012034	0.000950	0.001399	0.000772	0.009087	0.000733	0.004841

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.3890	3.3238	1.4144	0.0212		0.2687	0.2687		0.2687	0.2687		4,243.151	4,243.1515	0.0813	0.0778	4,268.9746
NaturalGas	0.4449	3.8017	1.6177	0.0243		0.3074	0.3074		0.3074	0.3074		4,853.226	4,853.2264	0.0930	0.0890	4,882.7624

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	18610	0.2007	1.7150	0.7298	0.0110		0.1387	0.1387		0.1387	0.1387		2,189.4143	2,189.414	0.0420	0.0401	2,202.7388
Single Family	14093.9	0.1520	1.2989	0.5527	8.2900e-		0.1050	0.1050		0.1050	0.1050		1,658.1090	1,658.109	0.0318	0.0304	1,668.2000
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4449**	**3.8017**	**1.6177**	**0.0243**		**0.3074**	**0.3074**		**0.3074**	**0.3074**		**4,853.2264**	**4,853.226**	**0.0930**	**0.0890**	**4,882.7624**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	16.1945	0.1747	1.4924	0.6351	9.5300e-		0.1207	0.1207		0.1207	0.1207		1,905.2315	1,905.231	0.0365	0.0349	1,916.8264
Single Family	12.37	0.1334	1.1400	0.4851	7.2800e-		0.0922	0.0922		0.0922	0.0922		1,455.2944	1,455.294	0.0279	0.0267	1,464.1511
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.3890**	**3.3238**	**1.4144**	**0.0212**		**0.2687**	**0.2687**		**0.2687**	**0.2687**		**4,243.1515**	**4,243.151**	**0.0813**	**0.0778**	**4,268.9746**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	46.1110	0.6647	57.7757	3.0500e-		1.3086	1.3086		1.2982	1.2982	0.0000	15,711.04	15,711.048	0.3987	0.2861	15,808.122
Unmitigated	1,330.9923	17.6392	1,614.475	0.5185		218.2795	218.2795		218.2732	218.2732	22,631.23	9,463.989	32,095.225	18.0628	1.8328	33,042.715

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	11.2459					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	31.7020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,286.3120	16.9746	1,556.777	0.5155		217.9593	217.9593		217.9531	217.9531	22,631.23	9,360.000	31,991.235	17.9632	1.8328	32,936.634
Landscaping	1.7324	0.6646	57.6977	3.0500e-		0.3201	0.3201		0.3201	0.3201		103.9899	103.9899	0.0996		106.0812
Total	**1,330.9923**	**17.6392**	**1,614.475**	**0.5185**		**218.2795**	**218.2795**		**218.2732**	**218.2732**	**22,631.23**	**9,463.989**	**32,095.225**	**18.0628**	**1.8328**	**33,042.715**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	11.2459					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	31.7020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4307	7.0000e-	0.0780	0.0000		0.9885	0.9885		0.9780	0.9780	0.0000	15,607.05	15,607.058	0.2991	0.2861	15,702.040
Landscaping	1.7324	0.6646	57.6977	3.0500e-		0.3201	0.3201		0.3201	0.3201		103.9899	103.9899	0.0996		106.0812
Total	**46.1110**	**0.6647**	**57.7757**	**3.0500e-**		**1.3086**	**1.3086**		**1.2982**	**1.2982**	**0.0000**	**15,711.04**	**15,711.048**	**0.3987**	**0.2861**	**15,808.122**

2025 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658
Condo/Townhouse	286.00	Dwelling Unit	34.00	286,000.00	818
Single Family Housing	153.00	Dwelling Unit	65.00	275,400.00	438
City Park	15.00	Acre	15.00	653,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	1.00
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	157.30	172.00
tblFireplaces	NumberGas	84.15	113.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	100.10	114.00

tblFireplaces	NumberWood	53.55	75.00
tblLandUse	LotAcreage	14.38	13.00
tblLandUse	LotAcreage	17.88	34.00
tblLandUse	LotAcreage	49.68	65.00
tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	1.59	36.55

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	44.8732	0.6352	55.2171	2.9100e-		1.2502	1.2502		1.2402	1.2402	0.0000	15,007.62	15,007.620	0.3809	0.2733	15,100.347
Energy	0.3696	3.1584	1.3440	0.0202		0.2554	0.2554		0.2554	0.2554		4,031.980	4,031.9806	0.0773	0.0739	4,056.5185
Mobile	16.5845	25.0958	141.4288	0.5019	35.1826	0.4627	35.6453	9.3904	0.4275	9.8178		35,961.33	35,961.333	1.1427		35,985.330
Total	**61.8273**	**28.8894**	**197.9899**	**0.5249**	**35.1826**	**1.9682**	**37.1508**	**9.3904**	**1.9230**	**11.3134**	**0.0000**	**55,000.93**	**55,000.934**	**1.6009**	**0.3472**	**55,142.197**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.5845	25.0958	141.4288	0.5019	35.1826	0.4627	35.6453	9.3904	0.4275	9.8178		35,961.33	35,961.333	1.1427		35,985.330
Unmitigated	16.5845	25.0958	141.4288	0.5019	35.1826	0.4627	35.6453	9.3904	0.4275	9.8178		35,961.33	35,961.333	1.1427		35,985.330

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603
Condo/Townhouse	2,588.30	2,588.30	2588.30	7,414,296	7,414,296
Single Family Housing	1,384.65	1,384.65	1384.65	3,966,389	3,966,389

City Park	548.25	548.25	548.25	1,170,433	1,170,433
Total	5,954.10	5,954.10	5,954.10	16,655,721	16,655,721

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.466229	0.079815	0.185269	0.155747	0.072128	0.010996	0.012034	0.000950	0.001399	0.000772	0.009087	0.000733	0.004841

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.3696	3.1584	1.3440	0.0202		0.2554	0.2554		0.2554	0.2554		4,031.980	4,031.9806	0.0773	0.0739	4,056.5185
NaturalGas	0.4227	3.6121	1.5371	0.0231		0.2920	0.2920		0.2920	0.2920		4,611.181	4,611.1811	0.0884	0.0845	4,639.2440

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	17169.2	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9113	2,019.911	0.0387	0.0370	2,032.2041
Single Family	13477.3	0.1453	1.2420	0.5285	7.9300e-		0.1004	0.1004		0.1004	0.1004		1,585.5667	1,585.566	0.0304	0.0291	1,595.2162
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4227**	**3.6121**	**1.5371**	**0.0231**		**0.2920**	**0.2920**		**0.2920**	**0.2920**		**4,611.1811**	**4,611.181**	**0.0884**	**0.0845**	**4,639.2440**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	14.9407	0.1611	1.3769	0.5859	8.7900e-		0.1113	0.1113		0.1113	0.1113		1,757.7297	1,757.729	0.0337	0.0322	1,768.4270
Single Family	11.8288	0.1276	1.0901	0.4639	6.9600e-		0.0881	0.0881		0.0881	0.0881		1,391.6253	1,391.625	0.0267	0.0255	1,400.0945
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.3696**	**3.1584**	**1.3440**	**0.0202**		**0.2554**	**0.2554**		**0.2554**	**0.2554**		**4,031.9806**	**4,031.980**	**0.0773**	**0.0739**	**4,056.5185**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	44.8732	0.6352	55.2171	2.9100e-		1.2502	1.2502		1.2402	1.2402	0.0000	15,007.62	15,007.620	0.3809	0.2733	15,100.347
Unmitigated	1,268.8323	16.8123	1,538.540	0.4956		208.0059	208.0059		207.9999	207.9999	21,569.27	9,057.031	30,626.309	17.2631	1.7466	31,530.279

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	10.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	30.9187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,225.3257	16.1772	1,483.398	0.4927		207.6999	207.6999		207.6939	207.6939	21,569.27	8,957.647	30,526.924	17.1679	1.7466	31,428.896
Landscaping	1.6557	0.6352	55.1426	2.9100e-		0.3060	0.3060		0.3060	0.3060		99.3848	99.3848	0.0952		101.3835
Total	**1,268.8323**	**16.8123**	**1,538.540**	**0.4956**		**208.0059**	**208.0059**		**207.9999**	**207.9999**	**21,569.27**	**9,057.031**	**30,626.309**	**17.2631**	**1.7466**	**31,530.279**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	10.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	30.9187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.3666	6.0000e-	0.0745	0.0000		0.9442	0.9442		0.9343	0.9343	0.0000	14,908.23	14,908.235	0.2857	0.2733	14,998.964
Landscaping	1.6557	0.6352	55.1426	2.9100e-		0.3060	0.3060		0.3060	0.3060		99.3848	99.3848	0.0952		101.3835
Total	**44.8732**	**0.6352**	**55.2171**	**2.9100e-**		**1.2502**	**1.2502**		**1.2402**	**1.2402**	**0.0000**	**15,007.62**	**15,007.620**	**0.3809**	**0.2733**	**15,100.347**

2024 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658
Condo/Townhouse	262.00	Dwelling Unit	31.00	262,000.00	749
Single Family Housing	132.00	Dwelling Unit	56.00	237,600.00	378
City Park	15.00	Acre	15.00	653,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	1.00
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	144.10	157.00
tblFireplaces	NumberGas	72.60	97.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	91.70	105.00

tblFireplaces	NumberWood	46.20	65.00
tblLandUse	LotAcreage	14.38	13.00
tblLandUse	LotAcreage	16.38	31.00
tblLandUse	LotAcreage	42.86	56.00
tblProjectCharacteristics	OperationalYear	2014	2024
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	1.59	36.55

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	42.8156	0.5930	51.5299	2.7200e-		1.1624	1.1624		1.1531	1.1531	0.0000	13,942.11	13,942.111	0.3544	0.2539	14,028.264
Energy	0.3386	2.8932	1.2312	0.0185		0.2339	0.2339		0.2339	0.2339		3,693.471	3,693.4714	0.0708	0.0677	3,715.9492
Mobile	15.9210	24.5968	136.4475	0.4672	32.7176	0.4346	33.1522	8.7323	0.4015	9.1339		33,756.57	33,756.574	1.0995		33,779.664
Total	**59.0751**	**28.0830**	**189.2086**	**0.4884**	**32.7176**	**1.8309**	**34.5485**	**8.7323**	**1.7886**	**10.5209**	**0.0000**	**51,392.15**	**51,392.157**	**1.5247**	**0.3216**	**51,523.878**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.9210	24.5968	136.4475	0.4672	32.7176	0.4346	33.1522	8.7323	0.4015	9.1339		33,756.57	33,756.574	1.0995		33,779.664
Unmitigated	15.9210	24.5968	136.4475	0.4672	32.7176	0.4346	33.1522	8.7323	0.4015	9.1339		33,756.57	33,756.574	1.0995		33,779.664

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603
Condo/Townhouse	2,371.10	2,371.10	2371.10	6,792,117	6,792,117

Single Family Housing	1,194.60	1,194.60	1194.60	3,421,983	3,421,983
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Total	5,546.85	5,546.85	5,546.85	15,489,136	15,489,136

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464546	0.079708	0.185557	0.156960	0.072575	0.010939	0.011912	0.000946	0.001396	0.000774	0.009091	0.000733	0.004862

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.3386	2.8932	1.2312	0.0185		0.2339	0.2339		0.2339	0.2339		3,693.471	3,693.4714	0.0708	0.0677	3,715.9492
NaturalGas	0.3872	3.3088	1.4080	0.0211		0.2675	0.2675		0.2675	0.2675		4,224.051	4,224.0513	0.0810	0.0774	4,249.7581

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	15728.5	0.1696	1.4495	0.6168	9.2500e-		0.1172	0.1172		0.1172	0.1172		1,850.4083	1,850.408	0.0355	0.0339	1,861.6695
Single Family	11627.5	0.1254	1.0716	0.4560	6.8400e-		0.0866	0.0866		0.0866	0.0866		1,367.9399	1,367.939	0.0262	0.0251	1,376.2650
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.3872**	**3.3088**	**1.4080**	**0.0211**		**0.2675**	**0.2675**		**0.2675**	**0.2675**		**4,224.0513**	**4,224.051**	**0.0810**	**0.0774**	**4,249.7581**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	13.6869	0.1476	1.2614	0.5367	8.0500e-		0.1020	0.1020		0.1020	0.1020		1,610.2279	1,610.227	0.0309	0.0295	1,620.0275
Single Family	10.2053	0.1101	0.9405	0.4002	6.0000e-		0.0760	0.0760		0.0760	0.0760		1,200.6179	1,200.617	0.0230	0.0220	1,207.9247
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.3386**	**2.8932**	**1.2312**	**0.0185**		**0.2339**	**0.2339**		**0.2339**	**0.2339**		**3,693.4714**	**3,693.471**	**0.0708**	**0.0677**	**3,715.9492**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	42.8156	0.5930	51.5299	2.7200e-		1.1624	1.1624		1.1531	1.1531	0.0000	13,942.11	13,942.111	0.3544	0.2539	14,028.264
Unmitigated	1,184.0218	15.6771	1,434.610	0.4622		193.9468	193.9468		193.9412	193.9412	20,112.13	8,393.876	28,506.009	16.1011	1.6276	29,348.678

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	10.4025					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	29.5962					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,142.4757	15.0842	1,383.150	0.4595		193.6616	193.6616		193.6560	193.6560	20,112.13	8,301.176	28,413.309	16.0121	1.6276	29,254.110
Landscaping	1.5474	0.5929	51.4607	2.7200e-		0.2852	0.2852		0.2852	0.2852		92.6999	92.6999	0.0890		94.5679
Total	**1,184.0217**	**15.6771**	**1,434.610**	**0.4622**		**193.9468**	**193.9468**		**193.9412**	**193.9412**	**20,112.13**	**8,393.876**	**28,506.009**	**16.1011**	**1.6276**	**29,348.678**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	10.4025					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	29.5962					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.2695	6.0000e-	0.0693	0.0000		0.8771	0.8771		0.8679	0.8679	0.0000	13,849.41	13,849.411	0.2655	0.2539	13,933.697
Landscaping	1.5474	0.5929	51.4607	2.7200e-		0.2852	0.2852		0.2852	0.2852		92.6999	92.6999	0.0890		94.5679
Total	**42.8156**	**0.5930**	**51.5299**	**2.7200e-**		**1.1624**	**1.1624**		**1.1531**	**1.1531**	**0.0000**	**13,942.11**	**13,942.111**	**0.3544**	**0.2539**	**14,028.264**

2023 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658
Condo/Townhouse	214.00	Dwelling Unit	26.00	214,000.00	612
Single Family Housing	111.00	Dwelling Unit	46.00	199,800.00	317

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	1.00
tblConstructionPhase	PhaseEndDate	1/1/2016	5/19/2016
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	117.70	128.00
tblFireplaces	NumberGas	61.05	82.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	74.90	86.00

tblFireplaces	NumberWood	38.85	54.00
tblLandUse	LotAcreage	14.38	13.00
tblLandUse	LotAcreage	13.38	26.00
tblLandUse	LotAcreage	36.04	46.00
tblProjectCharacteristics	OperationalYear	2014	2023
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.8013	0.5280	45.8598	2.4200e-		1.0314	1.0314		1.0232	1.0232	0.0000	12,364.79	12,364.799	0.3147	0.2252	12,441.212
Energy	0.2940	2.5125	1.0692	0.0160		0.2031	0.2031		0.2031	0.2031		3,207.460	3,207.4604	0.0615	0.0588	3,226.9805
Mobile	13.1203	20.9470	114.9120	0.3781	26.4667	0.3550	26.8217	7.0639	0.3279	7.3918		27,577.23	27,577.234	0.9226		27,596.609
Total	**35.2157**	**23.9875**	**161.8410**	**0.3965**	**26.4667**	**1.5895**	**28.0562**	**7.0639**	**1.5542**	**8.6181**	**0.0000**	**43,149.49**	**43,149.493**	**1.2988**	**0.2840**	**43,264.802**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.1203	20.9470	114.9120	0.3781	26.4667	0.3550	26.8217	7.0639	0.3279	7.3918		27,577.23	27,577.234	0.9226		27,596.609
Unmitigated	13.1203	20.9470	114.9120	0.3781	26.4667	0.3550	26.8217	7.0639	0.3279	7.3918		27,577.23	27,577.234	0.9226		27,596.609

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603
Condo/Townhouse	1,936.70	1,936.70	1936.70	5,547,760	5,547,760
Single Family Housing	1,004.55	1,004.55	1004.55	2,877,576	2,877,576
Total	4,374.15	4,374.15	4,374.15	12,529,939	12,529,939

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462790	0.079681	0.185763	0.158133	0.073100	0.010921	0.011773	0.000952	0.001395	0.000777	0.009098	0.000736	0.004882

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.2940	2.5125	1.0692	0.0160		0.2031	0.2031		0.2031	0.2031		3,207.460	3,207.4604	0.0615	0.0588	3,226.9805
NaturalGas	0.3362	2.8728	1.2225	0.0183		0.2323	0.2323		0.2323	0.2323		3,667.418	3,667.4184	0.0703	0.0672	3,689.7377

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	9777.66	0.1055	0.9011	0.3834	5.7500e-		0.0729	0.0729		0.0729	0.0729		1,150.3131	1,150.313	0.0221	0.0211	1,157.3137
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
Condo/Townhouse	12846.9	0.1386	1.1839	0.5038	7.5600e-		0.0957	0.0957		0.0957	0.0957		1,511.4022	1,511.402	0.0290	0.0277	1,520.6003
Total		**0.3362**	**2.8728**	**1.2225**	**0.0183**		**0.2323**	**0.2323**		**0.2323**	**0.2323**		**3,667.4184**	**3,667.418**	**0.0703**	**0.0672**	**3,689.7377**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	8.58169	0.0926	0.7909	0.3365	5.0500e-		0.0639	0.0639		0.0639	0.0639		1,009.6105	1,009.610	0.0194	0.0185	1,015.7548
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971
Condo/Townhouse	11.1794	0.1206	1.0303	0.4384	6.5800e-		0.0833	0.0833		0.0833	0.0833		1,315.2243	1,315.224	0.0252	0.0241	1,323.2286
Total		**0.2940**	**2.5125**	**1.0692**	**0.0160**		**0.2031**	**0.2031**		**0.2031**	**0.2031**		**3,207.4604**	**3,207.460**	**0.0615**	**0.0588**	**3,226.9805**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.8013	0.5280	45.8598	2.4200e-		1.0314	1.0314		1.0232	1.0232	0.0000	12,364.79	12,364.799	0.3147	0.2252	12,441.212
Unmitigated	1,032.3959	13.8940	1,271.125	0.4111		171.8315	171.8315		171.8266	171.8266	17,822.53	7,451.858	25,274.392	14.3206	1.4416	26,022.004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	5.5184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	13.7773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,011.7205	13.3660	1,225.327	0.4087		171.5780	171.5780		171.5731	171.5731	17,822.53	7,369.411	25,191.945	14.2413	1.4416	25,937.892
Landscaping	1.3798	0.5279	45.7984	2.4200e-		0.2535	0.2535		0.2535	0.2535		82.4465	82.4465	0.0793		84.1115
Total	**1,032.3959**	**13.8940**	**1,271.125**	**0.4111**		**171.8315**	**171.8315**		**171.8266**	**171.8266**	**17,822.53**	**7,451.858**	**25,274.392**	**14.3206**	**1.4416**	**26,022.004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	5.5184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	13.7773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.1259	5.0000e-	0.0614	0.0000		0.7779	0.7779		0.7697	0.7697	0.0000	12,282.35	12,282.352	0.2354	0.2252	12,357.101
Landscaping	1.3798	0.5279	45.7984	2.4200e-		0.2535	0.2535		0.2535	0.2535		82.4465	82.4465	0.0793		84.1115
Total	**21.8013**	**0.5280**	**45.8598**	**2.4200e-**		**1.0314**	**1.0314**		**1.0232**	**1.0232**	**0.0000**	**12,364.79**	**12,364.799**	**0.3147**	**0.2252**	**12,441.212**

2022 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658
Condo/Townhouse	166.00	Dwelling Unit	20.00	166,000.00	475
Single Family Housing	90.00	Dwelling Unit	37.00	162,000.00	257

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	70.00	1.00
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	91.30	100.00
tblFireplaces	NumberGas	49.50	66.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	58.10	66.00
tblFireplaces	NumberWood	31.50	44.00

tblLandUse	LotAcreage	14.38	13.00
tblLandUse	LotAcreage	10.38	20.00
tblLandUse	LotAcreage	29.22	37.00
tblProjectCharacteristics	OperationalYear	2014	2022
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	9.57	9.05

2.0 Emissions Summary

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.9187	0.4630	40.1924	2.1200e-		0.9004	0.9004		0.8933	0.8933	0.0000	10,787.49	10,787.490	0.2750	0.1965	10,854.164
Energy	0.2495	2.1318	0.9072	0.0136		0.1724	0.1724		0.1724	0.1724		2,721.449	2,721.4494	0.0522	0.0499	2,738.0117
Mobile	11.6930	19.1867	103.4627	0.3244	22.6879	0.3110	22.9989	6.0553	0.2872	6.3425		23,914.47	23,914.475	0.8258		23,931.818
Total	**30.8612**	**21.7815**	**144.5623**	**0.3401**	**22.6879**	**1.3838**	**24.0717**	**6.0553**	**1.3528**	**7.4081**	**0.0000**	**37,423.41**	**37,423.415**	**1.1530**	**0.2463**	**37,523.994**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.6930	19.1867	103.4627	0.3244	22.6879	0.3110	22.9989	6.0553	0.2872	6.3425		23,914.47	23,914.475	0.8258		23,931.818
Unmitigated	11.6930	19.1867	103.4627	0.3244	22.6879	0.3110	22.9989	6.0553	0.2872	6.3425		23,914.47	23,914.475	0.8258		23,931.818

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603
Condo/Townhouse	1,502.30	1,502.30	1502.30	4,303,402	4,303,402
Single Family Housing	814.50	814.50	814.50	2,333,170	2,333,170
Total	3,749.70	3,749.70	3,749.70	10,741,175	10,741,175

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.460731	0.079507	0.186932	0.159008	0.073518	0.010872	0.011639	0.000951	0.001389	0.000778	0.009045	0.000739	0.004892

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.2495	2.1318	0.9072	0.0136		0.1724	0.1724		0.1724	0.1724		2,721.449	2,721.4494	0.0522	0.0499	2,738.0117
NaturalGas	0.2852	2.4368	1.0369	0.0156		0.1970	0.1970		0.1970	0.1970		3,110.785	3,110.7855	0.0596	0.0570	3,129.7172

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	7927.83	0.0855	0.7306	0.3109	4.6600e-		0.0591	0.0591		0.0591	0.0591		932.6863	932.6863	0.0179	0.0171	938.3625
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
Condo/Townhouse	9965.37	0.1075	0.9184	0.3908	5.8600e-		0.0743	0.0743		0.0743	0.0743		1,172.3961	1,172.396	0.0225	0.0215	1,179.5311
Total		**0.2852**	**2.4368**	**1.0369**	**0.0156**		**0.1970**	**0.1970**		**0.1970**	**0.1970**		**3,110.7855**	**3,110.785**	**0.0596**	**0.0570**	**3,129.7172**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	6.95813	0.0750	0.6412	0.2729	4.0900e-		0.0518	0.0518		0.0518	0.0518		818.6031	818.6031	0.0157	0.0150	823.5850
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971

Condo/Townhouse	8.67188	0.0935	0.7992	0.3401	5.1000e-		0.0646	0.0646		0.0646	0.0646		1,020.2208	1,020.220	0.0196	0.0187	1,026.4296
Total		**0.2495**	**2.1318**	**0.9072**	**0.0136**		**0.1724**	**0.1724**		**0.1724**	**0.1724**		**2,721.4494**	**2,721.449**	**0.0522**	**0.0499**	**2,738.0117**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.9187	0.4630	40.1924	2.1200e-		0.9004	0.9004		0.8933	0.8933	0.0000	10,787.49	10,787.490	0.2750	0.1965	10,854.164
Unmitigated	898.9018	12.1108	1,107.643	0.3600		149.7162	149.7162		149.7119	149.7119	15,532.93	6,509.843	22,042.778	12.5401	1.2555	22,695.334

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.7829					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	11.9412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	880.9653	11.6478	1,067.504	0.3579		149.4944	149.4944		149.4901	149.4901	15,532.93	6,437.647	21,970.581	12.4704	1.2555	22,621.675
Landscaping	1.2124	0.4629	40.1388	2.1200e-		0.2218	0.2218		0.2218	0.2218		72.1965	72.1965	0.0697		73.6591
Total	**898.9018**	**12.1108**	**1,107.643**	**0.3600**		**149.7162**	**149.7162**		**149.7119**	**149.7119**	**15,532.93**	**6,509.843**	**22,042.778**	**12.5401**	**1.2555**	**22,695.334**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.7829					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	11.9412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.9822	4.0000e-	0.0536	0.0000		0.6786	0.6786		0.6715	0.6715	0.0000	10,715.29	10,715.294	0.2054	0.1965	10,780.505
Landscaping	1.2124	0.4629	40.1388	2.1200e-		0.2218	0.2218		0.2218	0.2218		72.1965	72.1965	0.0697		73.6591
Total	**18.9187**	**0.4630**	**40.1924**	**2.1200e-**		**0.9004**	**0.9004**		**0.8933**	**0.8933**	**0.0000**	**10,787.49**	**10,787.490**	**0.2750**	**0.1965**	**10,854.164**

2021 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	75.00	Dwelling Unit	29.00	135,000.00	215
Condo/Townhouse	104.00	Dwelling Unit	12.00	104,000.00	297
Apartments Low Rise	230.00	Dwelling Unit	13.00	230,000.00	658

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	70.00	1.00
tblFireplaces	NumberGas	41.25	54.00
tblFireplaces	NumberGas	126.50	138.00
tblFireplaces	NumberGas	57.20	62.00
tblFireplaces	NumberWood	26.25	36.00
tblFireplaces	NumberWood	80.50	92.00
tblFireplaces	NumberWood	36.40	42.00

tblLandUse	LotAcreage	24.35	29.00
tblLandUse	LotAcreage	6.50	12.00
tblLandUse	LotAcreage	14.38	13.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9043	0.3904	33.8612	1.7800e-		0.7551	0.7551		0.7491	0.7491	0.0000	9,039.581	9,039.5814	0.2310	0.1646	9,095.4615
Energy	0.2020	1.7264	0.7347	0.0110		0.1396	0.1396		0.1396	0.1396		2,203.969	2,203.9693	0.0422	0.0404	2,217.3822
Mobile	9.9468	16.7535	89.3896	0.2644	18.4714	0.2574	18.7288	4.9299	0.2376	5.1675		19,716.57	19,716.577	0.7061		19,731.405
Total	**26.0532**	**18.8704**	**123.9855**	**0.2772**	**18.4714**	**1.1520**	**19.6235**	**4.9299**	**1.1263**	**6.0562**	**0.0000**	**30,960.12**	**30,960.127**	**0.9793**	**0.2050**	**31,044.249**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.9468	16.7535	89.3896	0.2644	18.4714	0.2574	18.7288	4.9299	0.2376	5.1675		19,716.57	19,716.577	0.7061		19,731.405
Unmitigated	9.9468	16.7535	89.3896	0.2644	18.4714	0.2574	18.7288	4.9299	0.2376	5.1675		19,716.57	19,716.577	0.7061		19,731.405

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	678.75	678.75	678.75	1,944,308	1,944,308
Apartments Low Rise	1,432.90	1,432.90	1432.90	4,104,603	4,104,603
Condo/Townhouse	941.20	941.20	941.20	2,696,107	2,696,107
Total	3,052.85	3,052.85	3,052.85	8,745,019	8,745,019

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.458534	0.079358	0.188129	0.159824	0.074059	0.010841	0.011515	0.000947	0.001384	0.000779	0.008989	0.000740	0.004901

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.2020	1.7264	0.7347	0.0110		0.1396	0.1396		0.1396	0.1396		2,203.969	2,203.9693	0.0422	0.0404	2,217.3822
NaturalGas	0.2308	1.9720	0.8392	0.0126		0.1594	0.1594		0.1594	0.1594		2,517.454	2,517.4549	0.0483	0.0462	2,532.7757

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	6606.53	0.0713	0.6088	0.2591	3.8900e-		0.0492	0.0492		0.0492	0.0492		777.2386	777.2386	0.0149	0.0143	781.9687
Apartments Low	8548.48	0.0922	0.7878	0.3352	5.0300e-		0.0637	0.0637		0.0637	0.0637		1,005.7031	1,005.703	0.0193	0.0184	1,011.8236
Condo/Townhouse	6243.36	0.0673	0.5754	0.2448	3.6700e-		0.0465	0.0465		0.0465	0.0465		734.5132	734.5132	0.0141	0.0135	738.9833
Total		**0.2308**	**1.9720**	**0.8392**	**0.0126**		**0.1594**	**0.1594**		**0.1594**	**0.1594**		**2,517.4549**	**2,517.454**	**0.0483**	**0.0462**	**2,532.7757**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	5.79844	0.0625	0.5344	0.2274	3.4100e-		0.0432	0.0432		0.0432	0.0432		682.1693	682.1693	0.0131	0.0125	686.3208
Apartments Low	7.50232	0.0809	0.6914	0.2942	4.4100e-		0.0559	0.0559		0.0559	0.0559		882.6255	882.6255	0.0169	0.0162	887.9971
Condo/Townhouse	5.43298	0.0586	0.5007	0.2131	3.2000e-		0.0405	0.0405		0.0405	0.0405		639.1745	639.1745	0.0123	0.0117	643.0644
Total		**0.2020**	**1.7265**	**0.7347**	**0.0110**		**0.1396**	**0.1396**		**0.1396**	**0.1396**		**2,203.9693**	**2,203.969**	**0.0422**	**0.0404**	**2,217.3822**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.9043	0.3904	33.8612	1.7800e-		0.7551	0.7551		0.7491	0.7491	0.0000	9,039.581	9,039.5814	0.2310	0.1646	9,095.4615
Unmitigated	756.4839	10.1930	932.2088	0.3030		125.9957	125.9957		125.9921	125.9921	13,072.21	5,439.581	18,511.799	10.5528	1.0559	19,060.743

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.0201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	10.0366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	741.4026	9.8026	898.3924	0.3012		125.8093	125.8093		125.8057	125.8057	13,072.21	5,378.823	18,451.041	10.4939	1.0559	18,998.748
Landscaping	1.0246	0.3904	33.8163	1.7800e-		0.1864	0.1864		0.1864	0.1864		60.7579	60.7579	0.0589		61.9944
Total	**756.4839**	**10.1930**	**932.2088**	**0.3030**		**125.9957**	**125.9957**		**125.9921**	**125.9921**	**13,072.21**	**5,439.581**	**18,511.799**	**10.5528**	**1.0559**	**19,060.743**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.0201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	10.0366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.8231	4.0000e-	0.0449	0.0000		0.5687	0.5687		0.5627	0.5627	0.0000	8,978.823	8,978.8235	0.1721	0.1646	9,033.4672
Landscaping	1.0246	0.3904	33.8163	1.7800e-		0.1864	0.1864		0.1864	0.1864		60.7579	60.7579	0.0589		61.9944
Total	**15.9043**	**0.3904**	**33.8612**	**1.7800e-**		**0.7551**	**0.7551**		**0.7491**	**0.7491**	**0.0000**	**9,039.581**	**9,039.5814**	**0.2310**	**0.1646**	**9,095.4615**

2020 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	30.00	Dwelling Unit	16.00	54,000.00	86
Condo/Townhouse	20.00	Dwelling Unit	2.00	20,000.00	57
Apartments Low Rise	115.00	Dwelling Unit	6.00	115,000.00	329

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblFireplaces	NumberGas	16.50	24.00
tblFireplaces	NumberGas	63.25	69.00
tblFireplaces	NumberGas	11.00	12.00
tblFireplaces	NumberWood	10.50	16.00
tblFireplaces	NumberWood	40.25	46.00
tblFireplaces	NumberWood	7.00	8.00

tblLandUse	LotAcreage	9.74	16.00
tblLandUse	LotAcreage	1.25	2.00
tblLandUse	LotAcreage	7.19	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	WD_TR	9.57	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	6.59	9.05

2.0 Emissions Summary

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4202	0.1580	13.6765	7.2000e-		0.3098	0.3098		0.3073	0.3073	0.0000	3,730.393	3,730.3935	0.0949	0.0679	3,753.4488
Energy	0.0767	0.6557	0.2790	4.1900e-		0.0530	0.0530		0.0530	0.0530		837.0986	837.0986	0.0160	0.0154	842.1931
Mobile	3.9874	7.0067	36.4055	0.1014	7.0727	0.1032	7.1759	1.8877	0.0952	1.9829		7,654.367	7,654.3674	0.2848		7,660.3490
Total	**10.4844**	**7.8204**	**50.3610**	**0.1063**	**7.0727**	**0.4660**	**7.5387**	**1.8877**	**0.4556**	**2.3432**	**0.0000**	**12,221.85**	**12,221.859**	**0.3958**	**0.0833**	**12,255.990**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.9874	7.0067	36.4055	0.1014	7.0727	0.1032	7.1759	1.8877	0.0952	1.9829		7,654.367	7,654.3674	0.2848		7,660.3490
Unmitigated	3.9874	7.0067	36.4055	0.1014	7.0727	0.1032	7.1759	1.8877	0.0952	1.9829		7,654.367	7,654.3674	0.2848		7,660.3490

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	271.50	271.50	271.50	777,723	777,723
Apartments Low Rise	716.45	716.45	716.45	2,052,302	2,052,302
Condo/Townhouse	181.00	181.00	181.00	518,482	518,482
Total	1,168.95	1,168.95	1,168.95	3,348,507	3,348,507

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456027	0.079225	0.189471	0.160757	0.074654	0.010795	0.011376	0.000953	0.001380	0.000780	0.008930	0.000740	0.004913

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.0767	0.6557	0.2790	4.1900e-		0.0530	0.0530		0.0530	0.0530		837.0986	837.0986	0.0160	0.0154	842.1931
NaturalGas	0.0875	0.7481	0.3183	4.7700e-		0.0605	0.0605		0.0605	0.0605		954.9995	954.9995	0.0183	0.0175	960.8115

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	2642.61	0.0285	0.2435	0.1036	1.5500e-		0.0197	0.0197		0.0197	0.0197		310.8954	310.8954	5.9600e-	5.7000e-	312.7875
Apartments Low	4274.24	0.0461	0.3939	0.1676	2.5100e-		0.0319	0.0319		0.0319	0.0319		502.8515	502.8515	9.6400e-	9.2200e-	505.9118
Condo/Townhouse	1200.65	0.0130	0.1107	0.0471	7.1000e-		8.9500e-	8.9500e-		8.9500e-	8.9500e-		141.2525	141.2525	2.7100e-	2.5900e-	142.1122
Total		**0.0875**	**0.7481**	**0.3183**	**4.7700e-**		**0.0605**	**0.0605**		**0.0605**	**0.0605**		**954.9995**	**954.9995**	**0.0183**	**0.0175**	**960.8115**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	2.31938	0.0250	0.2138	0.0910	1.3600e-		0.0173	0.0173		0.0173	0.0173		272.8677	272.8677	5.2300e-	5.0000e-	274.5283
Apartments Low	3.75116	0.0405	0.3457	0.1471	2.2100e-		0.0280	0.0280		0.0280	0.0280		441.3128	441.3128	8.4600e-	8.0900e-	443.9985
Condo/Townhouse	1.0448	0.0113	0.0963	0.0410	6.1000e-		7.7800e-	7.7800e-		7.7800e-	7.7800e-		122.9182	122.9182	2.3600e-	2.2500e-	123.6662

Total		**0.0767**	**0.6557**	**0.2790**	**4.1800e-**		**0.0530**	**0.0530**		**0.0530**	**0.0530**		**837.0986**	**837.0986**	**0.0161**	**0.0153**	**842.1931**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.4202	0.1580	13.6765	7.2000e-		0.3098	0.3098		0.3073	0.3073	0.0000	3,730.393	3,730.3935	0.0949	0.0679	3,753.4488
Unmitigated	311.2800	4.1818	382.8143	0.1222		51.7539	51.7539		51.7524	51.7524	5,364.136	2,248.040	7,612.1771	4.2584	0.4350	7,836.4384

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	1.6200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	4.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	305.1994	4.0238	369.1563	0.1215		51.6788	51.6788		51.6773	51.6773	5,364.136	2,223.529	7,587.6660	4.2345	0.4350	7,811.4254
Landscaping	0.4159	0.1580	13.6580	7.2000e-		0.0751	0.0751		0.0751	0.0751		24.5111	24.5111	0.0239		25.0131
Total	**311.2800**	**4.1818**	**382.8143**	**0.1222**		**51.7539**	**51.7539**		**51.7524**	**51.7524**	**5,364.136**	**2,248.040**	**7,612.1771**	**4.2584**	**0.4350**	**7,836.4384**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	1.6200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	4.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3397	2.0000e-	0.0185	0.0000		0.2347	0.2347		0.2322	0.2322	0.0000	3,705.882	3,705.8824	0.0710	0.0679	3,728.4357
Landscaping	0.4159	0.1580	13.6580	7.2000e-		0.0751	0.0751		0.0751	0.0751		24.5111	24.5111	0.0239		25.0131
Total	**6.4202**	**0.1580**	**13.6765**	**7.2000e-**		**0.3098**	**0.3098**		**0.3073**	**0.3073**	**0.0000**	**3,730.393**	**3,730.3935**	**0.0949**	**0.0679**	**3,753.4488**

2019 Operation

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	6.00	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Modeling for criteria pollutants only - no construction
Land Use - Acres from PD
Construction Phase - No construction
Vehicle Trips - Trip rates from F&P (includes internalization)
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblFireplaces	NumberGas	2.75	6.00
tblFireplaces	NumberWood	1.75	4.00
tblLandUse	LotAcreage	1.62	6.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	9.57	9.05

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3019	4.8000e-	0.4156	2.0000e-		0.0157	0.0157		0.0155	0.0155	0.0000	212.5075	212.5075	4.7900e-	3.8800e-	213.8115
Energy	4.1700e-	0.0356	0.0152	2.3000e-		2.8800e-	2.8800e-		2.8800e-	2.8800e-		45.4780	45.4780	8.7000e-	8.3000e-	45.7547
Mobile	0.1625	0.2957	1.5040	3.9200e-	0.2738	4.2100e-	0.2780	0.0731	3.8800e-	0.0769		306.8120	306.8120	0.0117		307.0573
Total	**0.4685**	**0.3361**	**1.9348**	**4.1700e-**	**0.2738**	**0.0228**	**0.2965**	**0.0731**	**0.0223**	**0.0954**	**0.0000**	**564.7974**	**564.7974**	**0.0173**	**4.7100e-**	**566.6235**

4.0 Operational Detail - Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1625	0.2957	1.5040	3.9200e-	0.2738	4.2100e-	0.2780	0.0731	3.8800e-	0.0769		306.8120	306.8120	0.0117		307.0573
Unmitigated	0.1625	0.2957	1.5040	3.9200e-	0.2738	4.2100e-	0.2780	0.0731	3.8800e-	0.0769		306.8120	306.8120	0.0117		307.0573

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	45.25	45.25	45.25	129,621	129,621
Total	45.25	45.25	45.25	129,621	129,621

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456583	0.078851	0.189597	0.160849	0.074758	0.010700	0.011077	0.000966	0.001372	0.000777	0.008826	0.000741	0.004904

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	4.1700e-	0.0356	0.0152	2.3000e-		2.8800e-	2.8800e-		2.8800e-	2.8800e-		45.4780	45.4780	8.7000e-	8.3000e-	45.7547
NaturalGas	4.7500e-	0.0406	0.0173	2.6000e-		3.2800e-	3.2800e-		3.2800e-	3.2800e-		51.8159	51.8159	9.9000e-	9.5000e-	52.1313

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	440.435	4.7500e-	0.0406	0.0173	2.6000e-		3.2800e-	3.2800e-		3.2800e-	3.2800e-		51.8159	51.8159	9.9000e-	9.5000e-	52.1313
Total		**4.7500e-**	**0.0406**	**0.0173**	**2.6000e-**		**3.2800e-**	**3.2800e-**		**3.2800e-**	**3.2800e-**		**51.8159**	**51.8159**	**9.9000e-**	**9.5000e-**	**52.1313**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	0.386563	4.1700e-	0.0356	0.0152	2.3000e-		2.8800e-	2.8800e-		2.8800e-	2.8800e-		45.4780	45.4780	8.7000e-	8.3000e-	45.7547
Total		**4.1700e-**	**0.0356**	**0.0152**	**2.3000e-**		**2.8800e-**	**2.8800e-**		**2.8800e-**	**2.8800e-**		**45.4780**	**45.4780**	**8.7000e-**	**8.3000e-**	**45.7547**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3019	4.8000e-	0.4156	2.0000e-		0.0157	0.0157		0.0155	0.0155	0.0000	212.5075	212.5075	4.7900e-	3.8800e-	213.8115
Unmitigated	17.6123	0.2184	20.5097	3.7000e-		2.7923	2.7923		2.7922	2.7922	282.4548	127.8016	410.2563	0.1302	0.0249	420.6952

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer	0.1926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	17.3299	0.2136	20.0951	3.6800e-		2.7900	2.7900		2.7899	2.7899	282.4548	127.0588	409.5136	0.1295	0.0249	419.9371
Landscaping	0.0127	4.8000e-	0.4146	2.0000e-		2.2700e-	2.2700e-		2.2700e-	2.2700e-		0.7428	0.7428	7.3000e-		0.7581
Architectural	0.0771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**17.6123**	**0.2184**	**20.5097**	**3.7000e-**		**2.7923**	**2.7923**		**2.7922**	**2.7922**	**282.4548**	**127.8016**	**410.2563**	**0.1302**	**0.0249**	**420.6952**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer	0.1926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0194	0.0000	1.0600e-	0.0000		0.0134	0.0134		0.0133	0.0133	0.0000	211.7647	211.7647	4.0600e-	3.8800e-	213.0535
Landscaping	0.0127	4.8000e-	0.4146	2.0000e-		2.2700e-	2.2700e-		2.2700e-	2.2700e-		0.7428	0.7428	7.3000e-		0.7581
Architectural	0.0771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3018**	**4.8000e-**	**0.4156**	**2.0000e-**		**0.0157**	**0.0157**		**0.0155**	**0.0155**	**0.0000**	**212.5075**	**212.5075**	**4.7900e-**	**3.8800e-**	**213.8115**

Full Buildout Operations

El Dorado Westside Operations (2035)

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
Other Asphalt Surfaces	7.00	Acre	7.00	217,800.00	0
City Park	15.00	Acre	15.00	653,400.00	0
Apartments Low Rise	330.00	Dwelling Unit	16.00	330,000.00	944
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	123.00	Dwelling Unit	23.00	221,400.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	290	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated 2020 PG&E RPS-adjusted emission factor
Land Use - Acrages from PD
Vehicle Trips - Trip rates from F&P
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County (1,037 total for westside + pedregal)
Water And Wastewater - Water rates from WSA
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11
Water Mitigation - Water reduction = Policy 8.36; Irrigation systems = Policy 8.43

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	1381800	2025540
tblFireplaces	NumberGas	181.50	198.00
tblFireplaces	NumberGas	170.50	186.00

tblFireplaces	NumberGas	67.65	74.00
tblFireplaces	NumberWood	115.50	132.00
tblFireplaces	NumberWood	108.50	124.00
tblFireplaces	NumberWood	43.05	49.00
tblLandUse	LandUseSquareFeet	304,920.00	217,800.00
tblLandUse	LotAcreage	1.15	11.00
tblLandUse	LotAcreage	20.63	16.00
tblLandUse	LotAcreage	19.38	37.00
tblLandUse	LotAcreage	39.94	23.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	27.92	11.04
tblVehicleTrips	WD_TR	9.57	9.05
tblWater	IndoorWaterUseRate	21,500,828.46	10,552,372.68
tblWater	IndoorWaterUseRate	20,197,747.94	23,542,982.98
tblWater	IndoorWaterUseRate	9,932,984.29	4,311,275.09
tblWater	IndoorWaterUseRate	8,013,945.15	11,799,471.26
tblWater	OutdoorWaterUseRate	13,554,870.11	8,889,226.98
tblWater	OutdoorWaterUseRate	17,872,220.24	15,299,213.37
tblWater	OutdoorWaterUseRate	12,733,362.83	19,832,404.14
tblWater	OutdoorWaterUseRate	6,087,958.12	3,546,371.44
tblWater	OutdoorWaterUseRate	0.00	6,075,499.89
tblWater	OutdoorWaterUseRate	5,052,269.77	9,939,771.99
tblWaterMitigation	PercentReductionInFlowBathroomFauc	32	0
tblWaterMitigation	PercentReductionInFlowKitchenFaucet	18	0

2.0 Emissions Summary

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	56.7811	0.7238	62.8153	3.3200e-		1.3724	1.3724		1.3617	1.3617	0.0000	16,271.00	16,271.008	0.4176	0.2962	16,371.607
Energy	0.4151	3.5592	1.5968	0.0226		0.2868	0.2868		0.2868	0.2868		4,528.487	4,528.4874	0.0868	0.0830	4,556.0470
Mobile	15.1794	19.8133	131.3005	0.5828	40.8672	0.5063	41.3735	10.9098	0.4680	11.3778		40,141.69	40,141.699	1.0616		40,163.992
Total	**72.3756**	**24.0963**	**195.7126**	**0.6088**	**40.8672**	**2.1656**	**43.0327**	**10.9098**	**2.1165**	**13.0262**	**0.0000**	**60,941.19**	**60,941.194**	**1.5660**	**0.3792**	**61,091.647**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.1794	19.8133	131.3005	0.5828	40.8672	0.5063	41.3735	10.9098	0.4680	11.3778		40,141.69	40,141.699	1.0616		40,163.992
Unmitigated	15.1794	19.8133	131.3005	0.5828	40.8672	0.5063	41.3735	10.9098	0.4680	11.3778		40,141.69	40,141.699	1.0616		40,163.992

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,055.90	2,055.90	2055.90	5,889,213	5,889,213
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Condo/Townhouse	2,805.50	2,805.50	2805.50	8,036,474	8,036,474
Government (Civic Center)	552.00	0.00	0.00	753,731	753,731
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,113.15	1,113.15	1113.15	3,188,666	3,188,666
Total	7,074.80	6,522.80	6,522.80	19,038,517	19,038,517

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.4151	3.5592	1.5968	0.0226		0.2868	0.2868		0.2868	0.2868		4,528.487	4,528.4874	0.0868	0.0830	4,556.0470
NaturalGas	0.4754	4.0762	1.8309	0.0259		0.3284	0.3284		0.3284	0.3284		5,185.858	5,185.8583	0.0994	0.0951	5,217.4186

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	18610	0.2007	1.7150	0.7298	0.0110		0.1387	0.1387		0.1387	0.1387		2,189.4143	2,189.414	0.0420	0.0401	2,202.7388
Government (Civic	2369.86	0.0256	0.2323	0.1952	1.3900e-		0.0177	0.0177		0.0177	0.0177		278.8074	278.8074	5.3400e-	5.1100e-	280.5042
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family	10834.7	0.1168	0.9985	0.4249	6.3700e-		0.0807	0.0807		0.0807	0.0807		1,274.6713	1,274.671	0.0244	0.0234	1,282.4287
Apartments Low	12265.2	0.1323	1.1303	0.4810	7.2100e-		0.0914	0.0914		0.0914	0.0914		1,442.9653	1,442.965	0.0277	0.0265	1,451.7469
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4754**	**4.0762**	**1.8309**	**0.0259**		**0.3284**	**0.3284**		**0.3284**	**0.3284**		**5,185.8583**	**5,185.858**	**0.0994**	**0.0951**	**5,217.4186**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	16.1945	0.1747	1.4924	0.6351	9.5300e-		0.1207	0.1207		0.1207	0.1207		1,905.2315	1,905.231	0.0365	0.0349	1,916.8264
Government (Civic	2.02404	0.0218	0.1984	0.1667	1.1900e-		0.0151	0.0151		0.0151	0.0151		238.1225	238.1225	4.5600e-	4.3700e-	239.5717
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family	9.50944	0.1026	0.8764	0.3729	5.5900e-		0.0709	0.0709		0.0709	0.0709		1,118.7576	1,118.757	0.0214	0.0205	1,125.5662
Apartments Low	10.7642	0.1161	0.9920	0.4221	6.3300e-		0.0802	0.0802		0.0802	0.0802		1,266.3758	1,266.375	0.0243	0.0232	1,274.0827
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.4151**	**3.5592**	**1.5968**	**0.0226**		**0.2868**	**0.2868**		**0.2868**	**0.2868**		**4,528.4874**	**4,528.487**	**0.0868**	**0.0830**	**4,556.0470**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	56.7811	0.7238	62.8153	3.3200e-		1.3724	1.3724		1.3617	1.3617	0.0000	16,271.00	16,271.008	0.4176	0.2962	16,371.607
Unmitigated	1,386.1938	18.4183	1,681.148	0.5652		227.1442	227.1442		227.1377	227.1377	23,611.81	9,812.184	33,424.002	19.6782	1.8953	34,424.798

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	15.2762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	38.1476					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1,330.8938	17.6946	1,618.413	0.5619		226.7951	226.7951		226.7886	226.7886	23,611.81	9,698.823	33,310.641	19.5703	1.8953	34,309.170
Landscaping	1.8762	0.7238	62.7345	3.3200e-		0.3491	0.3491		0.3491	0.3491		113.3612	113.3612	0.1079		115.6279
Total	**1,386.1938**	**18.4183**	**1,681.148**	**0.5652**		**227.1442**	**227.1442**		**227.1377**	**227.1377**	**23,611.81**	**9,812.184**	**33,424.002**	**19.6782**	**1.8953**	**34,424.798**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	15.2762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	38.1476					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4811	7.0000e-	0.0808	0.0000		1.0233	1.0233		1.0126	1.0126	0.0000	16,157.64	16,157.647	0.3097	0.2962	16,255.979
Landscaping	1.8762	0.7238	62.7345	3.3200e-		0.3491	0.3491		0.3491	0.3491		113.3612	113.3612	0.1079		115.6279
Total	**56.7812**	**0.7238**	**62.8153**	**3.3200e-**		**1.3724**	**1.3724**		**1.3617**	**1.3617**	**0.0000**	**16,271.00**	**16,271.008**	**0.4176**	**0.2962**	**16,371.607**

Pedregal Operations (2035)

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.00	Acre	5.00	392,040.00	0
Apartments Low Rise	200.00	Dwelling Unit	13.00	200,000.00	572
Single Family Housing	37.00	Dwelling Unit	45.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	290	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated 2020 PG&E RPS-adjusted emission factor
Land Use - Acrages from PD
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County (1,037 total for westside + pedregal)
Water And Wastewater - Water rates from WSA
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11
Water Mitigation - Water reduction = Policy 8.36; Irrigation systems = Policy 8.43
Vehicle Trips - Trip rates from F&P

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	70.00	1.00
tblFireplaces	NumberGas	110.00	120.00
tblFireplaces	NumberGas	20.35	44.00
tblFireplaces	NumberWood	70.00	80.00
tblFireplaces	NumberWood	12.95	30.00
tblLandUse	LandUseSquareFeet	217,800.00	392,040.00

tblLandUse	LotAcreage	12.50	13.00
tblLandUse	LotAcreage	12.01	45.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52
tblWater	IndoorWaterUseRate	13,030,805.12	6,395,377.38
tblWater	IndoorWaterUseRate	2,410,698.95	5,915,724.07
tblWater	OutdoorWaterUseRate	8,215,072.80	5,387,410.29
tblWater	OutdoorWaterUseRate	1,519,788.47	4,983,354.52

2.0 Emissions Summary

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	19.9838	0.2248	19.5136	1.0300e-		0.4759	0.4759		0.4721	0.4721	0.0000	5,837.560	5,837.5609	0.1447	0.1064	5,873.5770
Energy	0.1012	0.8648	0.3680	5.5200e-		0.0699	0.0699		0.0699	0.0699		1,104.037	1,104.0373	0.0212	0.0202	1,110.7563
Mobile	3.6615	4.9022	32.5179	0.1451	10.1827	0.1253	10.308	2.7183	0.1158	2.8342		9,990.210	9,990.2107	0.2637		9,995.7473
Total	**23.7465**	**5.9919**	**52.3995**	**0.1516**	**10.1827**	**0.6711**	**10.8538**	**2.7183**	**0.6578**	**3.3761**	**0.0000**	**16,931.80**	**16,931.809**	**0.4295**	**0.1266**	**16,980.080**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.6615	4.9022	32.5179	0.1451	10.1827	0.1253	10.3080	2.7183	0.1158	2.8342		9,990.210	9,990.2107	0.2637		9,995.7473
Unmitigated	3.6615	4.9022	32.5179	0.1451	10.1827	0.1253	10.3080	2.7183	0.1158	2.8342		9,990.210	9,990.2107	0.2637		9,995.7473

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,330.00	1,330.00	1330.00	3,809,842	3,809,842
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	352.24	352.24	352.24	1,009,006	1,009,006
Total	1,682.24	1,682.24	1,682.24	4,818,848	4,818,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.2 Energy by Land Use - NaturalGas

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family	2.86056	0.0309	0.2636	0.1122	1.6800e-		0.0213	0.0213		0.0213	0.0213		336.5368	336.5368	6.4500e-	6.1700e-	338.5849
Apartments Low	6.52375	0.0704	0.6012	0.2558	3.8400e-		0.0486	0.0486		0.0486	0.0486		767.5005	767.5005	0.0147	0.0141	772.1714
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1012**	**0.8648**	**0.3680**	**5.5200e-**		**0.0699**	**0.0699**		**0.0699**	**0.0699**		**1,104.0373**	**1,104.037**	**0.0212**	**0.0202**	**1,110.7563**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.7744					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer	14.0949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Hearth	0.5319	2.0000e-	0.0290	0.0000		0.3675	0.3675		0.3636	0.3636	0.0000	5,802.352	5,802.3529	0.1112	0.1064	5,837.6651
Landscaping	0.5826	0.2248	19.4846	1.0300e-		0.1084	0.1084		0.1084	0.1084		35.2080	35.2080	0.0335		35.9119
Total	**19.9838**	**0.2248**	**19.5136**	**1.0300e-**		**0.4759**	**0.4759**		**0.4720**	**0.4720**	**0.0000**	**5,837.560**	**5,837.5609**	**0.1447**	**0.1064**	**5,873.5770**

El Dorado Westside Operations (2035)

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
Other Asphalt Surfaces	7.00	Acre	7.00	217,800.00	0
City Park	15.00	Acre	15.00	653,400.00	0
Apartments Low Rise	330.00	Dwelling Unit	16.00	330,000.00	944
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	123.00	Dwelling Unit	23.00	221,400.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	290	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated 2020 PG&E RPS-adjusted emission factor
Land Use - Acrages from PD
Vehicle Trips - Trip rates from F&P
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County (1,037 total for westside + pedregal)
Water And Wastewater - Water rates from WSA
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11
Water Mitigation - Water reduction = Policy 8.36; Irrigation systems = Policy 8.43

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	1381800	2025540
tblFireplaces	NumberGas	181.50	198.00
tblFireplaces	NumberGas	170.50	186.00

tblFireplaces	NumberGas	67.65	74.00
tblFireplaces	NumberWood	115.50	132.00
tblFireplaces	NumberWood	108.50	124.00
tblFireplaces	NumberWood	43.05	49.00
tblLandUse	LandUseSquareFeet	304,920.00	217,800.00
tblLandUse	LotAcreage	1.15	11.00
tblLandUse	LotAcreage	20.63	16.00
tblLandUse	LotAcreage	19.38	37.00
tblLandUse	LotAcreage	39.94	23.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	6.23
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	ST_TR	7.16	9.05
tblVehicleTrips	ST_TR	10.08	9.05
tblVehicleTrips	SU_TR	6.07	6.23
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	9.05
tblVehicleTrips	SU_TR	8.77	9.05
tblVehicleTrips	WD_TR	6.59	6.23
tblVehicleTrips	WD_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	9.05
tblVehicleTrips	WD_TR	27.92	11.04
tblVehicleTrips	WD_TR	9.57	9.05
tblWater	IndoorWaterUseRate	21,500,828.46	10,552,372.68
tblWater	IndoorWaterUseRate	20,197,747.94	23,542,982.98
tblWater	IndoorWaterUseRate	9,932,984.29	4,311,275.09
tblWater	IndoorWaterUseRate	8,013,945.15	11,799,471.26
tblWater	OutdoorWaterUseRate	13,554,870.11	8,889,226.98
tblWater	OutdoorWaterUseRate	17,872,220.24	15,299,213.37
tblWater	OutdoorWaterUseRate	12,733,362.83	19,832,404.14
tblWater	OutdoorWaterUseRate	6,087,958.12	3,546,371.44
tblWater	OutdoorWaterUseRate	0.00	6,075,499.89
tblWater	OutdoorWaterUseRate	5,052,269.77	9,939,771.99
tblWaterMitigation	PercentReductionInFlowBathroomFauc	32	0
tblWaterMitigation	PercentReductionInFlowKitchenFaucet	18	0

2.0 Emissions Summarv

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	64.4854	0.7906	72.0011	0.0233		9.3300	9.3300		9.3298	9.3298	878.2315	369.9992	1,248.23	0.7367	0.0705	1,285.5556
Energy	0.0868	0.7439	0.3341	4.7300e-		0.0599	0.0599		0.0599	0.0599	0.0000	1,397.476	1,397.48	0.0704	0.0269	1,407.2895
Mobile	2.3961	3.8738	22.2029	0.0967	7.0202	0.0906	7.1107	1.8806	0.0837	1.9643	0.0000	6,071.038	6,071.0388	0.1723	0.0000	6,074.6567
Waste						0.0000	0.0000		0.0000	0.0000	135.7380	0.0000	135.7380	8.0219	0.0000	304.1977
Water						0.0000	0.0000		0.0000	0.0000	15.9281	65.0085	80.9366	1.6425	0.0400	127.8202
Total	**66.9682**	**5.4083**	**94.5381**	**0.1247**	**7.0202**	**9.4805**	**16.5007**	**1.8806**	**9.4734**	**11.3540**	**1,029.897**	**7,903.522**	**8,933.4203**	**10.6437**	**0.1374**	**9,199.5197**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9794	0.0651	5.6494	3.0000e-		0.0734	0.0734		0.0729	0.0729	0.0000	610.2324	610.2324	0.0203	0.011	614.0749
Energy	0.0758	0.6496	0.2914	4.1300e-		0.0523	0.0523		0.0523	0.0523	0.0000	1,278.884	1,278.88	0.0673	0.0247	1,287.9518
Mobile	2.3961	3.8738	22.2029	0.0967	7.0202	0.0906	7.1107	1.8806	0.0837	1.9643	0.0000	6,071.038	6,071.0388	0.1723	0.0000	6,074.6567
Waste						0.0000	0.0000		0.0000	0.0000	135.7380	0.0000	135.7380	8.0219	0.0000	304.1977
Water						0.0000	0.0000		0.0000	0.0000	12.7425	55.4737	68.2161	1.3143	0.0321	105.7526
Total	**12.4513**	**4.5885**	**28.1438**	**0.1011**	**7.0202**	**0.2163**	**7.2365**	**1.8806**	**0.2090**	**2.0896**	**148.4805**	**8,015.628**	**8,164.1093**	**9.5961**	**0.0678**	**8,386.6336**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.3961	3.8738	22.2029	0.0967	7.0202	0.0906	7.1107	1.8806	0.0837	1.9643	0.0000	6,071.038	6,071.0388	0.1723	0.0000	6,074.6567
Unmitigated	2.3961	3.8738	22.2029	0.0967	7.0202	0.0906	7.1107	1.8806	0.0837	1.9643	0.0000	6,071.038	6,071.0388	0.1723	0.0000	6,074.6567

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,055.90	2,055.90	2055.90	5,889,213	5,889,213
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Condo/Townhouse	2,805.50	2,805.50	2805.50	8,036,474	8,036,474
Government (Civic Center)	552.00	0.00	0.00	753,731	753,731
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,113.15	1,113.15	1113.15	3,188,666	3,188,666
Total	7,074.80	6,522.80	6,522.80	19,038,517	19,038,517

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	529.1422	529.1422	0.0529	0.0110	533.6472
Electricity						0.0000	0.0000		0.0000	0.0000	0.0000	538.8993	538.8993	0.0539	0.0112	543.4873
NaturalGas	0.0758	0.6496	0.2914	4.1300e-		0.0523	0.0523		0.0523	0.0523	0.0000	749.7419	749.7419	0.0144	0.0138	754.3047
NaturalGas	0.0868	0.7439	0.3341	4.7300e-		0.0599	0.0599		0.0599	0.0599	0.0000	858.5770	858.5770	0.0165	0.0157	863.8022

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	6.79266e+	0.0366	0.3130	0.1332	2.0000e-		0.0253	0.0253		0.0253	0.0253	0.0000	362.4821	362.4821	6.9500e-	6.6500e-	364.6881
Government (Civic	865000	4.6600e-	0.0424	0.0356	2.5000e-		3.2200e-	3.2200e-		3.2200e-	3.2200e-	0.0000	46.1597	46.1597	8.8000e-	8.5000e-	46.4406
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family	3.95467e+	0.0213	0.1822	0.0775	1.1600e-		0.0147	0.0147		0.0147	0.0147	0.0000	211.0361	211.0361	4.0400e-	3.8700e-	212.3205
Apartments Low	4.4768e+0	0.0241	0.2063	0.0878	1.3200e-		0.0167	0.0167		0.0167	0.0167	0.0000	238.8991	238.8991	4.5800e-	4.3800e-	240.3530
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0868**	**0.7439**	**0.3341**	**4.7300e-**		**0.0599**	**0.0599**		**0.0599**	**0.0599**	**0.0000**	**858.5770**	**858.5770**	**0.0165**	**0.0158**	**863.8022**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.91098e+	0.0319	0.2724	0.1159	1.7400e-		0.0220	0.0220		0.0220	0.0220	0.0000	315.4325	315.4325	6.0500e-	5.7800e-	317.3521
Government (Civic	738775	3.9800e-	0.0362	0.0304	2.2000e-		2.7500e-	2.7500e-		2.7500e-	2.7500e-	0.0000	39.4239	39.4239	7.6000e-	7.2000e-	39.6638
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family	3.47095e+	0.0187	0.1599	0.0681	1.0200e-		0.0129	0.0129		0.0129	0.0129	0.0000	185.2229	185.2229	3.5500e-	3.4000e-	186.3501
Apartments Low	3.92893e+	0.0212	0.1810	0.0770	1.1600e-		0.0146	0.0146		0.0146	0.0146	0.0000	209.6627	209.6627	4.0200e-	3.8400e-	210.9387
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0758**	**0.6496**	**0.2914**	**4.1400e-**		**0.0523**	**0.0523**		**0.0523**	**0.0523**	**0.0000**	**749.7419**	**749.7419**	**0.0144**	**0.0137**	**754.3047**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	1.25079e+	164.5315	0.0165	3.4000e-	165.9323
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.37271e+	180.5689	0.0181	3.7400e-	182.1062
Government (Civic	558500	73.4661	7.3500e-	1.5200e-	74.0916
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	914788	120.3328	0.0120	2.4900e-	121.3573
Total		**538.8993**	**0.0539**	**0.0112**	**543.4873**

Mitigated

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	1.23356e+	162.2644	0.0162	3.3600e-	163.6458
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.35871e+	178.7268	0.0179	3.7000e-	180.2485
Government (Civic	529025	69.5889	6.9600e-	1.4400e-	70.1814
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	901326	118.5621	0.0119	2.4500e-	119.5715
Total		**529.1422**	**0.0529**	**0.0110**	**533.6472**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.9794	0.0651	5.6494	3.0000e-		0.0734	0.0734		0.0729	0.0729	0.0000	610.2324	610.2324	0.0203	0.0110	614.0749
Unmitigated	64.4854	0.7906	72.0011	0.0233		9.3300	9.3300		9.3298	9.3298	878.2315	369.9992	1,248.2307	0.7367	0.0705	1,285.5556

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	2.7879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	6.9619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	54.5667	0.7255	66.3550	0.0230		9.2986	9.2986		9.2983	9.2983	878.2315	360.7436	1,238.9751	0.7279	0.0705	1,276.1150
Landscaping	0.1689	0.0651	5.6461	3.0000e-		0.0314	0.0314		0.0314	0.0314	0.0000	9.2556	9.2556	8.8100e-	0.0000	9.4406
Total	**64.4854**	**0.7906**	**72.0011**	**0.0233**		**9.3300**	**9.3300**		**9.3298**	**9.3298**	**878.2315**	**369.9992**	**1,248.2307**	**0.7367**	**0.0705**	**1,285.5556**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	2.7879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	6.9619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0607	0.0000	3.3100e-	0.0000		0.0420	0.0420		0.0415	0.0415	0.0000	600.9768	600.9768	0.0115	0.0110	604.6343
Landscaping	0.1689	0.0651	5.6461	3.0000e-		0.0314	0.0314		0.0314	0.0314	0.0000	9.2556	9.2556	8.8100e-	0.0000	9.4406
Total	**9.9794**	**0.0651**	**5.6494**	**3.0000e-**		**0.0734**	**0.0734**		**0.0729**	**0.0729**	**0.0000**	**610.2324**	**610.2324**	**0.0203**	**0.0110**	**614.0749**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy
Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	68.2161	1.3143	0.0321	105.7526
Unmitigated	80.9366	1.6425	0.0400	127.8202

7.2 Water by Land Use

Unmitigated

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	10.5524 /	14.9512	0.3450	8.3600e-	24.7878
City Park	0 / 15.2992	7.0437	7.0000e-	1.5000e-	7.1037
Condo/Townhouse	23.543 /	33.3571	0.7697	0.0187	55.3030
Government (Civic	4.31128 /	6.0692	0.1410	3.4100e-	10.0876
Other Asphalt	0 / 6.0755	2.7971	2.8000e-	6.0000e-	2.8210
Single Family	11.7995 /	16.7182	0.3858	9.3500e-	27.7172
Total		**80.9366**	**1.6425**	**0.0400**	**127.8202**

Mitigated

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	8.4419 /	12.2776	0.2760	6.6900e-	20.1496
City Park	0 / 15.2992	7.0437	7.0000e-	1.5000e-	7.1037
Condo/Townhouse	18.8344 /	27.3922	0.6159	0.0149	44.9549
Government (Civic	3.44902 /	4.9768	0.1128	2.7300e-	8.1926
Other Asphalt	0 / 6.0755	2.7971	2.8000e-	6.0000e-	2.8210
Single Family	9.43958 /	13.7286	0.3087	7.4800e-	22.5309
Total		**68.2161**	**1.3143**	**0.0320**	**105.7526**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	135.7380	8.0219	0.0000	304.1977
Mitigated	135.7380	8.0219	0.0000	304.1977

8.2 Waste by Land Use

Unmitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	151.8	30.8140	1.8211	0.0000	69.0562
City Park	1.29	0.2619	0.0155	0.0000	0.5868
Condo/Townhouse	142.6	28.9465	1.7107	0.0000	64.8710
Government (Civic	285	57.8524	3.4190	0.0000	129.6510

Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	88	17.8632	1.0557	0.0000	40.0326
Total		**135.7380**	**8.0219**	**0.0000**	**304.1977**

Mitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	151.8	30.8140	1.8211	0.0000	69.0562
City Park	1.29	0.2619	0.0155	0.0000	0.5868
Condo/Townhouse	142.6	28.9465	1.7107	0.0000	64.8710
Government (Civic	285	57.8524	3.4190	0.0000	129.6510
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	88	17.8632	1.0557	0.0000	40.0326
Total		**135.7380**	**8.0219**	**0.0000**	**304.1977**

El Dorado Westside Operations Mobile Source with No Internalization (2035)

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
Other Asphalt Surfaces	7.00	Acre	7.00	217,800.00	0
City Park	15.00	Acre	15.00	653,400.00	0
Apartments Low Rise	330.00	Dwelling Unit	16.00	330,000.00	944
Condo/Townhouse	310.00	Dwelling Unit	37.00	310,000.00	887
Single Family Housing	123.00	Dwelling Unit	23.00	221,400.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	290	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - Trip rates from F&P

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	ST_TR	7.16	9.52
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	9.52
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	1.59	36.55

tblVehicleTrips	WD_TR	6.59	9.52
tblVehicleTrips	WD_TR	27.92	11.04
tblVehicleTrips	WD_TR	9.57	9.52

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mobile	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	6,383.208	6,383.2088	0.1811	0.0000	6,387.0125

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	6,383.208	6,383.2088	0.1811	0.0000	6,387.0125
Unmitigated	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	6,383.208	6,383.2088	0.1811	0.0000	6,387.0125

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,194.50	2,194.50	2194.50	6,286,239	6,286,239
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Condo/Townhouse	2,951.20	2,951.20	2951.20	8,453,838	8,453,838
Government (Civic Center)	552.00	0.00	0.00	753,731	753,731
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,170.96	1,170.96	1170.96	3,354,265	3,354,265
Total	7,416.91	6,864.91	6,864.91	20,018,506	20,018,506

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

Pedregal Operations (2035)

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.00	Acre	5.00	392,040.00	0
Apartments Low Rise	200.00	Dwelling Unit	13.00	200,000.00	572
Single Family Housing	37.00	Dwelling Unit	45.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	290	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated 2020 PG&E RPS-adjusted emission factor
Land Use - Acrages from PD
Woodstoves - All restricted to natural gas per Policy 8.51. Hearth numbers provided by the County (1,037 total for westside + pedregal)
Water And Wastewater - Water rates from WSA
Area Mitigation - All NG Hearth = Policy 8.80/8.51
Energy Mitigation - Exceed Title 24 = Policy 8.11
Water Mitigation - Water reduction = Policy 8.36; Irrigation systems = Policy 8.43
Vehicle Trips - Trip rates from F&P

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	70.00	1.00
tblFireplaces	NumberGas	110.00	120.00
tblFireplaces	NumberGas	20.35	44.00
tblFireplaces	NumberWood	70.00	80.00
tblFireplaces	NumberWood	12.95	30.00
tblLandUse	LandUseSquareFeet	217,800.00	392,040.00

tblLandUse	LotAcreage	12.50	13.00
tblLandUse	LotAcreage	12.01	45.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52
tblWater	IndoorWaterUseRate	13,030,805.12	6,395,377.38
tblWater	IndoorWaterUseRate	2,410,698.95	5,915,724.07
tblWater	OutdoorWaterUseRate	8,215,072.80	5,387,410.29
tblWater	OutdoorWaterUseRate	1,519,788.47	4,983,354.52

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	23.1369	0.2761	25.3316	7.2500e-		3.3057	3.3057		3.3056	3.3056	309.0216	132.0492	441.0708	0.2292	0.0254	453.7597
Energy	0.0210	0.1798	0.0765	1.1500e-		0.0145	0.0145		0.0145	0.0145	0.0000	344.1835	344.1835	0.0176	6.6300e-	346.6081
Mobile	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	1,535.017	1,535.02	0.0435	0	1,535.9311
Waste						0.0000	0.0000		0.0000	0.0000	24.0544	0.0000	24.0544	1.4216	0.0000	53.9075
Water						0.0000	0.0000		0.0000	0.0000	3.9057	13.5374	17.4431	0.4025	9.7500e-	28.9191
Total	**23.7486**	**1.4308**	**30.9820**	**0.0328**	**1.7769**	**3.3430**	**5.1199**	**0.4760**	**3.3412**	**3.8172**	**336.9818**	**2,024.787**	**2,361.7697**	**2.1143**	**0.0418**	**2,419.1254**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.5179	0.0202	1.7548	9.0000e-		0.0248	0.0248		0.0247	0.0247	0.0000	218.6907	218.6907	6.87E-03	3.96E-03	220.0616
Energy	0.0185	0.1578	0.0672	1.0100e-		0.0128	0.0128		0.0128	0.0128	0.0000	316.7928	316.7928	0.0169	6.12E-03	319.0461
Mobile	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	1,535.017	1,535.0179	0.0435	0.0000	1,535.9311
Waste						0.0000	0.0000		0.0000	0.0000	24.0544	0.0000	24.0544	1.4216	0.0000	53.9075
Water						0.0000	0.0000		0.0000	0.0000	3.1246	11.1993	14.3239	0.3221	7.8100e-	23.5078
Total	**4.1270**	**1.1529**	**7.3958**	**0.0255**	**1.7769**	**0.0604**	**1.8373**	**0.4760**	**0.0585**	**0.5345**	**27.1790**	**2,081.700**	**2,108.8797**	**1.8109**	**0.0179**	**2,152.4541**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	1,535.017	1,535.0179	0.0435	0.0000	1,535.9311
Unmitigated	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	1,535.017	1,535.0179	0.0435	0.0000	1,535.9311

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,330.00	1,330.00	1330.00	3,809,842	3,809,842
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	352.24	352.24	352.24	1,009,006	1,009,006
Total	1,682.24	1,682.24	1,682.24	4,818,848	4,818,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	134.0071	134.0071	0.0134	2.7700e-	135.1480

Electricity						0.0000	0.0000		0.0000	0.0000	0.0000	135.9137	135.9137	0.0136	2.8100e-	137.0709
NaturalGas	0.0185	0.1578	0.0672	1.0100e-		0.0128	0.0128		0.0128	0.0128	0.0000	182.7858	182.7858	3.5000e-	3.3500e-	183.8982
NaturalGas	0.0210	0.1798	0.0765	1.1500e-		0.0145	0.0145		0.0145	0.0145	0.0000	208.2697	208.2697	3.9900e-	3.8200e-	209.5372

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family	1.18962e+	6.4100e-	0.0548	0.0233	3.5000e-		4.4300e-	4.4300e-		4.4300e-	4.4300e-	0.0000	63.4824	63.4824	1.2200e-	1.1600e-	63.8688
Apartments Low	2.71321e+	0.0146	0.1250	0.0532	8.0000e-		0.0101	0.0101		0.0101	0.0101	0.0000	144.7873	144.7873	2.7800e-	2.6500e-	145.6685
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0210**	**0.1798**	**0.0765**	**1.1500e-**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**208.2697**	**208.2697**	**4.0000e-**	**3.8100e-**	**209.5372**

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family	1.04411e+	5.6300e-	0.0481	0.0205	3.1000e-		3.8900e-	3.8900e-		3.8900e-	3.8900e-	0.0000	55.7175	55.7175	1.0700e-	1.0200e-	56.0565
Apartments Low	2.38117e+	0.0128	0.1097	0.0467	7.0000e-		8.8700e-	8.8700e-		8.8700e-	8.8700e-	0.0000	127.0683	127.0683	2.4400e-	2.3300e-	127.8416
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0185**	**0.1578**	**0.0672**	**1.0100e-**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**182.7858**	**182.7858**	**3.5100e-**	**3.3500e-**	**183.8982**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	758056	99.7160	9.9700e-	2.0600e-	100.5650
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	275180	36.1977	3.6200e-	7.5000e-	36.5059
Total		**135.9137**	**0.0136**	**2.8100e-**	**137.0709**

Mitigated

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	747611	98.3420	9.8300e-	2.0300e-	99.1793
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	271131	35.6650	3.5700e-	7.4000e-	35.9687
Total		**134.0071**	**0.0134**	**2.7700e-**	**135.1480**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.5179	0.0202	1.7548	9.0000e-		0.0248	0.0248		0.0247	0.0247	0.0000	218.6907	218.6907	6.8700e-	3.9600e-	220.0616
Unmitigated	23.1369	0.2761	25.3316	7.2500e-		3.3057	3.3057		3.3056	3.3056	309.0216	132.0492	441.0708	0.2292	0.0254	453.7597

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	0.8713					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	2.5723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	19.6408	0.2559	23.5780	7.1600e-		3.2959	3.2959		3.2958	3.2958	309.0216	129.1746	438.1962	0.2264	0.0254	450.8276
Landscaping	0.0524	0.0202	1.7536	9.0000e-		9.7600e-	9.7600e-		9.7600e-	9.7600e-	0.0000	2.8746	2.8746	2.7400e-	0.0000	2.9321
Total	**23.1369**	**0.2761**	**25.3316**	**7.2500e-**		**3.3057**	**3.3057**		**3.3056**	**3.3056**	**309.0216**	**132.0492**	**441.0708**	**0.2292**	**0.0254**	**453.7597**

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	0.8713					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	2.5723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0218	0.0000	1.1900e-	0.0000		0.0151	0.0151		0.0149	0.0149	0.0000	215.8161	215.8161	4.1400e-	3.9600e-	217.1295
Landscaping	0.0524	0.0202	1.7536	9.0000e-		9.7600e-	9.7600e-		9.7600e-	9.7600e-	0.0000	2.8746	2.8746	2.7400e-	0.0000	2.9321
Total	**3.5179**	**0.0202**	**1.7548**	**9.0000e-**		**0.0248**	**0.0248**		**0.0247**	**0.0247**	**0.0000**	**218.6907**	**218.6907**	**6.8800e-**	**3.9600e-**	**220.0616**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy
Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.3239	0.3221	7.8100e-	23.5078
Unmitigated	17.4431	0.4025	9.7500e-	28.9191

7.2 Water by Land Use

Unmitigated

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	6.39538 /	9.0614	0.2091	5.0700e-	15.0229
Other Asphalt	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family	5.91572 /	8.3818	0.1934	4.6900e-	13.8962
Total		**17.4431**	**0.4025**	**9.7600e-**	**28.9191**

Mitigated

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	5.1163 /	7.4410	0.1673	4.0600e-	12.2119
Other Asphalt	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family	4.73258 /	6.8829	0.1548	3.7500e-	11.2960
Total		**14.3239**	**0.3221**	**7.8100e-**	**23.5078**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	24.0544	1.4216	0.0000	53.9075
Mitigated	24.0544	1.4216	0.0000	53.9075

8.2 Waste by Land Use

Unmitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	92	18.6752	1.1037	0.0000	41.8523
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	26.5	5.3793	0.3179	0.0000	12.0553
Total		**24.0544**	**1.4216**	**0.0000**	**53.9075**

Mitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	92	18.6752	1.1037	0.0000	41.8523
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	26.5	5.3793	0.3179	0.0000	12.0553
Total		**24.0544**	**1.4216**	**0.0000**	**53.9075**

El Dorado Westside Operations (2035) (NAT)

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	50.00	1000sqft	11.00	50,000.00	0
Other Asphalt Surfaces	5.00	Acre	5.00	217,800.00	0
City Park	15.00	Acre	15.00	653,400.00	0
Apartments Low Rise	330.00	Dwelling Unit	18.06	330,000.00	944
Condo/Townhouse	310.00	Dwelling Unit	36.00	310,000.00	887
Single Family Housing	123.00	Dwelling Unit	23.00	221,400.00	352

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	393	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated PG&E non-RPS-adjusted emission factor (last year with actual data = 2011)
Land Use - Acrages from PD
Vehicle Trips - Trip rates from F&P
Vechicle Emission Factors - Non-Pavley/LCFS emission factors (from Users Guide Appendix D)
Woodstoves - Hearth numbers provided by the County (1,037 total for westside + pedregal)
Energy Use - Historic data used per AQMD guidance
Water And Wastewater - Water rates from WSA

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	1381800	2025540
tblFireplaces	NumberGas	181.50	198.00
tblFireplaces	NumberGas	170.50	186.00
tblFireplaces	NumberGas	67.65	74.00

tblFireplaces	NumberWood	115.50	132.00
tblFireplaces	NumberWood	108.50	124.00
tblFireplaces	NumberWood	43.05	49.00
tblLandUse	LotAcreage	1.15	11.00
tblLandUse	LotAcreage	20.63	18.06
tblLandUse	LotAcreage	19.38	36.00
tblLandUse	LotAcreage	39.94	23.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	393
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleEF	LDA	202.27	340.26
tblVehicleEF	LDA	44.13	73.83
tblVehicleEF	LDT1	243.33	395.39
tblVehicleEF	LDT1	53.57	86.16
tblVehicleEF	LDT2	315.15	462.50
tblVehicleEF	LDT2	69.02	100.96
tblVehicleEF	MDV	417.11	592.22
tblVehicleEF	MDV	91.50	128.99
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	1.59	36.55
tblVehicleTrips	ST_TR	7.16	9.52
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	1.59	36.55
tblVehicleTrips	SU_TR	6.07	9.52
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	1.59	36.55
tblVehicleTrips	WD_TR	6.59	9.52
tblVehicleTrips	WD_TR	27.92	11.04
tblVehicleTrips	WD_TR	9.57	9.52
tblWater	IndoorWaterUseRate	21,500,828.46	10,552,372.68
tblWater	IndoorWaterUseRate	20,197,747.94	23,542,982.98
tblWater	IndoorWaterUseRate	9,932,984.29	4,311,275.09
tblWater	IndoorWaterUseRate	8,013,945.15	11,799,471.26
tblWater	OutdoorWaterUseRate	13,554,870.11	8,889,226.98
tblWater	OutdoorWaterUseRate	17,872,220.24	15,299,213.37
tblWater	OutdoorWaterUseRate	12,733,362.83	19,832,404.14
tblWater	OutdoorWaterUseRate	6,087,958.12	3,546,371.44
tblWater	OutdoorWaterUseRate	0.00	6,075,499.89
tblWater	OutdoorWaterUseRate	5,052,269.77	9,939,771.99

2.0 Emissions Summary

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	64.4854	0.7906	72.0011	0.0233		9.3300	9.3300		9.3298	9.3298	878.2315	369.9991	1,248.23	0.7367	0.0705	1,285.5556
Energy	0.0933	0.8002	0.3609	5.0900e-		0.0645	0.0645		0.0645	0.0645	0.0000	1,672.145	1,672.15	0.0730	0.0284	1,682.4692
Mobile	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	9,071.751	9,071.75	0.1811	0	9,075.5550
Waste						0.0000	0.0000		0.0000	0.0000	135.7380	0.0000	135.7380	8.0219	0.0000	304.1977
Water						0.0000	0.0000		0.0000	0.0000	15.9281	88.0977	104.0258	1.6425	0.0400	150.9094
Total	**67.0949**	**5.6629**	**95.6984**	**0.1301**	**7.3815**	**9.4897**	**16.8712**	**1.9774**	**9.4822**	**11.4596**	**1,029.897**	**11,201.99**	**12,231.891**	**10.6552**	**0.1388**	**12,498.686**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	9,071.751	9,071.7513	0.1811	0.0000	9,075.5550
Unmitigated	2.5162	4.0721	23.3365	0.1016	7.3815	0.0952	7.4767	1.9774	0.0880	2.0654	0.0000	9,071.751	9,071.7513	0.1811	0.0000	9,075.5550

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,194.50	2,194.50	2194.50	6,286,239	6,286,239
City Park	548.25	548.25	548.25	1,170,433	1,170,433
Condo/Townhouse	2,951.20	2,951.20	2951.20	8,453,838	8,453,838
Government (Civic Center)	552.00	0.00	0.00	753,731	753,731
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,170.96	1,170.96	1170.96	3,354,265	3,354,265
Total	7,416.91	6,864.91	6,864.91	20,018,506	20,018,506

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.2 Energy by Land Use - NaturalGas

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	7.23508e+	0.0390	0.3334	0.1419	2.1300e-		0.0270	0.0270		0.0270	0.0270	0.0000	386.0913	386.0913	7.4000e-	7.0800e-	388.4410
Government (Civic	1.0025e+0	5.4100e-	0.0491	0.0413	2.9000e-		3.7300e-	3.7300e-		3.7300e-	3.7300e-	0.0000	53.4972	53.4972	1.0300e-	9.8000e-	53.8228
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family	4.31298e+	0.0233	0.1987	0.0846	1.2700e-		0.0161	0.0161		0.0161	0.0161	0.0000	230.1571	230.1571	4.4100e-	4.2200e-	231.5578
Apartments Low	4.75172e+	0.0256	0.2190	0.0932	1.4000e-		0.0177	0.0177		0.0177	0.0177	0.0000	253.5697	253.5697	4.8600e-	4.6500e-	255.1129
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0933**	**0.8002**	**0.3609**	**5.0900e-**		**0.0645**	**0.0645**		**0.0645**	**0.0645**	**0.0000**	**923.3152**	**923.3152**	**0.0177**	**0.0169**	**928.9344**

5.3 Energy by Land Use - Electricity

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	1.27898e+	227.9929	0.0168	3.4800e-	229.4252
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.39561e+	248.7846	0.0184	3.8000e-	250.3476
Government (Civic	585000	104.2832	7.7000e-	1.5900e-	104.9383
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	941142	167.7697	0.0124	2.5600e-	168.8237
Total		**748.8303**	**0.0553**	**0.0114**	**753.5348**

6.0 Area Detail

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	2.7879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	6.9619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	54.5667	0.7255	66.3550	0.0230		9.2986	9.2986		9.2983	9.2983	878.2315	360.7436	1,238.9751	0.7279	0.0705	1,276.1150
Landscaping	0.1689	0.0651	5.6461	3.0000e-		0.0314	0.0314		0.0314	0.0314	0.0000	9.2555	9.2555	8.8100e-	0.0000	9.4406
Total	**64.4854**	**0.7906**	**72.0011**	**0.0233**		**9.3300**	**9.3300**		**9.3298**	**9.3298**	**878.2315**	**369.9991**	**1,248.2307**	**0.7367**	**0.0705**	**1,285.5556**

7.0 Water Detail

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	10.5524 /	19.0725	0.3450	8.3600e-	28.9090
City Park	0 / 15.2992	9.5454	7.0000e-	1.5000e-	9.6054
Condo/Townhouse	23.543 /	42.5518	0.7697	0.0187	64.4977
Government (Civic	4.31128 /	7.7390	0.1410	3.4100e-	11.7574
Other Asphalt	0 / 6.0755	3.7906	2.8000e-	6.0000e-	3.8144
Single Family	11.7995 /	21.3265	0.3858	9.3500e-	32.3255
Total		**104.0258**	**1.6425**	**0.0400**	**150.9094**

8.0 Waste Detail

8.1 Mitigation Measures Waste

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	151.8	30.8140	1.8211	0.0000	69.0562
City Park	1.29	0.2619	0.0155	0.0000	0.5868
Condo/Townhouse	142.6	28.9465	1.7107	0.0000	64.8710
Government (Civic	285	57.8524	3.4190	0.0000	129.6510
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	88	17.8632	1.0557	0.0000	40.0326
Total		**135.7380**	**8.0219**	**0.0000**	**304.1977**

Pedregal Operations (2035) (NAT)

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	9.00	Acre	9.00	392,040.00	0
Apartments Low Rise	200.00	Dwelling Unit	10.94	200,000.00	572
Single Family Housing	37.00	Dwelling Unit	45.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	2			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	393	**CH4 Intensity**	0.029	**N2O Intensity**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated PG&E non-RPS-adjusted emission factor (latest year with actual data = 2011)
Land Use - Acrages from PD
Vehicle Trips - Trip rates from F&P
Vechicle Emission Factors - Non-Pavley/LCFS CO2 emission factors
Woodstoves - Hearth numbers provided by the County (1,037 total for westside + pedregal)
Energy Use - Historic data for NAT checked per AQMD guidance.
Water And Wastewater - Water rates from WSA

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	70.00	1.00
tblFireplaces	NumberGas	110.00	120.00
tblFireplaces	NumberGas	20.35	44.00
tblFireplaces	NumberWood	70.00	80.00
tblFireplaces	NumberWood	12.95	30.00
tblLandUse	LotAcreage	12.50	10.94
tblLandUse	LotAcreage	12.01	45.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	393
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleEF	LDA	202.27	340.26
tblVehicleEF	LDA	44.13	73.83
tblVehicleEF	LDT1	243.33	395.39
tblVehicleEF	LDT1	53.57	86.16
tblVehicleEF	LDT2	315.15	462.50
tblVehicleEF	LDT2	69.02	100.96
tblVehicleEF	MDV	417.11	592.22
tblVehicleEF	MDV	91.50	128.99
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52
tblWater	IndoorWaterUseRate	13,030,805.12	6,395,377.38
tblWater	IndoorWaterUseRate	2,410,698.95	5,915,724.07
tblWater	OutdoorWaterUseRate	8,215,072.80	5,387,410.29
tblWater	OutdoorWaterUseRate	1,519,788.47	4,983,354.52

2.0 Emissions Summary

2.2 Overall Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	23.1369	0.2761	25.3316	7.2500e-		3.3057	3.3057		3.3056	3.3056	309.0216	132.0493	441.0709	0.2292	0.0254	453.7597
Energy	0.0225	0.1925	0.0819	1.2300e-		0.0156	0.0156		0.0156	0.0156	0.0000	411.5576	411.5576	0.0182	6.9700e-	414.0994
Mobile	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	2,181.536	2,181.54	0.0435	0.0000	2,182.4492
Waste						0.0000	0.0000		0.0000	0.0000	24.0544	0.0000	24.0544	1.4216	0.0000	53.9075
Water						0.0000	0.0000		0.0000	0.0000	3.9057	18.3455	22.2512	0.4025	9.7500e-	33.7272
Total	**23.7501**	**1.4434**	**30.9874**	**0.0329**	**1.7769**	**3.3440**	**5.1209**	**0.4760**	**3.3422**	**3.8182**	**336.9818**	**2,743.488**	**3,080.4702**	**2.1149**	**0.0421**	**3,137.9430**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	2,181.536	2,181.5360	0.0435	0.0000	2,182.4492
Unmitigated	0.5907	0.9748	5.5739	0.0244	1.7769	0.0228	1.7997	0.4760	0.0211	0.4971	0.0000	2,181.536	2,181.5360	0.0435	0.0000	2,182.4492

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,330.00	1,330.00	1330.00	3,809,842	3,809,842
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	352.24	352.24	352.24	1,009,006	1,009,006
Total	1,682.24	1,682.24	1,682.24	4,818,848	4,818,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470511	0.079702	0.184986	0.151012	0.071590	0.010888	0.013668	0.001015	0.001470	0.000717	0.009140	0.000700	0.004603

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family	1.2974e+0	7.0000e-	0.0598	0.0254	3.8000e-		4.8300e-	4.8300e-		4.8300e-	4.8300e-	0.0000	69.2342	69.2342	1.3300e-	1.2700e-	69.6556
Apartments Low	2.87983e+	0.0155	0.1327	0.0565	8.5000e-		0.0107	0.0107		0.0107	0.0107	0.0000	153.6786	153.6786	2.9500e-	2.8200e-	154.6139
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0225**	**0.1925**	**0.0819**	**1.2300e-**		**0.0156**	**0.0156**		**0.0156**	**0.0156**	**0.0000**	**222.9128**	**222.9128**	**4.2800e-**	**4.0900e-**	**224.2694**

5.3 Energy by Land Use - Electricity

	Electricity	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low	775138	138.1775	0.0102	2.1100e-	139.0456
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	283108	50.4673	3.7200e-	7.7000e-	50.7844

Total		**188.6448**	**0.0139**	**2.8800e-**	**189.8299**

6.0 Area Detail

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural	0.8713					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer	2.5723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	19.6408	0.2559	23.5780	7.1600e-		3.2959	3.2959		3.2958	3.2958	309.0216	129.1746	438.1962	0.2264	0.0254	450.8276
Landscaping	0.0524	0.0202	1.7537	9.0000e-		9.7600e-	9.7600e-		9.7600e-	9.7600e-	0.0000	2.8747	2.8747	2.7400e-	0.0000	2.9322
Total	**23.1369**	**0.2761**	**25.3316**	**7.2500e-**		**3.3057**	**3.3057**		**3.3056**	**3.3056**	**309.0216**	**132.0493**	**441.0709**	**0.2292**	**0.0254**	**453.7597**

7.0 Water Detail

	Indoor/Out	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low	6.39538 /	11.5591	0.2091	5.0700e-	17.5206
Other Asphalt	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family	5.91572 /	10.6921	0.1934	4.6900e-	16.2066
Total		**22.2512**	**0.4025**	**9.7600e-**	**33.7272**

8.0 Waste Detail

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low	92	18.6752	1.1037	0.0000	41.8523
Other Asphalt	0	0.0000	0.0000	0.0000	0.0000
Single Family	26.5	5.3793	0.3179	0.0000	12.0553
Total		**24.0544**	**1.4216**	**0.0000**	**53.9075**

Road Construction Emissions Model
Data Entry Worksheet

Version 7.1.5.1

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Park Drive Extension	
Construction Start Year	2017	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.23	miles
Total Project Area	3.00	acres
Maximum Area Disturbed/Day	0.75	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007
Grubbing/Land Clearing		0.60	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		2.40	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.10	0.00	0.00	0.00	0.00	0.00
Paving		0.90	0.00	0.00	0.00	0.00	0.00
Totals	0.00	6.00					

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip	0.00	30
Round trips/day	0.00	0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.15	7.43	0.65	0.16	0.09	1652.56
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		4
No. of employees: Grading/Excavation		16
No. of employees: Drainage/Utilities/Sub-Grade		14
No. of employees: Paving		10

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.133	0.172	1.555	0.047	0.020	443.765
Emission rate - Grading/Excavation (grams/mile)	0.133	0.172	1.555	0.047	0.020	443.765
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.133	0.172	1.555	0.047	0.020	443.765
Emission rate - Paving (grams/mile)	0.133	0.172	1.555	0.047	0.020	443.765
Emission rate - Grubbing/Land Clearing (grams/trip)	0.457	0.287	3.779	0.004	0.003	95.644
Emission rate - Grading/Excavation (grams/trip)	0.457	0.287	3.779	0.004	0.003	95.644
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.457	0.287	3.779	0.004	0.003	95.644
Emission rate - Paving (grams/trip)	0.457	0.287	3.779	0.004	0.003	95.644
Pounds per day - Grubbing/Land Clearing	0.051	0.062	0.576	0.016	0.007	148.199
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.004	0.000	0.000	0.978
Pounds per day - Grading/Excavation	0.223	0.267	2.497	0.067	0.028	642.194
Tons per const. Period - Grading/Excavation	0.006	0.007	0.066	0.002	0.001	16.954
Pounds per day - Drainage/Utilities/Sub-Grade	0.188	0.226	2.113	0.057	0.024	543.395
Tons per const. Period - Drain/Util/Sub-Grade	0.004	0.005	0.049	0.001	0.001	12.552
Pounds per day - Paving	0.137	0.165	1.537	0.041	0.017	395.196
Tons per const. Period - Paving	0.001	0.002	0.015	0.000	0.000	3.912
tons per construction period	0.012	0.014	0.134	0.004	0.002	34.397

Water Truck Emissions

	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.15	7.43	0.65	0.16	0.09	1652.56
Emission rate - Grading/Excavation (grams/mile)	0.15	7.43	0.65	0.16	0.09	1652.56
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	7.43	0.65	0.16	0.09	1652.56
Pounds per day - Grubbing/Land Clearing	0.01	0.65	0.06	0.01	0.01	145.60
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.96
Pound per day - Grading/Excavation	0.01	0.65	0.06	0.01	0.01	145.60
Tons per const. Period - Grading/Excavation	0.00	0.02	0.00	0.00	0.00	3.84
Pound per day - Drainage/Utilities/Subgrade	0.01	0.65	0.06	0.01	0.01	145.60
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.02	0.00	0.00	0.00	3.36

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust

	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.75	7.5	0.0	1.6	0.0
Fugitive Dust - Grading/Excavation		0.75	7.5	0.2	1.6	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.75	7.5	0.2	1.6	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.71	4.47	9.06	0.35	0.32	825.49
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.38	2.79	4.05	0.20	0.18	572.75
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.1	7.3	13.1	0.5	0.5	1398.2
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.1	0.0	0.0	9.2

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.71	4.47	9.06	0.35	0.32	825.49
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.15	8.37	12.15	0.60	0.55	1718.25
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	1.00	3.47	9.64	0.54	0.50	669.23
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.65	3.02	5.76	0.42	0.38	558.90
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.50	3.12	6.05	0.21	0.19	662.79
	2	Scrapers	2.73	14.51	32.82	1.32	1.21	3215.90
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.67	3.14	6.11	0.46	0.42	671.04
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	7.4	40.1	81.6	3.9	3.6	8321.6
	Grading	tons per phase	0.2	1.1	2.2	0.1	0.1	219.7

Drainage/Utilities/Subgrade	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.63	3.41	4.13	0.33	0.31	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.47	2.97	3.65	0.25	0.23	487.07
	1	Graders	1.00	3.47	9.64	0.54	0.50	669.23
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.40	2.45	3.01	0.21	0.20	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.20	2.03	2.43	0.13	0.12	372.73
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	2.73	14.51	32.82	1.32	1.21	3215.90
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.67	3.14	6.11	0.46	0.42	671.04
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.1	32.2	62.0	3.3	3.0	6354.5
	Drainage	tons per phase	0.1	0.7	1.4	0.1	0.1	146.8

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.37	2.84	4.01	0.20	0.18	481.97
	1	Paving Equipment	0.29	2.69	3.18	0.16	0.15	426.45
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.97	4.53	8.64	0.63	0.58	838.35
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.67	3.14	6.11	0.46	0.42	671.04
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	2.3	13.2	21.9	1.4	1.3	2417.8
	Paving	tons per phase	0.0	0.1	0.2	0.0	0.0	23.9
Total Emissions all Phases (tons per construction period) =>			0.4	2.0	3.9	0.2	0.2	399.6

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Park Drive Extension Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.2	7.9	13.8	8.1	0.6	7.5	2.1	0.5	1.6	1,692.0
Grading/Excavation	7.6	42.7	82.5	11.5	4.0	7.5	5.2	3.6	1.6	9,109.4
Drainage/Utilities/Sub-Grade	6.3	34.4	62.9	10.8	3.3	7.5	4.6	3.0	1.6	7,043.5
Paving	2.4	14.7	22.1	1.5	1.5	-	1.3	1.3	-	2,813.0
Maximum (pounds/day)	7.6	42.7	82.5	11.5	4.0	7.5	5.2	3.6	1.6	9,109.4
Total (tons/construction project)	0.4	2.1	3.9	0.6	0.2	0.4	0.3	0.2	0.1	442.2

Notes: Project Start Year -> 2017
Project Length (months) -> 6
Total Project Area (acres) -> 3
Maximum Area Disturbed/Day (acres) -> 1
Total Soil Imported/Exported (yd^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Park Drive Extension Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.5	3.6	6.3	3.7	0.3	3.4	0.9	0.2	0.7	769.1
Grading/Excavation	3.5	19.4	37.5	5.2	1.8	3.4	2.4	1.6	0.7	4,140.6
Drainage/Utilities/Sub-Grade	2.9	15.6	28.6	4.9	1.5	3.4	2.1	1.4	0.7	3,201.6
Paving	1.1	6.7	10.1	0.7	0.7	-	0.6	0.6	-	1,278.6
Maximum (kilograms/day)	3.5	19.4	37.5	5.2	1.8	3.4	2.4	1.6	0.7	4,140.6
Total (megagrams/construction project)	0.3	1.9	3.6	0.6	0.2	0.4	0.2	0.2	0.1	401.1

Notes: Project Start Year -> 2017
Project Length (months) -> 6
Total Project Area (hectares) -> 1
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported (meters^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model
Data Entry Worksheet

Version 7.1.5.1

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

Input Type

Project Name	Pedregal Water Lines	
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	0.50	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.07	miles
Total Project Area	0.17	acres
Maximum Area Disturbed/Day	0.04	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007
Grubbing/Land Clearing	0.00	0.05	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.20	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.50	0.18	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Totals	0.50	0.50					

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip	0.00	30
Round trips/day	0.00	0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing	0.00	4
No. of employees: Grading/Excavation	0.00	16
No. of employees: Drainage/Utilities/Sub-Grade		14
No. of employees: Paving	0.00	10

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Drainage/Utilities/Sub-Grade	0.209	0.255	2.367	0.057	0.024	543.252
Tons per const. Period - Drain/Util/Sub-Grade	0.001	0.001	0.013	0.000	0.000	2.988
Pounds per day - Paving	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Paving	0.000	0.000	0.000	0.000	0.000	0.000
tons per construction period	0.001	0.001	0.013	0.000	0.000	2.988

Water Truck Emissions

	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust	0.00	1		40
Grading/Excavation - Exhaust	0.00	1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.81

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust

	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.00	0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation	0.00	0	0.0	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.0425	0.4	0.0	0.1	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grading	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Drainage/Utilities/Subgrade	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.72	3.15	6.54	0.50	0.46	671.85
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.6	32.2	66.7	3.5	3.3	6357.3
	Drainage	tons per phase	0.0	0.2	0.4	0.0	0.0	35.0

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.0	0.2	0.4	0.0	0.0	35.0

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Pedregal Water Lines Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	6.8	34.7	67.7	4.0	3.6	0.4	3.4	3.3	0.1	7,048.5
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	6.8	34.7	67.7	4.0	3.6	0.4	3.4	3.3	0.1	7,048.5
Total (tons/construction project)	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	38.8

Notes: Project Start Year -> 2016
Project Length (months) -> 1
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Total Soil Imported/Exported (yd^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Pedregal Water Lines Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	3.1	15.8	30.8	1.8	1.6	0.2	1.5	1.5	0.0	3,203.9
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	3.1	15.8	30.8	1.8	1.6	0.2	1.5	1.5	0.0	3,203.9
Total (megagrams/construction project)	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	35.2

Notes: Project Start Year -> 2016
Project Length (months) -> 1
Total Project Area (hectares) -> 0
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model
Data Entry Worksheet

Version 7.1.5.1

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type

Project Name	Silva Road Connection	
Construction Start Year	2025	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.70	miles
Total Project Area	1.84	acres
Maximum Area Disturbed/Day	0.46	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007
Grubbing/Land Clearing		0.60	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		2.40	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.10	0.00	0.00	0.00	0.00	0.00
Paving		0.90	0.00	0.00	0.00	0.00	0.00
Totals	0.00	6.00					

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		5
No. of employees: Grading/Excavation		18
No. of employees: Drainage/Utilities/Sub-Grade		15
No. of employees: Paving		11

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grading/Excavation (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Paving (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grubbing/Land Clearing (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Grading/Excavation (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Paving (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Pounds per day - Grubbing/Land Clearing	0.044	0.045	0.445	0.021	0.009	196.651
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	1.298
Pounds per day - Grading/Excavation	0.155	0.156	1.558	0.072	0.031	688.280
Tons per const. Period - Grading/Excavation	0.004	0.004	0.041	0.002	0.001	18.171
Pounds per day - Drainage/Utilities/Sub-Grade	0.133	0.134	1.335	0.062	0.026	589.954
Tons per const. Period - Drain/Util/Sub-Grade	0.003	0.003	0.031	0.001	0.001	13.628
Pounds per day - Paving	0.100	0.100	1.001	0.047	0.020	442.466
Tons per const. Period - Paving	0.001	0.001	0.010	0.000	0.000	4.380
tons per construction period	0.008	0.008	0.085	0.004	0.002	37.477

Water Truck Emissions

	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	1.38	0.78	0.15	0.02	1541.89
Emission rate - Grading/Excavation (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Pounds per day - Grubbing/Land Clearing	0.01	0.12	0.07	0.01	0.00	135.85
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.90
Pound per day - Grading/Excavation	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	3.59
Pound per day - Drainage/Utilities/Subgrade	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	3.14

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust

	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.46	4.6	0.0	1.0	0.0
Fugitive Dust - Grading/Excavation		0.46	4.6	0.1	1.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.46	4.6	0.1	1.0	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.18	2.79	1.26	0.06	0.06	573.01
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.6	7.2	5.1	0.2	0.2	1395.2
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	9.2

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.54	8.37	3.79	0.19	0.17	1719.02
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.28	3.02	2.87	0.14	0.13	558.93
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.24	3.12	1.84	0.06	0.06	662.82
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.5	40.1	31.1	1.3	1.2	8320.3
	Grading	tons per phase	0.1	1.1	0.8	0.0	0.0	219.7

Drainage/Utilities/Subgrade	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.32	3.27	2.15	0.10	0.09	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.22	2.87	1.94	0.08	0.07	487.07
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.19	2.37	1.60	0.07	0.06	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.10	2.03	1.30	0.04	0.03	372.84
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	3.0	31.9	26.0	1.1	1.0	6355.8
	Drainage	tons per phase	0.1	0.7	0.6	0.0	0.0	146.8

Road Construction Emissions Model
Data Entry Worksheet

Version 7.1.5.1

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type		
Project Name	Recycled Waterline Expansion	
Construction Start Year	2019	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	1.00	month
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.57	miles
Total Project Area	0.73	acres
Maximum Area Disturbed/Day	0.18	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007
Grubbing/Land Clearing	0.00	0.10	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	1.00	0.35	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Totals	1.00	1.00					

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip	0.00	30
Round trips/day	0.00	0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing	0.00	5
No. of employees: Grading/Excavation	0.00	18
No. of employees: Drainage/Utilities/Sub-Grade		15
No. of employees: Paving	0.00	11

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Paving (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Paving (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Drainage/Utilities/Sub-Grade	0.173	0.200	1.911	0.062	0.026	590.128
Tons per const. Period - Drain/Util/Sub-Grade	0.002	0.002	0.021	0.001	0.000	6.491
Pounds per day - Paving	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Paving	0.000	0.000	0.000	0.000	0.000	0.000
tons per construction period	0.002	0.002	0.021	0.001	0.000	6.491

Water Truck Emissions

	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust	0.00	1		40
Grading/Excavation - Exhaust	0.00	1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Drainage/Utilities/Subgrade	0.01	0.52	0.06	0.01	0.01	140.66
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	1.55

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust

	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.00	0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation	0.00	0	0.0	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.1825	1.8	0.0	0.4	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grading	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.53	3.38	3.59	0.26	0.24	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.38	2.94	3.20	0.20	0.18	487.07
	1	Graders	0.80	3.46	7.57	0.42	0.39	666.91
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.33	2.43	2.64	0.17	0.16	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.15	2.03	1.87	0.08	0.08	372.66
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	2.21	14.51	25.55	1.00	0.92	3216.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.49	3.14	4.70	0.31	0.29	669.58
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.9	32.1	49.4	2.5	2.3	6350.7
	Drainage	tons per phase	0.1	0.4	0.5	0.0	0.0	69.9

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.1	0.4	0.5	0.0	0.0	69.9

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Recycled Waterline Expansion Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	5.1	34.1	50.1	4.4	2.5	1.8	2.7	2.3	0.4	7,081.5
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	5.1	34.1	50.1	4.4	2.5	1.8	2.7	2.3	0.4	7,081.5
Total (tons/construction project)	0.1	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	77.9

Notes:	
Project Start Year ->	2019
Project Length (months) ->	1
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Recycled Waterline Expansion Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	2.3	15.5	22.8	2.0	1.2	0.8	1.2	1.0	0.2	3,218.9
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	2.3	15.5	22.8	2.0	1.2	0.8	1.2	1.0	0.2	3,218.9
Total (megagrams/construction project)	0.1	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	70.7

Notes:	
Project Start Year ->	2019
Project Length (months) ->	1
Total Project Area (hectares) ->	0
Maximum Area Disturbed/Day (hectares) ->	0
Total Soil Imported/Exported ($meters^3$/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.17	2.84	1.51	0.07	0.07	481.74
	1	Paving Equipment	0.15	2.69	1.23	0.06	0.06	426.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.43	4.53	4.30	0.22	0.20	838.39
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.0	13.2	9.7	0.5	0.4	2418.4
	Paving	tons per phase	0.0	0.1	0.1	0.0	0.0	23.9
Total Emissions all Phases (tons per construction period) =>			0.2	2.0	1.6	0.1	0.1	399.6

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Silva Road Connection Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.6	7.8	5.3	4.8	0.2	4.6	1.2	0.2	1.0	1,727.7
Grading/Excavation	3.7	41.7	31.4	6.0	1.4	4.6	2.2	1.3	1.0	9,144.4
Drainage/Utilities/Sub-Grade	3.1	33.3	26.3	5.8	1.2	4.6	2.0	1.0	1.0	7,081.6
Paving	1.1	14.2	9.8	0.5	0.5	-	0.4	0.4	-	2,860.9
Maximum (pounds/day)	3.7	41.7	31.4	6.0	1.4	4.6	2.2	1.3	1.0	9,144.4
Total (tons/construction project)	0.2	2.1	1.6	0.3	0.1	0.3	0.1	0.1	0.1	444.7

Notes: Project Start Year -> 2025
Project Length (months) -> 6
Total Project Area (acres) -> 2
Maximum Area Disturbed/Day (acres) -> 0
Total Soil Imported/Exported (yd^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Silva Road Connection Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.3	3.5	2.4	2.2	0.1	2.1	0.5	0.1	0.4	785.3
Grading/Excavation	1.7	19.0	14.3	2.7	0.6	2.1	1.0	0.6	0.4	4,156.6
Drainage/Utilities/Sub-Grade	1.4	15.1	11.9	2.6	0.5	2.1	0.9	0.5	0.4	3,218.9
Paving	0.5	6.5	4.5	0.2	0.2	-	0.2	0.2	-	1,300.4
Maximum (kilograms/day)	1.7	19.0	14.3	2.7	0.6	2.1	1.0	0.6	0.4	4,156.6
Total (megagrams/construction project)	0.2	1.9	1.4	0.3	0.1	0.2	0.1	0.1	0.0	403.4

Notes: Project Start Year -> 2025
Project Length (months) -> 6
Total Project Area (hectares) -> 1
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

	Million BTU			
Total	Without	With		
VMT	124,054	119,476	-4%	-4578
Electricity	17,524	16,603	-5%	-921
Natural Gas	19,992	17,475	-13%	-2517
Total	161,570	153,554		

Westside

	Without Land Use Design					With Land Use Design				
VMT	**Weekday**	**Saturday**	**Sunday**	**Annual VMT**	**BTU**	**Weekday**	**Saturday**	**Sunday**	**Annual VMT**	**BTU**
Apartments Low Rise	2,195	2,195	2,195	6,287,671	29,447,381,006	2,056	2,056	2,056	5,889,213	27,581,262,237
City Park	548	548	548	1,169,899	5,479,051,109	548	548	548	1,170,433	5,481,550,676
Condo/Townhouse	2,473	2,473	2,473	7,084,014	33,176,935,060	2,806	2,806	2,806	8,036,474	37,637,643,070
Government (Civic Center)	552	552	552	753,731	3,529,988,195	552	0	0	753,731	3,529,988,195
Other Asphalt Surfaces	0	0	0	0	0	0	0	0		0
Single Family Housing	1,648	1,648	1,648	4,720,767	22,109,016,465	1,113	1,113	1,113	3,188,666	14,933,647,863
Total	7,416	7,416	7,416	20,016,082	93,742,371,835	7,075	6,523	6,523	19,038,517	89,164,092,041

Natural Gas (kBTU/year)	**Without Policies**	**With Policies**
Condo/Townhouse	6,792,660	5,910,980
Government (Civic Center)	865000	738775
Other Asphalt Surfaces	0	0
Single Family Housing	3,954,670	3,470,950
Apartments Low Rise	4,476,800	3,928,930
City Park	0	0
Total	16,089,130	14,049,635

Electricity (kWh/yr)	**Without Policies**	**With Policies**	**BTU-w/o**	**BTU-w**
Apartments Low Rise	1,250,790	1,193,440	4,272,698,640	4,076,791,040
City Park	0	0	0	0
Condo/Townhouse	1,372,710	1,312,160	4,689,177,360	4,482,338,560
Government (Civic Center)	558500	497675	1,907,836,000	1,700,057,800
Other Asphalt Surfaces	0	0	0	0
Single Family Housing	914788	871643	3,124,915,808	2,977,532,488
Total	4,096,788	3,874,918	13,994,627,808	13,236,719,888

Exceed Title 24
Install High Efficiency Lighting
Install Energy Efficient Appliances

Pedredgal

Traffic study predicts no change in VMT from land use design measures

VMT	**Weekday**	**Saturday**	**Sunday**	**Annual VMT**	**BTU**	**Weekday**	**Saturday**	**Sunday**	**Annual VMT**	**BTU**
Apartments Low Rise	1,328	1,432	1,214	3,779,559	23,920,283,558	1,328	1,432	1,214	3,779,559	23,920,283,558
Other Asphalt Surfaces	0	0	0	0	0	0	0	0	0	0
Single Family Housing	354	373	324	1,009,915	6,391,605,435	354	373	324	1,009,915	6,391,605,435
Total	1,682	1,805	1,538	4,789,474	30,311,888,993	1,682	1,805	1,538	4,789,474	30,311,888,993

Natural Gas (kBTU/year)	**Without Policies**	**With Policies**
Single Family Housing	1,189,620	1,044,110
Apartments Low Rise	2,713,210	2,381,170
Other Asphalt Surfaces	0	0
Total	3,902,830	3,425,280

Electricity (kWh/yr)	**Without Policies**	**With Policies**	**BTU-w/o**	**BTU-w**
Single Family Housing	758,056	723,300	2,589,519,296	2,470,792,800
Apartments Low Rise	0	0	0	0
Other Asphalt Surfaces	275,180	262,202	940,014,880	895,682,032
Total	1,033,236	985,502	3,529,534,176	3,366,474,832

Exceed Title 24
Install High Efficiency Lighting
Install Energy Efficient Appliances

BTU_VMT no Pavley	6,329	Oak Ridge National Laboratory 2013
BTU_VMT Pavley	4,683	
BTU_kWh	3,416	Argonne 2013
million BTU	1000000	
thousand BTU	1000	

Appendix C Errata

Technical Modeling Considerations for Criteria Pollutants and Human Health Effects

In their interim guidance addressing *Sierra Club v. County of Fresno* (6 Cal. 5th 502) (Friant Ranch), SMAQMD (2019) recommends lead agencies compare the air quality models used in CEQA analyses to those models designed to evaluate regional attainment with ambient air quality standards and associated human health consequences. This section describes the three models used to estimate criteria pollutant emissions generated by construction and operation of the project and evaluates their ability to assess specific health impacts of the project. This section also analyzes whether models and tools that have been developed to quantify ambient pollutant concentrations could be used to reasonably correlate project-level emissions to specific health consequences.

Review of Project Analysis Models

Criteria pollutant emissions generated by construction and operation of the project were estimated using the California Emissions Estimator Model (CalEEMod), SMAQMD's Roadway Construction Emissions Model (RCEM), and the California Air Resources Board's (CARB) EMissions FACtor (EMFAC) model. Each of the following sections note whether the given model is suitable for quantify human health consequences or changes in nonattainment days.

California Emissions Estimator Model

CalEEMod is a statewide computer model quantifies construction and operational criteria pollutant and greenhouse gas (GHG) emissions from land use development projects. The model evaluates construction emissions associated with six phases—demolition, site preparation, grading, building construction, architectural coatings, and paving. Emission sources considered by the model include offroad construction equipment, onroad mobile vehicles, fugitive dust from land disturbance, and volatile organic compounds from architectural coatings and paving activities.

CalEEMod quantifies project emissions based on user-defined inputs for project location, operational year, land use type (e.g., commercial), climate zone, and size. Based on these minimum data inputs, users can estimate construction emissions based model generated default assumptions for construction phasing, construction equipment inventory and activities, and trip lengths. Default values included in the model were provided by California air districts and account for local conditions and regulations. Where appropriate, CalEEMod combines local data with regional and statewide values to ensure enough information is available to quantify emissions. Users can override default values with project-specific information. In addition, users can implement mitigation measures and strategies to reduce construction-related exhaust and fugitive dust emissions.

Based on the user inputs and emission factors from the CARB's EMFAC and OFFROAD models, CalEEMod calculates both daily maximum (pounds per day) and annual average (tons per year) emissions. These emissions can be compared to air district mass emission thresholds, such as those adopted by EDCAQMD. CalEEMod does not quantify concentrations of the various air pollutants (in terms of micrograms per cubic meter or parts per million), nor does it estimate secondary pollutants (such as ozone and PM2.5) or potential human health effects from exposure to criteria pollutants.

Accordingly, CalEEMod cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

Road Construction Emissions Model

SMAQMD's RCEM is a public-domain spreadsheet model formatted as a series of individual worksheets. The model is specifically designed to evaluate construction criteria pollutant and GHG emissions from linear projects (e.g., water infrastructure, roads). Four generic construction phases are considered by the model: 1) grubbing/land clearing, 2) grading/excavation, 3) drainage/utilities/subgrade, and 4) paving. Within these phases, the model estimates construction emissions for load hauling (onroad heavy-duty vehicle trips), worker commutes, construction site fugitive dust, and offroad construction vehicles. Although exhaust emissions are estimated for each activity, fugitive dust estimates are currently limited to major dust-generating activities, which include grubbing/land clearing and grading/excavation.

The RCEM was designed to enable users to estimate emissions using a minimum amount of project-specific information, such as construction start year and duration, project type, and the project length and area. This was done because specific data to quantify emissions from transportation projects is often unavailable when the environmental document is being prepared. To help facilitate the quantification of construction emissions based on valid assumptions, the RCEM contains default data based on surveys of construction equipment , schedules, and other construction data from a selection of construction projects in Sacramento County, as well as construction surveys conducted for CalEEMod and a technical evaluation completed by the University of California, Davis. Emission factors used by the model are from the CARB's EMFAC and OFFROAD models.

Like CalEEMod, RCEM calculates both daily maximum (pounds per day) and annual average (tons per year) emissions. RCEM does not quantify concentrations of the various air pollutants (in terms of micrograms per cubic meter or parts per million), nor does it estimate secondary pollutants (such as ozone and PM2.5) or potential human health effects from exposure to criteria pollutants. Accordingly, RCEM cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

EMissions FACtor Model

CARB developed the EMFAC model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates criteria pollutant and GHG emissions rates that can be multiplied by vehicle activity data from all motor vehicles, including passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. The resulting emissions estimates are mass emission quantities that can be expressed in terms of pounds per day and tons per year (or other similar unit rates). Like CalEEMod and RCEM, EMFAC does not assess pollutant dispersion or quantify concentrations or potential health effects. Accordingly, EMFAC cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

Review of Photochemical and Human Health Models

Several models and tools capable of translating mass emissions of criteria pollutants to ambient pollutant concentrations and various health endpoints have been developed. Table 1 summarizes key tools, identifies the analyzed pollutants, describes their intended application and resolution, and

analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences.

As shown in Table 1, almost all tools were designed to be used at the national, state, regional, and/or city-levels. This is because criteria pollutants emitted by a specific source often do not deposit immediately adjacent to that source. Pollutants can be transported by prevailing winds or transformed through chemical reactions and physical interactions with other pollutants in the atmosphere. Because some pollutants can be transported over long distances, recorded violations of the ambient air quality standards at a specific monitoring station and resultant health effects experienced by the local population may be the result of faraway emission sources (some of which may not even be located within the same air basin). For this reason, attaining the ambient air quality standards and protecting human health from exposure to criteria pollutants requires a regional, and sometimes multiregional strategy that considers the combined effect of all emission-generating sources that influence air quality within an air basin.

The models and tools that have been developed to assess attainment of the ambient air quality standards and human health effects are therefore regional in nature and are not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Said another way, "it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact [because] such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level" (San Joaquin Valley Air Pollution Control District 2015). As of the writing of this analysis "neither the Sac Metro Air District nor any other air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions" (Sacramento Metropolitan Air Quality Management District 2019).

Table 1. Analysis of Photochemical and Human Health Models

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
AirCounts	Abt Assoc.	Online tool that helps large and medium-sized cities quickly estimate the health benefits of PM2.5 emission reductions and economic value of those benefits. The tool estimates the number of deaths (mortality) avoided and economic value related to user-specified regional, annual PM2.5 emissions reduction. The modeling year is 2010; avoided deaths are expected to occur over a 20-year period and their present value is shown in 2010 US dollars at a 3% discount rate.	City-level	Primary PM2.5	This tool is only illustrative, as it is limited to certain cities and does not target specific sectors. Given that it was designed as a screening-level tool, is not sector specific, and includes limited California data, the tool is **not recommended** for project-level CEQA analysis.
AP2 (formerly Air Pollution Emission Experiments and Policy [APEEP])	Mueller and Mendelsohn, 2006	AP2 is an integrated assessment model developed to assess marginal damage impacts from emissions at the national scale but can be applied at the county-level. The model connects emissions to monetary damages through six modules: emissions (per EPA's national inventory), air quality modeling, concentrations, exposures, physical effects, and valuation. Damages are presented on a dollar-per-ton basis. Model extends damage assessment beyond human health, and includes assessment on reduced crop and timber yields, reductions in visibility, enhanced depreciation of man-made materials and damages due to lost recreation services.	National or county-level	SO_2, ROG, NOx, ozone, PM2.5, PM10	The model operates at the national scale but may be applied at the county-level (although it is not clear how this adjustment should be made). The tool is also not commercially available. Accordingly, the tool is **not recommended** for project-level CEQA analysis.
Methodology for Estimating Premature Deaths Associated with Long-Term Exposure to Fine Airborne Particulate Matter in California	CARB	The staff report identifies a relative risk of premature death associated with PM2.5 exposure based on a review of all relevant scientific literature, and a new relative risk factor was developed. This new factor is a 10% increase in risk of premature death per 10 $\mu g/m^3$ increase in exposure to PM2.5 concentrations (uncertainty interval: 3% to 20%)	National		The primary author of the CARB staff report notes that the analysis method is not suited for small projects and may yield unreliable results due to various uncertainties. Accordingly, the tool is **not recommended** for project-level CEQA analysis.

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
Co-Benefits Risk Assessment (COBRA)	US EPA	Preliminary screening tool that contains baseline emission estimates of a variety of air pollutants for a single year (2017). COOBRA is targeted to state and local governments as a screening assessment for clean energy policies. Users specify changes to the baseline emission estimates. COBRA then uses "canned" source-receptor matrix model to estimate PM changes and resulting health outcomes and monetized values. The results can be mapped to visually represent air quality, human health, and health-related economic benefits. Analysis can be performed across the 14 major emissions categories included in the EPA's National Emissions Inventory. Note that COBRA is based on EPA's BenMAP-CE (discussed in a separate entry).	National, regional, state, or county-levels	PM2.5, SO_2, NOx, NH_3, and ROG	COBRA is a preliminary screening tool only and cannot be used at sub-county resolution. It also does not account for secondary emission changes resulting from market responses. Accordingly, the tool is **not recommended** for project-level CEQA analysis.
Environmental Benefits and Mapping Program-Community Edition (BenMAP-CE)	US EPA	BenMAP is EPA's detailed model for estimating the health impacts from air pollution. It relies on input concentrations and applies concentration-response (C-R) health impact functions, which relate a change in the concentration of a pollutant with a change in the incidence of a health endpoint, including premature mortality, heart attacks, chronic respiratory illnesses, asthma exacerbation and other adverse health effects. Detailed inputs are required for air quality changes (concentrations from AERMOD), population, baseline incidence rates, and effect estimates.	National, County, City, and sub-regional levels	Ozone, PM, NO_2, SO_2, CO	The smallest default analysis resolution for BenMAP-CE is 144 square kilometers (equivalent to approximately 56 square miles or 36,000 acres). This tool could be used to derive average health incidence/ton estimates that can be used for illustrative purposes only for most projects with proper disclosure of the inherent inaccuracies involved in averaging. It is **not recommended** for individual modeling of smaller projects, however. The tool may be appropriate for modeling certain large-scale General Plan-level analyses.
Fast Scenario Screening Tool (TM5-FASST)	Joint Research Centre (Italy)	Tool allows users to evaluate how air pollutant emissions affect large scale pollutant concentrations and their impact on human health (mortality and years of life lost) and crop yield from national to regional air quality policies, such as climate policies. The tool is web-based and does not require coding or modelling. Users must gain access through publishers.	Global and national-levels	PM2.5, ozone, NOx, NH_3, CO, ROG, EC, CH_4, SO_2	This tool is applicable at national to global scales. Accordingly, the tool is **not recommended** for project-level CEQA analysis.

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
Long-range Energy Alternatives Planning System--Integrated Benefits Calculator (LEAP-IBC)	Climate and Clean Air Coalition (CCAC)	Allows users to rapidly estimate the impacts of reducing emissions on health, climate, and agriculture. Tool uses sensitivity coefficients that link gridded emissions of air pollutants and precursors to health, climate and agricultural impacts at a national level. The sensitivity coefficients are generated by a chemical transport model, so air quality modeling not necessary. Tool is currently Excel-based and is available through the developers only. A web-based interface is currently under development.	National-level	PM2.5, ozone, NO_2	This tool is applicable at national scale. Accordingly, the tool is **not recommended** for project-level CEQA analysis.
Multi-Pollutant Evaluation Method (MPEM)	BAAQMD	Estimates the impacts of control measures on pollutant concentration, population exposures, and health outcomes for criteria, toxic, and GHG pollutants. Monetizes the value of total health benefits from reductions in PM2.5, ozone, and certain carcinogens, and the social value of GHG reductions. MPEM was designed for development of a Clean Air Plan for the San Francisco Bay Area. The inputs are specific to the SF region and are not appropriate for projects outside BAAQMD.	Regional level in the SFBAAB	Ozone, PM, air toxics, GHG	This tool is designed to support the BAAQMD in regional planning and emissions analysis within the SFBAAB. The model applies changes in pollutant concentrations over a four-square kilometer grid. This tool could be used to derive average health incidence/ton estimates that can be used for illustrative purposes only for most projects with proper disclosure of the inherent inaccuracies involved in averaging. It is **not recommended** for individual modeling of smaller projects, however. The tool may be appropriate for certain large-scale planning-level analyses in the SFBAAB (with permission of BAAQMD).
Response Surface Model (RSM)-based Benefit-per-Ton Estimates	US EPA	Consists of tables reporting the monetized PM2.5-related health benefits from reducing PM2.5 precursors from certain source types nationally and for 9 US cities/regions. Applying these estimates simply involves multiplying the emissions reduction by the relevant benefit per-ton metric. The resulting value is the PM mortality risk estimate at a 3% discount rate. Note that RSM is based on EPA's BenMAP-CE (discussed in a separate entry).	National or regional (San Joaquin County only) levels	EC, SOx, VOC, NH_3, NOx	While RSM includes regional values specific to San Joaquin County, the metrics only reflect the benefits of reductions in exposure to ambient PM alone and do not include the benefits of reductions in other pollutants. The values are also dated as new sector-based BPT values are more current. Accordingly, the tool is **not recommended** for project-level CEQA analysis (even in San Joaquin County).

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
Sector-based Benefit-per-Ton Estimates	US EPA	Two specific sets of BPT estimates for 17 key source categories are available. Both are a reduced-form approach based on BenMAP modeling. The first are based on Fann et al. (2012) values and available from EPA's website. The second is based on updated modeling from Fann et al. (2017) and available in a Technical Support Document (TSD) from EPA. Applying these factors involves multiplying the emissions reduction (in tons) by the relevant benefit (economic value) or incidence (rates of mortality and morbidity) per-ton metric. The resulting value is the economics, mortality, and morbidity of direct and indirect PM2.5 emissions. All values are based on a national-scale study. Local values are preferred, but not available from any existing reduced form model and use of reduced form estimates for another city is unlikely to provide a better-than-national value. Use of the current values from EPA's 2018 TSD represent the most current estimate of monetized or incidence risk. Values from Lepeule et al. (2012) represent the most current estimate of mortality.	National-scale	PM2.5, SO2, NOx	Due to the complex non-linear chemistry governing ozone formation, EPA was not able to derive ozone or secondary PM BPT values. The BPT estimates provide a rough order-of-magnitude analysis of health consequences from directly-emitted PM and precursors to PM (with no secondary formation). However, the multipliers do not account for project-specific characteristics, receptor locations, or local dispersion characteristics. The resultant health effects are therefore reflective of national averages and may not be exact when applied to the project-level. Nonetheless, the estimates can be used to present an informational and scaled health risk analysis of directly-emitted PM and precursors to PM (with no secondary formation).

Appendix D

EDCAPCD Rule 223-1 Best Management Practices

Appendix D. EDCAPCD Rule 223-1 Best Management Practices

Construction and Other Earthmoving Activities		
Source Category	Control Measure	EDCAPCD Guidance
Backfilling	A1. Stabilize backfill material when not actively handling; and A2. Stabilize backfill material during handling; and A3. Stabilize soil at completion of activity.	-Mix backfill soil with water prior to moving -Dedicate water truck or high capacity hose to backfilling equipment. -Empty loader bucket slowly so that no dust plumes are generated. -Minimize drop height from loader bucket.
Clearing and grubbing	B1. Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and B2. Stabilize soil during clearing and grubbing activities; and B3. Stabilize soil immediately after clearing and grubbing activities.	-Maintain live perennial vegetation where possible. -Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	C1. Use water spray to clear forms; or C2. Use sweeping and water spray to clear forms; or C3. Use vacuum system to clear forms.	-Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	D1. Stabilize surface soils prior to operation of support equipment; and D2. Stabilize material after crushing.	-Follow permit conditions for crushing equipment. -Pre-water material prior to loading into crusher. -Monitor crusher emissions opacity. -Apply water to crushed material to prevent dust plumes.
Cut and fill	E1. Pre-water soils prior to cut and fill activities; and E2. Stabilize soil during and after cut and fill activities	-For large sites, pre-water with sprinklers or water trucks and allow time for penetration. -Use water as necessary to keep dust down.
Demolition – mechanical/manual	F1. Stabilize wind erodible surfaces to reduce dust; and F2. Stabilize surface soil where support equipment and vehicles will operate; and F3. Stabilize loose soil and demolition debris.	-Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed soil	G1. Stabilize disturbed soil throughout the construction site; and G2. Stabilize disturbed soil between structures	-Limit vehicular traffic and disturbances on soils where possible. -If interior block walls are planned, install as early as possible. -Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.

Earth-moving activities	H1. Pre-apply water; and H2. Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 50 feet or beyond property line in any direction; and H3 Stabilize soils once earth-moving activities are complete.	-Grade each project phase separately, timed to coincide with construction phase. -Upwind fencing can prevent material movement on site. -Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/exporting of bulk materials	I1. Stabilize or adequately wet material while loading to reduce fugitive dust emissions; and I2. Maintain at least six inches of freeboard on haul vehicles traveling offsite; and I3. Stabilize or adequately wet material while transporting to reduce fugitive dust emissions; and I4. Stabilize material while unloading to reduce fugitive dust emissions.	-Use tarps or other suitable enclosures on haul trucks. -Comply with track-out prevention/ mitigation requirements. -Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	J1. Stabilize soils, materials and slopes.	-Apply water to materials to stabilize. -Maintain materials in a crusted condition. -Maintain effective cover over materials -Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes -Hydroseed prior to rainy season.
Road shoulder maintenance	K1. Apply water to unpaved shoulders prior to clearing; and K2. Apply chemical dust suppressants and/or other appropriate material in accordance with DOT specifications to maintain a stabilized surface after completing road shoulder maintenance.	-Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs. -Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	L1. Pre-water material prior to screening; and L2. Limit fugitive dust emissions to opacity and plume length standards; and L3. Stabilize material immediately after screening.	-Dedicate water truck or high capacity hose to screening operation. -Drop material through the screen slowly and minimize drop height. -Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging areas	M1. Stabilize staging areas during use; and M2. Stabilize staging area soils at project completion.	-Limit size of staging area. -Limit vehicle speeds to prevent visible dust in excess of standards per 223-1.4.A. -Limit number and size of staging area entrances/exists.
Stockpiles/Bulk Material Handling	N1. Stabilize stockpiled materials. N2. Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	-Add or remove material from the downwind portion of the storage pile. -Maintain storage piles to avoid slides.

Traffic areas for construction activities	O1. Stabilize or maintain adequate moisture on all off-road traffic and parking areas; and O2. Stabilize or maintain adequate moisture on all haul routes; and O3. Direct construction traffic over established haul routes.	-Apply gravel/paving to all haul routes as soon as possible to all future roadway areas. -Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	P1. Stabilize surface soils where trencher or excavator and support equipment will operate; and P2. Stabilize soils at the completion of trenching activities.	-Pre-watering of soils prior to trenching is an effective preventive measure. -Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	Q1. Pre-water material prior to loading; or Q2. Apply water as loader bucket is being emptied; and Q2. Freeboard must be 6 inches or greater (VCS 23114)	-Empty loader bucket such that no visible dust plumes are created. -Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf Overseeding	R1. Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and R2. Cover haul vehicles prior to exiting the site.	-Haul waste material immediately off-site.
Unpaved roads/parking lots	S1. Stabilize soils to meet the applicable performance standards(Surface crusting); and S2. Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	-Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant land	T1. In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access.	-Installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures to prevent access to motor or off-road vehicles.

Bulk Material Handling

Source Category	Control Actions
Handling Of Bulk Materials	A1. When handling bulk materials, apply water or chemical/organic stabilizers/ suppressants;
Storage of Bulk Materials	B1. When storing bulk materials, comply with the conditions for a stabilized surface; or B2. Cover bulk materials stored outdoors with tarps, plastic or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or B3. Construct and maintain wind barriers with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants; or B4. Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.

On-Site Transporting of Bulk Materials	C1. Limit vehicular speed while traveling on the work site; or C2. Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road; or C3. Apply water to the top of the load; or C4. Cover haul trucks with a tarp or other suitable cover.
Off-Site Transporting of Bulk Materials	D1. Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and D2. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides and/or tailgate; and D3. Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved road, and apply water to the top of the load; or cover haul trucks with a tarp or other suitable cover.
Outdoor Transport Of Bulk Materials With A Chute Or Conveyor:	E1. Fully enclose the chute or conveyor; or E2. Operate water spray equipment; or E3. Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less.

Removal and Prevention of Trackout

Source Category	Control Actions
Removal of Trackout Material	A1. Manually sweeping and picking-up; or A2. Operating a rotary brush or broom accompanied or preceded by sufficient wetting; or A3. Operating a PM10-efficient street sweeper; or A4. Flushing with water, where the use of water will not result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program; and A5. The use of blower devices, or dry rotary brushes or dry brooms is expressly prohibited.
Frequency of Trackout Material Removal	B1. At the minimum trackout must be removed at the end of the day; and B2. Trackout must be immediately removed when it extends 50 feet or more from the nearest unpaved surface exit point of a site; and B3. On interior paved roads trackout must be removed at least once per workday.
Trackout Prevention for Large Operations or Sites with more than 150 vehicle trips/day.	C1. Installation of grizzlies, or similar devices designed to remove dirt/mud from tires; or C2. Installation of gravel pads; or C3. Paving of interior roads.

Blasting Activities

Source Category	Control Measure	EDCAPCD Guidance
Site Preparation (drilling, setting charges, burial of charges)	A1. Reduce dust from drilling operation A2. Pre-wet blast area A3. Cover charges to minimize dust	-Control rate of drilling - Apply water fog - Place blast mats over charges - Place soil mounds over charges - Wet entire area prior to blasting
Blasting activities	B1. Dust cannot exceed 50 ft or cross the project property line	-Conduct blasting on calm days -Consider wind direction with respect to your property line, nearby residences and other receptors.
Post-Blasting Activities	C1. Follow Best Management Practice for all construction activities (Rule 223-1, Table 1)	

Large Operations Dust Control	
Source Category	Control Actions
Earth-moving (except construction cutting and filling areas, and mining operations)	A1. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Air Pollution Control Officer. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; or A2. For any earth-moving which is more than 50 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 50 feet in length in any direction. Visible emissions must not extend beyond property boundary.
Earth-moving: Construction fill areas:	B1. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Air Pollution Control Officer. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Air Pollution Control Officer complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations; or B2. For any earth-moving which is more than 50 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 50 feet in length in any direction. Visible emissions must not extend beyond property boundary.
Earth-moving: Construction cut areas	C1. Conduct watering as necessary to prevent any visible emissions from extending beyond property boundary.
Disturbed surface areas: (except completed grading areas)	D1. Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	E1. Apply chemical stabilizers within five working days of grading completion; or E2. Take actions F1 or F3 specified for inactive disturbed surface areas.
Inactive disturbed surface areas	F1. Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or F2. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; or F3. Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or F4. Utilize any combination of control actions F1, F2 and F3 such that, in total, these actions apply to all inactive disturbed surface areas. F5. Establishment and maintenance of surface crusting sufficient to satisfy the test in Section 223-1.10 F6. Approved mixture of tackifier and fiber mulch, applied per manufacturer's recommendation.
Unpaved Roads	G1. Water all roads used for any vehicular traffic at least once per every two hours of active operations or as often as necessary; or G2. Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface; and G3. Restrict vehicle speeds where necessary ;

Open storage piles	H1. Apply chemical stabilizers; or H2. Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; or H3. Install temporary coverings; or H4. Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	I1. Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in Table 5 may be used.

Large Operations Contingency Dust Control

Source Category	Control Actions
Earth-moving	A1. Cease all active operations except for dust mitigation activities; or A2. Apply water to soil not more than 15 minutes prior to moving such soil; and A3. Apply water during soil moving or disturbance operations.
Disturbed surface areas	B1. On the last day of active operations prior to a weekend, holiday or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; or B2. Apply chemical stabilizers prior to wind event; or B3. Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; or B4. Take the actions specified in Table 5, control action F3; or B5. Utilize any combination of control actions B1, B2 and B3B such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	C1. Apply chemical stabilizers prior to wind event; or C2. Apply water twice per hour during active operation; or C3. Stop all vehicular traffic, except for dust mitigation equipment.
Open storage piles	D1. Apply water twice per hour; or D2. Install temporary coverings.
Bulk Material Transport	E1. Cover all haul vehicles; or E2. Freeboard must be 6 inches or greater (VCS 23114)
All Categories	F1. Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in Table 6 may be used.

Appendix D Errata

EL DORADO COUNTY AIR QUALITY MANAGEMENT DISTRICT

RULE 223-2 FUGITIVE DUST – ASBESTOS HAZARD MITIGATION
(Adopted 7/19/2005, Amended 10/18/2005)

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REFERENCE A - Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining, Section 93105, Title 17, California Code of Regulations

REFERENCE B - Asbestos Airborne Toxic Control Measure For Surfacing Applications, Section 93106, Title 17, California Code of Regulations

5-2.1 GENERAL

A. **PURPOSE:** The purpose of this Rule is to reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities, that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.

B. **APPLICABILITY:** Unless one of the exemptions specified in Section 223-2.2 Exemptions applies, this Rule shall apply to **any construction or construction related activity** that:

1. is in excess of 20 cubic yards of graded material per project, or if required by the Air Pollution Control Officer **and**

2. meets **either** of the following criteria:

   . Any portion of the area to be disturbed:
     . is located in a geographic ultramafic rock unit, **or**
     . has naturally-occurring asbestos, serpentine or ultramafic rock as determined by owner/operator, Professional Geologist or the Air Pollution Control Officer, **or**
     ii. is located within designated Naturally Occurring Asbestos Review Areas on the current El Dorado County Naturally Occurring Asbestos Review Area Map

   . Naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a Professional Geologist, or the Air Pollution Control Officer in the area to be disturbed after the start of any construction or construction related activity.

C. **ASBESTOS RELATED STATE OF CALIFORNIA REGULATIONS**

1. In addition to the requirements of this rule there are two State of California regulations for asbestos control that are applicable within El Dorado County and enforceable by the El Dorado County Air Quality Management District (EDCAQMD). These two asbestos control regulations are Attachments A and B to this rule.

   Reference A: Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (California Code of Regulations, Title 17, Section 93105)
   . Reference B: Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Applications (California Code of Regulations, Title 17, Section 93106)

1. A person who is subject to the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (California Code of Regulations, Title 17, Section 93105) is required to comply with the following sections in addition to the requirements under the ATCM:

   a. Section 223-2.4.A. regarding the visible emission standards.

   b. Section 223-2.4.C: regarding the suspension of operations under high wind conditions.

   c. Section 223-2.4.D: regarding the posting of Asbestos Warning signs.

   d. Section 223-2.6.A and B: regarding trackout removal.

e. Section 223-2.6.D: regarding disposal of asbestiform containing soils removed by excavation.

e. Section 223-2.6.E: regarding 30-day time limit and other requirements for completion of post construction stabilization/mitigation.

223-2.2 EXEMPTION

A. **GENERAL:** Exemptions as defined in EDCAQMD Rule 223.2 A through F shall apply to this rule.

B. **GEOLOGIC EVALUATION**: The Air Pollution Control Officer may provide an exemption from this Rule for any property that meets at least one of the criteria in Section 223-2.1.B if a Professional Geologist has **conducted** a geologic evaluation of the property and determined that no serpentine or ultramafic rock, or asbestos, is likely to be found in the area to be disturbed. Before an exemption can be granted, the owner/operator must provide a copy of a report detailing the geologic evaluation to the Air Pollution Control Officer for his or her consideration.

1. At a minimum, the geologic evaluation must include:
   a. A general description of the property and the proposed use;
   b. A detailed site characterization which may include:
      . A physical site inspection;
      . Offsite geologic evaluation of adjacent property;
      . Evaluation of existing geological maps and studies of the site and surrounding area;
      . Development of geologic maps of the site and vicinity;
      . Identification and description of geologic units, rock and soil types, and features that could be related to the presence of ultramafic rocks, serpentine, or asbestos mineralization; and
      . A subsurface investigation to evaluate the nature and extent of geologic materials in the subsurface where excavation is planned; methods of subsurface investigation may include, but are not limited to borings, test pits, trenching, and geophysical surveys;
   c. A classification of rock types found must conform to the nomenclature based on the International Union of Geological Science system;
   d. A description of the sampling procedures used;
   e. A description of the analytical procedures used, which may include mineralogical analyses, petrographic analyses, chemical analyses, or analyses for asbestos content;
   f. An archive of collected rock samples for third party examination (to be kept for at least one year after the completion of the project); and
   g. A geologic evaluation report documenting observations, methods, data, and findings; the format and content of the report should follow the Guidelines for the Assessment of Naturally Occurring Asbestos issued by the California Geologic Survey.

2. The Air Pollution Control Officer may request any additional tests or other information needed to evaluate an application for exemption

3. The Air Pollution Control Officer shall grant or deny a request for an exemption within 30 days of the receipt of a complete application.

4. If the request for an exemption is denied, the Air Pollution Control Officer shall provide written reasons for the denial.

5. Expiration of the Geologic Exemption: If the owner/operator discovers any naturally-occurring asbestos, serpentine, or ultramafic rock in the area to be disturbed after the exemption is granted, then:

    a. The owner/operator must comply with the requirements of this Rule.
    b. The owner/operator must report the discovery of the naturally-occurring asbestos, serpentine or ultramafic rock to the Air Pollution Control Officer no later than the next business day.
    g. The exemption under Section 223-2.2.B shall expire and cease to be effective.

223-2.3 DEFINITIONS

In addition to the definitions of terms in EDCAQMD Rule 223 (General Requirements), the following definitions shall apply to this rule.

E. **ADEQUATELY WETTED:** sufficiently moistened with water to minimize the release of particulate matter into the ambient air.

F. **APPROVED ASBESTOS BULK TEST METHOD:** ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board.

G. **ARB:** the California Air Resources Board.

H. **ARB TEST METHOD 435:** the test method specified in title 17, California Code of Regulations, Section 94147.

I. **ASBESTOS:** asbestiforms of the following minerals: chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite--grunerite), asbestiform amphiboles (e.g. edenite, winchite and richterite), fibrous tremolite, fibrous actinolite, fibrous anthophyllite and tremolite/actinolite solution series of asbestiform minerals.

J. **ASBESTOS-CONTAINING MATERIAL:** any material that has asbestos content of 0.25 percent or greater by ARB test method 435.

K. **ASBESTOS CONTAINING WASTE or ACW:** asbestos containing waste managed at a landfill as authorized by Section 25143.7, chapter 6.5 of the California Health and Safety Code, which contains greater than (1%) friable asbestos by weight. Asbestos containing waste does not include waste contaminated with another hazardous waste as identified in chapter 11, division 4.5, Title 22, California Code of Regulations.

L. **ASBESTOS DUST MITIGATION PLAN:** a detailed written document specifying measures that would be implemented to minimize the emissions of asbestos-laden dust.

D. EL DORADO COUNTY NATURALLY OCCURING ASBESTOS REVIEW AREA MAP: a map created by adding mapping accuracy buffers to (1) faults and areas likely to contain asbestos as shown on the March 2000 Department of Mines and Geology "Areas More Likely to Contain Naturally-Occurring Asbestos in Western El Dorado County, California" map and (2) documented discovery sites containing at least 0.25% Asbestos. The most current map is provided on the EDCAQMD website and is available at the El Dorado County Surveyor's office.

E. G**EOGRAPHIC ULTRAMAFIC ROCK UNIT:** a geographic area that is designated as an ultramafic rock unit or ultrabasic rock unit, including the unit boundary line, on any of the maps referenced in Appendix A of the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining, Section 93105, Title 17, California Code of Regulations

F. **GEOLOGIC EVALUATION:** an evaluation of a property by a Professional Geologist to determine the presence of various types of rocks, including but not limited to ultramafic rock, serpentinite, or other metamorphic derivatives of ultramafic rock.

G. **HEPA FILTER:** a High Efficiency Particulate Air filter used to remove particles less than one (1) micron in aerodynamic diameter that operates at removal efficiencies of 99.9 percent or greater.

H. **NATURALLY-OCCURRING ASBESTOS:** asbestos that has not been processed in an asbestos mill or is not asbestos mine tailings.

I. **PROFESSIONAL GEOLOGIST:** an individual who is currently licensed as a geologist with the State of California, Department of Consumer Affairs, Board of Geology and Geophysicists.

J. **REMOTE LOCATION:** any location that is at least one (1.0) mile from the location of a receptor.

K. **RECEPTOR:** includes, but is not limited to, any hospital, school, day care center, work site, business, residence, and permanent campground. The distance to the nearest receptor is to be measured from the outermost limit of the area to be disturbed or road surface, whichever is closer.

L. **SERPENTINE:** any form of the following hydrous magnesium silicate minerals: antigorite, lizardite, and chrysotile.

M. **SERPENTINITE:** a rock consisting almost entirely of serpentine, although small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite may also be present. "Serpentinite" is a metamorphic derivative of the ultramafic rocks, peridotite, pyroxenite, or dunite.

N. **ULTRABASIC ROCK:** ultramafic rock.

O. **ULTRAMAFIC ROCK:** an igneous rock composed of 90 percent or greater of one or a combination of the following iron/magnesium-rich, dark-colored silicate minerals: olivine, pyroxene or more rarely amphibole. For the purposes of this section, "ultramafic rock" includes the following rock types: dunite, pyroxenite and peridotite; and their metamorphic derivatives.

P. **VEGETATIVE COVER**: ground cover with sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter.

1-9.1 GENERAL REQUIREMENTS

A. Visible emissions shall not exceed the shade designated as No. 0 on the Ringelmann Chart, or 0% opacity as determined in accordance with US EPA Method 9, at 25 feet from the point-of-origin and at the property line. Visible emissions shall not exceed the shade designated as No. 1 on the Ringelmann Chart, or 20% opacity as determined in accordance with US EPA Method 9at the point-of-origin. Applicable Best Management Practices included in Table 1 through 4 of this Rule or

similar effective measures shall be utilized to comply with fugitive dust standards of this rule from each fugitive dust source type within the active operation.

A. Vehicle Speed Limitations and Posting of Speed Limit Signs

1. An owner/operator shall limit the speed of vehicles traveling within construction sites to a maximum of 15 miles per hour.

2 An owner/operator shall post speed limit signs limiting vehicle speed to maximum of 15 miles per hour that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance.

C. When sustained wind speeds result in visible dust emissions in excess of the standards in Section 223-2.4 A., despite the application of dust mitigation measures, grading and earthmoving operations except except for dust mitigation activities shall be suspended

D. Warning Signs shall be posted at the main entrance(s) to the project for the duration of soil disturbance activities. Signs shall be posted in letter of sufficient size as to be readily visible and legible. The following wording is recommended: "Warning. Soils in the area may contain naturally occurring asbestos. Asbestos is a known carcinogen. Report excessive fugitive dust to the contractor at (contractor phone number), NOA Hotline: 888-FYI4NOA or EDCAQMD: 530-621-6662"

I. Following operations and activities are expressly prohibited:

2. Rock crushing of asbestos-containing material;

2. Use of blower devices for any removal of asbestos-containing material.

223-2.5 ADMINISTRATIVE REQUIREMENTS

A. Asbestos Dust Mitigation Plan

1. An owner/operator shall submit an Asbestos Dust Mitigation Plan to the Air Pollution Control Officer prior to the start of any construction activity that is applicable to this rule. An updated Asbestos Dust Mitigation Plan must be submitted if the project is significantly modified, a new grading permit is issued, the owner/operator changes or at the request of the Air Pollution Control Officer.

   Construction activities shall not commence until the Air Pollution Control Officer has approved or conditionally approved the Asbestos Dust Mitigation Plan. An owner/operator shall provide written notification to the Air Pollution Control Officer at least 10 days prior to the commencement of earthmoving activities via fax or mail. Projects that are less than 1 acre shall provide notification to the Air Pollution Control Officer at least 48 hours prior to earthmoving activities via fax or mail. The requirement to submit an Asbestos Dust Mitigation Plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.

2. . An owner/operator may submit one Asbestos Dust Mitigation Plan covering multiple construction stages within same project, provided the plan includes description of activities and

control measures for all stages of the project. The Asbestos Dust Mitigation Plan shall specify the expected start and final completion date of each project.

3. Asbestos Dust Mitigation Plan shall describe all dust mitigation measures to be implemented before, during and after any dust generating activity.

4. Asbestos Dust Mitigation Plan shall contain all the information described in Section 223-2.5.B. The Air Pollution Control Officer shall approve, disapprove or conditionally approve the Asbestos Dust Mitigation Plan within 30 days of plan submittal.

5. An owner/operator shall retain a copy of an approved Asbestos Dust Mitigation Plan at the project site. The approved Asbestos Dust Mitigation Plan shall remain valid until the termination of all dust generating activities. Failure to comply with the provisions of an approved Asbestos Dust Mitigation Plan is deemed to be a violation of this rule. Regardless of whether an approved Asbestos Dust Mitigation Plan is in place or not, or even when the owner/operator responsible for the plan is complying with an approved Asbestos Dust Mitigation Plan, the owner/operator shall comply also with all requirements of this Rule at all times.

B. An Asbestos Dust Mitigation Plan shall contain all of the following information:

0. Name(s), address(s), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the Asbestos Dust Mitigation Plan and responsible for the dust generating operation and the application of dust control measures.

0. A plot plan which shows the type and location of each project.

0. The total area of land surface to be disturbed and total area in acres of the entire project site.

0. The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site.

0. The actual and potential sources of fugitive dust emissions on the site and the location of bulk material handling and storage areas, paved and unpaved roads; entrances and exits where carryout/trackout may occur; and traffic areas.

0. Best Management Practice (Rule 223-2, Table 1 through 4) or other effective measures for:
   - Construction
   - Bulk Material Handling
   - Carryout and Trackout Management
   - Blasting Activities

0. Large Operations must include Dust Control Measures (Rule 223-2, Table 5 and 6).

0. If chemical dust suppressants are to be applied, the following information must be included: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

0. Specific surface treatment(s) and/or control measures utilized to control material carryout, trackout, and sedimentation where unpaved and/or access points join paved roads.

10. Frequency of reporting: The plan shall state how often the items specified in Section 223-2.9. and any other items identified in the plan, will be reported to the EDCAQMD.

223-2.6 REQUIREMENTS FOR TRACKOUT MANAGEMENT, EXCAVATED SOIL MANAGEMENT AND POST-CONSTRUCTION STABILIZATION

A. An owner/operator shall prevent or cleanup carryout and trackout as specified in Section 223-2.6.A. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

   1. Owners/operators shall prevent carryout and trackout, or remove all visible carryout and trackout immediately.

   2. Cleanup of carryout and trackout shall be accomplished by:
      a. Wet sweeping and picking-up; or
      b. Operating a HEPA filter equipped vacuum device; or
      c. Flushing with water, if curbs or gutters are not present, and where the use of water will not result in a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

E. An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall in addition to the requirements in Section 223-2.6.A, take the following preventative actions for carryout and trackout:

   1. Installing and maintaining a trackout control device (grizzlies, gravel pads or paved surfaces) designed and maintained to control trackout at all access points to paved public roads; or:

   2. Utilizing a carryout and trackout prevention procedure which has been demonstrated to the satisfaction of the Air Pollution Control Officer as achieving an equivalent or greater level of control.

F. Control for disturbed surface areas and storage piles, shall comply with all applicable requirements of this Rule.

G. Disposal of asbestiform containing soils removed by excavation:

   1. Placing excavated soils into fills constructed elsewhere on the project.
      a. The location(s) of such removals and the placement quantities and locations shall be documented.
      b. Fills with a naturally occurring asbestos content equal to or greater than 1.0% by ARB Test Method 435, or when visually evident fibrous materials likely to be asbestos are present, located in residential landscaping areas shall be covered by at least two feet (24 inches) of non-asbestiform containing material or by concrete or asphalt paving.

   2. It is the owner/operator responsibility that final destination (usage or disposal) and transports of any excavated soils from the project is in conducted in full compliance with pertinent federal,

state and local rules and regulations including CA Title 17, Section 93106, Asbestos Airborne Toxic Control Measure for Surfacing Applications.

3. For any soils transported off-site the following information must be documented, retained for a period of at least 3 years, and provided to the Air Pollution Control Officer upon request:
   e. Project location
   f. Laboratory results for any asbestos soil testing done at the project location
   g. Date(s) of off-site transport(s) of excavated soils
   h. Location(s) where excavated soils were transported to
   i. Total quantity transported to each location
   j. Intended usage (fill, surface application), if the final destination is other than Class II or Class III landfill disposal facility.

H. Control for off-site transport. The owner/operator shall ensure that no trucks are allowed to transport excavated material off-site unless:

1. Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; <u>and</u>

2. Loads are adequately wetted; <u>and</u>
   a. Covered with tarps; <u>or</u>
   b. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.

5. If excavated material is classified as a hazardous waste/material, off-site transport must comply with pertinent State and Federal rules and regulations.

I. Post construction stabilization of disturbed areas. For multiple phase projects, the property owner shall be responsible for ensuring that the soil be stabilized following each phase of the project using one of the methods listed below or by any other method approved by the APCO. Upon completion of all phases of the project, but no later than 30 days following the end of soil disturbing activities, all disturbed surfaces with naturally occurring asbestos content of equal to or greater than 0.25% by ARB test method 435 shall be stabilized using one or more of the following methods:

1. Establishment of a vegetative cover;

2. Placement of non-asbestos containing material on disturbed soil areas shall be as follows:
   a. At least three (3.0) inches in residential and nonresidential areas;
   b. A total of at least twelve (12) inches or the maximum depth of irrigation improvements, whichever is higher, in residential landscaping areas with a naturally occurring asbestos content greater than 0.25% by ARB Test Method 435, or when visually evident fibrous materials likely to be asbestos are present;

3. Paving, building foundations, concrete flatwork or retaining walls

223-2.7. ADDITIONAL REQUIREMENTS FOR LARGE OPERATIONS

E. Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 5 of this Rule at all times and shall implement the

applicable actions specified in Table 6 of this Rule when the applicable performance standards can not be met through use of Table 5 actions; and shall:

0. Submit a Large Operation Notification to the Air Pollution Control Officer within 7 days of qualifying as a large operation;

0. Maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Air Pollution Control Officer upon request;

0. Identify a dust control supervisor that:
   a. is employed by or contracted with the property owner or developer;
   b. is on the site or available on-site within 30 minutes during working hours;
   c. has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements.

223-2.8 AIR MONITORING FOR ASBESTOS

A. Pursuant to the requirements of California Health and Safety Code Section 41511:

   1. Air monitoring may be required by the Air Pollution Control Officer.

   2. The Air Pollution Control Officer may require revisions to the asbestos dust mitigation plan on the basis of the results of the air monitoring.

. Air monitoring for asbestos (if required by the Air Pollution Control Officer).

   0. If required by the Air Pollution Control Officer, the Asbestos Dust Mitigation Plan shall include an air-monitoring component.

   1. The air monitoring component shall specify the following:
      . Type of air sampling device(s);
      . Siting of air sampling device(s);
      . Sampling duration and frequency; and
      . Analytical method
      . Frequency and detail of analytical data submittal

223-2.9 RECORDKEEPING AND REPORTING REQUIREMENTS

A. Recordkeeping Requirements: The owner shall retain all of the following records for at least ten (10) years following the completion of the construction project:

   0. The results of any air monitoring conducted any time during the project.

   0. The documentation for any geologic evaluation conducted on the property for the purposes of obtaining an exemption, except the archive of collected samples which may be discarded at the expiration of the exemption or one (1) year after the exemption is granted whichever is less.

   0. The results of any asbestos bulk sampling that meets any of the following conditions:

a. The asbestos bulk sampling was conducted by the owner/operator to document the applicability of or compliance with this section.
b. The asbestos bulk sampling was done at the request of the Air Pollution Control Officer or the El Dorado Building Department or Department of Transportation (DOT).

7. The placement quantities and both removal and placement location of asbestiform containing soils removed by excavation as required in 223-2.6.D.

8. Records and reports for the project, as defined in 223-2.9.A, shall be provided upon request with disclosures in real estate transactions concerning the project or property.

B. Reporting Requirements: The owner/operator of any grading or construction operation subject to this section shall submit the following to the EDCAQMD:

1. The results of any air monitoring conducted at the request of the Air Pollution Control Officer.

2. The laboratory results of any asbestos bulk sampling or testing.

3. The areas where asbestos was identified, removed, and placed, onsite or offsite shall be described upon completion of the project.

4. Any public complaints received by the contractor during the project shall be reported as requested by the Air Pollution Control Officer.

223-2.10 TEST METHODS

E. Ultramafic Rock: The ultramafic rock composition of any material shall be determined using standard analysis techniques including, but not limited to, color index assessment, microscopic examination, petrographic analysis or rock thin sections, or chemical analysis techniques, such as X-ray fluorescence spectrometry or inductively coupled plasma analysis.

F. Bulk Sampling Methods: ARB Test Method 435, or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board, shall be used to determine the asbestos content of a bulk sample. For the purposes of determining compliance with this section, references in ARB Test Method 435 to "serpentine aggregate" shall mean "gravel" or other "bulk materials" to be tested for asbestos content.

G. Surface Crusting: “Measurement of the stability of surface crusting on horizontal surfaces” shall be as follows:

1. Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16 to 17 grams from a distance of 30 centimeters (one foot) directly above at a 90 degree angle (perpendicular) to the ground surface. If blowsand (thin deposits of loose grains covering less than 50 percent of the surface that have not originated from the surface being tested) is present, clear the blowsand from the surfaces to be tested before dropping the steel ball.

2. A sufficient crust is determined to exist if, when the ball is dropped according to Section 223-2.10.C.1 the ball does not sink into the surface so that it is partially or fully surrounded by loose

grains and, upon removing the ball, the surface on which it was dropped has not been pulverized so that loose grains are visible.

0. Drop the ball three times each in three representative test areas within a survey area measuring 1 foot by 1 foot that represents a random portion of the surface being evaluated. The test area shall be deemed to have passed if at least two of the three times the ball was dropped, the results met the criteria in Section 223-2.10.C.1. If all three test areas pass, the area shall be deemed to be "sufficiently crusted".

C. Analysis of Air Samples: Analysis of all air samples shall follow the analytical method specified by the United States Environmental Protection Agency, Asbestos Hazard Emergency Response Act (AHERA) criteria for asbestos (40 CFR, Part 763 Subpart E, Appendix A, adopted October 30, 1987), with the following exceptions:

0. The analytical sensitivity shall be 0.001 structures per cubic centimeter (0.001 s/cc); and

0. All asbestos structures with an aspect ratio greater than three to one (3:1) shall be counted irrespective of length.

2. The results of the analysis of air samples shall be reported as transmission electron microscopy (TEM) asbestos structures per cubic centimeter (s/cc).

D. Adequately Wetted: Field determination of "adequately wetted" shall be as follows:

0. If the district-approved asbestos dust mitigation plan has specified a percent moisture content for specific materials the determination shall be as specified in the district-approved asbestos dust mitigation plan; or

0. If no moisture threshold is specified in a district-approved asbestos dust mitigation plan, a sample of at least one (1) quart in volume shall be taken from the top three (3) inches of a road, or bare area or from the surface of a stockpile. The sample shall be poured out from a height of four (4) feet onto a clean hard surface. The material shall be considered to be adequately wetted if there is no observable dust emitted when the material is dropped.

RULE 223-2 TABLE 1
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Construction And Other Earthmoving Activities)

Source Category	Control Measure	Guidance
Backfilling	A1 Stabilize backfill material when not actively handling; and A2 Stabilize backfill material during handling; and A3 Stabilize soil at completion of activity. .	Mix backfill soil with water prior to moving Dedicate water truck or high capacity hose to backfilling equipment. Empty loader bucket slowly so that no dust plumes are generated. Minimize drop height from loader bucket.
Clearing and grubbing	B1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and B2 Stabilize soil during clearing and grubbing activities; and B3 Stabilize soil immediately after clearing and grubbing activities.	Maintain live perennial vegetation where possible. Apply water in sufficient quantity to prevent generation of visible dust.
Clearing forms	C1 Use water spray to clear forms; or C2 Use sweeping and water spray to clear forms; or C3 Use vacuum system to clear forms.	Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	D1 Crushing asbestos containing material is expressly prohibited..	
Cut and fill	E1 Pre-water soils prior to cut and fill activities; and E2 Stabilize soil during and after cut and fill activities.	For large sites, pre-water with sprinklers or water trucks and allow time for penetration. Use water as necessary to keep dust down.
Demolition – mechanical/manual	F1 Stabilize wind erodible surfaces to reduce dust; and F2 Stabilize surface soil where support equipment and vehicles will operate; and F3 Stabilize loose soil and demolition debris.	Apply water in sufficient quantities to prevent the generation of visible dust.
Disturbed soil	G1 Stabilize disturbed soil throughout the construction site; and G2 Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible. If interior block walls are planned, install as early as possible. Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.

RULE 223-2 TABLE 1
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Construction And Other Earthmoving Activities)

Source Category	Control Measure	Guidance
Earth-moving activities	H1 Pre-apply water; and H2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 25 feet or beyond property line in any direction; and H3 Stabilize soils once earth-moving activities are complete.	Grade each project phase separately, timed to coincide with construction phase. Upwind fencing can prevent material movement on site. Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes. Suspend operations when winds generate visible dust emissions despite control measures
Importing/exporting of bulk materials	I1 Stabilize or adequately wet material while loading to reduce fugitive dust emissions; and I2 Maintain at least six inches of freeboard on haul vehicles traveling off-site; and I3 Stabilize or adequately wet material while transporting to reduce fugitive dust emissions; and I4 Stabilize material while unloading to reduce fugitive dust emissions.	Use tarps or other suitable enclosures on haul trucks. Comply with track-out prevention/ mitigation requirements. Provide water while loading and unloading to reduce visible dust plumes. Maintain trucks and cargo compartments, to prevent any spillage of material. If excavated material is classified as a hazardous waste/material, off-site transport must comply with pertinent State and Federal rules and regulations.
Landscaping	J1 Stabilize soils, materials and slopes.	Apply water to materials to stabilize. Maintain materials in a crusted condition. Maintain effective cover over materials Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes Hydroseed prior to rainy season.
Road shoulder maintenance	K1 Apply water to unpaved shoulders prior to clearing; and K2 Apply chemical dust suppressants and/or other appropriate material in accordance with DOT specifications to maintain a stabilized surface after completing road shoulder maintenance.	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs. Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Staging areas	M1 Stabilize staging areas during use; and M2 Stabilize staging area soils at project completion.	Limit size of staging area. Limit vehicle speeds to 15 miles per hour. Limit number and size of staging area entrances/exists.

RULE 223-2 TABLE 1
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Construction And Other Earthmoving Activities)

Source Category	Control Measure	Guidance
Stockpiles/Bulk Material Handling	N1 Stabilize stockpiled materials. N2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	Add or remove material from the downwind portion of the storage pile. Maintain storage piles to avoid slides.
Traffic areas for construction activities	O1 Stabilize or maintain adequate moisture on all off-road traffic and parking areas; and O2 Stabilize or maintain adequate moisture on all haul routes; and O3 Direct construction traffic over established haul routes.	Apply gravel/paving to all haul routes as soon as possible to all future roadway areas. Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	P1 Stabilize surface soils where trencher or excavator and support equipment will operate; and P2 Stabilize soils at the completion of trenching activities.	Pre-watering of soils prior to trenching is an effective preventive measure. Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	Q1 Material must be adequately wet prior to loading; and Q2 Freeboard must be 6 inches or greater (VCS 23114)	Empty loader bucket such that no visible dust plumes are created. Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Unpaved roads/parking lots	S1 Stabilize soils to meet the applicable performance standards (Surface Crusting); and S2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.

RULE 223-2 TABLE 1
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Construction And Other Earthmoving Activities)

Source Category	Control Measure	Guidance
Vacant land	T1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access.	Installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures to prevent access to motor or off-road vehicles.
Onsite Disposal of asbestiform containing soils	U1 If possible, place excavated soils into fills constructed elsewhere on the project	Fills with NOA content equal to or greater than 1.0%, or when visually evident fibrous materials likely to be asbestos are present, in residential landscaping areas must be covered by at least 24 inches of clean fill Document location and quantities of fills
Offsite disposal of asbestiform containing soils	V1 Management and disposition of excavated soils transported offsite must be in accordance with federal, state and local regulations.	For excavated soils transported offsite, information per Rule 223-2.6.D.3. <u>must</u> be documented by owner/operator and retained for a period of 3 years.
Post Construction Stabilization of Disturbed Areas	W1 Must be completed no later than 30 days following completion of the project.	Establishment of vegetative cover; <u>or</u> Placement of at least 3 inches of clean fill, Placement of a total of at least 12 inches, or maximum depth of irrigation improvements, whichever is higher, of clean fill in residential landscaping areas with NOA greater than 0.25%; or Paving, Foundations, Retaining Walls; or Other measures as approved by APCO.
Signage	X1 Post Warning Signs at the main entrance to the project for the duration of soil disturbance activities	Signs to be in compliance with current OSHA requirements Proposition 65 (H&S Code 25249.5-25249.13) may apply

RULE 223-2 TABLE 2
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Bulk Material Handling)

Source Category	**Control Actions**
Handling Of Bulk Materials	A1 When handling bulk materials, apply water or chemical/organic stabilizers/ suppressants;
Storage of Bulk Materials	B1 When storing bulk materials, comply with the conditions for a stabilized surface; or B2 Cover bulk materials stored outdoors with tarps, plastic or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or B3 Construct and maintain wind barriers with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants; or B4 Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
On-Site Transporting of Bulk Materials	C1 Limit vehicular speed while traveling on the work site; or C2 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road; or C3 Apply water to the top of the load; or C4 Cover haul trucks with a tarp or other suitable cover.
Off-Site Transporting of Bulk Materials	D1 Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and D2 Material must be adequately wet prior to loading; and D3 Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides and/or tailgate; and D4 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved road, and apply water to the top of the load; or cover haul trucks with a tarp or other suitable cover. D5 If excavated material is classified as a hazardous waste/material, off-site transport must comply with pertinent State and Federal rules and regulations.
Outdoor Transport Of Bulk Materials With A Chute Or Conveyor:	E1 Fully enclose the chute or conveyor; or E2 Operate water spray equipment; or E3 Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less.

RULE 223-2 TABLE 3
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Removal and Prevention of Trackout)

Source Category	**Control Actions**
Removal of Trackout Material	A1 Manually wet sweeping and picking-up; or A2 Operating HEPA filter equipped vacuum device; or A3 Flushing with water, where the use of water will not result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program; and A4 The use of blower devices, or dry rotary brushes or dry brooms is expressly prohibited.
Frequency of Trackout Material Removal	B1 Visible trackout must be immediately removed from paved public roads; and B4 On interior paved roads trackout must be removed at least once per workday.
Trackout Prevention for Large Operations or Sites with more than 150 vehicle trips/day.	C1 Installation of grizzlies, or similar devices designed to remove dirt/mud from tires; or C2 Installation of gravel pad; or C3 Paving of interior roads.

RULE 223-2 TABLE 4
BEST MANAGEMENT PRACTICE FOR ASBESTOS DUST MITIGATION
(Blasting Activities)

Source Category	Control Measure	Guidance
Site Preparation (drilling, setting charges, burial of charges)	A1 Reduce dust from drilling operation A2 Pre-wet blast area A3 Cover charges to minimize dust	☐ Control rate of drilling ☐ Apply water fog ☐ Place blast mats over charges ☐ Place soil mounds over charges ☐ Wet entire area prior to blasting
Blasting activities	B1 Dust cannot exceed 25 ft or cross the project property line	☐ Conduct blasting on calm days ☐ Consider wind direction with respect to your property line, nearby residences and other receptors.
Post-Blasting Activities	C1 Follow Best Management Practices for all construction activities (Table 223-2, Table 1)	

RULE 223-2 TABLE 5
DUST CONTROL MEASURES FOR LARGE OPERATIONS

Source Category	**Control Actions**
Earth-moving (except construction cutting and filling areas, and mining operations)	A1 Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Air Pollution Control Officer. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; <u>or</u> A2 For any earth-moving which is more than 25 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 25 feet in length in any direction. Visible emissions must not extend beyond property boundary.
Earth-moving: Construction fill areas:	B1 Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Air Pollution Control Officer. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Air Pollution Control Officer complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations. B2 For any earth-moving which is more than 25 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 25 feet in length in any direction. Visible emissions must not extend beyond property boundary.
Earth-moving: Construction cut areas	C1 Conduct watering as necessary to prevent any visible emissions from extending beyond property boundary.
Disturbed surface areas: (except completed grading areas)	D1 Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	E1 Apply chemical stabilizers within five working days of grading completion; <u>or</u> E2 Take actions F1 or F3 specified for inactive disturbed surface areas.

RULE 223-2 TABLE 5
DUST CONTROL MEASURES FOR LARGE OPERATIONS

Source Category	Control Actions
Inactive disturbed surface areas	F1 Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or F2 Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; or F3 Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or F4 Utilize any combination of control actions F1, F2 and F3 such that, in total, these actions apply to all inactive disturbed surface areas. F5 Establishment and maintenance of surface crusting sufficient to satisfy the test in Section 223-2.10.C F6 Approved mixture of tackifier and fiber mulch, applied per manufacturer's recommendation.
Unpaved Roads	G1 Water all roads used for any vehicular traffic at least once per every two hours of active operations or as often as necessary; or G2 Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface; and G3 Restrict vehicle speeds to 15 miles per hour;
Open storage piles	H1 Apply chemical stabilizers; or H2 Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; or H3 Install temporary coverings; or H4 Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	I1 Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in Table 5 may be used.

RULE 223-2 TABLE 6
CONTINGENCY DUST CONTROL MEASURES FOR LARGE OPERATIONS

Source Category	**Control Actions**
Earth-moving	A1 Cease all active operations except for dust mitigation activities; or A2 Apply water to soil not more than 15 minutes prior to moving such soil; and A3 Apply water during soil moving or disturbance operations.
Disturbed surface areas	B1 On the last day of active operations prior to a weekend, holiday or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; or B2 Apply chemical stabilizers prior to wind event; or B3 Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; or B4 Take the actions specified in Table 5, control action F3; or B5 Utilize any combination of control actions B1, B2 and B3B such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	C1 Apply chemical stabilizers prior to wind event; or C2 Apply water twice per hour during active operation; or C3 Stop all vehicular traffic, except for dust mitigation equipment.
Open storage piles	D1 Apply water twice per hour; or D2 Install temporary coverings.
Bulk Material Transport	E1 Cover all haul vehicles; or E2 Freeboard must be 6 inches or greater (VCS 23114)
All Categories	F1 Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in Table 6 may be used.

Appendix E

Plant Species

Appendix E
Plant Species

Plants Observed in the Project Area (2006, 2012, and 2013)

Scientific Name	Common Name
ADOXACEAE	MUSKROOT FAMILY
Sambucus nigra ssp. *caerulea*	Blue elderberry
AGAVACEAE	AGAVE FAMILY
Chlorogalum pomeridianum	Soap plant
AMARANTHACEAE	AMANRANTH FAMILY
*Amaranthus retroflexus**	Rough pigweed
ANACARDIACEAE	SUMAC FAMILY
Toxicodendron diversilobum	Poison-oak
APIACEAE	CARROT FAMILY
Conium maculatum†*	Poison-hemlock
Daucus pusillus	American wild carrot
Lomatium caruifolium var. *denticulatum*	Caraway-leaved lomatium
Sanicula crassicaulis	Pacific sanicle
Torilis arvensis†*	Torilis (hedge parsley)
ASCLEPIADACEAE	MILKWEED FAMILY
Asclepias fascicularis	Narrow-leaf milkweed
Asclepias speciosa	Showy milkweed
ASTERACEAE	SUNFLOWER FAMILY
Achillea millefolium	Common yarrow
Achyrachaena mollis	Blowwives
*Anthemis cotula**	Mayweed
Artemisia douglasiana	Mugwort
Baccharis pilularis	Coyote bush
Carduus pycnocephalus†*	Italian thistle
Centaurea solstitialis†*	Yellow star-thistle
Cirsium vulgare†*	Bull thistle
Erigeron canadensis	Canada horseweed
Erigeron foliosus	Leafy fleabane
Euthamia occidentalis	Western fragrant goldenrod
Gnaphalium palustre	Western marsh cudweed
Helminthotheca echioides†*	Bristly ox tongue
Hemizonella minima	Opposite leaved tarweed
Holocarpha virgata	Sticky tarweed

Scientific Name	Common Name
*Hypochaeris glabra**†	Smooth cats-ear
*Lactuca serriola**	Prickly lettuce
Leontodon taraxacoides ssp. *taraxacoides**	Lesser hawkbit
*Leontodon saxatilis**	Hairy hawkbit
Logfia gallica	Herba impia, narrow leaf cotton rose
Madia sp.	Tarweed
Pseudognaphalium californicum	Everlasting, labies tobacco
*Pseudognaphalium luteoalbum**	Jersey cudweed
*Silybum marianum**†	Milk thistle
*Sonchus arvensis**	Perennial sowthistle
*Sonchus asper**	Prickly sowthistle
*Sonchus oleraceus**	Common sowthistle
Symphyotrichum chilense	Common California aster
*Taraxacum officinale**	Common dandelion
*Tragopogon dubius**	Goat's beard
Wyethia angustifolia	Mule ears
Xanthium spinosum	Spiny cocklebur
BETULACEAE	BIRCH FAMILY
Betula sp.	Birch
BIGNONIACEAE	TRUMPET-CREEPER FAMILY
*Catalpa bignonioides**	Cigar-tree
BORAGINACEAE	BORAGE FAMILY
Amsinckia menziesii	Rancher’s fireweed
Cryptantha sp.	Cryptantha
BRASSICACEAE	MUSTARD FAMILY
*Capsella bursa-pastoris**	Shepards purse
*Brassica nigra**†	Black mustard
*Hirschfeldia incana**†	Shortpod mustard
Nasturtium officinale	Water cress
*Raphanus raphanistrum**	Yellow wild radish
*Raphanus sativus**†	Purple wild radish
Rorippa nasturtium-aquaticum	Water cress
CALLITRICHACEAE	WATER-STARWORT FAMILY
Callitriche heterophylla	Larger water-starwort
CAPRIFOLIACEAE	HONEYSUCKEL FAMILY
Lonicera interrupta	Chaparral honeysuckle
Lonicera subspicata	Southern honeysuckle
Symphoricarpos albus var. *laevigatus*	Snowberry

Scientific Name	Common Name
CARYOPHYLLACEAE	PINK FAMILY
*Cerastium glomeratum**	Mouse-ear chickweed
*Stellaria media**	Common chickweed
CONVOLVULACEAE	MORNING-GLORY FAMILY
Calystegia occidentalis	Chaparral morning glory
Convolvulus arvensis†*	Morning glory
CUPRESSACEAE	CYPRESS FAMILY
Sequoia sempervirens	Redwood
CYPERACEAE	SEDGE FAMILY
Carex barbarae	Santa Barbara sedge
Carex praegracilis	Clustered field sedge
Carex sp.	Sedge
Cyperus eragrostis	Tall flatsedge
Eleocharis macrostachya	Creeping spikerush
EUPHORBIACEAE	SPURGE FAMILY
Croton setigerus	Turkey mullein
Euphorbia sp.	Spurge
*Sapium sebiferum**†	Chinese tallow
FABACEAE	LEGUME FAMILY
Acacia sp.	Acacia
Acmispon americanus	Spanish lotus
*Medicago polymorpha**†	Bur clover
*Trifolium dubium**	Shamrock clover
*Trifolium hirtum**†	Rose clover
*Trifolium incarnatum**	Crimson clover
Trifolium willdenovii	Tomcat clover
*Vicia villosa**	Winter vetch
FAGACEAE	OAK FAMILY
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizenii	Interior live oak
GENTIANACEAE	GENTIAN FAMILY
Centaurium tenuiflorum	Monterey/slender centaury
Zeltnera muehlenbergii	Muehlenberg's centaury

Scientific Name	Common Name
GERANIACEAE	GERANIUM FAMILY
*Erodium botrys**	Filaree
*Geranium dissectum**†	Cut-leaved geranium
*Geranium molle**	Soft geranium
HIPPOCASTANACEAE	BUCKEYE FAMILY
Aesculus californica	California buckeye
HYPERICACEAE	ST. JOHN'S WORT FAMILY
*Hypericum canariense**†	Canary island St. John's wort
*Hypericum perforatum**†	Klamath weed
IRIDACEAE	IRIS FAMILY
Sisyrinchium bellum	Blue-eyed grass
JUNCACEAE	RUSH FAMILY
Juncus balticus ssp. *ater*	Baltic rush
Juncus bufonius	Toad rush
*Juncus capitatus**	Capped rush
Juncus xiphioides	Iris-leaved rush
LAMIACEAE	MINT FAMILY
*Rosmarinus officinalis**	Rosemary
Stachys albens	White-stem hedgenettle
Stachys stricta	Hedgenettle
LILIACEAE	LILY FAMILY
Brodiaea elegans	Harvest brodiaea
Chlorogalum pomeridianum	Soap plant
Dichelostemma capitatum	Blue dicks
Dichelostemma volubile	Twining brodiaea
Triteleia hyacinthine	Hyacinth brodiaea
LYTHRACEAE	LOOSESTRIFE FAMILY
*Lythrum hyssopifolia**†	Hyssop loosestrife
MALVACEAE	MALLOW FAMILY
*Malva parviflora**	Cheeseweed mallow
MORACEAE	MULBERRY FAMILY
*Ficus carica**†	Fig
MYRSINACEAE	MYRSINE FAMILY
*Anagallis arvensis**	Scarlet pimpernel

Scientific Name	Common Name
OLEACEAE	OLIVE FAMILY
*Ligustrum sp.**	Privet
ONAGRACEAE	EVENING PRIMROSE FAMILY
Clarkia purpurea	Four-spot clarkia
Clarkia unguiculata	Elegant clarkia
Epilobium brachycarpum	Panicled willow-herb
Epilobium ciliatum	Hairy willow-herb
Epilobium densiflorum	Dense-flower spike-primrose
Epilobium torreyi	Brook spike primrose
OXALIDACEAE	OXALIS FAMILY
*Oxalis micrantha**	Woodsorrel
PAPAVERACEAE	POPPY FAMILY
Eschscholzia californica	California poppy
PINACEAE	PINE FAMILY
Pinus sp.	Pine
Pinus sabiniana	Gray/foothill pine
Pinus torreyana	Torrey Pine
PLANTAGINACEAE	PLANTAIN FAMILY
*Kickxia elatine**	Sharp-leaved fluellin
Mimulus guttatus	Common large monkey-flower
*Plantago major**	Broad-leaf/ common plantain
Platanus racemosa	California sycamore
Veronica peregrina ssp. *xalapensis*	Purslane speedwell
POACEAE	GRASS FAMILY
Aegilops triuncialis†*	Barbed goatgrass
*Aira caryophyllea**	Hairgrass
Avena barbata†*	Slender wild oat
Brachypodium distachyon	False brome
Briza maxima†*	Big quaking grass
*Briza minor**	Little quaking grass
Bromus carinatus	California brome
Bromus diandrus†*	Ripgut brome
Bromus hordeaceus†*	Soft brome
Bromus laevipes	Narrow-flowered brome
Bromus madritensis ssp. *rubens*†*	Red brome
Cynodon dactylon†*	Bermuda grass
Cynosurus echinatus†*	Hedgehog dog-tail grass
Dactylis glomerata†*	Orchard grass

Scientific Name	Common Name
*Elymus caput-medusae**†	Medusahead grass
*Elymus ponticus**	Tall wheat grass
*Festuca arundinacea**†	Kentucky fescue
*Festuca bromoides**	Brome fescue
Festuca microstachys	Vulpia
*Festuca perennis**†	Perennial ryegrass
*Gastridium phleoides**	Nit grass
Hordeum marinum ssp. *gussoneanum**†	Mediterranean barley
Hordeum murinum ssp. *leporinum**†	Foxtail barley
Melica californica	California melic / onion grass
Muhlenbergia rigens	Deergrass
Paspalum distichum	Joint paspalum, knot grass
*Poa annua**	Annual bluegrass
*Poa bulbosa**	Bluegrass
*Polypogon monspeliensis**†	Annual rabbit-foot grass
*Sorghum halepense**†	Johnson grass
*Taeniatherum caput-medusae**†	Medusahead grass
*Triticum aestivum**	Cultivated wheat
POLEMONIACEAE	PHLOX FAMILY
Navarretia intertexta	Needle-leaf navarretia
Navarretia pubescens	Purple navarretia
POLYGONACEAE	BUCKWHEAT FAMILY
Polygonum sp.	Smartweed
*Polygonum arenastrum**	Prostrate knotweed
*Rumex crispus**†	Curly dock
*Rumex pulcher**	Fiddle dock
Rumex salicifolius	Willow dock
POLYPODIACEAE	POLYPODY FAMILY
Polypodium californicum	California polypody
PORTULACACEAE	PURSLANE FAMILY
Claytonia perfoliata	Miner's lettuce
PTERIDACEAE	BRAKE FAMILY
Adiantum aleuticum	Five-finger fern
Pentagramma triangularis	Silverback fern
RANUNCULACEAE	BUTTERCUP FAMILY
*Ranunculus muricatus**	Spiny-fruit buttercup

Scientific Name	Common Name
ROSACEAE	ROSE FAMILY
Heteromeles arbutifolia	Toyon
*Pyrus calleryana**	Callery pear
Rosa californica	California rose
*Rubus armeniacus**†	Himalayan blackberry
RUBIACEAE	MADDER FAMILY
*Galium parisiense**	Wall bedstraw
SALICACEAE	WILLOW FAMILY
Populus fremontii	Fremont's cottonwood
*Salix babylonica**	Weeping willow
Salix exigua	Sandbar willow
Salix gooddingii	Goodding's black willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
SAPINDACEAE	SOAPBERRY FAMILY
Acer sp.	Maple
Aesculus californica	California buckeye
THEMIDACEAE	BRODIAEA FAMILY
Brodiaea elegans	Harvest brodiaea
Dichelostemma multiflorum	Wild hyacinth
Dichelostemma volubile	Twining brodiaea
TYPHACEAE	CATTAIL FAMILY
*Typha angustifolia**	Narrow-leaf cattail
Typha domingensis	Southern cattail
Typha latifolia	Broad-leaf cattail
VISCACEAE	MISTLETOE FAMILY
Phoradendron serotinum ssp. *tomentosum*	Oak mistletoe
VITACEAE	GRAPE FAMILY
Vitis californica	California wild grape

* Non-native species.

† Invasive species—included on California Department of Food and Agriculture Noxious Weed List (2010) and/or California Invasive Plant Inventory (Cal IPC 2006, 2007).

Appendix F

Biological Resources Study and Important Habitat Mitigation Plan

Biological Resources Study and Important Habitat Mitigation Plan

For

Oak Woodlands in the

Central El Dorado Hills Specific Plan

El Dorado County, California

10 February 2014

Prepared For:
Serrano Associates, LLC

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment A – Interim Interpretative Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A)

Attachment B – Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Attachment C – Proposed Guidelines for Acorn Collection, Storage and Planting

Attachment D – Proposed Conceptual Layout for Acorn Planting with Protection

Attachment E – Proposed Guidelines for Planting Oak Seedling with Shelter

Attachment F – Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns

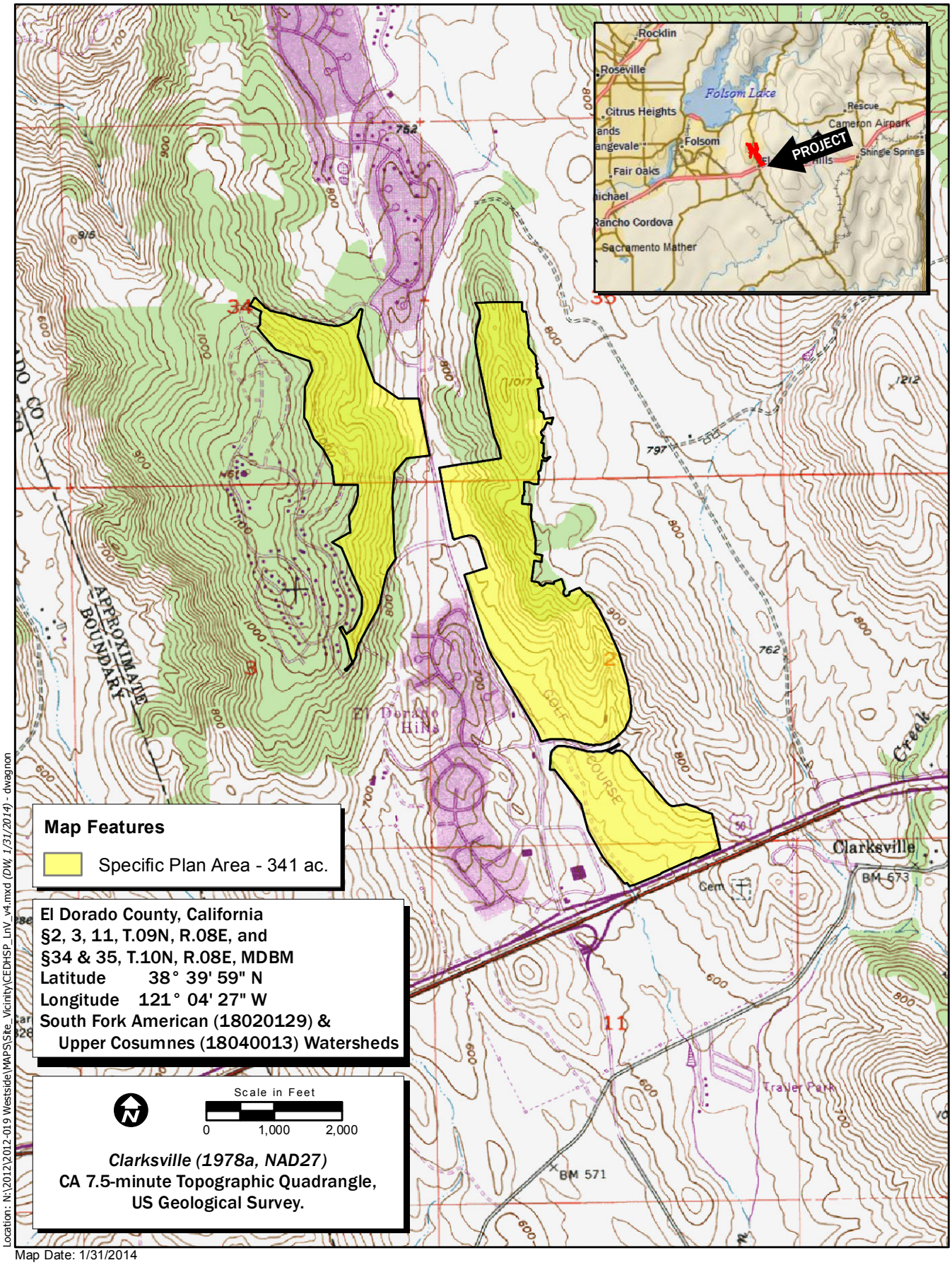
1.0 INTRODUCTION

At the request of Serrano Associates, LLC, ECORP Consulting, Inc. (ECORP) conducted a Biological Resources Study and created an Important Habitat Mitigation Plan to address oak tree impacts and proposed mitigation for the Central El Dorado Hills Specific Plan (CEDHSP) Project (Project). The Project is part of a proposed regional community plan for specific infill properties within the El Dorado Hills and Cameron Park communities. This area consists of two disjunct parcels north of Highway 50, separated by El Dorado Hills Blvd. The Pedregal parcel is west of El Dorado Hills Blvd., between Wilson Blvd. and Olsen Lane, and the Westside parcel is east of El Dorado Hills Blvd. and north of State Highway 50. Serrano Parkway bisects the Westside parcel. The 341-acre CEDHSP is situated within an elevational range of 600 to 1,050 feet above mean sea level in El Dorado Hills within El Dorado County, California (Figure 1. *Project Location and Vicinity*).

1.1 Project Location

The Project is located within portions of Sections 2, 3, 11, of Township 9 North, Range 8 East and portions of Sections 34 and 35 of Township 10 North, Range 8 East of the "Clarksville, California" 7.5-minute topographic quadrangle (U.S. Department of the Interior, Geological Survey 1978a). The Project is located at approximately 38° 39' 59" North and 121° 04' 27" West within the South Fork American and Upper Cosumnes Watersheds (USGS Hydrological Unit Code [HUC] #18020129 and #18040013, respectively) (U.S. Department of the Interior, Geological Survey 1978b).

Planned improvements include 1,000 dwelling units of low, medium, and high density residential use (1-24 dwellings units per acre) on approximately 140 acres. The Plan Area includes approximately 50,000 square feet of civic/limited commercial uses (or an 11-acre public park), a 15-acre public village park, and nearly 170 acres of natural open space. Planned improvements include an extensive network of trails interconnecting the proposed land uses and a location for pedestrian overcrossing of Highway 50. Approximately 50% of the site (170 acres) would be designated as Open Space (Figure 2. *Land Use Plan*).



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Map Date: 1/31/2014

Service Layer Credits: Copyright:© 2012 DeLorme

Figure 1. Project Location and Vicinity

2012-019 Central El Dorado Hills Specific Plan

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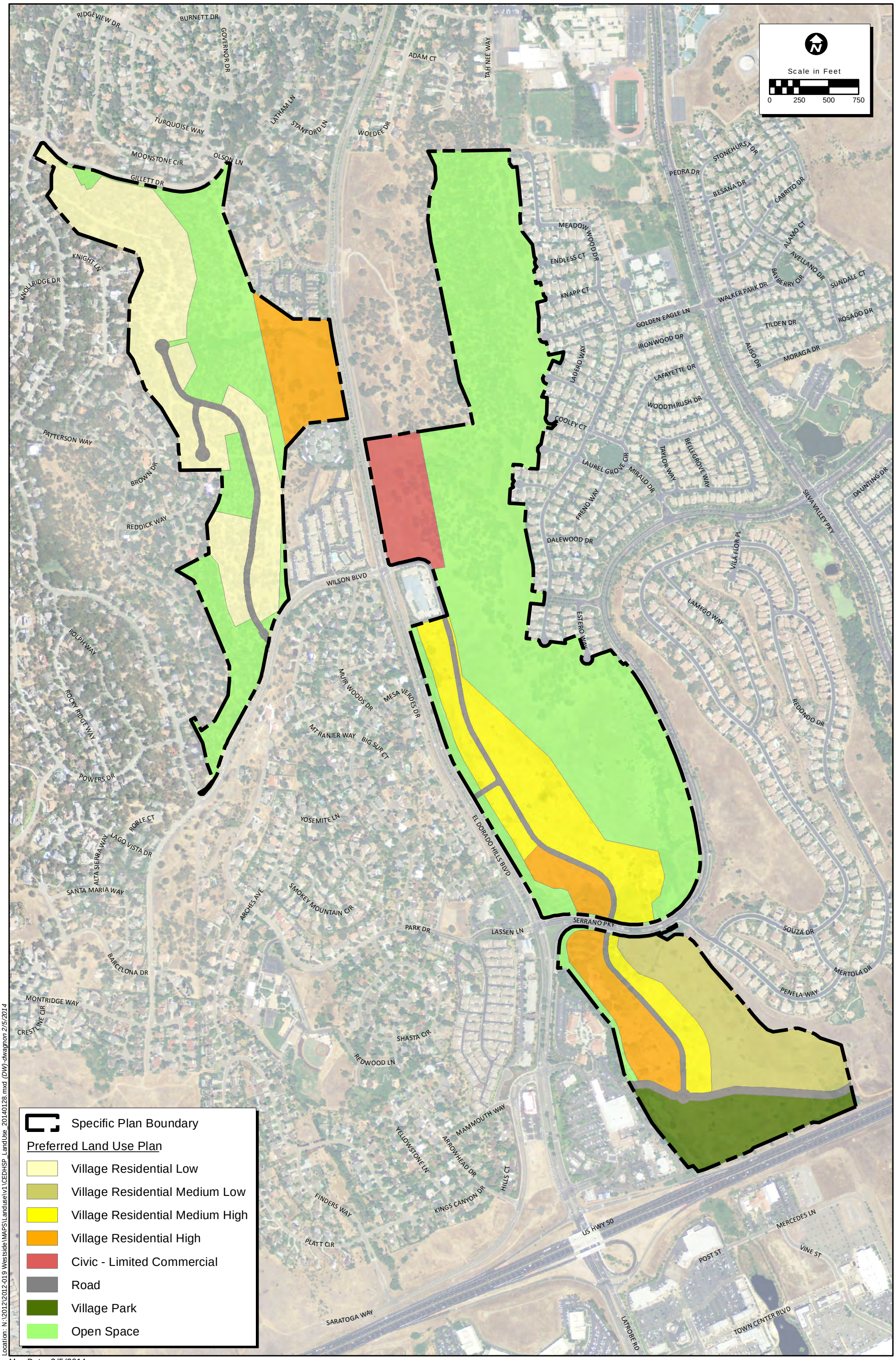

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Map Date: 2/5/2014
Photo Source: NAIP (2012)

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Figure 2. Land Use Plan

2012-019 Central El Dorado Hills Specific Plan

1.2 El Dorado County Oak Woodland Mitigation Requirements

Forest and Oak Woodland Resources are protected by Objective 7.4.4 of the El Dorado County General Plan, which states:

> *Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of sustainable flow or wood products, and aesthetic values (El Dorado County 2009).*

Policy 7.4.4.4 of the General Plan (El Dorado County 2009) specifies that for projects that are over one acre in size and have at least 1% canopy cover by woodland habitats, two mitigation options are available: A) the project applicant shall adhere to the tree canopy retention and replacement standards; or B) the project applicant shall contribute to El Dorado County's (County) Integrated Natural Resources Management Plan (INRMP) conservation fund. As this fund is not currently available, use of Option B is not feasible and the applicant for the CEDHSP Project is required to follow Option A.

Option A specifies canopy retention standards based on the percent of existing canopy within the Project. The retention rates, as stipulated in the *Interim Interpretive Guidelines for Policy 7.4.4.4 (Option A)* (Guidelines) (El Dorado County 2009), (Attachment A) are as follows:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80-100	60% of existing canopy
60-79	70% of existing canopy
40-59	80% of existing canopy
20-39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

A summary of the mitigation requirements of Option A as it relates to the Project is provided below:

1) 85% of the existing oak woodland canopy cover shall be retained (See Section 2.2 for methods on how this retention rate was determined).
2) Impact to on-site oak woodland habitat shall be replaced at a 1:1 canopy ratio, where the oak replacement area shall equal at minimum the total area of the oak canopy cover proposed for removal.
3) Replacement of removed tree canopy shall be at a 200 trees/acre density or as recommended by a Qualified Professional so that the replacement trees will equal the canopy coverage removed within 10 to 15 years from the date of planting.
4) The County defines trees as one-gallon saplings or three locally-sourced acorns. Replacement trees must be either one-gallon, locally-sourced saplings or locally-collected acorns that have been stored properly.
5) Replacement trees must be managed so that ten years after planting, one-gallon saplings will measure an average of at least two-inch Diameter at Breast Height (DBH) with a 90% survival rate.
6) One-gallon saplings shall be maintained and monitored for 10 years and acorn plantings shall be maintained and monitored for 15 years. A combination of saplings and acorns shall be maintained and monitored for 15 years.
7) Trees must have a 90% survival rate over the required monitoring period.
8) Any trees in excess of the acceptable 10% mortality that do not survive during the monitoring period shall be replaced by the property owner.
9) An initial Site Assessment Form and Tree Survey, Preservation, and Replacement Plan must be prepared by a Qualified Professional and submitted to the County's Planning Services Division. The intent of the Site Assessment is to determine if any of the following are impacted:

    - landmark or heritage trees;
    - oak corridor continuity;
    - sensitive or important oak woodland habitats;
    - oak woodland within or directly adjacent to important biological resources; and
    - oak canopy removal that exceeds allowable amount.

If the Site Assessment determines that none of the above is impacted and retention/ replacement ratios are met, then a Biological Resources Study and Important Habitat Mitigation Plan (addressed below) may not be needed. If the Site Assessment shows that any of the above listed impacts are probable for a site (or at the County's discretion), impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Program that satisfies County requirements.

10) The *Biological Resources Study* is to be prepared by a Qualified Professional and is an evaluation of a Development that quantifies the amount of important habitat, by habitat type, and addresses the potential for the Development to adversely affect important habitat through conversion or fragmentation.
11) The *Important Habitat Mitigation Plan* is to be prepared by a Qualified Professional and should identify options that would avoid, minimize, or compensate for impacts on important habitats, including a monitoring and reporting component, and addresses "Certified Arborist Reports" and "Tree Protection Plans".
12) The Applicant shall enter into an agreement with the County for the long-term maintenance of the mitigation plantings.
13) Oak tree mitigation replacements must be completed prior to the Development's final grading or building inspection.

1.3 Purpose of This Study

Option A requires that the applicant prepare a Biological Resources Study and Important Habitat Mitigation Plan for the Project, which will address oak woodland habitat impacts and mitigation. This document addresses both of these requirements.

The Biological Resources Study (Study) portion of this document was prepared by Debra Sykes [ECORP botanist and International Society of Arboriculture (ISA)-certified Arborist (WE-8640A)] and provides information on the following:

- Documents the existing oak woodland and oak canopy habitat with the Project;
- Presents proposed impacts to oak canopy with the current proposed land use plan;
- Compares pre- and post-Project canopy cover;

- Discusses the relative importance of the Project's oak woodland and oak canopy as habitat for regionally occurring wildlife species and as wildlife corridors; and
- Discusses Project-related impacts on the remaining oak canopy.

The Important Habitat Mitigation Plan (Plan) portion of this document was prepared by Emily Tozzi [ECORP biologist and ISA-certified Arborist (WE-10136A)] and addresses the following:

- How the Project will conform to the requirements of Option A;
- Project avoidance, minimization, and/or compensation for impacts on important oak woodland habitats;
- Recommendations for tree protection during development; and
- Mitigation planting, monitoring, and reporting.

2.0 BIOLOGICAL RESOURCES STUDY

This Study identifies the existing oak woodland and oak canopy resources within the Project. Due to the quantity of oak trees within the Project, a traditional arborist survey (including tree inventory) was not conducted. Instead, a remote sensing-based canopy mapping approach was implemented. Oak woodlands were mapped as part of a vegetation community mapping exercise using aerial photographs and Light Detection and Ranging (lidar) data and total oak canopy was mapped using hyperspectral imaging and lidar technology.

2.1 Oak Woodland Habitat Resources

2.1.1 Vegetation Communities

2.1.1.1 Vegetation Communities Mapping Methods

Vegetation communities were digitized using a WACOM Cintiq 21UX DTZ-2100D LCD Pen Tablet and ArcView 10.1 onto a high-resolution 0.5-foot pixel, 1"=100' aerial photograph flown in April 2008 (Merrick and Company 2008). Lidar data were used to distinguish height classes of vegetation. Additionally, lidar was used to calculate the density of canopy cover within each

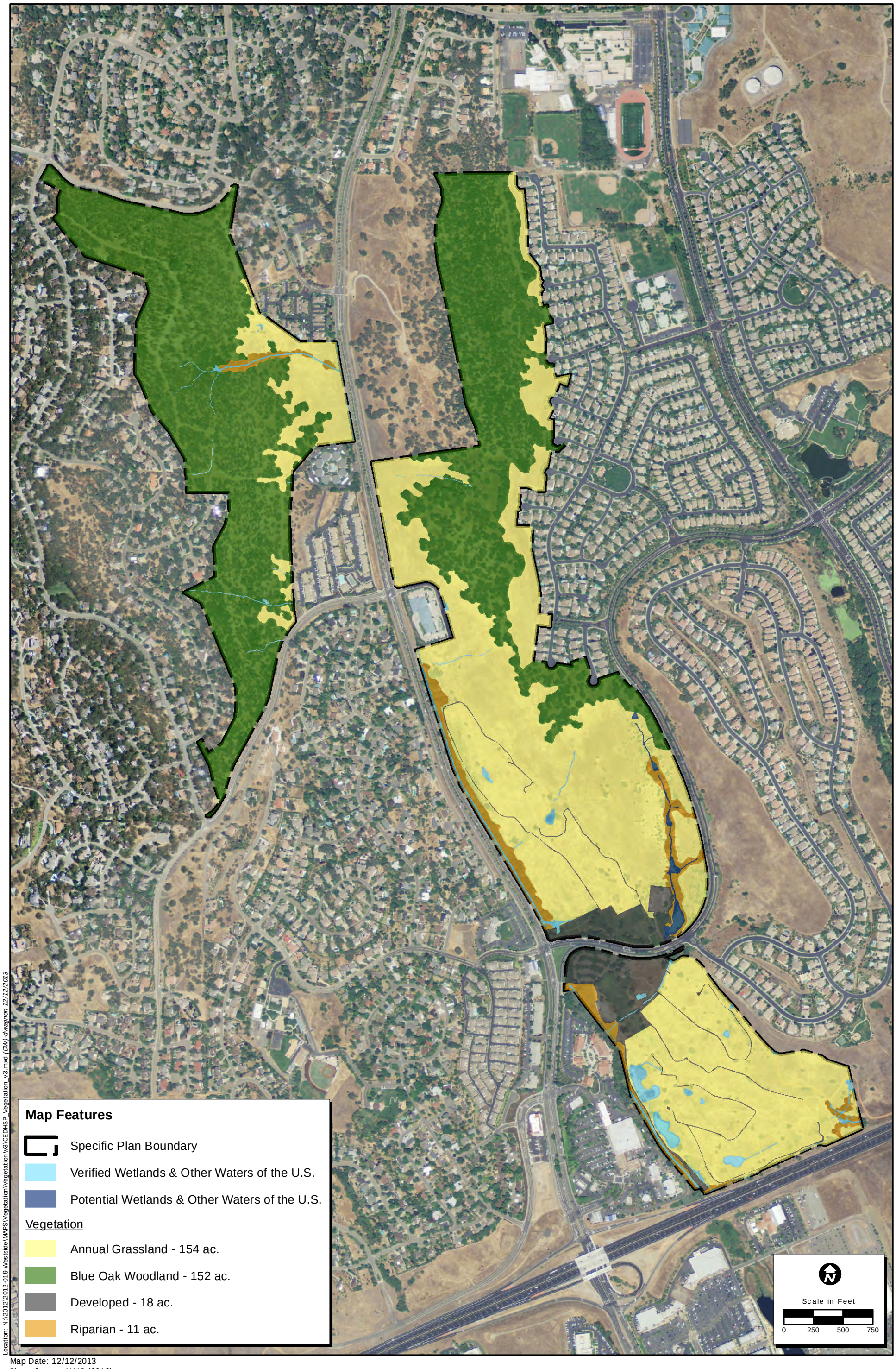
polygon. The vegetation community classification was based on the classification systems presented in *A Manual of California Vegetation* (Sawyer et al. 2009), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988).

2.1.1.2 Vegetation Communities Mapping Results

A total of three vegetation communities were mapped within the Project (Figure 3. *Vegetation Communities*). In addition, portions of the Project area were considered "Developed" due to the existing buildings, pavement, and other amenities. Included within these vegetation communities is one community that is dominated by oak trees: blue oak woodland (152 acres). In addition to this oak-dominated community, occasional individual oak trees are also found within the other vegetation communities on the site.

Blue oak woodland is the second most extensive vegetation community within the Project, behind annual grassland. The western portion of the Pedregal parcel and the northeast corner of the Westside parcel were mapped as blue oak woodland. The canopy of the blue oak woodland is dominated by blue oak (*Quercus douglasii*) with occasional Interior live oak (*Quercus wislizenii*), Valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), and gray pine (*Pinus sabiniana*).

The understory is dominated by a variety of non-native annual grasses and forbs, including ripgut brome (*Bromus diandrus*), hedgehog dog-tail grass (*Cynosurus echinatus*), hedge parsley (*Torilis arvensis*), and soft geranium (*Geranium molle*). Poison-oak (*Toxicodendron diversilobum*) is scattered throughout the blue oak woodland.



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Map Date: 12/12/2013
Photo Source: NAIP (2012)

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Figure 3. Vegetation Communities

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2.1.2 Oak Canopy

2.1.2.1 Oak Canopy Mapping Methods

Oak canopy was mapped using both hyperspectral imaging and lidar technology in ArcGIS Advanced with the Spatial Analyst Extension. These techniques mapped the location and canopy area of native oak trees and other vegetation types on the Project. As part of this process, a 155-band hyperspectral imager was utilized to identify the spectral signatures of specific vegetation types and the lidar sensor recorded the precise location and size of different clusters of vegetation. Vegetation greater than five feet tall was considered to be tree canopy.

Once tree canopy areas were identified, a supervised classification was used to establish canopy type. Potential canopy types included oak, riparian, and other vegetation. The imagery-based canopy model was then supplemented by the use of tree canopy heights established by lidar to help determine oak tree locations in mixed canopy areas. Results were ground-truthed by ECORP botanists and arborists.

Generally, single type vegetation clusters (e.g., oak) were correctly identified. Mixed species clusters, primarily riparian area with some oak trees, were more difficult to classify. These areas were checked against high resolution orthophotos and oak tree canopy was identified and separated from other vegetation. Finally, oak canopy was extracted from the vegetation data, field verified, and quantified.

2.1.2.2 Oak Canopy Mapping Results

Across the entire 341-acre CEDHSP project, a total of 94.3 acres of oak canopy cover was mapped (Figure 4. *Oak Tree Canopy*). Oak canopy accounts for 27.7% of the total cover for the entire Project.

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Map Date: 1/31/2014
Photo (or Base) Source: USGS (2011)

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Figure 4. Oak Tree Canopy

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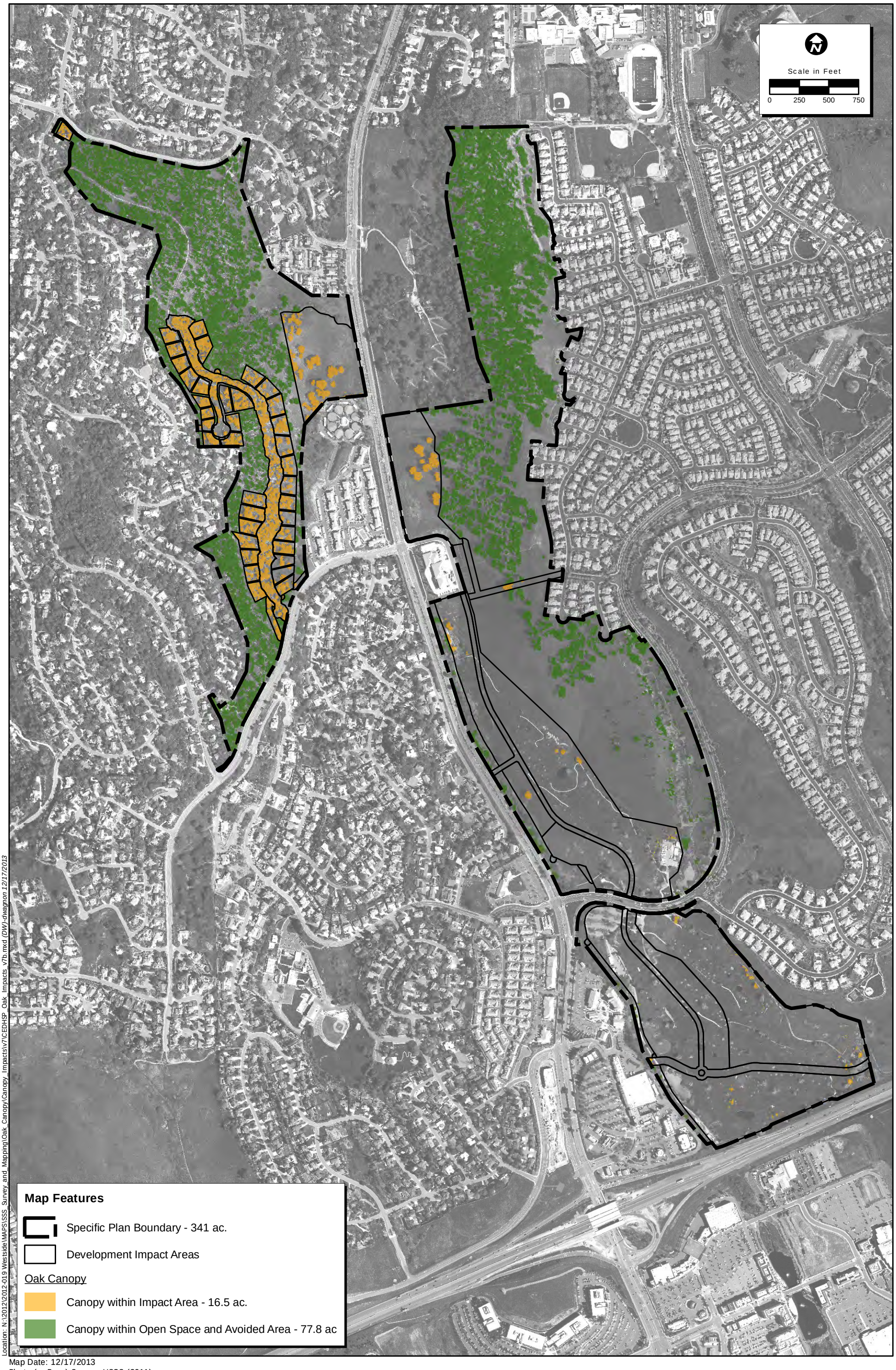
2.2 Impact Analysis

2.2.1 Oak Canopy Impacts

A total of 94.3 acres of oak canopy occurs within the CEDHSP Project. This accounts for 27.7% of the total cover for the entire Project. Therefore, based on the canopy retention rates stipulated in the Guidelines (El Dorado County 2009), as summarized in Section 1.2 of this document, the Project is required to avoid 85% and allowed to impact 15% (14.15 acres) of oak canopy.

The current preferred development footprint is only a portion of the Project Area. Of the 94.3 acres of oak canopy within the entire CEDHSP project, only 16.5 acres of oak canopy occurs within the development footprint and the remaining 77.8 acres will be avoided within the Open Space and other avoided areas (Figure 5. *Oak Canopy Impact Areas*). As the project is allowed 14.15 acres of impacts, avoidance measures have been incorporated into the various project design elements in order to meet the 15% impact threshold. Depending on the project element within the footprint (i.e., road, residential lot, etc.), it is estimated that a certain percentage of oak canopy will be retained. The following list shows examples of project elements and the expected oak canopy retention rates determined for that element:

Target Oak Retention Rate	Example Project Elements
0%	Roads, Civic, Village Residential – High (VRH), Village Residential Medium (VRM)
30%	Village Residential – Low (VRL), Infrastructure
100%	VRL Avoided Area, Open Space



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Map Date: 12/17/2013
Photo (or Base) Source: USGS (2011)

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Figure 5. Oak Canopy Impact Areas

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Based on the proposed project elements, Table 1. summarizes the total oak canopy acreage, target retention rate, and impact acreage for different project element types based on the proposed retention rates, and (Figure 6. *Oak Canopy Retention*) illustrates the locations of these retention rates within the Project design.

Actual retention rates may vary for each of the proposed project elements as development of the Specific Plan progresses, but shall not exceed the maximum impact acreage allowed under Option A (14.15 acres). If the County amends the oak woodlands retention regulations in the future, additional impacts and mitigation to the oak woodlands may occur subject to any required CEQA analysis.

Table 1. Summary of Approximate Oak Canopy Retention Within The Project Area

Retention Percentage	Typical Land Use	Canopy Acreage*	Assumed Impacts*
0%	Road, Civic, VRH, VRM	8.4	8.4
30%	VRL, Infrastructure	8.1	5.7
100%	VRL Avoided Area, Open Space	77.8	0.0
Total:		94.3	14.1

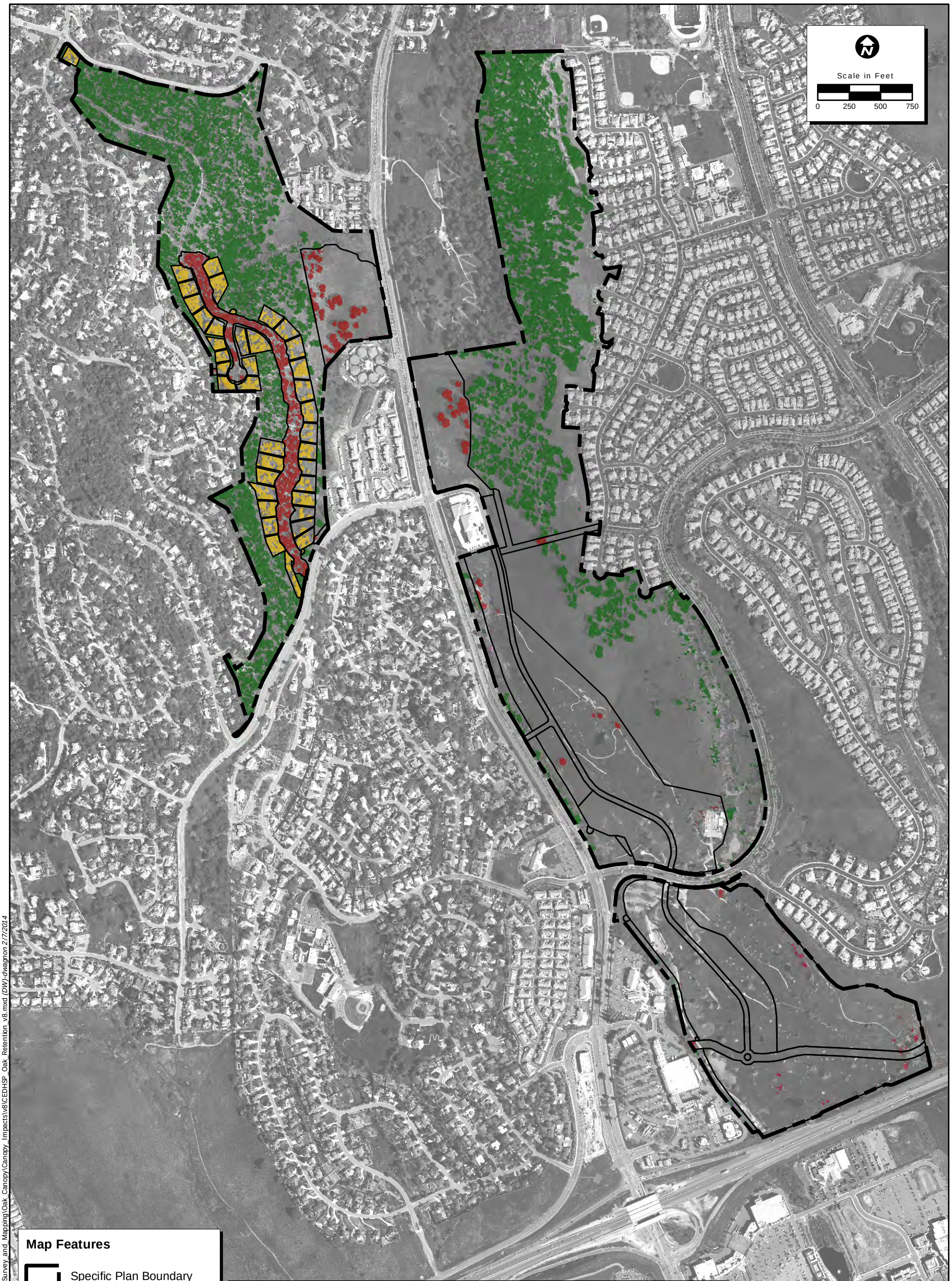
**Area calculated in square feet and converted to acreage. Some rounding errors may occur.*

After incorporating these retention rates to the oak canopy impact acreages, total project related impacts to oak canopy are 14.1 acres which complies with the canopy retention rates stipulated in the Guidelines. Table 2 compares pre and post-Project oak canopy cover within the Project area.

Table 2. Pre and Post-Project Oak Canopy Cover

Project Phase	Oak Canopy (acres)
Pre-Project	94.3
Post-Project	82.9*

**This total does not include mitigation planning discussed in Section 3.0 below*



Oak Canopy Retention

Retention Percentage	Typical Land Use	Canopy Acreage*	Assumed Impacts*
0	Roads, Civic, VRH, VRM	8.4	8.4
30	VRL, Infrastructure	8.1	5.7
100	VRL Avoided Area, Open Space	77.8	0.0
TOTAL	-	94.3	14.1

Areas calculated in square feet and converted to acreages. Some rounding error may occur.

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Map Date: 2/7/2014
Photo Source: USGS (2011)

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Figure 6. Oak Canopy Retention

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2.3 Oak Woodland Corridors

2.3.1 Importance of Oak Woodland and Corridors

Oak woodland habitats are one of the most ecologically diverse communities within California, and oak trees provide a number of ecological services within the landscape including, but not limited to, shade, shelter, erosion protection, and food (McCreary 2011) for birds, mammals, reptiles, and amphibians. Acorns, leaves, sap, and wood provide food while the trees themselves provide microhabitats, shelters, and living places for wildlife species (McCreary 2011). Larger mammals such as deer, bears, and mountain lions depend on larger, intact landscapes in order to thrive.

Urbanization and development within the oak woodland communities of California has caused fragmentation of existing oak woodlands. As woodlands become fragmented into smaller and smaller pieces, the essential landscape linkages for larger wildlife species become rarer, and the quality and health of the oak woodlands diminishes over time. Appropriately designed developments that retain the majority of oak canopy can continue to provide corridors and linkages between larger intact woodlands.

2.3.2 Impacts to Oak Woodland and Corridors within the Central El Dorado Hills Specific Plan

As conceptually designed, the CEDHSP Project will impact 14.1 acres of oak canopy within the Project area, but is likely to impact up to 14.15 acres as allowed by Option A. This represents 15% of the total oak canopy within the Project area, and complies with Option A of General Plan policy 7.4.4.4. The majority of the development is occurring within the portions of the project closest to major roadways and the project has been designed to avoid and preserve large tracts of unfragmented oak woodland. These areas will remain undeveloped to protect the habitat for many wildlife species. Almost all of the oak woodland in the Westside portion of the Project, east of El Dorado Hills Boulevard, is avoided and preserved as part of the Open Space areas within the Project. In addition, the residential lots in the south-central portion of the Pedregal portion of the Project will retain approximately 30% of the oak canopy within this area.

CEDHSP is an infill Project surrounded by existing developments. As such, the pre-Project site does not provide a suitable corridor for wildlife species in the area. Therefore, it is not expected that larger animals would use these woodlands as corridors for migration between adjacent parcels, but it does provide suitable woodland habitat for birds and other small animals.

2.3.3 Post-Construction Oak Woodlands

Given the large intact oak woodlands that will be present after construction of the CEDHSP Project, and the connectedness of the patches of woodland, no long-term effects to either the oak trees or the plants and wildlife that live within the woodlands are expected.

As part of the mitigation for the Project, oak tree plantings and acorn plantings will occur within designated oak replacement areas within the Open Space areas and within public spaces and residential areas. Additional oak plantings will occur to enhance the already existing oak woodland by incorporating this habitat type into the development. These trees will add to the overall quantity of oak canopy and further provide habitat for wildlife species (see Section 3.0 for more details regarding mitigation plantings).

2.4 Conclusions

The CEDHSP Project has been designed to maximize oak woodland protection through a variety of methods. Not only does the Project avoid 77.8 acres of oak canopy within the Open Space and Avoided Areas, but it also incorporates minimization measures to retain additional oak canopy within the development footprint. In total, the Project is retaining 85% of the existing oak canopy, the majority of which is located in the Pedregal portion of the site and the eastern side of the Westside parcel. These areas also have the highest density of oak trees within the Project area. The Project design allows for contiguous oak woodland habitat including several large intact woodlands to support wildlife.

In addition to the avoidance and retention measures, the Project plans to mitigate for oak canopy loss by planting new oak trees and acorns within on-site oak replacement areas and within select locations within the development parcels. These mitigation measures are discussed in more detail in Section 3.0. The proposed oak mitigation will provide additional habitat, especially for birds that may use these trees as nesting and/or foraging habitats or as corridors to more intact woodlands. Overall, the CEDHSP Project will continue to provide high quality oak woodlands to support regionally occurring wildlife species.

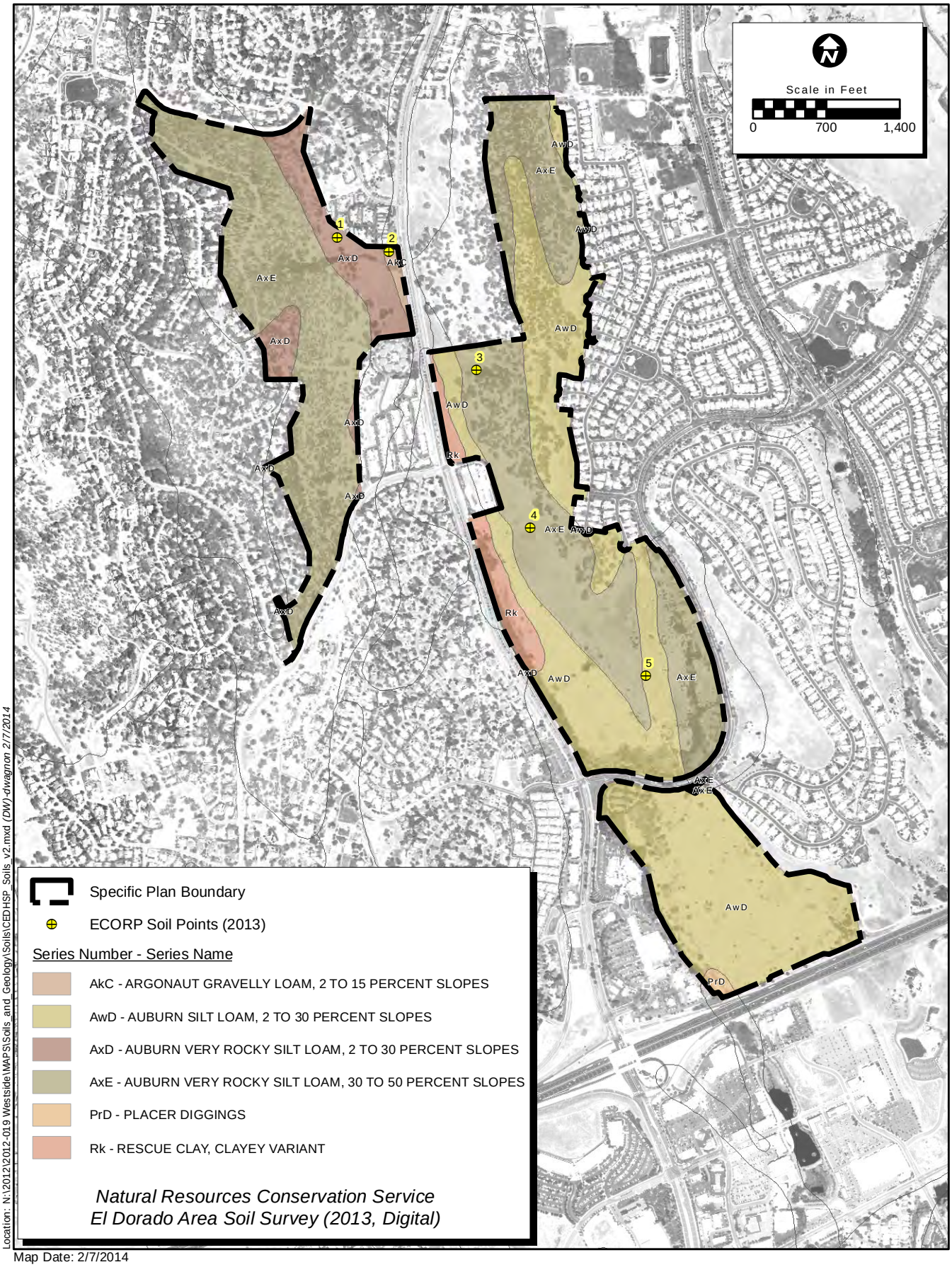
3.0 IMPORTANT HABITAT MITIGATION PLAN

This Plan identifies the mitigation measures that will be used by the Project to provide sufficient protection to oak tree resources. It contains an on-site mitigation assessment that details where oak trees can be planted within the mitigation areas, mitigation measures to be used by the Project, and information on mitigation monitoring, success criteria, and reporting.

3.1 Potential On-Site Oak Mitigation Assessment

An oak mitigation assessment was conducted to establish the potential for on-site oak planting within the Project area. Prior to conducting field surveys, aerial photos of the 341-acre CEDHSP area were overlain with the current land use plan (Figure 2) and Natural Resources Conservation Service (NRCS) soil map units (Figure 7. *Natural Resources Conservation Service Soils Types*) were reviewed by Emily Tozzi (ECORP biologist, Associate Professional Soils Scientist [new as of January 14, 2014] and ISA-certified arborist) and David Wagnon (ECORP GIS Specialist). Open Space within the CEDHSP area that appeared to have appropriate soils and lacked dense canopy cover were identified as potential oak mitigation areas.

On 25 October 2013, Ms. Tozzi and Mr. Wagnon conducted field surveys in 5 previously-identified potential oak mitigation areas to determine oak mitigation suitability. These 5 locations represented a subsample of areas identified as potential oak mitigation sites. At each location, soils were analyzed to validate soil data on NRCS soil maps and soil series descriptions (Figure 7 and Attachment B). In addition, photos facing the four cardinal directions were taken.



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Map Date: 2/7/2014
Photo Source: NAIP (2012)

Figure 7. Natural Resources Conservation Service Soil Types

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Each location was mapped using a GPS unit with sub-meter accuracy. Within each of the potential areas, the following data were collected:

- Existing vegetation and canopy cover
- Slope and aspect
- Soil data including texture, color, and horizonization
- Potential for irrigation from the Development

These data were used to determine site-specific potential for oak tree mitigation. For each site, the appropriate oak tree species and planting type (i.e. acorn, sapling, etc.) were determined based on the following:

1) West facing slopes with shallow, rocky soils will be the most difficult for successful oak mitigation establishment, especially if irrigation is not possible.
2) Many hillslope summits and shoulder slopes will not be suitable for oak mitigation because of the high concentration of large rock outcrops.
3) Areas with very rocky, steep hillsides and/or shallow soils are only appropriate for acorn plantings.
4) Valley oaks are more suited for deeper floodplain soils with higher clay contents.
5) Blue oaks are well suited for shallow, rocky soils found on hillsides and summits.
6) Interior live oaks are suitable for floodplains and rockier hillsides as this species tends to establish in areas with Valley and blue oaks.
7) Areas with existing dense canopy are not considered appropriate for oak mitigation.

After an analysis of the available data (e.g., soil maps and descriptions, existing conditions, etc.), a suitability determination was made for each of the previously identified potential oak mitigation areas. All suitable areas were mapped using ArcGIS software and acreages were calculated for each. Approximately 15.0 acres were identified as suitable oak mitigation areas within the site. This is discussed in more detail in Section 3.3.1 along with other proposed mitigation for oak canopy impacts.

3.2 Mitigation Measures

3.2.1 Conservation Measures

The Project has incorporated various conservation measures into its design to minimize impacts to oak woodland habitat. The following is a summary of these measures:

- Overall, up to 14.15 acres (15%) of oak woodland canopy will be impacted during Project development.
- In total, 77.8 acres of oak woodland will be protected in Open Space and other avoided areas. While these areas are not considered major wildlife corridors, they still provide regional protection of the biological resources by protecting the remaining oak woodlands within the already developed vicinity.
- The Project as designed does not contain and is not located directly adjacent to designated Important Biological Corridors or Ecological Preserve areas, and is not anticipated to have impacts on the aforementioned areas.
- The Project has been designed and clustered to minimize impacts and reduce habitat fragmentation.
- As required by regulatory agencies, Project activities will be planned to avoid critical time periods (i.e., nesting and breeding) for fish, birds, and other wildlife species. If construction must occur during a critical time period, then the appropriate biological surveys will be conducted. If it is determined that Project activities could have negative impacts on a species, then the appropriate agencies will be consulted and protective measures will be employed to mitigate the impacts.
- To limit disturbance and impacts to biological resources, infrastructure elements such as bridges, roads, utilities, and pipelines, will be placed within previously disturbed locations, where feasible.
- Oak woodland restoration or enhancement will be conducted to mitigate for losses to oak forest canopy and to enhance the ecological value of Open Space areas.
- Contiguous stands of oak woodland habitat and the corridors connecting the stands will be retained.

- A Stormwater Pollution Prevention Plan will be prepared prior to ground-breaking activities to determine the most appropriate Best Management Practices (BMPs) for reducing impacts from construction activities.
- The project developer will prepare lot notebooks for each VRL lot to limit the development area for the placement and construction of primary and ancillary structures.
- To minimize impacts on VRL lots, the Design Guidelines will set forth special design and construction measures to minimize impacts to oak trees, such as limiting excessive pad grading through the use of raised foundations, piers, post and beam construction and other similar measures, to the maximum extent feasible.
- In addition to the County's site plan review and approval procedures, the Architectural Control Committee of a Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or El Dorado County will review and approve site and improvement plans for VRL lots prior to ground-disturbing activities.

3.2.2 Tree Preservation Measures

Construction, planting, and irrigation contractors will be made aware of existing trees and shrubs to be preserved and will take precautions to protect such vegetation from damage. Whenever possible, irrigation lines will avoid the drip line of existing trees and shrubs. Equipment, construction materials, fuels, and tools will not be stored within the drip line of the trees or shrubs to be preserved.

The following measures will be implemented to protect and minimize effects to preserved trees that are adjacent to construction activities.

- If necessary, pruning, cabling, and other corrective measures for preserved trees will be specified by an ISA-Certified arborist, and will conform to the pruning standards of the ISA.
- Each tree or group of trees to be preserved within one foot of the drip line of ground disturbance will be protected with a fence or other acceptable methods, such as warning tape, indicating grading limits prior to any grading or movement of

heavy equipment. Grading limit line demarcation should be removed following construction, and prior to installation of landscaping material.

- Signs will be posted on all sides of grading limit lines surrounding an individual tree or group of trees stating that each tree is to be preserved.
- Prior to construction, awareness training will be conducted for all construction personnel regarding the importance of the oak woodlands, the locations of preserved trees within the vicinity of the construction area, and preservation measures that are in place to protect them.
- To the extent possible no landscaping requiring permanent irrigation will be installed within the drip line of any preserved heritage or landmark tree, and to the extent possible, run-off, particularly from landscape irrigation, will be directed away from the root zone.
- Excavating and/or trenching within the drip line of trees (or a distance of half the drip line, outside of the drip line) will be avoided whenever practicable. However, if unavoidable, any authorized cut or fill occurring within the drip line of any preserved tree should be supervised by an ISA-Certified arborist.
- Any and all exposed roots will be covered with a protective material during construction.
- Native tree replacement will be used to mitigate the removal of native trees within the area, subject to approval by the County.
- Procedures and protocols for tree preservation and protection will comply with standards established by the County.
- Oak trees required to be planted as a condition of construction will be maintained after completion of construction according to this Plan.

3.3 Proposed Revegetation And Restoration Plan

3.3.1 Required Oak Replacement Area

Option A requires that the oak replacement area shall equal, at a minimum, the total area of the oak canopy cover proposed for removal. As conceptually designed, a total of 14.1 acres (and likely up to 14.15 acres) within the Project are proposed for impact. Therefore, Option A

requires that 14.1 acres (and likely up to 14.15 acres) are planted as oak replacement. ECORP identified 15.0 acres of potential oak mitigation within the Open Space areas (See Section 3.3.1.1 for more detail).

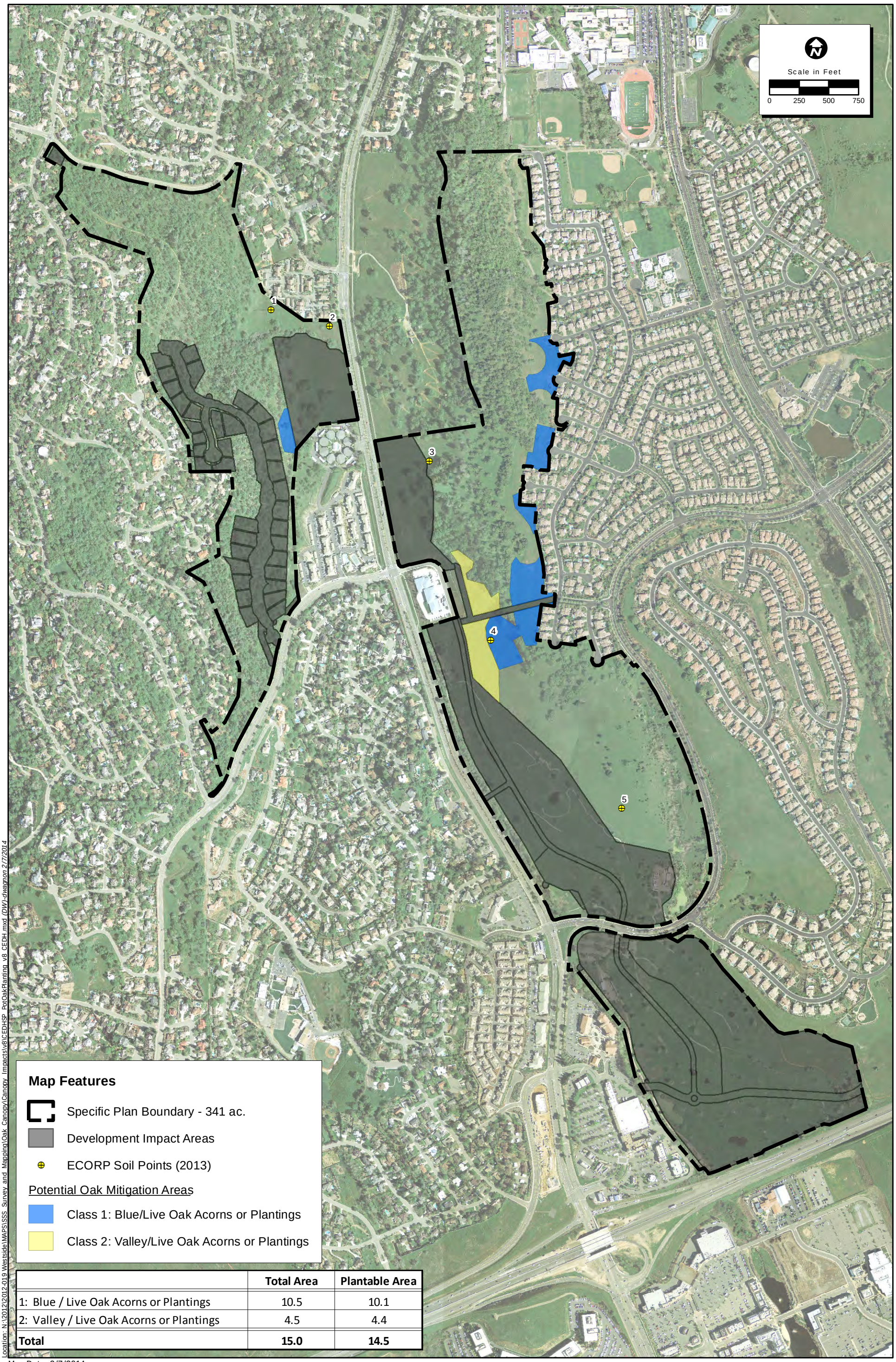
In addition to the mitigation required under Option A, the applicant proposes to do additional oak tree replacement and plantings within certain land use types (e.g., VRL and VRM – Low). These plantings will be a requirement of the proposed Design Guidelines to be developed and adopted for each use and enforced through the Project's Master Owners' Association or El Dorado Hills CSD Design Review Committee, or County of El Dorado. Both of these mitigation types are discussed in more detail below.

3.3.1.1 On-Site Oak Replacement Area

Within the CEDHSP Open Space areas, ECORP identified 15.0 acres of oak replacement areas that are suitable for oak mitigation (Figure 8. *Potential Oak Mitigation Areas*). Within these 15.0 acres, approximately 14.5 acres are considered plantable space given the existing oak canopy. Within these 14.5 acres of plantable space, two classes of species and planting type were established based on site suitability:

- Class 1 - blue/live oak acorns or saplings (10.1 acres); and
- Class 2 – Valley/live oak acorns or saplings (4.4 acres).

Approximately 10.1 acres are suitable for blue/live oak acorns or saplings (Class 1). The majority of Class 1 locations are within the Open Space areas along the eastern edge of the Westside parcel. In general, acorn plantings are ideal for rocky soils where digging is difficult and supplemental irrigation is unlikely to occur. Oak saplings are suitable for soils with fewer, smaller rocks and where water is available for irrigation. Acorns can also be planted in areas suitable for saplings. Irrigation is necessary for saplings, but not for acorns. However, if irrigation is feasible, it is recommended to ensure survivorship of the acorns.



	Total Area	Plantable Area
1: Blue / Live Oak Acorns or Plantings	10.5	10.1
2: Valley / Live Oak Acorns or Plantings	4.5	4.4
Total	**15.0**	**14.5**

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Map Date: 2/7/2014
Photo Source: USGS 2011

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Figure 8. Potential Oak Mitigation Areas

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Approximately 4.4 acres were identified as suitable for Valley and live oak saplings or acorns (Class 2). This area is located within the center of the Westside Parcel. Areas that are suitable for this Class included low gradient areas and/or areas adjacent to creek channels where there tends to be deep soils with higher soil-water content.

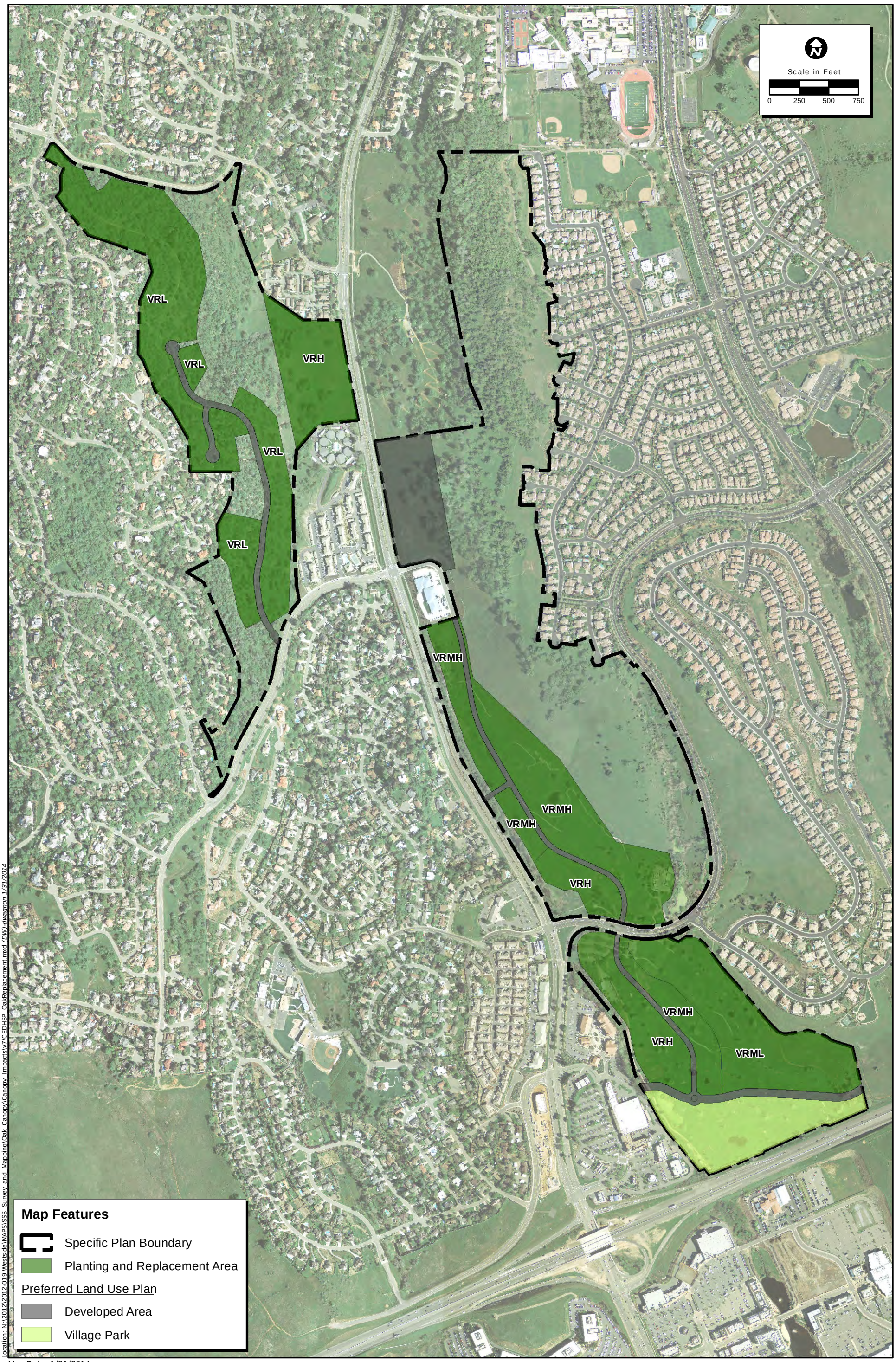
3.3.1.2 Development Area Replacement and Additional Plantings

Within several of the proposed land use types, the project design has incorporated minimization measures to reduce the amount of oak impacts (Figure 9. *Development Area Planting and Replacement Areas*). For example, within the VRL residential lots, grading and tree removal will only occur within the construction footprint for the proposed house, driveway, and limited ancillary features.

In addition, the Project proposes to plant a replacement tree for each tree removed within the footprint at a 1:1 ratio. All replacement plantings will occur within the same lot as the original tree removal. As a result, the lot will have, at minimum, the same number of trees after construction is completed and in time a similar acreage of oak canopy.

In addition, there will be oak tree plantings that will be required within each individual pad graded as well as for all multi-family attached product types. These minimum oak plantings will be required for both front and rear yards for single family detached lots, as well as a defined percentage of the common areas for attached type products. Commercial and other non-residential common areas will also be required to plant a certain percentage of oak trees.

Based on tentative lot design, it is anticipated that 873 trees will be replanted or planted within the proposed residential development areas. The applicant is proposing a credit of 0.5:1 for these trees and this credit will be applied to the final number of replacement trees that are required for the project. Section 3.3.2 discusses planting amounts in detail and how this credit would apply.



Location: N:\2012\2012-019 Westside\MAPS\SSS Survey and Mapping\Oak Canopy\Canopy Impacts\v7\CEDHSP OakReplacement.mxd (DW)-dwagnon 1/31/2014

Map Date: 1/31/2014
Photo Source: USGS 2011

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 9. Development Area Planting and Replacement Areas

2012-019 Central El Dorado Hills Specfic Plan

3.3.2 Planting Types and Amounts

Option A requires that the replacement of removed tree canopy shall be at a 200 trees per acre density or as recommended by a Qualified Professional. A replacement tree is defined by the County as either a one-gallon sapling or three acorns.

A total of 14.1 acres of oak canopy are required to be planted, based on the current conceptual design for the Project. At a rate of 200 trees/acre, a total of 2,820 one-gallon saplings or 8,460 acorns are required as mitigation. However, the project is likely to impact up to 14.15 acres as allowed by Option A. The above values give perspective on the number of saplings or acorns needed to meet the requirements of Option A, and there will be a combination of saplings and acorns used at the site as determined by the two Classes previously described. In addition, the plantings will be completed in a phased manner consistent with the phased approach of the Project.

Table 3, below, shows the planting class and available acres for the class within each mitigation type (on-site replacement area) based on an impact of 14.1 acres. The total number of acorns and/or saplings is also shown based on the density requirements of Option A (i.e. 200 trees per acre with one sapling or three acorns equaling one tree). The totals presented are based on the total plantable acreage within the mitigation site; however, more acreage is available than is needed to comply with Option A.

Table 3. On-Site Replacement Areas - Oak Mitigation Plantings

Planting Class	On-site Oak Replacement Area (acres)	Number of Saplings*
Class 1: Blue/Live Oak Saplings or Acorns	10.1	2,020
Class 2: Valley/Live Oak Saplings or Acorns	4.4	880
Total	**14.5**	**2,900**

**Assumes irrigation is available and only saplings are planted.*

Mitigation for the Project will be conducted in a phased manner and detailed phasing plans, as they become available, will be submitted to the County as part of each Tentative Map (for most projects) or grading permit (for infrastructure projects, as an example).

As mentioned in Section 3.3.1.2, additional mitigation will occur in the form of oak replacement and plantings within the VRL, VRM-Low, VRM – High, VRH Residential Lots. Based on calculation of anticipated impacts, a total of 873 trees will be planted or replaced within these lots.

The applicant is proposing a credit of 0.5:1 for these trees and this credit will be applied to the final number of replacement trees that are required for the project. Based on a total oak canopy impact of 14.1 acres for the current conceptual design, the project has to plant 2,820 trees. At a 0.5:1 ratio, the credit for the replacement trees equals 437 trees. The applicant is proposing this credit be subtracted from the final sapling requirement. Therefore, the applicant would be required to plant 2,383 trees within the above mentioned mitigation areas. If the total oak impacts increase to 14.15 acres, the applicant is required to plant 2,830 trees under Option A. With the credit applied, the applicant would plant 2,393 trees.

3.3.3 Planting Installation and Maintenance

3.3.3.1 Timing and Phasing

Option A requires that oak mitigation be completed prior to final grading or building inspection, but it also requires a very high success rate for mitigation plantings. To promote the highest success rate, it is important to properly install and maintain the mitigation plantings, and protect them from ground disturbing activities. As such, this plan proposes that grading will be completed and utilities installed prior to oak tree mitigation planting in order to provide the greatest protection of the replacement trees. To ensure seedling health, irrigation will be needed to supplement plant growth, but may not be feasible in many cases without an existing utility system in place. Irrigation is unnecessary (but recommended) for acorns and these may be planted prior to grading.

The installation and irrigation of the one-gallon saplings will be concurrent with Project phasing. The project proposes to overplant by at least 10% as contingency for potential mortality within the monitoring period. Project phasing will be contingent on market conditions and focus on providing the most appropriate product at the time of construction. The applicant will determine the project phasing with the submittal of each small lot tentative map or similar discretionary

application that proposes impacts to the oak canopy. At the discretionary permit stage, the applicant will submit a Tree Survey, Preservation, and Replacement Plan to the County that will identify impacts on a phase-by-phase basis, provide details on the mitigation plantings (saplings or acorns), and identify specific planting areas associated with that phase of development.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, the installation of the plantings will occur after construction is completed on a given pad.

3.3.3.2 Maintenance

Proper maintenance of the oak trees within the first few years will be critical, especially for acorn plantings, as invasive annual grasses are known to out-compete young plants. The trees will receive, at a minimum, quarterly maintenance as needed which should include applications of supplemental mulch and fertilizer, weeding around the plantings, and incidental litter removal, as needed. Maintenance should occur regularly during the first five years after planting. For trees receiving irrigation, monthly checks of the irrigation system during the dry season and irrigation system repairs should occur, as necessary.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the project's Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.3.4 Irrigation Schedule

Irrigation is necessary for the one-gallon plantings to survive. Plantings will be irrigated for a minimum of three years. While irrigation is not required for acorns, it is recommended in order to ensure a higher survival rate. Supplemental irrigation for acorns will be provided, where possible, during summer months. For irrigation of saplings, a recommended irrigation schedule is outlined in Table 4, but will be adjusted as needed after plantings are installed to account for site-specific soil conditions.

Table 4. Irrigation Schedule for Oak Plantings		
Duration	April 15th – September 30th	October 1st – April 15th
Year 1	8 gallons, once/7-10 days	Irrigation off
Year 2	10 gallons, once/14-20 days	Irrigation off
Year 3	10 gallons, once/21-30 days	Irrigation off
Year 4	Monitor	Discontinue system

** Recommended schedule. Actual schedule will depend on the weather pattern of that year.*

Irrigation will be gradually decreased and finally eliminated during the monitoring period to ensure the plantings will have long-term survival without irrigation. Irrigation will deliver deep, infrequent watering and will typically take place between April 15 and September 30 of each year. This will be adjusted for seasonal variations if a year is particularly hot earlier or later in the year.

If after the third year it is determined that irrigation of the planting should continue, then adjustments will be made accordingly to the irrigation schedule in Table 4. The irrigation system should remain in place until the end of the monitoring period. At the end of the monitoring period, the above-ground irrigation equipment can be removed. Irrigation should be timed to allow a minimum of one year of monitoring after irrigation has ceased.

Acorn collection, storage, and planting will occur according to Attachment C. Plant installation and establishment will follow conceptual plans described in Attachment D, Attachment E, and Attachment F. These detail installation timing, design, and planting as well as irrigation for planting and acorns.

3.4 Mitigation Monitoring And Reporting

3.4.1 Monitoring Schedule

Option A requires that one-gallon plantings be maintained and monitored annually for ten years, acorn plantings shall be maintained and monitored for 15 years, and a combination of plantings and acorns shall be maintained and monitored for 15 years. The Project will be

developed in a phased manner. Therefore, the required oak mitigation will also be phased based on the impacts for a given phase of development.

For replacement trees and additional plantings that will occur in VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the projects Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.2 Monitoring Methods

Planted trees within oak mitigation areas will be monitored to ensure that success criteria are met. A representative sampling of vigor, height, and canopy diameter for each tree species will be conducted. Vigor will be based on qualitative comparisons to on-site conditions of leaf turgor, stem caliber, leaf color, and foliage density. Monitoring will be conducted over a 10 to 15 year period starting the year after initial installation.

Monitoring protocol will involve locating all previously numbered trees and shrubs to determine their survivorship, estimating height, assessing overall condition/health, and measuring DBH and drip line radius.

Plant condition will be ranked according to the following scale:

- Good - healthy foliage and vigorous growth;
- Fair - healthy foliage, but minimal apical growth;
- Poor - few green leaves present and no apparent apical growth; or
- Dead.

Plant height will be measured in feet and plants grouped according to the following height intervals:

- Less than two feet;
- Two feet to five feet; or
- Greater than five feet.

Calculated results will include the total number of plantings monitored, the condition and height class of each plant found, annual survival rate, and cumulative survival rate. The annual survival rate is calculated according to the following formula:

$$\text{Annual Survival Rate (\%)} = \frac{\text{total \# alive during survey}}{\text{total \# alive in previous season}} \times 100$$

The cumulative survival rate was calculated according to the following formula:

$$\text{Cumulative Survival Rate (\%)} = \frac{\text{total \# alive during survey}}{\text{required plantings}} \times 100$$

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the project's Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.3 Success Criteria

Option A requires that the canopy density achieved by the replacement oaks in the oak replacement area must match that of the canopy that was removed by the end of 15 years.

Achieving the original canopy density within 15 years will be challenging regardless of whether acorns or saplings are planted because the majority of the potential oak mitigation area is most suitable for blue oaks. Blue oaks grow slower than the other oak species (i.e., live, Valley, and black oaks). Faster-growing species of oaks could be planted in these locations, but they are not likely to be successful or persist in these locations. Regardless of oak species, the canopy density of the replacement oaks will be impracticable to measure after 15 years of growth. For this reason, success will be defined by survival rates rather than canopy cover.

Option A stipulates a 90% survival rate for planted trees. To achieve success with a 90% survival rate, overplanting will need to occur. This Project will overplant by at least 10% to ensure the 90% survival rate is achieved.

The proposed final success criterion and replanting criterion for the mitigation oak plantings is shown in Table 5.

Table 5. Proposed Success and Replanting Criteria for Oak Plantings
1) Plantings must have a 90% cumulative total survival rate at the end of the 10 to 15 year monitoring period for saplings and acorns, respectively.
2) Replanting must occur within one year of the cumulative survival rate dropping below 90%, and new plants will be monitored for an additional 15 year period.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the Project's Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.4 Reporting

An annual mitigation monitoring report documenting tree locations, a description of the planting areas, tree survivorship, an evaluation of the success rating per success criteria assessment, and a report concerning any necessary maintenance, complete with photographs taken at distinct photo points, will be submitted to the County by December 1 of each year for a ten-

year period for plantings and a 15-year monitoring period for acorns. Additionally, the monitoring report will include recommendations for action during the following years as specified in this document for the Project (e.g., reporting requirements, replacement criteria for replantings). The first report shall be submitted approximately one year after planting.

The provisions of the monitoring program shall be placed into a standard "Notice of Restriction" document and recorded on the title of the property. Once the 10 to 15 years of monitoring has been successfully completed, the County may record a release of the Notice of Restriction.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the projects Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.5 Funding Mechanism

Funding mechanisms (i.e., endowments, performance bonds, HOA fees) for the installation, monitoring, maintenance, and replacement of failed plantings that may be needed during the required 10 to 15-year monitoring period, will be provided in or appended to the final draft of this report prior to the first small lot of tentative maps. Additionally, the financially responsible party, including name, address, telephone number, and email (if available) will be identified.

3.6 Findings and Recommendations

Based on the oak canopy retention and impact analysis, the 341-acre Project has 94.3 acres of oak canopy, and will be impacting 14.1 acres of oak canopy as the project is currently designed. However, the project is likely to impact up to 14.15 acres and still meet the 85% oak canopy retention requirement of Option A. As conceptually designed, the canopy retention of 77.8 acres meets the 85% oak canopy retention requirement of Option A.

Two mitigation options have been proposed for the Project to mitigate for the 14.1 acres of impact. First, approximately 14.5 acres of oak restoration areas have been identified within the Open Space areas within the Project. A combination of saplings and acorns will be planted in these areas. Second, the applicant proposes on-site oak replacement within certain land use types where canopy retention rates are already high (e.g., VRL lots). Replacement will occur at a 1:1 ratio and plantings will take place within the same lot where impacts occur. Also, additional oak plantings will be required within the individual pad graded lot, and multi-family attached product types. The applicant proposes a partial credit (0.5:1) towards the final number of required plantings for these replacement and additional trees.

The Project will be built in phases and the oak mitigation will follow this phased approach. Once grading has occurred and utilities have been installed within the Project, on-site oak plantings will occur, utilizing the previously discussed phased approach. Installing the plantings after initial phase build-out will reduce disturbance and ultimately lead to higher survival rates.

The Project will comply with the 90% survival rate at the end of the 10 to 15-year monitoring period. To achieve this, the Project will overplant by a minimum of 10% to ensure a 90% survival rate at the end of the monitoring period. Additionally, if the survival rate drops below 90%, replacement trees will be added the following year.

With proper protection of preserved trees during construction, installation and maintenance of plants within the appropriate planting sites, and the ability to provide necessary irrigation, the mitigation measures outlined in this Plan should sufficiently minimize impacts and protect existing oak woodlands and associated biological resources as required by the County General Plan.

4.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this Biological Resources Study and Important Habitat Mitigation Plan, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

SIGNED: _____ DATED: 2/10/14

5.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – Interim Interpretative Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A)

Attachment B – Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Attachment C – Proposed Guidelines for Acorn Collection, Storage and Planting

Attachment D – Proposed Conceptual Layout for Acorn Planting with Protection

Attachment E – Proposed Guidelines for Planting Oak Seedling with Shelter

Attachment F – Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns

ATTACHMENT A

Interim Interpretative Guidelines for El Dorado County General Plan Policy 7.4.4.4

(Option A)

INTERIM INTERPRETIVE GUIDELINES FOR EL DORADO COUNTY GENERAL PLAN POLICY 7.4.4.4 (OPTION A)

ADOPTED NOVEMBER 9, 2006
AMENDED OCTOBER 12, 2007

BACKGROUND

The adopted 2004 El Dorado County General Plan, Conservation and Open Space Element provides for the conservation and protection of soils, minerals, water, wildlife and fisheries, vegetation, cultural resources, and open space. Policies adopted in this element serve to guide the design of new development to meet these objectives. Policy 7.4.4.4 (Option A), reproduced below, addresses oak canopy retention standards. These Guidelines are intended to clarify the scope and implementation of Option A of this policy and provide for a process to consider limited modifications to oak canopy replacement and retention requirements for existing legal parcels if necessary to ensure reasonable use of those parcels. Option B (Mitigation Fee) will be available upon completion of the Oak Woodland Management Plan (OWMP) and related fee studies and implementing ordinances.

OBJECTIVE 7.4.4: FOREST AND OAK WOODLAND RESOURCES

Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

Policy 7.4.4.4

For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) The project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County's Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

Option A
The County shall apply the following tree canopy retention standards:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

- Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio.
- Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Program as described in Policy 7.4.2.8.
- Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Note: For purposes of implementing these guidelines, "tree canopy" retention shall mean oak tree canopy retention and replacement of "woodland habitat" shall mean replacement of oak canopy.

DEFINITIONS

For the purposes of these Guidelines, the following words and phrases shall have the meanings respectively ascribed to them by this section:

<u>1:1 Woodland Replacement (Replacement Land Area/Replacement Tree/Replacement Acorn-Density Ratio)</u>: Replacement of removed tree canopy shall be at a 200 trees (saplings or one gallon trees) per acre density or as recommended by a qualified professional. Replacement is subject to intensive to moderate management[1] and 10 to 15 years of monitoring, respectively. The survival rate shall be 90 percent as specified in the approved monitoring plan for the project, prepared by a qualified professional. Acorns may be used instead of saplings or one gallon trees. If acorns are used, they

[1] Management intensity assumes that 10 years after planting 1 year old saplings that trees that have been nurtured with high management intensity will be on average 2 inches DBH with 90 percent survival; moderate management intensity will result in trees that are on average 1.5 inches DBH with 85 percent survival. See Standiford et al 2002.

shall be planted at a 3:1 ratio as determined by the tree replacement formula[2]. The replacement is as follows:

- Replacement replanting from saplings or one-gallon trees, that are locally sourced, shall follow this formula for ratios:

  (Replacement Area in acres) x 200 trees per acre = the total number of replacement trees to be replanted

- Replacement replanting by acorn shall be from locally-sourced acorns (acorns gathered locally). The replacement ratio by acorn replanting shall be obtained by the following formula:

  (Replacement Area in acres) x (200 trees per acre) x (3 acorns per tree) = the total number of acorns to be replanted

Agricultural Conversion: As defined by General Plan Policy 7.1.2.7.

Agricultural Cultivation/Operations: As defined by General Plan Policy 8.2.2.1.

Agricultural Lands: As defined by General Plan Policies 2.2.1.2 and 8.1.1.8, and further, Policy 8.2.2.1.

Arborist: A person certified by the International Society of Arboriculture (I.S.A.) or other recognized professional organization of arborists that provides professional advice and licensed professionals to do physical work on trees in the County.

Biological Resources Study and Important Habitat Mitigation Program: The Biological Resources Study is an evaluation of a project site that quantifies the amount of important habitat, by habitat type, and addresses the potential for the project to adversely affect important habitat through conversion or fragmentation. The Important Habitat Mitigation Program identifies options that would avoid, minimize, or compensate for impacts on important habitats in compliance with General Plan policies 7.4.4.4 and 7.4.5.2, including a monitoring and reporting component (General Plan 2004 Measure CO-U). The Important Habitat Mitigation Program includes components which address "Certified Arborist Reports" and "Tree Protection Plans". The Biological Resources Study and Important Habitat Mitigation Program shall be prepared by a qualified professional. See separate guidelines for detailed requirements.

CDF: California Department of Forestry.

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[2] McCreary DD. 2001. *Regenerating rangeland oaks in California*. Berkeley (CA): University of California, Agriculture and Natural Resources. Communication Services Publication #21601. 62 p.

Construction/Disturbance Area: Any area in which movement of earth, alteration in topography, soil compaction, disruption of vegetation, change in soil chemistry, and any other change in the natural character of the land occurs as a result of site preparation, grading, building construction or any other construction activity.

Diameter at breast height (Dbh): The measurement of the diameter of the tree in inches, specifically four (4) feet six (6) inches above natural grade on the uphill side of the tree. In the case of trees with multiple trunks, the diameter of all stems (trunks) at breast height shall be combined to calculate the diameter at breast height of the tree.

Fire Safe Plan: Defined by the El Dorado County Department of Forestry Guidelines (http://www.co.el-dorado.ca.us/building/PDF/Booklets/Fire_safe_regs.pdf), and the CDF General Guidelines for Creating Defensible Spaces (http://www.bof.fire.ca.gov/pdfs/4291finalguidelines2_23_06.pdf), and as defined by Goal 6.2 Fire Hazards of the Public Health, Safety, and Noise element of the General Plan.

Given Unit of Land: The land contained within the project site. If the project site, prior to any proposed land division, is comprised of multiple parcels, the parcels may be treated as a single given unit of land for the purpose of calculating oak canopy cover and retention requirements.

Habitat: The physical location or type of environment in which an organism or biological population lives or can be found (General Plan 2004).

Heritage trees: Trees planted by a group or individuals or by the City or the County in commemoration of an event or in memory of a person figuring significantly in history (General Plan 2004).

Important Habitat: Defined as habitats that support important flora and fauna, including deer winter, summer, and fawning ranges and migration routes; stream, river, and lakeshore habitat; fish spawning areas; seeps, springs, and wetlands; oak woodlands; large expanses of native vegetation; and other unique plant, fish, and wildlife habitats generally located within or adjacent to designated Ecological Preserves, the Important Biological Resource Corridor Overlay, or in other locations otherwise recognized as being important habitat by Federal, State or County agencies.

Landmark Tree: Trees whose size, visual impact or association with a historically significant structure or event has led the government to designate them as landmarks (General Plan 2004).

Licensed engineers and land surveyors: Professionals that are licensed by the California Board for Professional Engineers and Land Surveyors.

Oak Canopy Cover: The area directly under the live branches of the oak trees, often defined as a percent, of a given unit of land.

Oak Woodlands: A given unit of land, with one or more groupings of live trees, where the dominant species (i.e. a plurality) of the live trees within the groupings are native oaks (genus quercus). "Stand" means a group or groupings of trees.

Oak woodlands with oak tree canopy coverage of less than 10 percent of the project site for parcels one acre or less in size, or oak woodlands with oak tree canopy coverage of less than 1 percent on parcels of land that are more than one acre in size, are **not** subject to the oak tree canopy cover retention requirements of Policy 7.4.4.4 Option A.

Protected Trees: Trees of the genus quercus (oak trees), landmark, and heritage trees, which are subject to County review pursuant to General Plan Policies 7.4.4.4, 7.4.5.1, and 7.4.5.2.

Qualified Professional: An arborist certified by the International Society of Arborists, a qualified wildlife biologist, or a registered professional forester (RPF).

Qualified Wildlife Biologist: A professional with a BA or BS or advanced degree in biological sciences or other degree specializing in the natural sciences; professional or academic experience as a biological field investigator, with a background in field sampling design and field methods; taxonomic experience and knowledge of plant and animal ecology; familiarity with plants and animals of the area, including the species of concern; and familiarity with the appropriate county, state, and federal policies and protocols related to special status species and biological surveys.

Registered Professional Forester (RPF): A Registered Professional Forester (RPF) is a person licensed by the State of California to perform professional services that require the application of forestry principles and techniques to the management of forested landscapes. RPFs have an understanding of forest growth, development, and regeneration; soils, geology, and hydrology; wildlife and fisheries biology and other forest resources. RPFs are also trained in fire management and, if involved in timber harvesting operations, have expertise in both forest road design and application of the various methods used to harvest timber (California Licensed Foresters Association).

Removal: The physical destruction, displacement or removal of a tree, or portions of a tree caused by poisoning, cutting, burning, relocation for transplanting, bulldozing or other mechanical, chemical or physical means.

Replacement: See 1:1 Woodland Replacement definition.

Self Certification: Acknowledgment by an applicant constructing a single-family dwelling or accessory structures and appurtenances to a single-family dwelling that the removal

of oak trees not otherwise in compliance with these interim guidelines and Policy 7.4.4.4, is in compliance with General Plan Policy 7.1.2.2 and are therefore exempt from the provisions of Policy 7.4.4.4 as "reasonable use."

Sensitive Habitat: In El Dorado County, this includes the following habitat types: montane riparian, valley-foothill riparian, aspen, valley oak woodland, wet meadow, and vernal pools (General Plan EIR).

Tree Survey, Preservation, and Replacement Plan: A plan that identifies trees at the project site, shows how specific trees shall be protected during development and related work, and includes any required mitigation measures and ensures viability of trees after construction. A Tree Survey, Preservation, and Replacement Plan is a stand-alone report, and is also included as part of an Important Habitat Mitigation Program. The plan shall be prepared by a qualified professional. See separate guidelines for requirements.

Woodland Habitats: Biological communities that range in structure from open savannah to dense forest. In El Dorado County, major woodland habitats include blue oak-foothill pine, blue oak woodland, montane hardwood, montane hardwood-conifer, and montane riparian.

Guidance for Application of Policy 7.4.4.4:

1. Trees subject to canopy retention and replacement – Policy 7.4.4.4 is intended to apply exclusively to retention and replacement of oak canopy within oak woodlands. All oak trees, of all sizes, are included in the measurement of oak canopy.

   Any oak tree canopy, landmark or heritage trees, including native oak trees that do not qualify for review as oak woodland under Policy 7.4.4.4 may be subject to review under Policy 7.4.5.2.

2. Minimum oak canopy area – The oak canopy retention requirements of Policy 7.4.4.4 are intended only to apply to:

   a. Parcels greater than 1.0 acre that contain 1 percent or more oak canopy cover; or

   b. Parcels 1.0 acre or smaller that contain 10 percent or more oak canopy cover.

3. Exceptions to oak canopy retention/replacement requirements – Policy 7.4.4.4 intends that the following activities are not subject to oak canopy cover retention or replacement requirements:

a. Agricultural cultivation/operations, whether for personal or commercial purposes, on land planned (AL, NR, RR, and Agricultural Districts [-A]) or zoned (AE, AP, A, PA, SA-10, RA, TPZ, and MR) for agricultural use per Policy 2.2.1.5 (Table 2-4 General Plan Land Use Designation and Zoning District Consistency Matrix, page 21), by the El Dorado County General Plan or Zoning Ordinance;

b. Tree removal associated with an approved Fire Safe Plan as necessary to protect an existing structure or structures. The Fire Safe Plan shall take into consideration the El Dorado County Department of Forestry SRA Fire Safe Regulations and the CDF General Guidelines for Creating Defensible Space. Fire Safe Plans are prepared by a RPF or other qualified professional subject to review and approval by the County. See Exhibit One for more information.

c. Development on parcels that are one acre or larger and have less than 1 percent total oak canopy cover;

d. Development on parcels that are less than one acre and have less than 10 percent total oak canopy cover; or

e. Oak trees determined to be dead or diseased and dying by a certified arborist or registered forester are excluded from calculations of canopy cover ~~and~~ retention and replacement requirements.

f. Applicant has "self certified" compliance with Policy 7.1.2.2. For properties located outside of an Important Biological Corridor (IBC) and Mitigation Area 0 of the Ecological Preserve (EP), the removal of natural vegetation, including oak trees (less than 36 inches dbh), is demonstrated to be limited to areas proposed to be graded or cleared for single-family residential development to include the following (for ministerial permits and Director approved design review applications):

- Primary residence
- Accessory structures (including secondary residence, garages, workshops, barns, swimming pools, decks, etc.)
- Driveways and parking area
- Septic systems
- Wells and storage tanks
- Propane tanks

- Yard areas immediately surrounding the primary residence and any accessory structure
- Yard areas immediately surrounding the primary and any accessory structures
- Retaining walls necessary for any of the above

Replacement of oak trees will be required on-site to the greatest extent feasible and an oak replacement agreement shall be recorded requiring self-monitoring and maintenance.

4. Qualified Professional – For the purposes of Policy 7.4.4.4, "Qualified Professionals", refers to professionals approved by Development Services, suitably trained and experienced in wildlife biology, botany, arboriculture, or forestry such as qualified wildlife biologists, I.S.A. certified arborists, or Registered Professional Foresters (RPFs) can determine "habitat" value and canopy cover of oak woodlands determined from baseline aerial photography. The professional may be under contract to either the County or the property owner. The professional should be able to perform a species-focused site survey, use GPS to locate species and habitat on a map or aerial photograph, and should be able to address oak tree corridors (if applicable) for Policy 7.4.4.5. The qualified professional will need to prepare a Biological Resources Study and Important Habitat Mitigation Program that satisfies County requirements. In the event that a dispute arises involving the contents of the Biological Resources Study and/or Important Habitat Mitigation Program the County may refer the matter to an outside qualified consultant, retained by the County and paid for by the applicant/property owner, to develop recommendations for dispute resolution.

   If there is a need to provide a survey level of detail to fully ascertain which canopy level applies per Policy 7.4.4.4, then the survey shall be conducted by a California professional engineer or a California professional land surveyor.

   Generalized maps may be provided by a qualified professional using GPS.

5. Site Assessment Form and Tree Survey, Preservation, and Replacement Plan Required: An initial Site Assessment Form (Attachment 1) and Tree Survey, Preservation, and Replacement Plan must be prepared by a qualified professional and submitted to the Planning Services Division for review for all projects proposing removal of oak canopy cover. The purpose of the Site Assessment is to determine if the proposed removal of oak canopy cover would impact any of the following:

   - Landmark or heritage trees (See Policy 7.4.5.2 A);

- Oak corridor continuity, between all portions of existing stands of oak woodland habitat with connecting corridors at a tree density that is equal to the density of the stand (See Policy 7.4.4.5);
- Sensitive or important oak woodland habitats (See Policy 7.4.5.2 A);
- Oak woodland within or directly adjacent to an important biological resource corridor overlay or an ecological preserve overlay (See Policies 7.4.2.9 and 7.4.1.4);
- Listed or special status plant or animal species observed or expected to occur on the project site or in adjacent areas that may be directly or indirectly affected by the project (See Policy 7.4.1.5); or
- Removal of oak canopy that exceeds retention requirements of Policy 7.4.4.4.

For discretionary projects, the Site Assessment must also include a conclusion by the qualified professional as to whether the proposed oak tree canopy cover removal would have the potential to cause a significant effect on the environment.

If the Site Assessment concludes that the project would not impact any of the above, and the County concurs, and the retention/replacement requirements of Policy 7.4.4.4 are satisfied, the proposed oak tree canopy cover removal may be found consistent with Policy 7.4.4.4 without preparation of a Biological Resource Study and Important Habitat Mitigation Program. A Tree Survey, Preservation, and Replacement Plan, prepared according to County requirements, shall be required prior to issuance of a grading or building permit for the project. The Tree Survey, Preservation, and Replacement Plan will address long term preservation as well as protection of oak trees required to be retained or replaced during grading and construction.

If the Site Assessment, or the County, concludes that the proposed project would impact any of the above resources, and/or for discretionary projects could have the potential to cause a significant impact on the environment, then a full Biological Resources Study and Important Habitat Mitigation Program for the project must be provided to the County for review and approval. For ministerial projects, this must occur prior to issuance of a grading or building permit for the project. For discretionary projects, this must occur as part of the environmental review process. The recommendations of the plan must be fully implemented prior to final grading or building inspection for the project.

6. Project Sites Within ~~or Directly Adjacent to~~ Important Biological Corridor Overlay or Ecological Preserve Overlay Areas: Any projects (ministerial or discretionary) proposing any oak canopy cover removal within ~~or directly~~

~~adjacent to the~~ an Important Biological Corridor Overlay Designation or Ecological Preserve Overlay Designation shall require the submittal of Oak/Canopy Site Assessment Form, tree survey, and biological report. Should a dispute arise regarding recommendations of the biological report, review by the Planning Commission will be required to ensure consistency with Policies 7.4.2.9 and 7.4.1.4 unless the subject property is also located within an Agricultural District Overlay or Agricultural Lands designation in which case it would not be subject to additional requirements per Policy 7.4.2.9. The Biological Resources Study and Important Habitat Mitigation Program must address the requirements of Policies 7.4.2.9 and 7.4.1.4, including, but not limited to the potential for higher oak canopy cover retention and mitigation standards than for projects located outside of the Important Biological Corridor Overlay and Ecological Preserve Overlay areas.

7. Replacement Provisions – Where Policy 7.4.4.4 requires oak canopy cover replacement, the replacement shall be at a 1:1 ratio of canopy removed to canopy replaced as defined in these Guidelines or as specified by a qualified professional approved by the County. The 1:1 replacement ratio can be determined by a simple projection of an aerial photograph justified to the same scale as the underlying parcel is sufficient to estimate the land area, measured in square feet, subject to oak canopy coverage (land area in square feet shall be converted to acreage). Replacement may be by one of the following methods, at the discretion of the Development Services Director (Director):

   a. On-Site Replacement Tree Planting. The replacement requirement is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Replacement trees are to be planted on-site to the satisfaction of the Development Services Director. The size of the designated replacement area shall equal at a minimum the total area of the oak canopy cover proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement trees planted. Maintenance and monitoring shall be required for a minimum of 10 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

   b. On-Site Planting of Acorns. Under the direction of a qualified biologist, certified arborist and/or registered professional forester, acorns may be planted at a density designed to achieve oak canopy coverage which will equal the canopy coverage removed within no more than 15 years from the date of planting. The

minimum replacement ratio for acorns is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Recommendations from the qualified professional shall include a minimum of: site planting design; acorn planting ratios to ensure success; acorn collection areas or nurseries; propagation measures; acorn protection techniques; maintenance, and monitoring and reporting. The size of the designated replacement area shall equal at a minimum, the total area of the oak canopy cover that is proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement acorns planted. Maintenance and monitoring shall be required for a minimum of 15 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

c. On-Site Replacement of Canopy Area. Under the direction of a qualified biologist, certified arborist and/or registered professional forester, acorns, oak trees or a combination of both may be planted on-site The replacement requirement is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Replacement plantings should be at a density designed to achieve oak woodland canopy coverage which will equal the canopy coverage removed within 15 years from date of planting or sooner.

Recommendations from the qualified professional shall include a minimum of: Site planting design; planting ratios to ensure success; any required acorn collection areas or nurseries; propagation measures; acorn and tree protection techniques; maintenance, monitoring and reporting requirements. The size of the designated replacement area shall equal at a minimum, the total area of the oak canopy cover that is proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any replacement trees and/or acorns planted. Maintenance and monitoring shall be required for a minimum of 10 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

Replacement (and execution of related maintenance and monitoring agreements) shall be completed to the County's satisfaction prior to final grading or building inspection of the project.

d. Off-Site Replacement of Canopy Area. The applicant may be permitted to procure an off-site planting area for the replacement trees and/or planting of acorns, preferably in close proximity and/or in connection with any oak woodland contiguous to the project site or within or adjacent to an Important Biological Corridor or Ecological Preserve as designated in the General Plan, to implement the replacement planting. The size of the off-site replacement planting area shall equal at a minimum the total area of oak canopy cover proposed to be removed. Oaks planted shall have characteristics of the receiver site. Replacement shall occur at a 1:1 ratio as defined in these Guidelines or as otherwise specified by a qualified professional approved by the County. A Conservation Easement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement trees and/or acorns planted. The Conservation Easement shall provide for the preservation of the designated area in perpetuity and shall include such terms, conditions, and financial endowments for monitoring and management deemed necessary by the County to ensure the long term preservation of the oak woodland within the easement area. The Conservation Easement shall be in favor of the County or a County approved conservation organization. Maintenance and monitoring shall be required for a minimum of 10 years (15 years for acorns) after planting. Any trees that do not survive during this period of time shall be replaced by the property owner; or

e. Off-Site Conservation Easement to Protect Existing Oak Woodland in Lieu of Replacement. The applicant may obtain a Conservation Easement on property off-site with healthy oak woodland canopy area equivalent to 100 percent of the oak canopy area proposed to be removed. The conservation easement site should either be in close proximity and/or in connection with any oak woodland contiguous to the project site or within or adjacent to an Important Biological Corridor or Ecological Preserve as designated in the General Plan. The Conservation Easement shall provide for the preservation of the designated area in perpetuity and shall include such terms, conditions, and financial endowments for monitoring and management deemed necessary by the County to ensure the long term preservation of the oak woodland within the easement area. The Conservation Easement shall be in favor of the County or a County approved conservation organization.

8. Ministerial Projects on Existing Legal Lots for which Previous Approvals or Determinations of Developable Area have been made by County Decision-Makers: Previously approved discretionary projects that have conditions of approval and/or mitigation measures specifying detailed oak tree protection and mitigation plans shall not be required to demonstrate further consistency with Policy 7.4.4.4. However, canopy that was required to be retained in prior approvals must continue to be retained, unless modified by the decision-making authority for the original protection plan. This provision does not apply to any development project whose approval has expired and a time extension is applied for.

Reasonable Use Provisions for Development on Existing Legal Lots

A. Reasonable Use Related to Oak Canopy Cover Retention:

For existing legal lots, where strict compliance with the oak canopy cover retention requirements of Policy 7.4.4.4 could preclude reasonable use of the property or cause substantial inconsistencies with other General Plan policies protective of the environment, due to factors which are unique to the proposed property, such as topographic constraints, configuration of the remaining area useable for development, access requirements, lot size, and/or other physical or environmental limitations, or conflict with the requirements of an approved Fire Safe Plan, the Development Services Director may grant relief as described below, or the Planning Commission may grant relief to the retention requirements of Policy 7.4.4.4 for the project if the ~~following~~ findings are made pursuant to a noticed public hearing:

Development Services Director Relief:

The Director may grant a reduction in the retention requirements by up to 50 percent of what is specified in the Option A Retention Table after meeting all the required findings herein (subsection i. through iv.) and meeting one of the following conditions.

- For existing legal lots ½ acre in size or less with up to 100 percent disturbed area proposed; or

- For existing legal lots greater than ½ acre up to one acre in size with not more than 20,000 square feet of development/disturbed area proposed; or

- For existing legal lots greater than one acre in size but not greater than five acres in size with not more than 25,000 square feet of development/disturbed area proposed, excluding driveway access

removing oak canopy (intrusion of up to 25 percent of the dripline permitted).

- For existing legal lots greater than five acres with not more than 30,000 square feet of development/disturbed area proposed excluding driveway access removing oak canopy (intrusion of up to 25 percent of the dripline permitted).

If the lot is within an Important Biological Corridor or Ecological Preserve, relief may only be granted by the Planning Commission.

Planning Commission Relief:

Where the Director cannot grant relief, the Commission may grant relief when the following findings can be made.

i. The applicant demonstrates that the project is designed to maximize use of parcel area unconstrained by oak trees, unless precluded by other significant constraints such as steep slopes, streams, creeks, wetlands, or other sensitive environmental resources.

ii. The proposed project is limited to development and site disturbance that is typical and prevalent for the general area surrounding the project site.

iii. Soil disturbance and tree removal is minimized through the incorporation of some or all of the following measures into the project design:

   a. Stepped foundations are used on sloping areas rather than graded pads;
   b. Depth of excavation and/or fill outside of the building footprint is limited to no more than five feet measured vertically from the natural ground surface, except for grading necessary to install retaining walls designed to reduce the total area of tree canopy that will be removed and/or damaged;
   c. Structures and the configuration of the area of disturbance are designed to parallel the natural topographic contours to the greatest extent feasible;
   d. Patio decks are included in the design of dwellings to minimize the need for graded yard areas;

e. Design techniques such as clustering of buildings are proposed to take advantage of the portions of the property which are least constrained by oaks;

f. The project is designed to maximize consistency with all applicable policies of the El Dorado County General Plan. *It is recognized that more than one policy may have to be considered in the determination of reasonable use of a particular parcel.*

iv. If the project site is within ~~or directly adjacent to~~ an Important Biological Corridor Overlay or Ecological Preserve a Biological Resources Study and Important Habitat Mitigation Program have been prepared by a qualified professional and approved by the County and will be fully implemented by the applicant. The Study shall be prepared in accordance with the *Biological Resources Study and Important Habitat Mitigation Program Interim Guidelines*, adopted November 9, 2006.

Replacement of any oak tree canopy area allowed to be removed by the Planning Commission in excess of the retention standards in the General Plan shall be required. At a minimum, the replacement shall be completed in accordance with the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. A 2:1 ratio or as otherwise specified by a qualified professional approved by the County, pursuant to the options and methods specified in these Guidelines, may be applied at the discretion of the Planning Commission. Further, for discretionary projects, any effects on biological resources will be analyzed in the environmental document and appropriate additional mitigation proposed as required by the California Environmental Quality Act, California Oak Woodlands Conservation Law and other applicable statutes.

B. Reasonable Use Related to Oak Corridor Retention:

In order to ensure that reasonable use of the property is provided, an applicant may request the Planning Commission to provide relief from the strict application of this corridor retention requirement (Policy 7.4.4.5) in the same manner as described above. In addition, for discretionary projects, any effects on biological resources will be analyzed in the environmental document and appropriate mitigation proposed as required by the California Environmental Quality Act, California Oak Woodlands Conservation Law and other applicable statutes.

GENERAL REQUIREMENTS APPLICABLE TO ALL PROJECTS

Compliance with the General Plan:

In addition to compliance with these guidelines for these Policies, the proposed development shall be in conformance with all other applicable policies of the County General Plan and any applicable Specific Plans and/or Development Agreements.

Compliance with the Zoning Ordinance and Grading Ordinance and Building Codes:

The proposed development shall be in compliance with all applicable requirements of the County Zoning Ordinance, Grading Ordinance, and Building Codes.

County, State, or Federal Agency Requirements:

County, State and Federal agencies have different jurisdictional authority which may result in different conditions for approval. In the event of multiple agency permit approval, the most restrictive set of conditions shall apply.

Important Biological Corridor Overlay Designation and Ecological Preserve Overlay Designation:

Proposals for removal of any oak canopy cover on property within or directly adjacent to an Important Biological Corridor Overlay (IBC) designation or Ecological Preserve Overlay (EP) designation pursuant to the General Plan shall require review by the Planning Commission to ensure consistency with the requirements of Policies 7.4.2.9 and 7.4.1.4. A Biological Resource Study and Important Habitat Mitigation Program shall be required.

SITE ASSESSMENT FORM REQUIREMENTS AND THE TREE SURVEY, PRESERVATION, AND REPLACEMENT PLAN REQUIREMENTS

The Site Assessment Form requirements are detailed in Attachment 1.

BIOLOGICAL RESOURCE STUDY AND IMPORTANT HABITAT MITIGATION PROGRAM REQUIREMENTS

Biological Resource Study and Important Habitat Mitigation Program requirements are detailed in Attachment 2.

ADMINISTRATION

The above guidelines are interim standards utilized by the Development Services Department of El Dorado County to provide for consistent review of projects for conformance with Policy 7.4.4.4 pending adoption of permanent regulations.

Penalties for Violation – ~~Pursuant to Policy 7.4.5.2 D,~~ If oak trees are removed prior to review by the County and without appropriate retention and replacement provisions implemented in anticipation of development of a site, the County may withhold and defer approval of any application for development of that property ~~for a period of up to five years. Additionally, fines may be applied as high as three times the current market value of replacement trees plus the cost of replacement, and/or replacement tree(s) may be required at a 3:1 ratio at sites approved by the County. The cost of maintenance, monitoring, and reporting of any replacement trees shall be paid for by the applicant.~~ until such time as the amount of oak tree canopy removed is determined and appropriate replacement and mitigation provisions are met in conformance with Policy 7.4.4.4 to the satisfaction of the Director.

INTERNET RESOURCES

California Department of Conservation, Office of Mine Reclamation, Fall 2005 SMARA Newsletter regarding the State Oak Woodlands Conservation Law
http://www.consrv.ca.gov/omr/smara/newsletter/Fall%202005.pdf

California Department of Forestry Fire Safe Plan
http://www.fire.ca.gov/php/education_100foot.php

California Department of Forestry Fire Safe Regulations
http://www.co.el-dorado.ca.us/building/FSArticle1.htm

California Licensed Foresters Association
http://www.clfa.org/registered_professional.htm

California Board for Professional Engineers and Land Surveyors:
http://www.dca.ca.gov/pels/

CDF General Guidelines for Creating Defensible Spaces
http://www.bof.fire.ca.gov/pdfs/4291finalguidelines2_23_06.pdf

El Dorado County Department of Forestry SRA Fire Safe Regulations
http://www.co.el-dorado.ca.us/building/PDF/Booklets/Fire_safe_regs.pdf

El Dorado County General Plan
http://www.co.el-dorado.ca.us/Planning/GeneralPlanAdopted.html

El Dorado County General Plan EIR
http://www.co.el-dorado.ca.us/Planning/GeneralPlanDraftEIR.htm

McCreary DD. 2001. *Regenerating rangeland oaks in California*. Berkeley (CA): University of California, Agriculture and Natural Resources. Communication Services Publication #21601. 62 p.

Standiford, Richard and Douglas McCreary and William Frost. 2002. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands.* USDA Forest Service Gen. Tech. Rep. PSW-GTR-184. Available at: http://danr.ucop.edu/ihrmp/proceed/standiford.pdf

Western Chapter – International Society of Arboriculture Publications (Guide for Plant Appraisal, Item # P1209, to determine market values of trees)
http://wcisa.wcainc.com/docs/Publication.pdf

ATTACHMENTS

Exhibit One	CDF Fire Safe Plan Brochure
Attachment 1	Site Assessment Form
Attachment 2	Biological Resources Study and Important Habitat Mitigation Program Requirements

ATTACHMENT B

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

AUBURN SERIES

The Auburn series consists of shallow to moderately deep, well drained soils formed in material weathered from amphibolite schist. Auburn soils are on foothills and have slopes of 2 to 75 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 60 degrees F.

TAXONOMIC CLASS: Loamy, mixed, superactive, thermic Lithic Haploxerepts
TYPICAL PEDON: Auburn silt loam - on an east facing slope of 10 percent under annual grass, oak and digger pine at 620 feet elevation. (Colors are for dry soil unless otherwise stated. When described on March 27, 1959, the soil was dry throughout.)

A1--0 to 1.5 inches; strong brown (7.5YR 5/6) silt loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; many very fine roots; many very fine and fine tubular pores; slightly acid (pH 6.4); clear smooth boundary. (1 to 8 inches thick)
A2--1.5 to 9 inches; yellowish red (5YR 5/6) silt loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and medium roots; many very fine and medium tubular pores; slightly acid (pH 6.4); gradual smooth boundary. (1 to 8 inches thick)

Bw--9 to 14 inches; yellowish red (5YR 5/8) silt loam, yellowish red (5YR 4/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; few thin clay films line pores; slightly acid (pH 6.5); abrupt wavy boundary. (5 to 12 inches thick)
R--14 to 24 inches; very pale brown (10YR 7/4) partly weathered amphibolite schist with reddish brown (2.5YR 4/4) colloidal stains in fracture planes; few roots in cracks; slightly acid (pH 6.5).

TYPE LOCATION: Amador County, California. About 3.5 miles northeast of Ione, 0.25 miles east and 100 feet north of the southeast corner of sec. 6 T. 6 N, R. 10 E. Irish Hill Quadrangle.

RANGE IN CHARACTERISTICS: The depth to bedrock ranges from 10 to 28 inches. These range from less than 20 inches to more than 20 inches within a linear distance of less than 140 inches. Dominantly the soils are 10 to 20 inches deep to rock over 50 to 90 percent of the area. The rest of the area, 10 to 50 percent, is 20 to 28 inches to rock. The contact with the bedrock is abrupt, although some slightly weathered fracture planes are present in some pedons. Rock fragments range from 0 to 25 percent and consist of pebbles, cobbles and stones. The soil between the depths of 8 and 20 inches or to a lithic contact is dry in all parts from June to mid-October and is moist in all parts from mid-November to May. The mean annual soil temperature is between 59 and 67 degrees F.

The A horizon is 7.5YR 4/4, 5/8, 5/6, 5/4, 6/6; 5YR 4/6, 5/4 or 5/6. Moist colors are 7.5YR 3/2, 3/3, 3/4, 4/4, 4/6, 5/4; 5YR 3/3, 3/4, 3/6 or 4/4. Mottles of lower chroma than the matrix may occur in the upper 2 or 3 inches. It is massive or has weak subangular blocky structure. It is loam, silt loam or clay loam or its gravelly, stony, or very stony equivalents. It is neutral to medium acid.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

The Bw horizon is 7.5YR 4/4, 5/4, 5/6, 5/8, 6/6; 5YR 4/4, 4/6, 5/4, 5/6, 5/8, 6/6 or 6/8. Moist colors are 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, 6/6, 6/8; 5YR 3/4, 4/4, 4/6, 5/6, 5/8, 6/6 or 6/8. It is loam, silt loam, clay loam, or its' gravelly equivalent. It is slightly to strongly acid. It has hues that are one unit redder or chromas that are brighter or there is weak structure or there is a slight clay increase.

COMPETING SERIES: These are the Daulton, Escondido, Exchequer, Hornitos, Maymen, eMillsholm, Sobrante, Temescal, and Toomes soils in other families. All these soils except Escondido and Sobrante are less than 20 inches deep to a lithic contact in all parts. In addition, Daulton, Millsholm, and Temescal soils lack reddish colors in hues of 7.5YR and 5YR. Exchequer soils are less than 10 inches deep. Hornitos and Maymen have a base saturation (ammonium acetate) of less than 60 percent throughout the 10 to 20 inch zone. Escondido and Sobrante soils are more than 20 inches deep to a lithic contact in all points. In addition, Sobrante soils have an argillic horizon.

GEOGRAPHIC SETTING: The Auburn soils are on undulating to very steep foothills with slopes of 2 to 75 percent. Rock outcrops are common. The soils formed in material weathered from metabasic or metasedimentary rock such as amphibolite schist, greenstone schist, or diabase. Elevations are 125 to 3,000 feet. The climate is subhumid with hot dry summers and cool moist winters. Mean annual precipitation is 20 to 40 inches. Mean January temperature is about 45 degrees F, and mean July temperature is 76 degrees F; mean annual temperature varies from 56 to 63 degrees F. Frost-free season is about 175 to 275 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Exchequer and Sobrante soils and the eArgonaut and Whiterock soils. Argonaut soils have argillic horizons and Whiterock soils lack reddish colors in hues of 7.5YR and 5YR.

DRAINAGE AND PERMEABILITY: Well drained; low to very high runoff; moderate permeability.

USE AND VEGETATION: Used for annual rangeland with small areas used for irrigated pasture. The native vegetation is typically annual grasses and forbs such as soft chess, wild oats, ripgut brome, and filaree with stands of oak and scattered digger pine and brush.

DISTRIBUTION AND EXTENT: Lower foothills of the Sierra Nevada Mountains of California. The soil is extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California
SERIES ESTABLISHED: Marysville and Sacramento Areas, 1913. The classification was updated in February 2001 using the Eighth Edition to Soil Taxonomy. This series was formerly classified as loamy, oxidic, thermic Ruptic-Lithic Xerochrepts. Competing series were not checked at that time.

REMARKS: Diagnostic horizons and features recognized in this pedon are:
Ochric epipedon - 0 to 9 inches (A1, A2)
Cambic horizon - 9 to 14 inches (Bw)
Lithic contact - depth to contact in 10 to 28 inches and is more than or less than 20 inches within short distances.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Last major revision by the state on 5/88.
Edit log: 10/2006 minor edits, changed terminology for runoff

ADDITIONAL DATA: Two pedons in Amador County: NSSL Pedon S59CA-005-007 (series type location) and S59CA-005-008. Based on lab data this soil should NOT be oxidic and is mixed.

National Cooperative Soil Survey
U.S.A.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

ARGONAUT SERIES

The Argonaut series consists of moderately deep, well drained soils that formed in materials weathered from meta-andesite. Argonaut soils are on foothills with slopes of 2 to 30 percent. The mean annual precipitation is 27 inches and the mean annual temperature is about 60 degrees F.

TAXONOMIC CLASS: Fine, mixed, superactive, thermic Mollic Haploxeralfs

TYPICAL PEDON: Argonaut gravelly loam-on a southwest facing slope of 6 percent under annual grass - oak cover at 1,360 feet elevation. (Colors are for dry soil unless otherwise stated. When described on March 24, 1959, the soil was slightly moist throughout.)

A1--0 to 2 inches; brown (7.5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; weak thin platy structure; hard, friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine pores; 21 percent pebbles; slightly acid (pH 6.1); abrupt smooth boundary. (2 to 3 inches thick)

A2--2 to 6 inches; yellowish red (5YR 5/6) gravelly loam, yellowish red (5YR 3/6) moist, massive; hard, friable, nonsticky and slightly plastic; common very fine, few fine and medium roots; common very fine and fine, few medium pores; few thin clay films line pores; 20 percent pebbles, cobbles and stones; slightly acid (pH 6.3); clear smooth boundary. (3 to 8 inches thick)

Bt1--6 to 10 inches; yellowish red (5YR 4/6) gravelly heavy loam, yellowish red (5YR 3/6) moist, massive; hard, friable, slightly sticky and plastic; common very fine, few fine and medium roots; common very fine and fine medium pores; common thin clay films line most pores; 15 percent pebbles, cobbles and stones; slightly acid (pH 6.2); clear smooth boundary. (3 to 6 inches thick)

Bt2--10 to 14 inches; yellowish red (5YR 5/6) clay loam, yellowish red (5YR 3/6) moist; massive; hard, firm, slightly sticky and plastic; few fine and medium roots; common very fine and fine, few medium pores; continuous thin clay films line pores; about 8 percent pebbles and cobbles; slightly acid (pH 6.1); abrupt boundary. (3 to 5 inches thick)

Bt3--14 to 21 inches; brown (10YR 5/3) gravelly clay, yellowish brown (10YR5/4) and brown (7.5YR 5/4) moist; brown (7.5YR 5/4) coatings; massive; very hard, firm, sticky and very plastic; few very fine and coarse roots; few very fine pores; continuous thick clay films line pores; few slickenslides; about 22 percent pebbles, cobbles and stones; slightly acid (ph 6.1); abrupt wavy boundary. (4 to 17 inches)

Cr--21 to 27 inches; light reddish brown (2.5YR 6/4) deeply weathered meta-andesite, light olive brown moist, yellowish red (5YR 4/6) moderately thick, continuous clay films and black stains along a few fracture planes; the weathered rock crumbles when disturbed but is firmer with increasing depth; neutral (pH 7.1).

TYPE LOCATION: Amador County, California; about 0.5 miles west of Martell, 1,800 feet south and 1,500 feet east of the NE corner of sec 19, T. 6 N, R. 11 E. Jackson Quadrangle.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

RANGE IN CHARACTERISTICS: Thickness of solum and depth to a paralithic contact is 20 to 40 inches. The mean annual soil temperature ranges from 59 to 67 degrees F. The soil between the depths of 8 and 24 inches or to a paralithic contact is dry in all parts from June 1 to October 15 (120 to 150 days) and is moist in all parts from November 15 to May 15 (165 to 195 days). Some rock fragments are present throughout the soil with about 2 to 25 percent in the lower Bt horizons and 5 to 35 percent in the A and upper Bt horizons. It has 2 to 6 percent organic matter in the upper 4 inches and more than 1 percent to a depth of 10 inches. The weighted average of the upper 20 inches of the Bt horizon is 35 to 50 percent.

The A horizon is 7.5YR 6/6, 5/6, 5/4, 4/6, 4/4; 5YR 5/3, 5/4, 5/6, 4/6, 4/4, or 4/6. Moist colors are 7.5YR 3/4, 4/4, 4/6; 5YR 3/4, 4/3, 4/4, or 4/6. The upper 4 inches have moist color values of 3. It is loam, silt loam or clay loam and may be gravelly or extremely stony. It is massive and hard or the upper few inches has weak platy, weak granular or weak subangular blocky structure. Reaction is moderately acid to neutral .

There is a transitional horizon between the A and B horizon or a gradual boundary occurs for the A horizon. The upper Bt horizon is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8; 5YR 5/3, 5/4, 5/6, 4/4, or 4/6. Moist colors are 7.5YR 4/4, 4/6; 5YR 4/4, 4/6, or 3/4. It is heavy loam, heavy silt loam, clay loam or its gravelly or cobbly equivalents. Reaction is moderately acid to neutral. An abrupt boundary is always present.

The lower Bt horizon is 10YR 5/3, 5/4, 5/6, 6/4; 7YR 5/4, 5/6, 4/6, 4/4; 5YR 4/6, 5/6, or 4/4. Moist colors are 10YR 5/3, 5/4, 5/6; 7.5YR 5/6, 5/4, 4/4, 4/6; 5YR 3/4, 4/4, 4/6, 4/8, or 5/6. It is heavy clay loam, gravelly clay or clay. Reaction is moderately acid to mildly alkaline. The clay increase between the upper Bt and lower Bt exceeds 15 percent. In some profiles a stone line separates these two horizons.

The Cr is 10YR 7/6, 2.5Y 7/4, or 6/4. Moist colors are 2.5Y 6/4 or 5/4.

COMPETING SERIES: These are the Conosta, Contra Costa, Francher, Kilaga, Phipps (T), and Trabuco. Conosta soils lack an argillic horizon with more than 15 percent clay increase within one inch. Contra Costa soils have a lithic contact between 20 and 40 inches. Francher soils have a CA/Mg ratio of less than 2:1. Kilaga and Phipps (T) soils are greater than 60 inches deep. Trabuco soils have a paralithic contact below 40 inches.

GEOGRAPHIC SETTING: The Argonaut soils are on undulating to hilly broad ridges and slightly concave slopes of 2 to 30 percent. The soils formed in material weathered from metamorphosed and intrusive basic rocks. Rock outcrops are common. Elevations are 200 to 2,500 feet. The climate is subhumid with hot dry summers and cool moist winters. Mean annual precipitation is 20 to 50 inches. Mean January temperature is about 44 degrees F.; mean July temperature is about 76 degrees F.; mean annual temperature is about 56 to 63 degrees F. Frost-free season ranges from 220 to 270 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Auburn, Rescue and Sobrante soils. Auburn soils lack argillic horizons. Rescue and Sobrante have less than 35 percent clay in all parts of the argillic horizon.

DRAINAGE AND PERMEABILITY: Well drained; slow to rapid runoff; very slow permeability.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

USE AND VEGETATION: Mainly used for annual rangeland. Vegetation is soft chess, wild oats, ripgut brome, filaree with scattered foothill pine and scattered to dense thickets of blue oak, interior live oak and buckbrush.

DISTRIBUTION AND EXTENT: Foothills of the central Sierra Nevada in California. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Amador County, California, Amador Area 1963.

REMARKS: Diagnostic horizons and features recognized in the pedon are:
Ochric epipedon - 0 to 6 inches (A1, A2)
Argillic horizon - 6 to 21 inches (Bt1, Bt2, Bt3)
Paralithic contact at 21 inches.
This pedon was sampled by NSSL at Riverside in 1959. Pedon number S59CA-3-6-(1-6)
OSED scanned by SSQA. Last revised by state on 8/85.
Edit log: 4/2003 Proposed edits for use in Butte County. Expand reaction A horizon: moderately acid to neutral. Expand reaction lower Bt horizon: from slightly acid to moderately acid. Add the following colors: A horizon-dry colors: 7.5YR 4/6 and 5YR 4/6. Upper Bt horizon-dry colors: 7.5YR 4/4, 4/6. Lower Bt horizon dry colors: 7.5YR 4/4, 4/6. Moist colors: 5YR 3/4. Cr horizon-dry: 10YR 7/6. Expand elevation from 300 to 200 feet. Expand MAT from 62 to 63 degrees F. Changed digger pine to foothill pine.

National Cooperative Soil Survey
U.S.A.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

RESCUE SERIES

The Rescue series is a member of the fine-loamy, mixed, thermic family of Mollic Haploxeralfs. Typically, Rescue soils have reddish brown, medium and slightly acid, sandy loam A horizons, yellowish red, slightly acid, sandy clay loam B2t horizons grading to weathered basic rock.

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

TYPICAL PEDON: Rescue sandy loam - annual range. (Colors are for dry soil unless otherwise noted.)

Al--0 to 5 inches; reddish brown (5YR S/4) sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; many very fine, common fine roots; many very fine tubular and interstitial, few fine tubular pores; moderately acid (pH 6.0); clear smooth boundary. (4 to 6 inches thick)

A3--5 to 10 inches; reddish brown (5YR 4/4) sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; many very fine, common fine roots; many very fine tubular pores; slightly acid (pH 6.2); clear wavy boundary. (2 to 7 inches thick)

B1t--10 to 14 inches; yellowish red (5YR 4/6) heavy sandy loam, yellowish red (5YR 3/6) moist; massive; hard, friable, sticky, plastic; common very fine and fine roots; common very fine tubular pores; many thin clay films line pores and as bridges; slightly acid (pH 6.2); gradual smooth boundary. (2 to 8 inches thick)

B2t--14 to 26 inches; yellowish red (5YR 4/6) sandy clay loam, dark red (2.5YR 3/6) moist; massive; extremely hard, firm, sticky, plastic; few fine, medium and coarse roots; few very fine and fine tubular pores; many moderately thick clay films line pores; slightly acid (pH 6.4); gradual smooth boundary. (7 to 14 inches thick)

B31t--26 to 34 inches; reddish yellow (5YR 6/8) heavy sandy loam, variegated reddish brown and reddish yellow (5YR 4/4, 6/6) moist; massive; extremely hard, firm, sticky, plastic; few fine, medium and coarse roots; few very fine tubular and interstitial pores; many thin clay films line pores and as bridges; slightly acid (pH 6.5); clear wavy boundary. (5 to 14 inches thick)

C1--34 to 55 inches; reddish yellow (5YR 7/8) coarse sandy loam, yellowish red (5YR 5/6) moist; massive; very hard, firm, slightly sticky, slightly plastic; few fine, medium and coarse roots; few very fine tubular and interstitial pores; few thin clay films line pores and as bridges; slightly acid (pH 6.5); clear wavy boundary. (10 to 22 inches thick)

C2--55 to 66 inches; very pale brown (10YR 7/4) loamy coarse sand, strong brown (7.5YR 5/6) moist; massive; slightly hard, firm, nonsticky, nonplastic; few fine, medium and coarse roots; few and very fine tubular and interstitial pores; slightly acid (pH 6.5).

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

TYPE LOCATION: El Dorado County, California; 2.0 miles north of Bass Lake, 50 feet east of Deer Valley Road, near center of NE114 SE1/4 of sec. 19, T.lON., R.9E.

RANGE IN CHARACTERISTICS: The solum is 30 to 70 inches thick. Depth to a paralithic contact of weathered rock is 40 to 80 inches. Mean annual soil temperature at a depth of 20 inches is 59 degrees to 65 degrees F. Coarse fragments in the profile range from about 3 to 25 percent. The larger amounts are in the upper A horizon or in the C horizon. Between the depths of about 5 and 15 inches the soils are usually continually moist but become dry in May or early June and remain dry all the time until sometime in October or early November. The soils are usually slightly or moderately acid throughout, but are neutral in the lower part of some pedons.

The A horizon is reddish brown or brown in hue of 7.5YR or 5YR. Moist chromas are 4 or more below a depth of 4 inches, or are 4 or more in all parts. It has 3 to 8 percent organic matter in the upper 4 inches and drops to levels of 0.5 to 1.5 percent at a depth of 10 inches. It is sandy loam or loam. Its lower boundary is gradual or there is either one or both an A3 horizon and a Bl horizon.

The B2t horizon is red, reddish brown, yellowish red or reddish yellow ln hue of 2.5YR or 5YR. It is clay loam or sandy clay loam with 27 to 35 percent clay and has 10 to 20 percent total coarse and very coarse sand. It averages 75 to 85 percent base saturation.

COMPETING SERIES: These are
the Academy, Blasingame, Burchell, Cajalco, Coarsegold, Honn, Jacinto, Los Robles, Marguerite, Modesto, Ojai, Pachappa, Perkins, Pleasanton, Sobrante, Trimmer, Whitney and Wyo series. Academy soils have sandstone at depths of 19 to 39 inches. Burchell, Jacinto, Marguerite, Pachappa and Wyo soils have no hue redder than 10YR, and Los Robles, Honn, Modesto and Pleasanton soils have no hue redder than 7.5YR in the B2t horizon. Blasingame soils have less than 1 percent organic matter ln all parts of the A horizon. Cajalco and Trimmer soils have a paralithic contact above 40 inches. Coarsegold soils have less than 10 percent coarse and very coarse sand and are micaceous. Ojai soils have very hard dry consistence in the Al horizon. Perkins soils have B2t horizons that are gravelly in the upper part and very gravelly in the lower part. Sobrante soils have a lithic contact above 40 inches. Whitney soils have a paralithic contact above 40 inches and no hue redder than 7.5YR.

GEOGRAPHIC SETTING: Rescue soils are on gently sloping to very steep uplands at elevations of 800 to 2,000 feet. They formed in residuum of gabbrodiorite rocks. Rock outcrops and stones are present in some units. The climate is moist subhumid with hot dry summers and cool moist winters. Annual precipitation 18 25 to 45 inches. Mean annual temperature ls about 59 degrees F., average January temperature about 44 degrees F., and the average July temperature about 75 degrees F.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Argonaut, Auburn,
and Boomer soils and the competing Sobrante soils. Argonaut soils have more than 35 percent

clay in the argillic horizon. Auburn soils lack an argillic horizon and are less than 20 inches deep to rock in part of each pedon. Boomer soils have a mean soil temperature of less than 59 degrees F.

DRAINAGE AND PERMEABILITY: Well-drained; medium to very rapid runoff; moderately slow to slow permeability.

USE AND VEGETATION: Annual range and watershed. Some areas are irrigated and produce pasture and deciduous fruit. Native vegetation is annual and perennial grasses, brush, scattered conifers, and oaks.

DISTRIBUTION AND EXTENT: Mainly on the western slopes of the Sierra Nevada range. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Nevada County, California, 1970.

REMARKS: The Rescue soils were formerly classified as Brunlzems.

The activity class was added to the classification in January of 2003. Competing series were not checked at that time. - ET

OSED scanned by SSQA. Last revised by state on 4/71.

ATTACHMENT C

Proposed Guidelines for Acorn Collection, Storage and Planting

Guidelines for Acorn Collection,
Storage, and Planting

- **Acorn Collection**
- All acorns should be from a source local to the mitigation sites.
- Collect acorns over an interval of a few weeks from late summer to mid fall, when the acorns have ripened, but before they have all fallen from the trees. Acorns can be harvested when they can be easily dislodged from their caps by gentle twisting and when they start to drop from the trees.
- If feasible, collect acorns directly from trees, rather than the ground, since acorns that are on the ground readily loose their moisture and are subject to predation.
- Place acorns in loosely sealed plastic bags that allow some gas exchange. Discard obviously damaged or deformed acorns.
- Store acorns in refridgerator just above freezing (34 degrees to 38 degrees F) for no more than one to two months before planting.

Planting Site Preparation

- All planting should be done in late fall or early winter, as soon as the soil is moist down to a depth of four+ inches.
- Soak acorns from eight to 48 hours prior to planting. Discard all acorns that float. Keep acorns cool during transport. Soaked acorns not planted must be discarded.
- Each planting site should be cleared of most vegetation around a four foot diameter area. Clear down to stubble and rake clean.
- Clear the center 12 inches of the planting site down to soil, removing all vegetation.
- Dig or auger a 12 inchs deep planting hole in this center area, removing all but very small rocks and debris. If shallow hardpan is found within the planting site, auger past the depth of the hardpan.
- Backfill with the loosened soil or, if necessary, sterile topsoil to fill the planting hole back up to original grade. Compact well using foot and hand tools. Do not compact by machine.

Planting

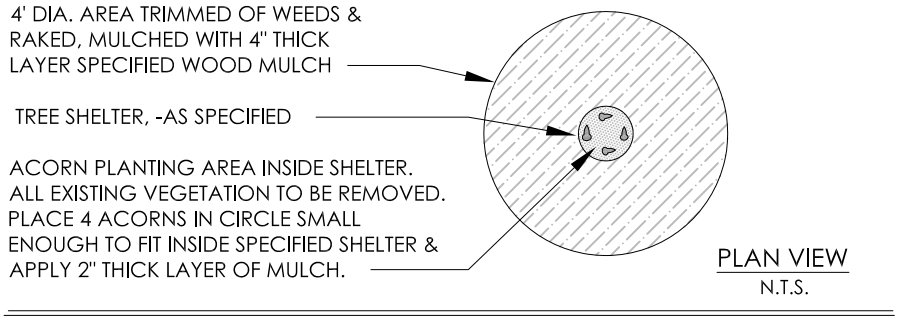
- Over the backfilled planting hole, place four evenly spaced acorns of the species specified on their sides and within a six inch diameter circle. The acorns should be spaced in an area smaller than the diameter of the specified tree shelter.
- Cover the acorns with one to two inches of the specified topsoil. Carefully but thoroughly compact backfill with hand or foot.
- Place the specified tree shelter over the covered acorns, inserting the bottom of the shelter four inches into the soil if vole predation is a consideration.
- Place shredded or chipped wood mulch four inches deep or sterile rice straw (compressed with foot) six inches deep outside of the shelter to cover the entire four foot diameter planting area.

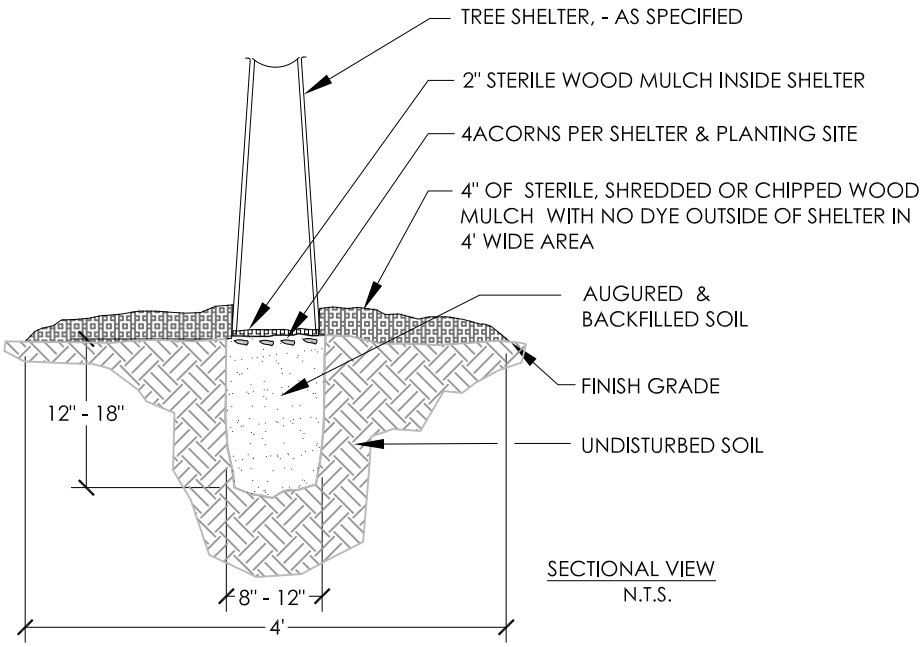
Maintenance

- Maintain a four-foot wide weed-free area around each acorn planting site for a minimum of three years by mowing or weedeating in mid spring. Initiate weed control in spring before weed seeds ripen. Additional late-season mowing or weedeating may be necessary. The elimination of surrounding weeds is vital to maintaining soil moisture, eliminating competition for light and space, and discouraging herbivory.
- The need for mowing may be reduced by additional applications of mulch or straw or by the application of approved pre- or post-emergent herbicides.
- Check for predation around tree shelters. Adjust position of the shelters and methods of weed control, if necessary.

ATTACHMENT D

Proposed Conceptual Layout for Acorn Planting with Protection





1. ACORN PLANTING SHOULD BE COMPLETED IN EARLY WINTER, JUST AFTER RAINS HAVE SUFFICIENTLY MOISTENED SOIL. SEE *GUIDELINES FOR ACORN COLLECTION AND PLANTING* (ECORP 2008).

2. REMOVE WEEDS FROM 4' DIA. CIRCLE AROUND ACORN PLANTING AREA. RAKE CLEAN.

3. REMOVE ALL VEGETATION FROM 12" DIA. SHELTER AREA.

4. AUGUR PLANTING HOLE AT LEAST 12" DEEP X 8" WIDE. REMOVE ROCKS & ALL VEGETATION. BACKFILL WITH NATIVE SOIL OR , IF NECESSARY, STERILE TOPSOIL.

5. PLACE 5 ACORNS ON THEIR SIDES WITHIN A CIRCLE SMALLER THAN THE DIAMETER OF THE SHELTER.

6. COVER ACORNS WITH $\frac{1}{2}$" TO 1" OF THE LOOSENED SOIL OR STERILE TOPSOIL.

7. SECURE TREE SHELTER AROUND ACORNS.

8. PLACE 1" THICK LAYER STERILE WOOD MULCH OVER ACORNS (WITHIN SHELTER) AND 4" THICK LAYER OUTSIDE SHELTER TO 4' DIAMETER.

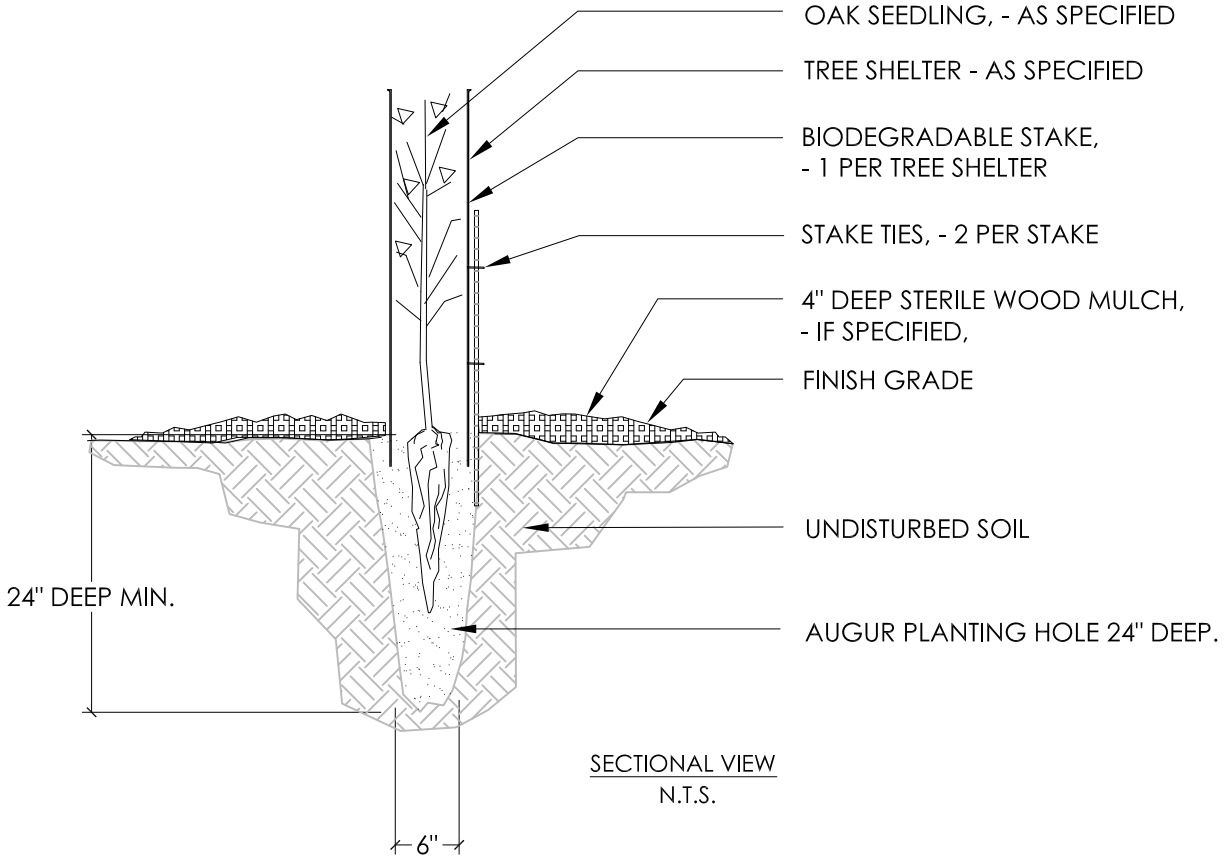
2 ACORN PLANTING AND PROTECTION

Detail for Acorn Planting

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT E

Proposed Guidelines for Planting Oak Seedling with Shelter



1. PLANTING HOLES SHALL BE AUGURED 6" WIDE X 24" DEEP.
2. ALL TREES TO RECEIVE SPECIFIED TREE SHELTER.
3. IF VOLE HERBIVORY NOTICED IN IMMEDIATE OR SURROUNDING AREAS PLACE BOTTOM OF SHELTERS 4" BELOW GRADE.

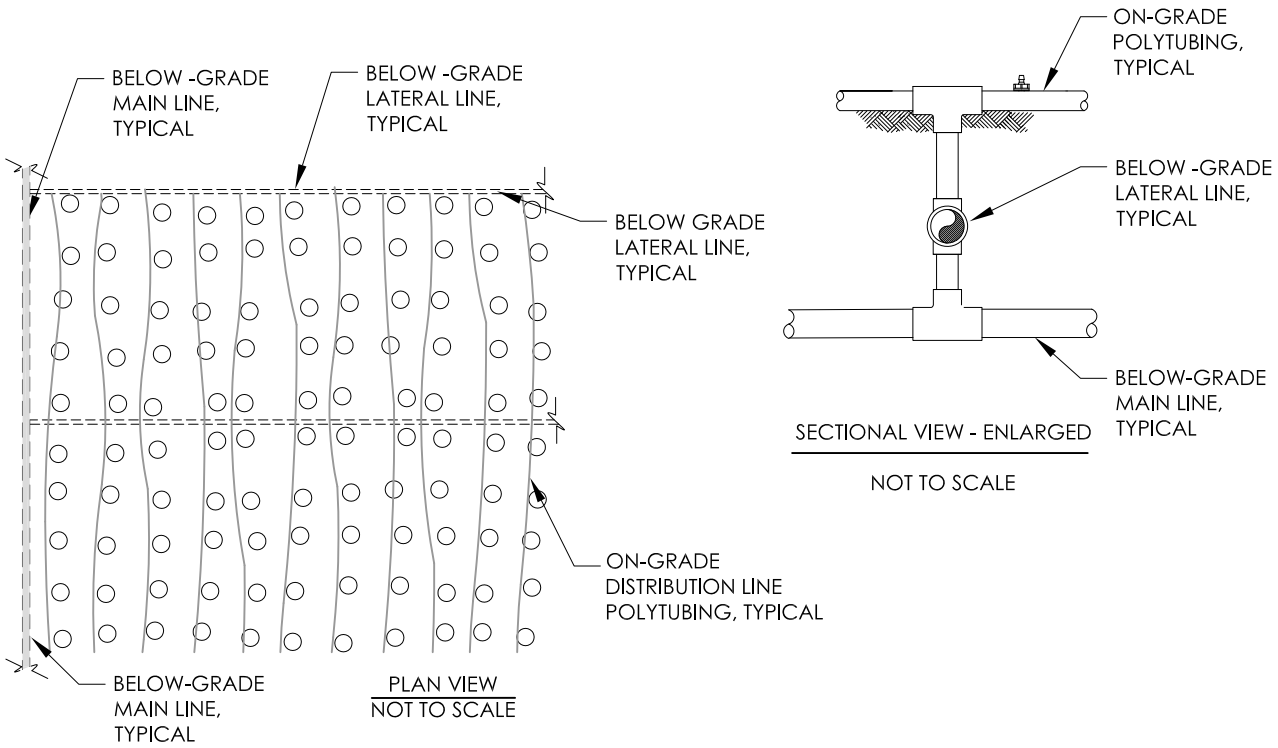
1 PLANTING OAK SEEDLING WITH SHELTER

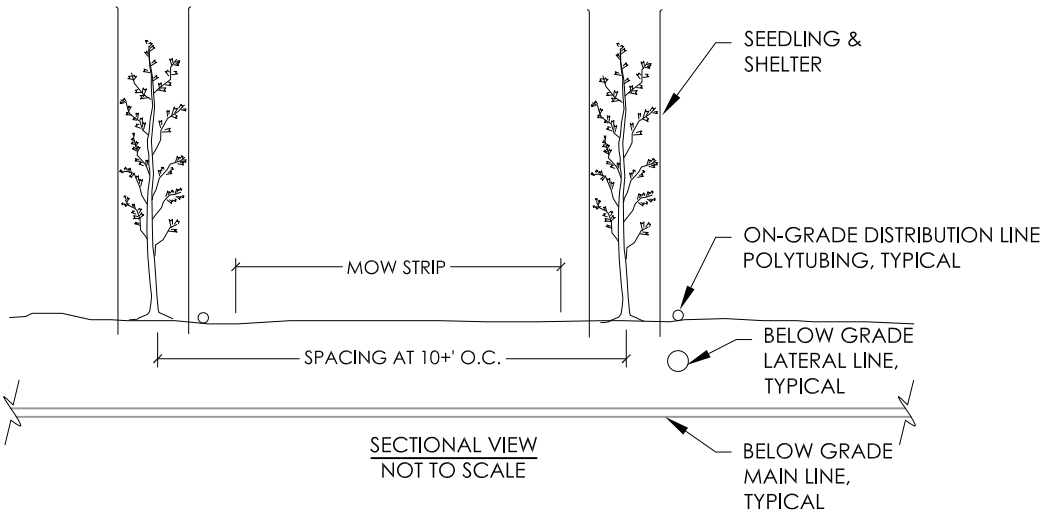
Detail for Oak Seedling Planting

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT F

Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns





1. TO HELP ENSURE SUCCESS OF CANOPY COVER MITIGATION, PLANT OAK SEEDLINGS AT A DENSITY OF 400 TREES/ACRE.
2. SPACING SHALL BE EQUAL TO OR GREATER THAN 10' O.C.
3. PLANT IN UNDULATING (NOT STRAIGHT) ROWS TO MIMIC NATURAL PATTERN OF OAK WOODLAND.
4. TO ALLOW FOR ANNUAL MOWING, IRRIGATION MAINLINES & LATERAL LINES SHALL BE BURIED AND DISTRIBUTION LINES SHALL RUN IN ONE DIRECTION ONLY. SPACING BETWEEN DISTRIBUTION LINES SHALL EXCEED WIDTH OF MOWER.

4 CONCEPTUAL IRRIGATION LAYOUT FOR OAK SEEDLINGS & ACORNS

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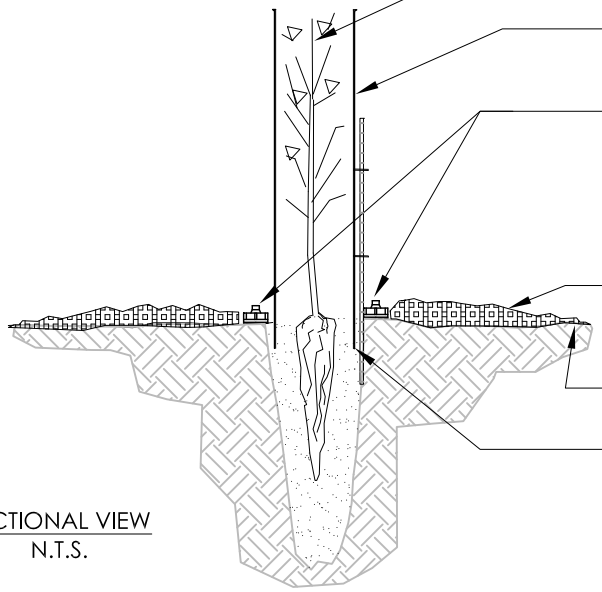
Detail for Oak Irrigation System Layout

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



SECTIONAL VIEW
N.T.S.

1. AT THE BEGINNING OF THE DRY SEASON, WATER SEEDLINGS DEEPLY, MOISTENING THE SURROUNDING SOIL TO A DEPTH OF AT LEAST 2'.

2. WATER INFREQUENTLY AND DEEPLY DURING THE DRY SEASON. SEE BELOW FOR TYPICAL IRRIGATION SCHEDULE, WHICH IS MEANT AS A GUIDE TO DETERMINE IRRIGATION FREQUENCY. ACTUAL SCHEDULE WILL BE DEPENDENT ON SOIL TYPE, EXPOSURE, AND LOCALE OF PLANTINGS. FOR EACH SUBSEQUENT WATERING, MOISTEN SURROUNDING SOIL TO A DEPTH OF AT LEAST 1'. NEWLY PLANTD SEEDLINGS WILL REQUIRE MORE FREQUENT WATERINGS.

3. ON LARGE-TRACK PLANTINGS, USE SOIL MOISTURE SENSOR WITH REMOTE CONTROL READER TO GUAGE WHEN SOIL IS DRY AND PLANTINGS SHOULD BE WATERED.

4. WATER DELIVERY DURING EACH WATERING CYCLE MUST PROVIDE ENOUGH WATER TO MOISTEN SOIL WITHIN TREE SHELTER.

IRRIGATION SCHEDULE GUIDELINES FOR OAK SEEDLINGS & ACORNS

SEASON	GOAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4
MID SPRING (TYPICALLY MID APRIL)	DEEP WATER, MOISTENING SOIL TO DEPTH OF 2'+.	ONCE	ONCE	ONCE	ONCE, IF NEEDED
EARLY SUMMER	DEEP WATER, MOISTENING SOIL TO DEPTH OF 1'+.	ONCE / 2 WEEKS	ONCE / 3 WEEKS	ONCE / 4 WEEKS	MONITOR ONLY
LATE SUMMER	DEEP WATER, MOISTENING SOIL TO DEPTH OF 1'+.	ONCE / 3 WEEKS	ONCE / 3-4 WEEKS	ONCE / 4 WEEKS IF NEEDED	MONITOR ONLY
FALL - MID SPRING	NO WATERING REQUIRED	NONE	NONE	NONE	SYSTEM DISCONNECTED

3 IRRIGATING OAK SEEDLINGS & ACORNS

Detail for Oak Seedling Irrigation

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Appendix F Errata

Oak Resources Technical Report
Oak Woodlands and Oak Tree Individuals

Central El Dorado Hills Specific Plan

El Dorado County, California

Prepared For:

Serrano Associates, LLC

June 26, 2017

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment A – Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands in the Central El Dorado Hills Specific Plan El Dorado County, California
Attachment B – Tree Survey Table

1.0 INTRODUCTION

This Oak Resources Technical Report was prepared to satisfy the requirements of the proposed El Dorado County (County) Oak Resources Management Plan (ORMP), which is expected to be adopted in 2017. The purpose of the report is to identify the inventory of individual native oak trees and oak woodland on the Project site and address native oak tree impacts and proposed mitigation for the Central El Dorado Hills Specific Plan (CEDHSP) Project (Project). An oak species focused Biological Resources Study (BRS) and Important Habitat Mitigation Plan (IHMP) (Attachment A) was prepared in 2014 to address oak impacts under the previously adopted General Plan requirements. In the event that the new ORMP is adopted prior to the acceptance of the CEDHSP, this report provides Project oak resources impacts and mitigation acceptable under the new plan.

1.1 Project Description and Location

The Project is part of a proposed regional community plan for specific infill properties within the El Dorado Hills community. This Project area consists of two disjunct parcels north of U.S. Highway 50, separated by El Dorado Hills Boulevard. The Pedregal parcel is west of El Dorado Hills Boulevard, between Wilson Boulevard and Olsen Lane, and the Westside parcel is east of El Dorado Hills Boulevard and north of U.S. Highway 50. Serrano Parkway bisects the Westside parcel. The 341-acre CEDHSP is situated within an elevational range of 600 to 1,050 feet above mean sea level in El Dorado Hills within El Dorado County, California (Figure 1. *Project Location and Vicinity*).

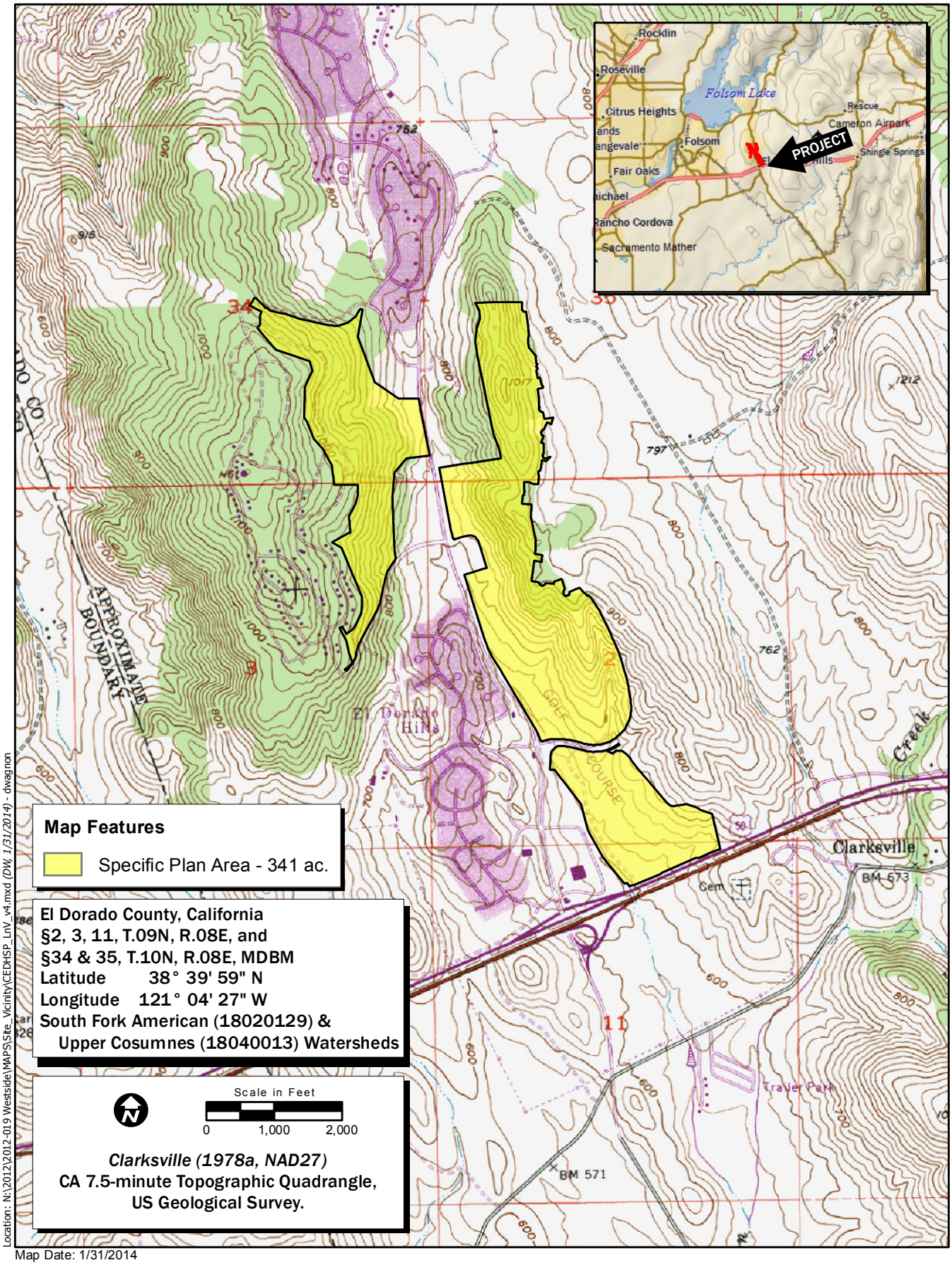
The Project is located within portions of Sections 2, 3, 11, of Township 9 North, Range 8 East and portions of Sections 34 and 35 of Township 10 North, Range 8 East of the “Clarksville, California” 7.5-minute topographic quadrangle (U.S. Geological Survey [USGS] 1978a). The Project is located at approximately 38° 39’ 59” North and 121° 04’ 27” West within the South Fork American and Upper Cosumnes Watersheds (USGS Hydrological Unit Code #18020129 and #18040013, respectively) (USGS 1978b).

Planned improvements include 1,000 dwelling units of low-, medium-, and high-density residential use (1-24 dwellings units per acre) on approximately 140 acres. The Plan Area includes approximately 50,000 square feet of civic/limited commercial uses (or an 11-acre public park), a 15-acre public village park, and nearly 170 acres of natural open space. Planned improvements include an extensive network of trails interconnecting the proposed land uses and a location for pedestrian overcrossing of U.S. Highway 50. Approximately 50 percent of the site (170 acres) would be designated as Open Space (Figure 2. *Land Use Plan*).

1.2 El Dorado County Oak Tree Permit and Mitigation Requirements

Forest and Oak Woodland Resources as well as individual native oak trees are protected by Objective 7.4.4 of the El Dorado County General Plan, which states:

> *Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of sustainable flow or wood products, and aesthetic values (El Dorado County 2009).*



Location: N:\2012\2012-019 Westside\MAPS\Site_Vicinity\CEDHSP_LnV_v4.mxd (DW, 1/31/2014) - dwagnon

Map Date: 1/31/2014

Service Layer Credits: Copyright:© 2012 DeLorme

Figure 1. Project Location and Vicinity

2012-019 Central El Dorado Hills Specific Plan

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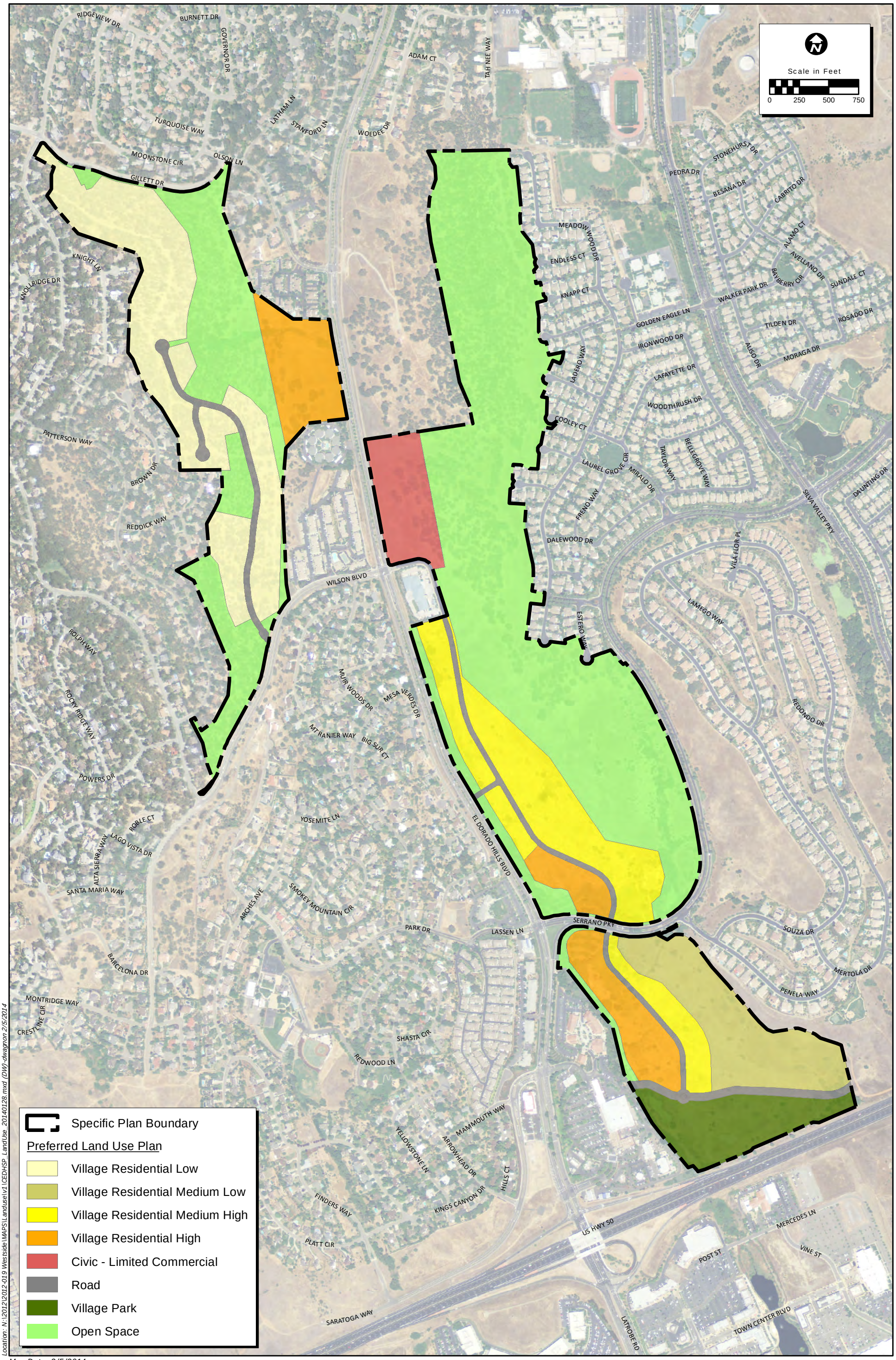


Location: N:\2012\2012-019 Westside\MAPS\Landuse\v1\CEDHSP_LandUse_20140128.mxd (DW)-dwagnon 2/5/2014

Map Date: 2/5/2014
Photo Source: NAIP (2012)

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Land Use Plan

2012-019 Central El Dorado Hills Specific Plan

Policy 7.4.4.4 of the General Plan (El Dorado County 2009; Revised 2015) specifies that mitigation requirements for impacts to oak resources (oak woodlands, individual native oak trees, and Heritage Trees) shall be quantified and identified by a certified arborist or biologist.

The Implementation Measure of Policy 7.4.4.4 directed the County to develop and adopt the Oak Resources Management Plan (ORMP) (El Dorado County 2017), which addresses the following:

- Mitigation standards for oak resources impacts;
- Definitions of exempt projects and actions;
- Technical report requirements;
- Oak resources mitigation options and standards;
- Heritage Tree mitigation standards; and
- Oak resources mitigation monitoring and reporting requirements.

The County ORMP, planned for adoption in 2017, serves multiple purposes. It defines the County's conservation strategy for oak resources and provides a framework for mitigating impacts to oak resources. It also complies with Implementation Measure CO-P and constitutes the oak portion of the County's Biological Resources Mitigation Program (General Plan Policy 7.4. 2.8).

The policy of the County is to preserve native oak resources when feasible, through the review of all proposed development activities where such trees are present on either public or private property, while at the same time recognizing individual rights to develop private property in a reasonable manner. As such, the County requires mitigation for impacts to oak woodlands, individual native oak trees and Heritage Trees. The pending adoption of the ORMP may define a Heritage Tree as native oak trees measuring 20 inches diameter at breast height (DBH) or greater[1]. According to the ORMP, there are six primary native oak tree species in El Dorado County, including blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), and Oregon oak (*Quercus garryana*). Additionally, one native hybrid between California black oak and interior live oak exists, known as oracle oak (*Quercus x morehus*). These oak species comprise the County's oak woodlands and also occur outside of oak woodlands as isolated individuals or small groups.

Per the requirements of the ORMP, a tree removal permit is required for discretionary or ministerial (e.g., building permits) projects to authorize removal of any trees that area a component of an oak woodland and any individual native oak tree not located within an oak woodland. A tree removal permit is also required for removal of any Heritage Tree. An oak resources technical report must accompany any tree removal permit application submitted to the County, which may impose such reasonable conditions of approval as are necessary to protect the health of existing oak trees, the

[1] The draft ORMP revised February 2017 defines a Heritage Tree as a native oak tree measuring 36 inches DBH. However, the Planning Commission's April 27, 2017 recommendation to the Board of Supervisors asks the Board to consider reducing the DBH to 20 inches. Since this Technical Report is prepared at a time that precedes the adoption and effective dates of the ORMP, the analysis contained herein follows a conservative approach and is consistent with the Planning Commission's recommendation, if so adopted by the Board. All oak resource impacts associated with the CEDHSP project will be quantified and mitigated consistent with the requirements of the ORMP as adopted by the Board of Supervisors.

public, and the surrounding property. Oak tree removal permit review will be integrated into the environmental review process for discretionary projects or may be processed as an administrative permit for ministerial projects.

1.2.1 Oak Woodland Mitigation

On-site retention of oak woodlands is incentivized by the ORMP. Projects impacting up to 50% of total oak woodlands mitigate for impacts at a 1:1 ratio. Projects impacting between 50.1-75% must mitigate for impacts at 1.5:1 and projects impacting greater than 75% of their oak woodlands must mitigate at 2:1. Mitigation for oak woodlands may occur using one or more of the following options:

1. Off-site deed restriction or conservation easement acquisition and/or acquisition in fee title by a land conservation organization for purposes of off-site oak woodland conservation;
2. In-lieu fee payment;
3. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of numbers 1 through 4 above.

Consistent with California PRC 21083.4, replacement planting shall not account for more than 50 percent of the oak woodland mitigation requirement.

1.2.2 Individual and Heritage Trees Mitigation

Mitigation for removal of individual native oak trees is to be based on an inch-for-inch replacement standard (defined in Section 2.4 of the ORMP). Mitigation for removal of Heritage Trees is based on an inch-for-inch replacement standard at a 3:1 ratio. Options for individual native oak tree and Heritage Tree impact mitigation requirements include:

1. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
2. Replacement planting off-site within an area subject to a conservation easement or acquisition in fee title by a land conservation organization;
3. In-lieu fee payment; or
4. A combination of numbers 1 through 3 above.

For impacts to individual native oak trees that are not otherwise mitigated, replacement plantings are required to be calculated based upon an inch-for-inch replacement of removed individual native oak trees. The total of replacement trees must have a combined diameter of the tree(s) removed. Replacement tree species must be the same proportion as those removed. Replacement trees are required to be planted on-site and monitored and maintained for a period of seven years, calculated from the day of planting. Off-site replacement plantings may be permitted, with County approval, for replacement planting, preferably in proximity, and/or in connection with, oak woodlands contiguous to the project site or within or adjacent to a Priority Conservation Area (PCA) or an Important Biological Corridor as designated in the General Plan or important ecological area as identified in the Initial Inventory and Mapping. Replacement plantings must be inspected, maintained and documented consistent with requirements for Mitigation Maintenance, Monitoring, and Reporting.

Replacement tree sizes may vary and may include acorn plantings, based on documentation of inch-for-inch replacement consistency. Table 1 identifies replacement tree size options and associated quantity of trees, by size, required to meet the inch-for-inch replacement standard.

Table 1. Oak Tree Replacement Quantities

Replacement Size Trees	Number of Trees Required Per Inch of Trunk Diameter Removed
Acorn	3
1-Gallon / Tree Pot 4	2
5-Gallon	1.5*
15-Gallon	1

*Quantity of replacement trees to be rounded up to the nearest whole number

If acorns are used, they must be planted at a 3:1 ratio (3 acorns for every 1-inch of trunk diameter removed) under the direction of a Qualified Professional. Acorn planting must not exceed 25 percent of any project's tree planting total. If 1-gallon/Tree Pot 4-sized containers are used, they must be planted at a 2:1 ratio (2 container trees for every 1-inch of trunk diameter removed). If 5-gallon-sized containers are used, they must be planted at a 1.5:1 ratio (1.5 container trees for every 1-inch of trunk diameter removed). Finally, if 15-gallon-sized containers are used, they must be planted at a 1:1 ratio (1 container tree for every 1-inch of trunk diameter removed).

The replacement planting area is required to be suitable for tree planting, must not conflict with current or planned land uses, and must be large enough to accommodate replacement plantings up to a maximum density of 200 trees per acre. Replacement plantings are required to be inspected, maintained and documented consistent with the requirements for Mitigation Maintenance, Monitoring, and Reporting. For impacts to Heritage Trees, replacement plantings are required to adhere to the standards identified for individual native oak trees; however, replacement totals must be calculated based upon an inch-for-inch replacement at a 3:1 ratio.

Oak resources replacement planting plans are required to be prepared for all replacement planting efforts (on- and off-site) by a Qualified Professional. Replacement planting plans must address the following:

- Consistency with the accepted native oak tree planting standards, including those outlined in Regenerating Rangeland Oaks in California, How to Grow California Oaks, How to Collect, Store and Plant Acorns, and other publications and protocols that may be established by the University of California, Division of Agriculture and Natural Resources. (ORMP 2017.)
- The suitability of the site must be demonstrated with soil information, aerial photography, or other resources.
- The density of replanting must be determined by the Qualified Professional, based on accepted practice and current research, up to a maximum density of 200 trees per acre.
- The intent of the replacement planting plan is to provide replacement oak trees or acorns with a similar mix of species as those removed, however, the species may vary based on site specific conditions, as determined by the Qualified Professional.

- Acorns or container trees for replanting must be from local sources, when available, to maintain local genetic strains.
- Replacement planting must not be located within the 100-foot defensible space zone from an existing or proposed structure unless otherwise consistent with CAL FIRE's defensible space guidelines and fuels reduction requirements mandated under PRC 4291.
- Replacement plantings are required to be maintained in a manner determined by the Qualified Professional, based on the site-specific conditions, which may include weed control, irrigation, tree protection, pest management, and/or fertilization.
- The replacement planting plan is required to identify the frequency and methods of maintenance and monitoring, as well as contingencies or alternatives if the success criteria are not met annually or at the end of the monitoring term along with a means to ensure compliance with the replacement planting plan. The monitoring term is seven years (PRC 21083.4).
- Best Management Practices (BMPs) for protection of retained oaks during and after construction (refer to Appendix D of the ORMP).
- An estimate of the total costs associated with implementation of the replacement plan.

1.3 Purpose of This Oak Resources Technical Report

The ORMP requires that the Project applicant prepare an Oak Resources Technical Report for the Project, which will address impacts to oak woodlands and individual oak trees and outlines plants for oak resource mitigation. This document addresses the requirements of the ORMP. This Oak Resources Technical Report was prepared by Seth Myers (International Society of Arboriculture [ISA\-certified Arborist [WE-7501A]) and provides the following:

- A map of oak woodland habitat across the Project and a discussion of woodland impacts;
- A map of the inventoried native oak tree individuals outside the oak woodland anticipated to be impacted (i.e., removed) by the Project;
- A discussion of the relative importance of the Project's native oak tree individuals as habitat for regionally occurring wildlife species and as wildlife corridors;
- A discussion of how the Project will conform to the requirements of the ORMP;
- Project avoidance, minimization, and/or compensation for impacts on oak tree individuals;
- Recommendations for tree protection during development; and
- Mitigation planting, monitoring, and reporting.

2.0 OAK RESOURCES TECHNICAL REPORT

This Report discusses the method used to identify oak woodlands and woodland impacts within the plan area and identifies the existing native oak tree individuals within the Project that are anticipated to be impacted by the Project.

2.1 Oak Woodland Resources

2.1.1 Oak Woodland Mapping Method

Vegetation mapping was conducted by ECORP biologists concurrently with the special-status plant field surveys in 2012 (ECORP 2013a) and 2013 (ECORP 2013b). Vegetation community classifications were based on the classification systems presented in *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988).

Oak woodlands were mapped as part of a broader vegetation community mapping exercise using aerial photographs, lidar data, and hyperspectral imaging technology. Vegetation communities within the Project were digitized using a WACOM Cintiq 21UX DTZ-2100D LCD Pen Tablet and ArcView 10.1 onto a high-resolution 0.5-foot pixel, 1”=100’ aerial photograph flown in April 2008 (Merrick and Company 2008). Lidar data were used to distinguish height classes of vegetation. Additionally, lidar was used to calculate the density of canopy cover within each polygon. Oak woodland polygons were field verified by ECORP biologists conducting meandering transects of the Project during special status plant surveys in 2012 and 2013.

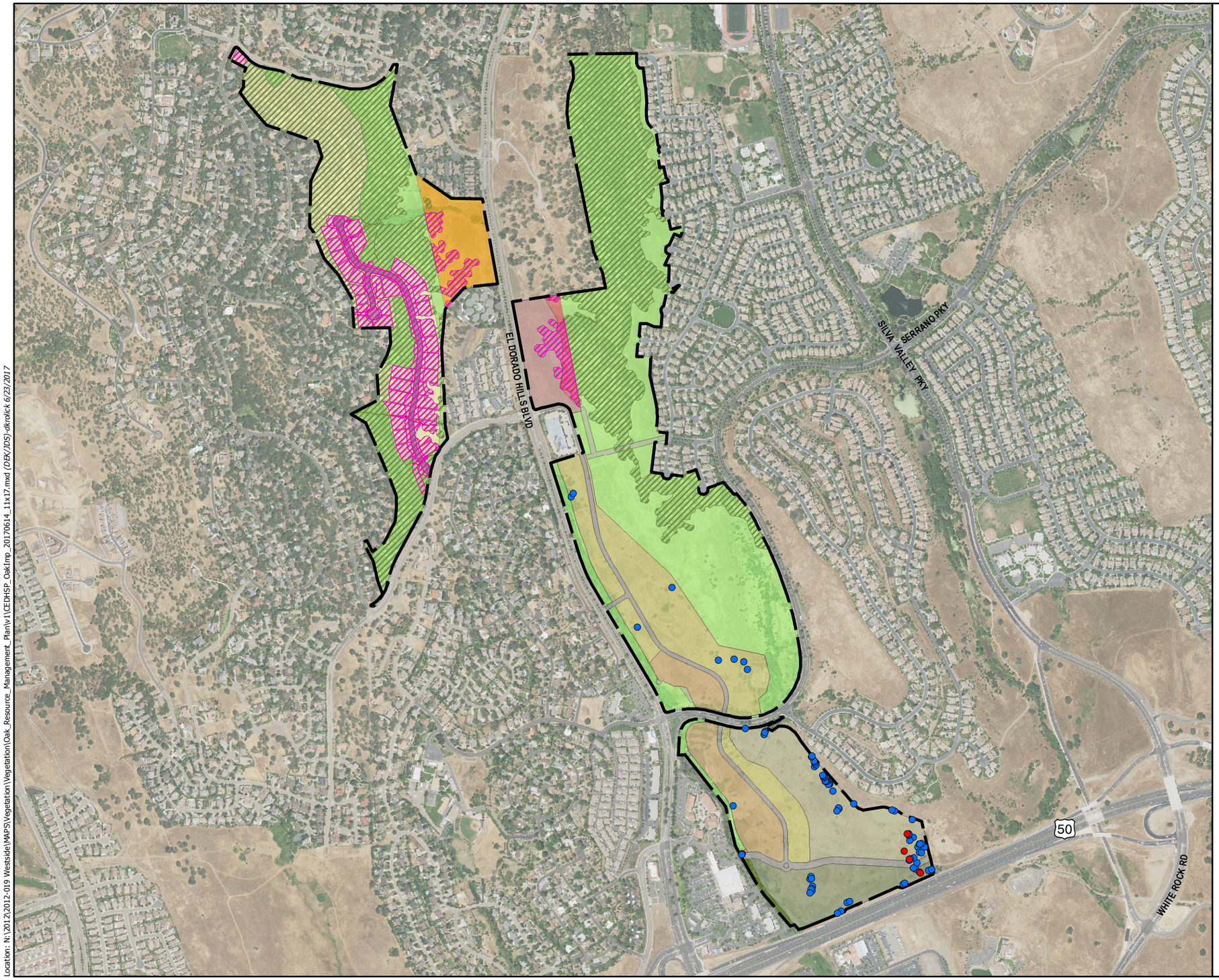
2.1.2 Oak Woodland Mapping Results

A total of 152.5 acres of oak woodland were identified within the Project, depicted in Figure 3. *On-Site Oak Resources*. The highest density areas are on the Pedregal portion of the Project west of El Dorado Hills Boulevard and on the ridgeline east and north of the remnant Executive Golf Course, both in areas not proposed for development. Overlaying the development footprint on the mapped oak woodland shows that 28.8 acres (18.8%) of oak woodland are within the impact area of the Plan.

2.2 Individual Oak Tree Resources

On 5 June 2017 ECORP Consulting, Inc. performed a tree survey within the Project and inventoried all existing on-site oak tree individuals outside of oak woodland areas identified above and greater than four inches DBH that are anticipated to be impacted. As discussed in Section 1.2, six native oak trees species and one naturally occurring hybrid oak tree species are recognized as a sensitive natural resource in the county, and impacts to them must be mitigated to comply with the ORMP.

Figure 3.
On-Site Oak Resources



Map Features

- Specific Plan Boundary

Oak Woodland - 152.5 acres

- Avoided Oak Woodland - 123.8 acres
- Impacted Oak Woodland - 28.8 acres

Impacted Non-woodland Individual Oaks *

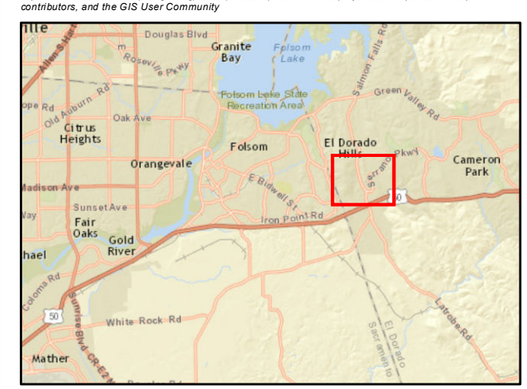
- Heritage Oak (176" total DBH)
- Non-heritage Oaks subject to ORMP (827" total DBH)**

Land Use Plan

- Village Residential Low
- Village Residential Medium Low
- Village Residential Medium High
- Village Residential High
- Civic - Limited Commercial
- Road
- Village Park
- Open Space

** Tree locations may not reflect actual trunk location and may be subject to further adjustment.*

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: N:\2012\2012-019 Westside\MAPS\Vegetation\Vegetation\Oak_Resource_Management_Plan\v1\CEDHSP_OakImp_20170614_11x17.mxd (DBK/JDS)-dkrolick 6/23/2017

2012-019.02 Central El Dorado Hills Specific Plan

Scale in Feet
0 1,000

Photo Source: NAIP 2016

Map Date: 6/23/2017

2.2.1 Individual Oak Tree Mapping and Inventory Method

The Project site was surveyed on foot and the seven oak trees species identified in the ORMP were inventoried. Physical attribute information was recorded about each inventoried tree, which included (1) DBH, (2) approximate height, (3) drip line radius, and (4) health/condition (normal, fair, poor) (see Attachment B). The on-foot survey included a detailed visual inspection of the inventoried oak trees. Each tree was examined from every direction in order to identify pertinent conditions. Inspection tools employed included diameter tape, binoculars, a magnifying glass, a mallet, and a trowel in order to examine the crown for defect indicators. The definitions of each tree condition rating are as follows:

Normal	■ No trunk or root cavities or injuries present ■ No indication of hollowness ■ Root crown is at or slightly above grade ■ No decay present except for small stubs ■ Strong structure ■ Tapered trunk ■ No fungus evident	■ Below average amount of dead limbs ■ No co-dominant branching ■ No large callused areas, callusing intact ■ No evidence of large-scale insect infestation ■ Average growth rate ■ No excessive limb weight ■ Normal foliage, tree not suppressed
Fair	■ No decay in the root crown and no major decay in the truck or limbs ■ Small cavities may be present ■ No fungus evident ■ Some small to moderate callusing injuries may be present	■ Some suppression or crowded growing conditions present ■ Average amount of dead wood limbs ■ Small cavities may be present ■ Foliage size, color, and density may vary
Poor (indication that trees are weakened and dying)	■ Significant cavities, dead areas, and decay present ■ Tree structurally defective ■ Decay present in the root crown or base of trunk ■ Fungus bodies present indicating internal decay	■ Dead limbs above normal ■ Co-dominant branching with included bark present ■ Foliage is below average in size and color ■ Pest damage may be present

2.2.2 Individual Oak Tree Mapping Results

During the survey, 66 valley oak tree individuals, 14 interior live oak individuals, three oracle oak tree individuals and two blue oak tree individuals were inventoried on-site within the areas that will be impacted by the Project. Additionally, 22 coast live oak individuals (*Quercus agrifolia*) and three red oak individuals (*Quercus rubra*), two oak species that are not identified as a sensitive resource in the ORMP, were observed on-site and inventoried. It is noted that the majority, if not all, of the 66 individual valley oak trees occur on the Project site as landscaped ornamentals planted during historic golf course operations. This is evidenced by the observation of landscape stake attachments remaining on some trees, unnatural spatial patterns between some trees (i.e., trees occurring in straight rows), and the fact that, while native to certain regions of El Dorado County, valley oaks do not occur naturally within the habitat type existing at the Project site. Nonetheless, as previously described, blue oaks, valley oaks, California black oaks, interior live oaks, canyon live oaks, Oregon oaks, and oracle oaks are protected under the ORMP. Therefore, for the purposes of this report,

these species are accounted for as part of the Project mitigation requirements. Coast live oaks and red oaks are inventoried for informational purposes only, and are not accounted for as part of the Project mitigation requirements.

Of the 66 on-site valley oak trees inventoried, eight are rated in normal condition, 23 in fair condition, and 35 in poor condition. Of the 14 interior live oaks inventoried, six are rated in normal condition, five in fair condition, and three in poor condition. Of the three oracle oaks inventoried, two are rated in fair condition and one in poor condition. Finally, both blue oaks inventoried are rated in fair condition. Six Heritage Trees were inventoried, four of which are interior live oaks and two of which are valley oaks. Note that an additional interior live oak was inventoried (#711) measuring greater than 20 DBH; however, this individual, while living, was parallel to the ground due to recent trunk failure and considered in very poor condition. A list of all inventoried oak trees that are anticipated to be impacted by the Project (including coast live oaks and red oaks) are included in Attachment B and shown in Figure 3.

2.2.3 Individual Oak Tree Impacts

A total of 827 inches of individual native oak trees would be impacted as a result of the Project (130 inches of interior live oaks, 649 inches of valley oaks, 10 inches of blue oaks, and 38 inches of oracles oaks). Additionally, 176 inches of individual Heritage Trees would be impacted (108 inches of Heritage interior live oak trees and 68 inches of Heritage valley oak trees).

2.3 Impact Summary

As previously described, a total of 152.5 acres of oak woodland were identified within the Plan area. Approximately 28.8 acres (18.8%) of oak woodland are within the development footprint of the Plan and will be impacted. Additionally, a total of 827 inches of individual native oak trees would be impacted as a result of the Project (130 inches of interior live oaks, 649 inches of valley oaks, 10 inches of blue oaks, and 38 inches of oracles oaks). Furthermore, 176 inches of individual Heritage Trees would be impacted (108 inches of Heritage interior live oak trees and 68 inches of Heritage valley oak trees). See Table 2 for a summary of total anticipated project impacts.

Table 2. Oak Resource Impacts

Resource Type	Acres/Inches Impacted
Oak Woodland	
Total Oak Woodlands (acres)	28.8
Individual Native Oak Trees	
Interior Live Oak (*Quercus wislizeni)*	130
Valley Oak (*Quercus lobata*)	649
Blue Oak (*Quercus douglasii*)	10
Oracle Oak (*Quercus x morehus)*	38
Total (inches):	827
Heritage Oak Trees	
Interior Live Oak (*Quercus wislizeni)*	108
Valley Oak (*Quercus lobata*)	68
Total (inches):	176

*Quantity of replacement trees to be rounded up to the nearest whole number

3.0 TREE MITIGATION PLAN

3.1 Oak Woodland Mitigation

The Project has been designed to maximize oak woodland protection through a variety of methods. Not only does the Project avoid 123.8 acres of oak woodland within the Open Space and Avoided Areas, but it also incorporates minimization measures to retain additional oak woodland within the development footprint. As previously described, 28.8 acres (18.8%) of oak woodland are within the impact area of the Plan. Per the requirements of the ORMP, all of a project's oak woodland impacts shall be mitigated at a 1:1 ratio where 50 percent or less of on-site oak woodlands are impacted. Therefore, CEDHSP Project will be required to replace impacted oak woodlands at a 1:1 ratio using the options mitigation described in Section 1.2.1 above.

Consistent with California PRC 21083.4, replacement planting shall not account for more than 50 percent of the oak woodland mitigation requirement. Therefore, half of the Project's oak woodland impact mitigation requirement would consist of replacement planting on-site. Per the requirements of the Oak Resources Technical Report, the replacement planting area must be suitable for tree planting, shall not conflict with current or planned land uses, and shall be large enough to accommodate replacement plantings at a density equal to the density of oak woodlands impacted, up to a maximum density of 200 trees per acre. Replacement plantings are inspected, maintained and documented consistent with the requirements for Mitigation Maintenance, Monitoring, and Reporting per the ORMP.

The remaining half of the Project's oak woodland impact mitigation requirement would be implemented in the form of an in-lieu fee payment to the County. The in-lieu fee for oak woodlands ($8,285 / impacted acre of woodland) is based on the costs of acquisition of land and conservation easements, along with management, monitoring, and administrative costs. Since the CEDHSP Project would mitigate 50% of the impacted 28.8 acres with replanting, under the current proposal the in-lieu fee for the remaining mitigation requirement would equate to $119,304 for 14.4 acres of woodland impact (50 percent of 28.8 acres) at $8,285 per acre.

3.2 Individual Oak Tree Mitigation

As previously described, a total of 827 inches of individual native oak trees would be impacted as a result of the Project. Additionally, 176 inches of individual Heritage Trees would be impacted. Options for individual native oak impact mitigation requirements include replacement plantings, in-lieu payment, or a combination of the two. Replacement plantings are required to be calculated based upon an inch-for-inch replacement of removed individual native oak trees, and a 3-inch-for-one-inch replacement of removed Heritage Trees. This equates to the requirement of replanting 1,355 inches of oak trees, based on an inch-for-inch replacement standard for individual oak trees and an inch-for-inch replacement standard at a 3:1 ratio for Heritage Trees. Replacement trees are required to be monitored and maintained for a period of seven years, calculated from the day of planting. Replacement plantings must be inspected, maintained and documented consistent with requirements for Mitigation Maintenance, Monitoring, and Reporting per the ORMP. Currently, the in-lieu fee program requires a payment of $153 per inch of impact for individual oak trees and $459

per inch for Heritage Trees. Using the per-inch mitigation fee option would result in a fee of $126,531 for individual oaks and $80,784 for Heritage Trees. The total fee would be $207,315.

3.3 Potential On-Site Oak Mitigation Assessment

The CEDHSP Project will comply with the requirements of the ORMP through tree replanting and/or payment of fees. Oak mitigation for any given impact will be assessed and implemented at the time tentative maps are approved. A BRS and IHMP for Oak Woodlands was completed for the Project in 2012 (see Attachment A). This Plan identifies the mitigation measures that will be used by the Project to provide sufficient mitigation to impacts to oak trees. It contains an on-site mitigation assessment that details where oak trees can be planted (i.e., mitigation areas), mitigation measures to be used by the Project, and information on mitigation monitoring, success criteria, and reporting. As identified in the BRS and IHMP for Oak Woodlands, the Project has incorporated various conservation, preservation, and oak replacement measures into its design to minimize impacts to oak trees and oak woodland habitat. For instance, ECORP has identified 15.0 acres of potential oak mitigation within defined Open Space areas within the Project site. Within these 15.0 acres, approximately 14.5 acres are considered plantable space given the existing oak canopy. The applicant may plant 2,393 trees in the area with a combination of acorns and seedlings. Within these 14.5 acres of plantable space, two classes of species and planting type were established based on site suitability:

- Class 1 - blue/live oak acorns or saplings (10.1 acres); and
- Class 2 – valley/live oak acorns or saplings (4.4 acres).

Approximately 10.1 acres are suitable for blue/live oak acorns or saplings (Class 1). The majority of Class 1 locations are within the Open Space areas along the eastern edge of the Westside parcel. In general, acorn plantings are ideal for rocky soils where digging is difficult and supplemental irrigation is unlikely to occur. Oak saplings are suitable for soils with fewer, smaller rocks and where water is available for irrigation. Acorns can also be planted in areas suitable for saplings. Irrigation is necessary for saplings, but not for acorns. However, if irrigation is feasible, it is recommended to ensure survivorship of the acorns. Approximately 4.4 acres were identified as suitable for valley and live oak saplings or acorns (Class 2). This area is located within the center of the Westside Parcel. Areas that are suitable for this class included low gradient areas and/or areas adjacent to creek channels where there tends to be deep soils with higher soil-water content.

In addition to replanting oak trees within these 15.0 acres, the applicant proposes to complete additional oak tree replacement and plantings within certain land use types (e.g., VRL and VRM – Low). Based on tentative lot design, it is anticipated that 873 trees will be replanted or planted within the proposed residential development areas.

Further detail concerning specific timing and phasing of plantings, maintenance of plantings, irrigation schedule, monitoring, and success criteria can be found in the Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands (Attachment A). Components of the BRS and IHMP relating to Mitigation Maintenance, Monitoring, and Reporting will be modified to be consistent with the requirements of the ORMP.

The following is a summary of other measures proposed by the Project:

- In total, 123.8 acres of oak woodland across the Project site will be protected in Open Space and other avoided areas. While these areas are not considered major wildlife corridors, they provide regional protection of the biological resources by protecting the remaining oak woodlands within the already developed vicinity.
- Native tree replacement will be used to mitigate the removal of native trees within the area, subject to approval by the County.
- Oak trees required to be planted as a condition of construction will be maintained after completion of construction according to the Mitigation Maintenance, Monitoring, and Reporting contained in the ORMP, and supplemented by the strategies in the BRS and IHMP.
- To limit disturbance and impacts to biological resources, infrastructure elements such as bridges, roads, utilities, and pipelines, will be placed within previously disturbed locations, where feasible.
- A Stormwater Pollution Prevention Plan will be prepared prior to ground-breaking activities to determine the most appropriate BMPs for reducing impacts from construction activities.
- If necessary, pruning, cabling, and other corrective measures for preserved trees will be specified by an ISA-Certified arborist, and will conform to the pruning standards of the ISA.
- Each tree or group of trees to be preserved within one foot of the drip line of ground disturbance will be protected with a fence or other acceptable methods, such as warning tape, indicating grading limits prior to any grading or movement of heavy equipment. Grading limit line demarcation should be removed following construction, and prior to installation of landscaping material.
- Signs will be posted on all sides of grading limit lines surrounding an individual tree or group of trees stating that each tree is to be preserved.
- Prior to construction, awareness training will be conducted for all construction personnel regarding the importance of the oak woodlands, the locations of preserved trees within the vicinity of the construction area, and preservation measures that are in place to protect them.
- To the extent possible no landscaping requiring permanent irrigation will be installed within the drip line of any preserved heritage or landmark tree, and to the extent possible, run-off, particularly from landscape irrigation, will be directed away from the root zone.
- Excavating and/or trenching within the drip line of trees (or a distance of half the drip line, outside of the drip line) will be avoided whenever practicable. However, if unavoidable, any authorized cut or fill occurring within the drip line of any preserved tree should be supervised by an ISA-Certified arborist.
- Any and all exposed roots will be covered with a protective material during construction.
- Procedures and protocols for tree preservation and protection will comply with standards established by the County.

4.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this Oak Resources Technical Report, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

SIGNED: Seth A. Myers DATED: June 21, 2017

Seth A. Myers
Certified Arborist (WE7501A)

5.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands in the Central El Dorado Hills Specific Plan El Dorado County, California

Attachment B – Tree Survey Table

ATTACHMENT A

Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands in the Central El Dorado Hills Specific Plan El Dorado County, California

Biological Resources Study and Important Habitat Mitigation Plan

For

Oak Woodlands in the

Central El Dorado Hills Specific Plan

El Dorado County, California

10 February 2014

Prepared For:
Serrano Associates, LLC

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment B – Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

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1.0 INTRODUCTION

At the request of Serrano Associates, LLC, ECORP Consulting, Inc. (ECORP) conducted a Biological Resources Study and created an Important Habitat Mitigation Plan to address oak tree impacts and proposed mitigation for the Central El Dorado Hills Specific Plan (CEDHSP) Project (Project). The Project is part of a proposed regional community plan for specific infill properties within the El Dorado Hills and Cameron Park communities. This area consists of two disjunct parcels north of Highway 50, separated by El Dorado Hills Blvd. The Pedregal parcel is west of El Dorado Hills Blvd., between Wilson Blvd. and Olsen Lane, and the Westside parcel is east of El Dorado Hills Blvd. and north of State Highway 50. Serrano Parkway bisects the Westside parcel. The 341-acre CEDHSP is situated within an elevational range of 600 to 1,050 feet above mean sea level in El Dorado Hills within El Dorado County, California (Figure 1. *Project Location and Vicinity*).

1.1 Project Location

The Project is located within portions of Sections 2, 3, 11, of Township 9 North, Range 8 East and portions of Sections 34 and 35 of Township 10 North, Range 8 East of the "Clarksville, California" 7.5-minute topographic quadrangle (U.S. Department of the Interior, Geological Survey 1978a). The Project is located at approximately 38° 39' 59" North and 121° 04' 27" West within the South Fork American and Upper Cosumnes Watersheds (USGS Hydrological Unit Code [HUC] #18020129 and #18040013, respectively) (U.S. Department of the Interior, Geological Survey 1978b).

Planned improvements include 1,000 dwelling units of low, medium, and high density residential use (1-24 dwellings units per acre) on approximately 140 acres. The Plan Area includes approximately 50,000 square feet of civic/limited commercial uses (or an 11-acre public park), a 15-acre public village park, and nearly 170 acres of natural open space. Planned improvements include an extensive network of trails interconnecting the proposed land uses and a location for pedestrian overcrossing of Highway 50. Approximately 50% of the site (170 acres) would be designated as Open Space (Figure 2. *Land Use Plan*).

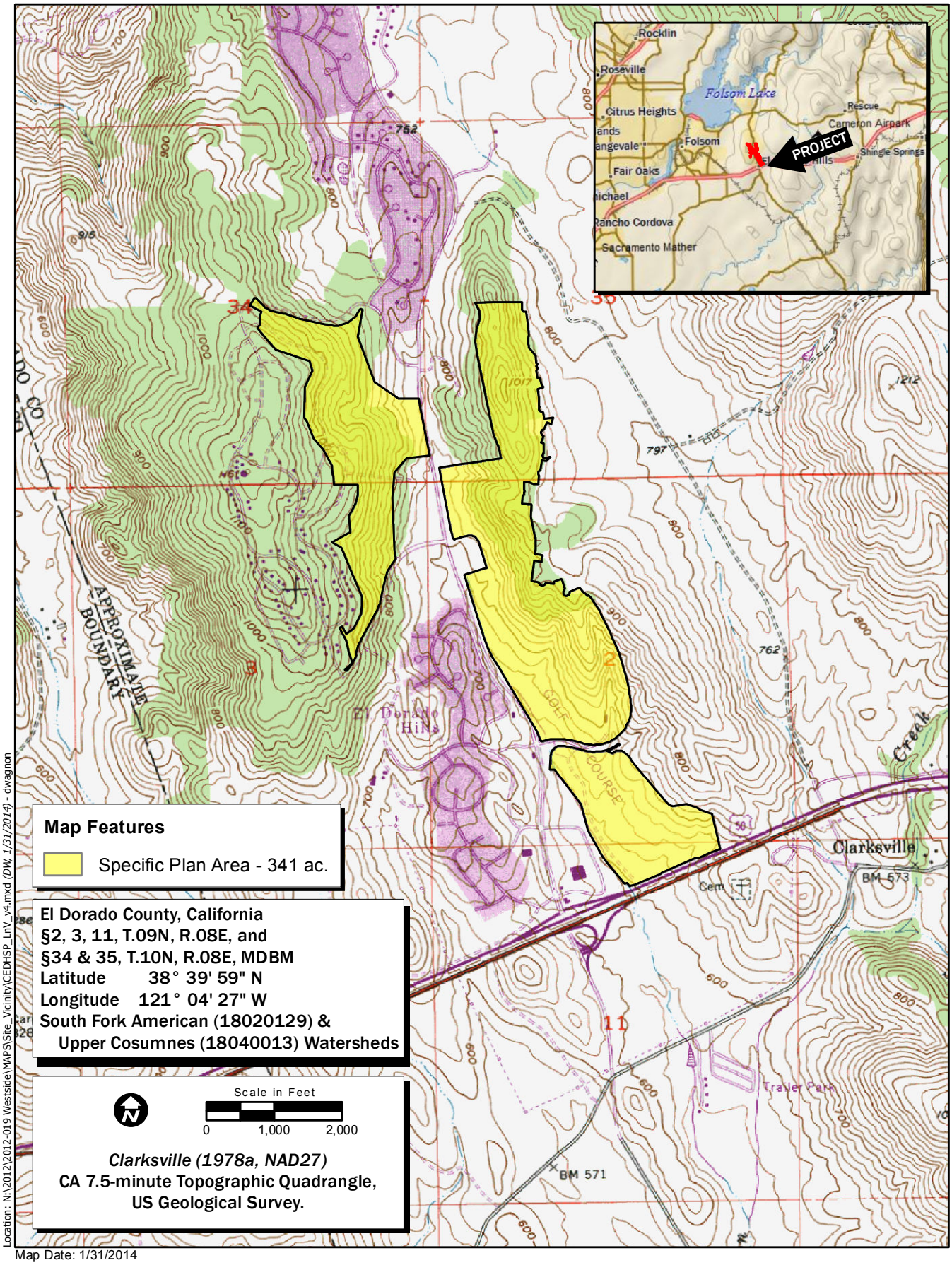

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Figure 1. Project Location and Vicinity

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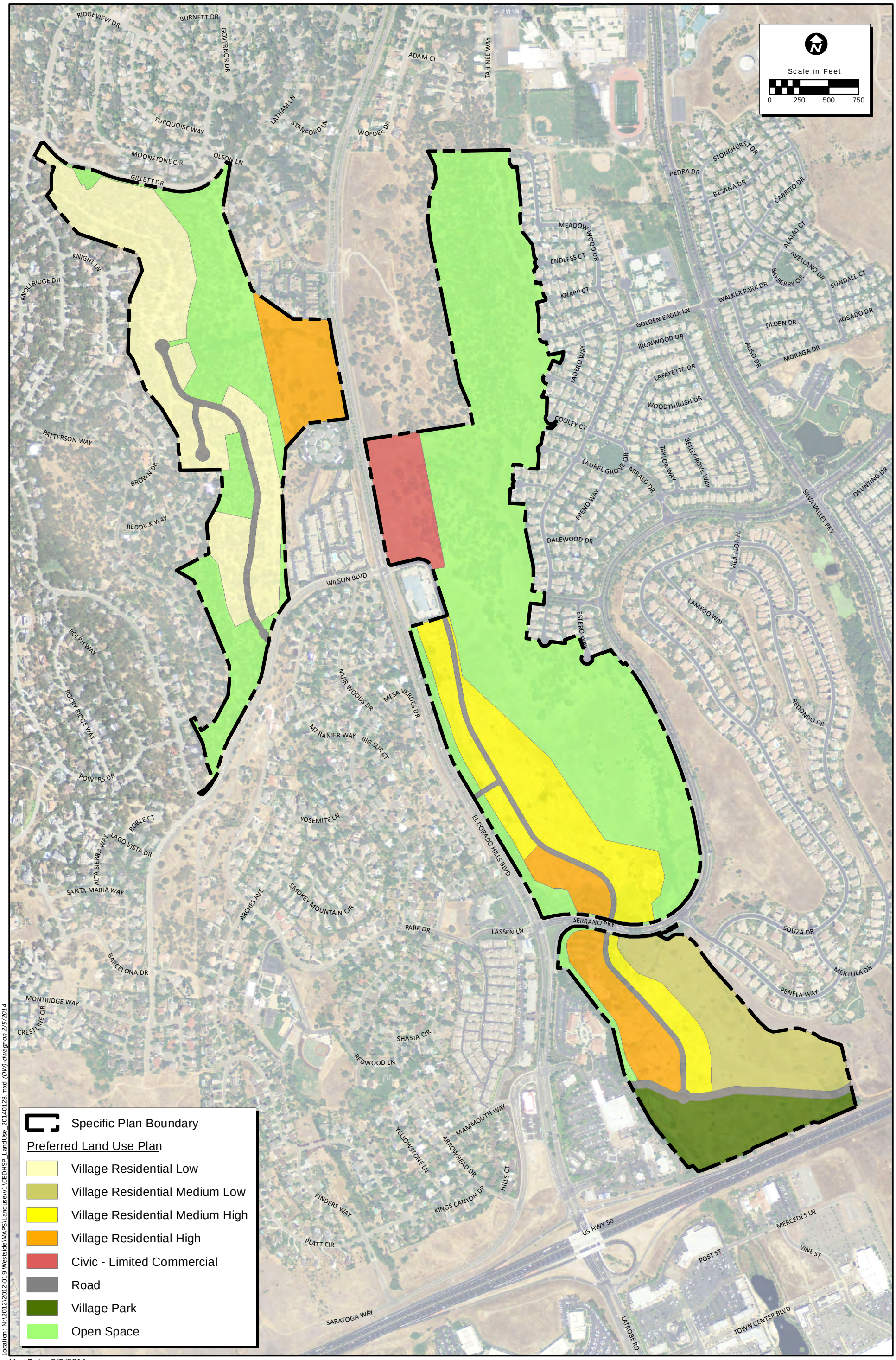

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Figure 2. Land Use Plan

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1.2 El Dorado County Oak Woodland Mitigation Requirements

Forest and Oak Woodland Resources are protected by Objective 7.4.4 of the El Dorado County General Plan, which states:

> *Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of sustainable flow or wood products, and aesthetic values (El Dorado County 2009).*

Policy 7.4.4.4 of the General Plan (El Dorado County 2009) specifies that for projects that are over one acre in size and have at least 1% canopy cover by woodland habitats, two mitigation options are available: A) the project applicant shall adhere to the tree canopy retention and replacement standards; or B) the project applicant shall contribute to El Dorado County's (County) Integrated Natural Resources Management Plan (INRMP) conservation fund. As this fund is not currently available, use of Option B is not feasible and the applicant for the CEDHSP Project is required to follow Option A.

Option A specifies canopy retention standards based on the percent of existing canopy within the Project. The retention rates, as stipulated in the *Interim Interpretive Guidelines for Policy 7.4.4.4 (Option A)* (Guidelines) (El Dorado County 2009), (Attachment A) are as follows:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80-100	60% of existing canopy
60-79	70% of existing canopy
40-59	80% of existing canopy
20-39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

A summary of the mitigation requirements of Option A as it relates to the Project is provided below:

1) 85% of the existing oak woodland canopy cover shall be retained (See Section 2.2 for methods on how this retention rate was determined).
2) Impact to on-site oak woodland habitat shall be replaced at a 1:1 canopy ratio, where the oak replacement area shall equal at minimum the total area of the oak canopy cover proposed for removal.
3) Replacement of removed tree canopy shall be at a 200 trees/acre density or as recommended by a Qualified Professional so that the replacement trees will equal the canopy coverage removed within 10 to 15 years from the date of planting.
4) The County defines trees as one-gallon saplings or three locally-sourced acorns. Replacement trees must be either one-gallon, locally-sourced saplings or locally-collected acorns that have been stored properly.
5) Replacement trees must be managed so that ten years after planting, one-gallon saplings will measure an average of at least two-inch Diameter at Breast Height (DBH) with a 90% survival rate.
6) One-gallon saplings shall be maintained and monitored for 10 years and acorn plantings shall be maintained and monitored for 15 years. A combination of saplings and acorns shall be maintained and monitored for 15 years.
7) Trees must have a 90% survival rate over the required monitoring period.
8) Any trees in excess of the acceptable 10% mortality that do not survive during the monitoring period shall be replaced by the property owner.
9) An initial Site Assessment Form and Tree Survey, Preservation, and Replacement Plan must be prepared by a Qualified Professional and submitted to the County's Planning Services Division. The intent of the Site Assessment is to determine if any of the following are impacted:

    - landmark or heritage trees;
    - oak corridor continuity;
    - sensitive or important oak woodland habitats;
    - oak woodland within or directly adjacent to important biological resources; and
    - oak canopy removal that exceeds allowable amount.

If the Site Assessment determines that none of the above is impacted and retention/ replacement ratios are met, then a Biological Resources Study and Important Habitat Mitigation Plan (addressed below) may not be needed. If the Site Assessment shows that any of the above listed impacts are probable for a site (or at the County's discretion), impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Program that satisfies County requirements.

10) The *Biological Resources Study* is to be prepared by a Qualified Professional and is an evaluation of a Development that quantifies the amount of important habitat, by habitat type, and addresses the potential for the Development to adversely affect important habitat through conversion or fragmentation.
11) The *Important Habitat Mitigation Plan* is to be prepared by a Qualified Professional and should identify options that would avoid, minimize, or compensate for impacts on important habitats, including a monitoring and reporting component, and addresses "Certified Arborist Reports" and "Tree Protection Plans".
12) The Applicant shall enter into an agreement with the County for the long-term maintenance of the mitigation plantings.
13) Oak tree mitigation replacements must be completed prior to the Development's final grading or building inspection.

1.3 Purpose of This Study

Option A requires that the applicant prepare a Biological Resources Study and Important Habitat Mitigation Plan for the Project, which will address oak woodland habitat impacts and mitigation. This document addresses both of these requirements.

The Biological Resources Study (Study) portion of this document was prepared by Debra Sykes [ECORP botanist and International Society of Arboriculture (ISA)-certified Arborist (WE-8640A)] and provides information on the following:

- Documents the existing oak woodland and oak canopy habitat with the Project;
- Presents proposed impacts to oak canopy with the current proposed land use plan;
- Compares pre- and post-Project canopy cover;

- Discusses the relative importance of the Project's oak woodland and oak canopy as habitat for regionally occurring wildlife species and as wildlife corridors; and
- Discusses Project-related impacts on the remaining oak canopy.

The Important Habitat Mitigation Plan (Plan) portion of this document was prepared by Emily Tozzi [ECORP biologist and ISA-certified Arborist (WE-10136A)] and addresses the following:

- How the Project will conform to the requirements of Option A;
- Project avoidance, minimization, and/or compensation for impacts on important oak woodland habitats;
- Recommendations for tree protection during development; and
- Mitigation planting, monitoring, and reporting.

2.0 BIOLOGICAL RESOURCES STUDY

This Study identifies the existing oak woodland and oak canopy resources within the Project. Due to the quantity of oak trees within the Project, a traditional arborist survey (including tree inventory) was not conducted. Instead, a remote sensing-based canopy mapping approach was implemented. Oak woodlands were mapped as part of a vegetation community mapping exercise using aerial photographs and Light Detection and Ranging (lidar) data and total oak canopy was mapped using hyperspectral imaging and lidar technology.

2.1 Oak Woodland Habitat Resources

2.1.1 Vegetation Communities

2.1.1.1 Vegetation Communities Mapping Methods

Vegetation communities were digitized using a WACOM Cintiq 21UX DTZ-2100D LCD Pen Tablet and ArcView 10.1 onto a high-resolution 0.5-foot pixel, 1"=100' aerial photograph flown in April 2008 (Merrick and Company 2008). Lidar data were used to distinguish height classes of vegetation. Additionally, lidar was used to calculate the density of canopy cover within each

polygon. The vegetation community classification was based on the classification systems presented in *A Manual of California Vegetation* (Sawyer et al. 2009), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988).

2.1.1.2 Vegetation Communities Mapping Results

A total of three vegetation communities were mapped within the Project (Figure 3. *Vegetation Communities*). In addition, portions of the Project area were considered "Developed" due to the existing buildings, pavement, and other amenities. Included within these vegetation communities is one community that is dominated by oak trees: blue oak woodland (152 acres). In addition to this oak-dominated community, occasional individual oak trees are also found within the other vegetation communities on the site.

Blue oak woodland is the second most extensive vegetation community within the Project, behind annual grassland. The western portion of the Pedregal parcel and the northeast corner of the Westside parcel were mapped as blue oak woodland. The canopy of the blue oak woodland is dominated by blue oak (*Quercus douglasii*) with occasional Interior live oak (*Quercus wislizenii*), Valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), and gray pine (*Pinus sabiniana*).

The understory is dominated by a variety of non-native annual grasses and forbs, including ripgut brome (*Bromus diandrus*), hedgehog dog-tail grass (*Cynosurus echinatus*), hedge parsley (*Torilis arvensis*), and soft geranium (*Geranium molle*). Poison-oak (*Toxicodendron diversilobum*) is scattered throughout the blue oak woodland.

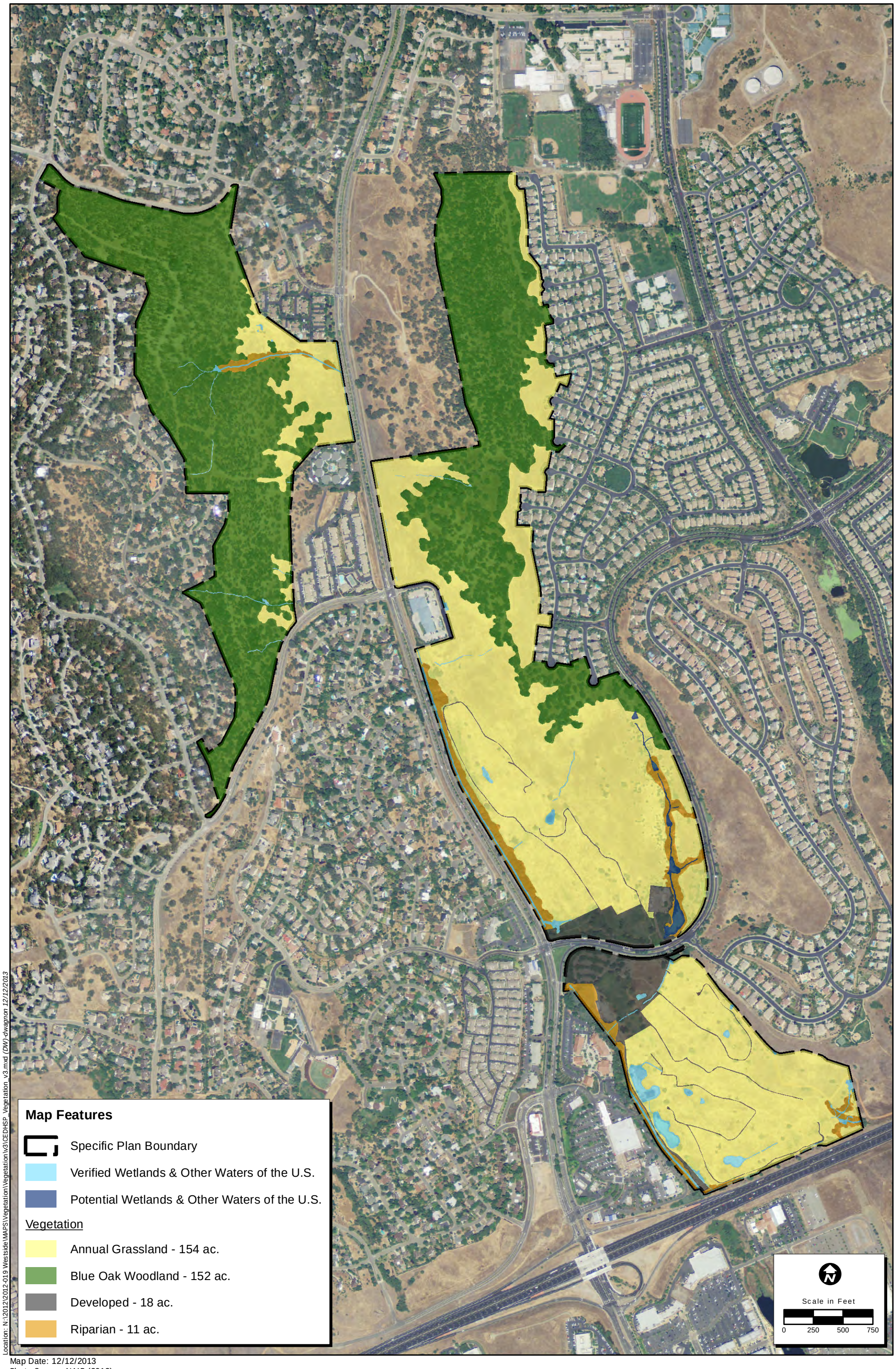

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Figure 3. Vegetation Communities

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2.1.2 Oak Canopy

2.1.2.1 Oak Canopy Mapping Methods

Oak canopy was mapped using both hyperspectral imaging and lidar technology in ArcGIS Advanced with the Spatial Analyst Extension. These techniques mapped the location and canopy area of native oak trees and other vegetation types on the Project. As part of this process, a 155-band hyperspectral imager was utilized to identify the spectral signatures of specific vegetation types and the lidar sensor recorded the precise location and size of different clusters of vegetation. Vegetation greater than five feet tall was considered to be tree canopy.

Once tree canopy areas were identified, a supervised classification was used to establish canopy type. Potential canopy types included oak, riparian, and other vegetation. The imagery-based canopy model was then supplemented by the use of tree canopy heights established by lidar to help determine oak tree locations in mixed canopy areas. Results were ground-truthed by ECORP botanists and arborists.

Generally, single type vegetation clusters (e.g., oak) were correctly identified. Mixed species clusters, primarily riparian area with some oak trees, were more difficult to classify. These areas were checked against high resolution orthophotos and oak tree canopy was identified and separated from other vegetation. Finally, oak canopy was extracted from the vegetation data, field verified, and quantified.

2.1.2.2 Oak Canopy Mapping Results

Across the entire 341-acre CEDHSP project, a total of 94.3 acres of oak canopy cover was mapped (Figure 4. *Oak Tree Canopy*). Oak canopy accounts for 27.7% of the total cover for the entire Project.

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Photo (or Base) Source: USGS (2011)

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Figure 4. Oak Tree Canopy

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2.2 Impact Analysis

2.2.1 Oak Canopy Impacts

A total of 94.3 acres of oak canopy occurs within the CEDHSP Project. This accounts for 27.7% of the total cover for the entire Project. Therefore, based on the canopy retention rates stipulated in the Guidelines (El Dorado County 2009), as summarized in Section 1.2 of this document, the Project is required to avoid 85% and allowed to impact 15% (14.15 acres) of oak canopy.

The current preferred development footprint is only a portion of the Project Area. Of the 94.3 acres of oak canopy within the entire CEDHSP project, only 16.5 acres of oak canopy occurs within the development footprint and the remaining 77.8 acres will be avoided within the Open Space and other avoided areas (Figure 5. *Oak Canopy Impact Areas*). As the project is allowed 14.15 acres of impacts, avoidance measures have been incorporated into the various project design elements in order to meet the 15% impact threshold. Depending on the project element within the footprint (i.e., road, residential lot, etc.), it is estimated that a certain percentage of oak canopy will be retained. The following list shows examples of project elements and the expected oak canopy retention rates determined for that element:

Target Oak Retention Rate	Example Project Elements
0%	Roads, Civic, Village Residential – High (VRH), Village Residential Medium (VRM)
30%	Village Residential – Low (VRL), Infrastructure
100%	VRL Avoided Area, Open Space

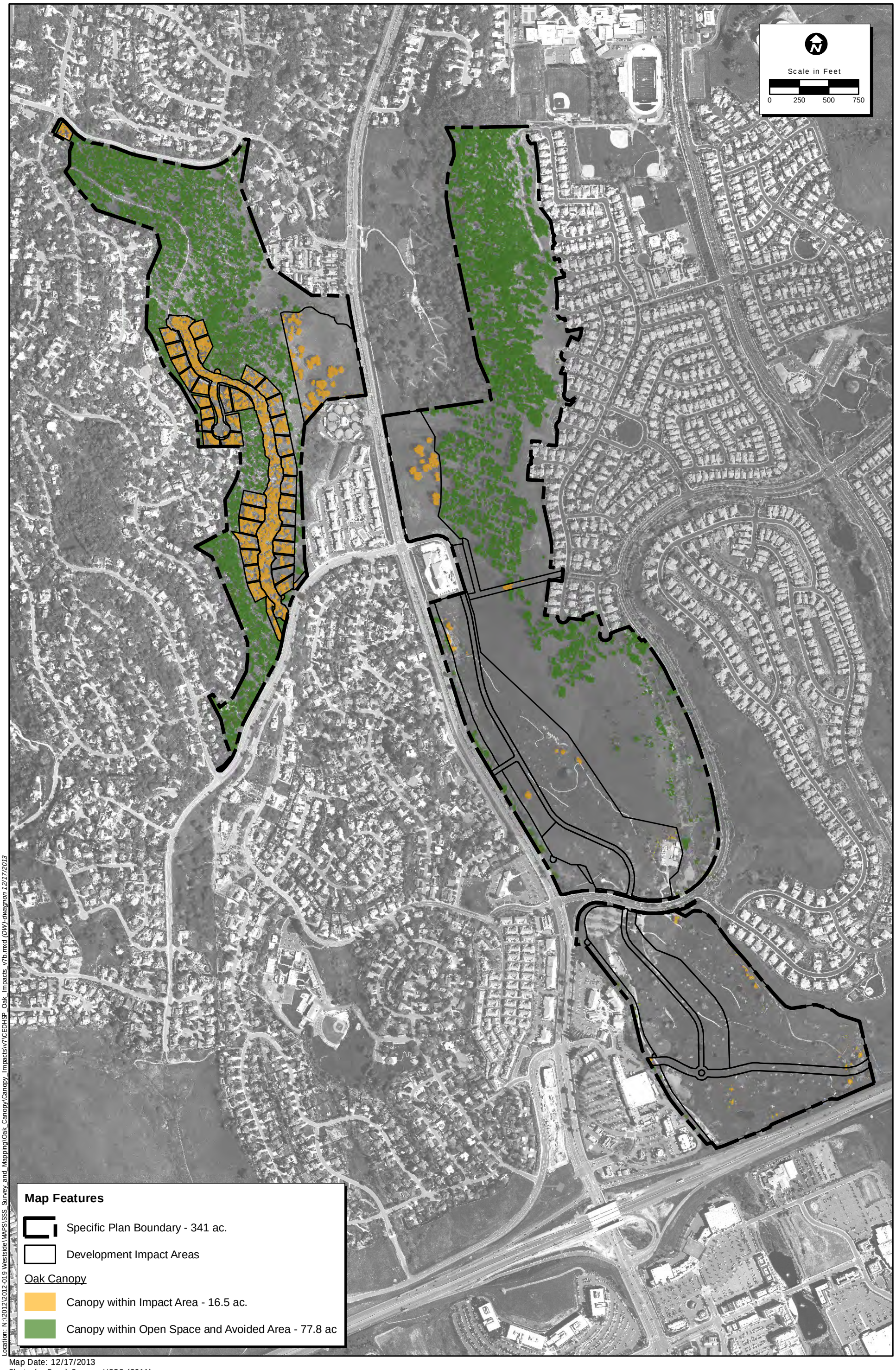

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Photo (or Base) Source: USGS (2011)

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Figure 5. Oak Canopy Impact Areas

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Based on the proposed project elements, Table 1. summarizes the total oak canopy acreage, target retention rate, and impact acreage for different project element types based on the proposed retention rates, and (Figure 6. *Oak Canopy Retention*) illustrates the locations of these retention rates within the Project design.

Actual retention rates may vary for each of the proposed project elements as development of the Specific Plan progresses, but shall not exceed the maximum impact acreage allowed under Option A (14.15 acres). If the County amends the oak woodlands retention regulations in the future, additional impacts and mitigation to the oak woodlands may occur subject to any required CEQA analysis.

Table 1. Summary of Approximate Oak Canopy Retention Within The Project Area

Retention Percentage	Typical Land Use	Canopy Acreage*	Assumed Impacts*
0%	Road, Civic, VRH, VRM	8.4	8.4
30%	VRL, Infrastructure	8.1	5.7
100%	VRL Avoided Area, Open Space	77.8	0.0
Total:		94.3	14.1

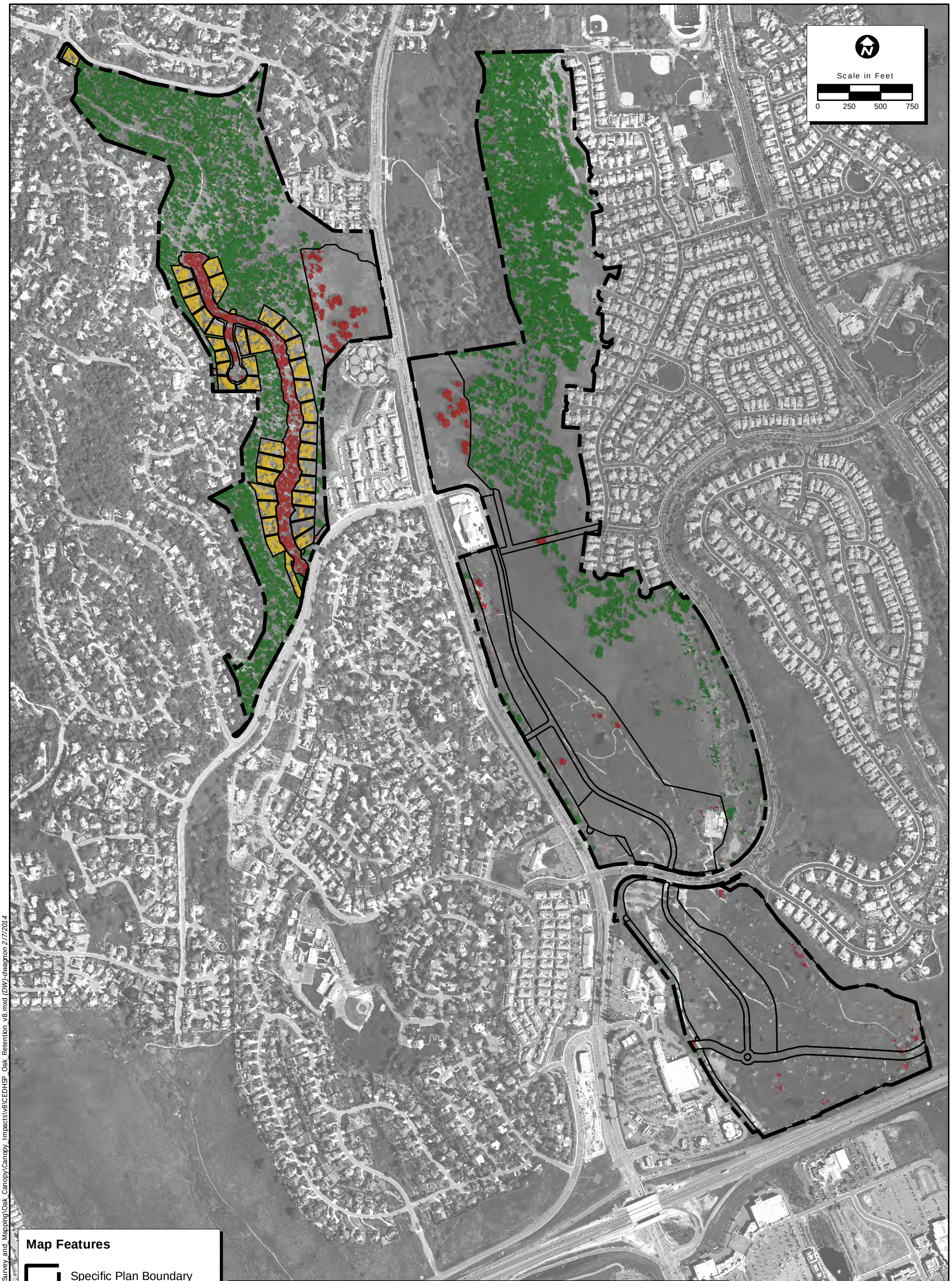
**Area calculated in square feet and converted to acreage. Some rounding errors may occur.*

After incorporating these retention rates to the oak canopy impact acreages, total project related impacts to oak canopy are 14.1 acres which complies with the canopy retention rates stipulated in the Guidelines. Table 2 compares pre and post-Project oak canopy cover within the Project area.

Table 2. Pre and Post-Project Oak Canopy Cover

Project Phase	Oak Canopy (acres)
Pre-Project	94.3
Post-Project	82.9*

**This total does not include mitigation planning discussed in Section 3.0 below*



Oak Canopy Retention

Retention Percentage	Typical Land Use	Canopy Acreage*	Assumed Impacts*
0	Roads, Civic, VRH, VRM	8.4	8.4
30	VRL, Infrastructure	8.1	5.7
100	VRL Avoided Area, Open Space	77.8	0.0
TOTAL	-	94.3	14.1

Areas calculated in square feet and converted to acreages. Some rounding error may occur.

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Photo Source: USGS (2011)

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Figure 6. Oak Canopy Retention

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2.3 Oak Woodland Corridors

2.3.1 Importance of Oak Woodland and Corridors

Oak woodland habitats are one of the most ecologically diverse communities within California, and oak trees provide a number of ecological services within the landscape including, but not limited to, shade, shelter, erosion protection, and food (McCreary 2011) for birds, mammals, reptiles, and amphibians. Acorns, leaves, sap, and wood provide food while the trees themselves provide microhabitats, shelters, and living places for wildlife species (McCreary 2011). Larger mammals such as deer, bears, and mountain lions depend on larger, intact landscapes in order to thrive.

Urbanization and development within the oak woodland communities of California has caused fragmentation of existing oak woodlands. As woodlands become fragmented into smaller and smaller pieces, the essential landscape linkages for larger wildlife species become rarer, and the quality and health of the oak woodlands diminishes over time. Appropriately designed developments that retain the majority of oak canopy can continue to provide corridors and linkages between larger intact woodlands.

2.3.2 Impacts to Oak Woodland and Corridors within the Central El Dorado Hills Specific Plan

As conceptually designed, the CEDHSP Project will impact 14.1 acres of oak canopy within the Project area, but is likely to impact up to 14.15 acres as allowed by Option A. This represents 15% of the total oak canopy within the Project area, and complies with Option A of General Plan policy 7.4.4.4. The majority of the development is occurring within the portions of the project closest to major roadways and the project has been designed to avoid and preserve large tracts of unfragmented oak woodland. These areas will remain undeveloped to protect the habitat for many wildlife species. Almost all of the oak woodland in the Westside portion of the Project, east of El Dorado Hills Boulevard, is avoided and preserved as part of the Open Space areas within the Project. In addition, the residential lots in the south-central portion of the Pedregal portion of the Project will retain approximately 30% of the oak canopy within this area.

CEDHSP is an infill Project surrounded by existing developments. As such, the pre-Project site does not provide a suitable corridor for wildlife species in the area. Therefore, it is not expected that larger animals would use these woodlands as corridors for migration between adjacent parcels, but it does provide suitable woodland habitat for birds and other small animals.

2.3.3 Post-Construction Oak Woodlands

Given the large intact oak woodlands that will be present after construction of the CEDHSP Project, and the connectedness of the patches of woodland, no long-term effects to either the oak trees or the plants and wildlife that live within the woodlands are expected.

As part of the mitigation for the Project, oak tree plantings and acorn plantings will occur within designated oak replacement areas within the Open Space areas and within public spaces and residential areas. Additional oak plantings will occur to enhance the already existing oak woodland by incorporating this habitat type into the development. These trees will add to the overall quantity of oak canopy and further provide habitat for wildlife species (see Section 3.0 for more details regarding mitigation plantings).

2.4 Conclusions

The CEDHSP Project has been designed to maximize oak woodland protection through a variety of methods. Not only does the Project avoid 77.8 acres of oak canopy within the Open Space and Avoided Areas, but it also incorporates minimization measures to retain additional oak canopy within the development footprint. In total, the Project is retaining 85% of the existing oak canopy, the majority of which is located in the Pedregal portion of the site and the eastern side of the Westside parcel. These areas also have the highest density of oak trees within the Project area. The Project design allows for contiguous oak woodland habitat including several large intact woodlands to support wildlife.

In addition to the avoidance and retention measures, the Project plans to mitigate for oak canopy loss by planting new oak trees and acorns within on-site oak replacement areas and within select locations within the development parcels. These mitigation measures are discussed in more detail in Section 3.0. The proposed oak mitigation will provide additional habitat, especially for birds that may use these trees as nesting and/or foraging habitats or as corridors to more intact woodlands. Overall, the CEDHSP Project will continue to provide high quality oak woodlands to support regionally occurring wildlife species.

3.0 IMPORTANT HABITAT MITIGATION PLAN

This Plan identifies the mitigation measures that will be used by the Project to provide sufficient protection to oak tree resources. It contains an on-site mitigation assessment that details where oak trees can be planted within the mitigation areas, mitigation measures to be used by the Project, and information on mitigation monitoring, success criteria, and reporting.

3.1 Potential On-Site Oak Mitigation Assessment

An oak mitigation assessment was conducted to establish the potential for on-site oak planting within the Project area. Prior to conducting field surveys, aerial photos of the 341-acre CEDHSP area were overlain with the current land use plan (Figure 2) and Natural Resources Conservation Service (NRCS) soil map units (Figure 7. *Natural Resources Conservation Service Soils Types*) were reviewed by Emily Tozzi (ECORP biologist, Associate Professional Soils Scientist [new as of January 14, 2014] and ISA-certified arborist) and David Wagnon (ECORP GIS Specialist). Open Space within the CEDHSP area that appeared to have appropriate soils and lacked dense canopy cover were identified as potential oak mitigation areas.

On 25 October 2013, Ms. Tozzi and Mr. Wagnon conducted field surveys in 5 previously-identified potential oak mitigation areas to determine oak mitigation suitability. These 5 locations represented a subsample of areas identified as potential oak mitigation sites. At each location, soils were analyzed to validate soil data on NRCS soil maps and soil series descriptions (Figure 7 and Attachment B). In addition, photos facing the four cardinal directions were taken.

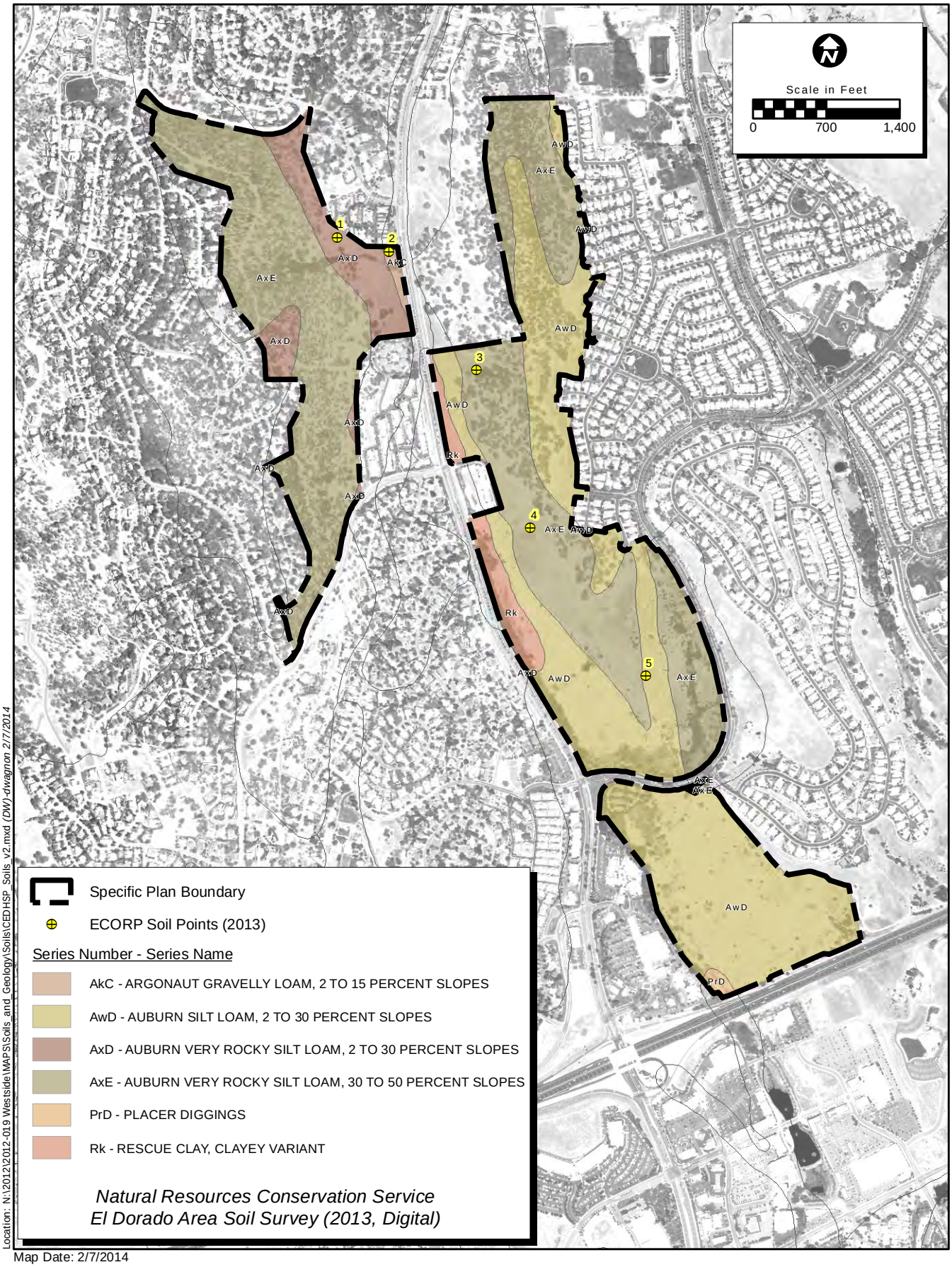

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Figure 7. Natural Resources Conservation Service Soil Types

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Each location was mapped using a GPS unit with sub-meter accuracy. Within each of the potential areas, the following data were collected:

- Existing vegetation and canopy cover
- Slope and aspect
- Soil data including texture, color, and horizonization
- Potential for irrigation from the Development

These data were used to determine site-specific potential for oak tree mitigation. For each site, the appropriate oak tree species and planting type (i.e. acorn, sapling, etc.) were determined based on the following:

1) West facing slopes with shallow, rocky soils will be the most difficult for successful oak mitigation establishment, especially if irrigation is not possible.
2) Many hillslope summits and shoulder slopes will not be suitable for oak mitigation because of the high concentration of large rock outcrops.
3) Areas with very rocky, steep hillsides and/or shallow soils are only appropriate for acorn plantings.
4) Valley oaks are more suited for deeper floodplain soils with higher clay contents.
5) Blue oaks are well suited for shallow, rocky soils found on hillsides and summits.
6) Interior live oaks are suitable for floodplains and rockier hillsides as this species tends to establish in areas with Valley and blue oaks.
7) Areas with existing dense canopy are not considered appropriate for oak mitigation.

After an analysis of the available data (e.g., soil maps and descriptions, existing conditions, etc.), a suitability determination was made for each of the previously identified potential oak mitigation areas. All suitable areas were mapped using ArcGIS software and acreages were calculated for each. Approximately 15.0 acres were identified as suitable oak mitigation areas within the site. This is discussed in more detail in Section 3.3.1 along with other proposed mitigation for oak canopy impacts.

3.2 Mitigation Measures

3.2.1 Conservation Measures

The Project has incorporated various conservation measures into its design to minimize impacts to oak woodland habitat. The following is a summary of these measures:

- Overall, up to 14.15 acres (15%) of oak woodland canopy will be impacted during Project development.
- In total, 77.8 acres of oak woodland will be protected in Open Space and other avoided areas. While these areas are not considered major wildlife corridors, they still provide regional protection of the biological resources by protecting the remaining oak woodlands within the already developed vicinity.
- The Project as designed does not contain and is not located directly adjacent to designated Important Biological Corridors or Ecological Preserve areas, and is not anticipated to have impacts on the aforementioned areas.
- The Project has been designed and clustered to minimize impacts and reduce habitat fragmentation.
- As required by regulatory agencies, Project activities will be planned to avoid critical time periods (i.e., nesting and breeding) for fish, birds, and other wildlife species. If construction must occur during a critical time period, then the appropriate biological surveys will be conducted. If it is determined that Project activities could have negative impacts on a species, then the appropriate agencies will be consulted and protective measures will be employed to mitigate the impacts.
- To limit disturbance and impacts to biological resources, infrastructure elements such as bridges, roads, utilities, and pipelines, will be placed within previously disturbed locations, where feasible.
- Oak woodland restoration or enhancement will be conducted to mitigate for losses to oak forest canopy and to enhance the ecological value of Open Space areas.
- Contiguous stands of oak woodland habitat and the corridors connecting the stands will be retained.

- A Stormwater Pollution Prevention Plan will be prepared prior to ground-breaking activities to determine the most appropriate Best Management Practices (BMPs) for reducing impacts from construction activities.
- The project developer will prepare lot notebooks for each VRL lot to limit the development area for the placement and construction of primary and ancillary structures.
- To minimize impacts on VRL lots, the Design Guidelines will set forth special design and construction measures to minimize impacts to oak trees, such as limiting excessive pad grading through the use of raised foundations, piers, post and beam construction and other similar measures, to the maximum extent feasible.
- In addition to the County's site plan review and approval procedures, the Architectural Control Committee of a Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or El Dorado County will review and approve site and improvement plans for VRL lots prior to ground-disturbing activities.

3.2.2 Tree Preservation Measures

Construction, planting, and irrigation contractors will be made aware of existing trees and shrubs to be preserved and will take precautions to protect such vegetation from damage. Whenever possible, irrigation lines will avoid the drip line of existing trees and shrubs. Equipment, construction materials, fuels, and tools will not be stored within the drip line of the trees or shrubs to be preserved.

The following measures will be implemented to protect and minimize effects to preserved trees that are adjacent to construction activities.

- If necessary, pruning, cabling, and other corrective measures for preserved trees will be specified by an ISA-Certified arborist, and will conform to the pruning standards of the ISA.
- Each tree or group of trees to be preserved within one foot of the drip line of ground disturbance will be protected with a fence or other acceptable methods, such as warning tape, indicating grading limits prior to any grading or movement of

heavy equipment. Grading limit line demarcation should be removed following construction, and prior to installation of landscaping material.

- Signs will be posted on all sides of grading limit lines surrounding an individual tree or group of trees stating that each tree is to be preserved.
- Prior to construction, awareness training will be conducted for all construction personnel regarding the importance of the oak woodlands, the locations of preserved trees within the vicinity of the construction area, and preservation measures that are in place to protect them.
- To the extent possible no landscaping requiring permanent irrigation will be installed within the drip line of any preserved heritage or landmark tree, and to the extent possible, run-off, particularly from landscape irrigation, will be directed away from the root zone.
- Excavating and/or trenching within the drip line of trees (or a distance of half the drip line, outside of the drip line) will be avoided whenever practicable. However, if unavoidable, any authorized cut or fill occurring within the drip line of any preserved tree should be supervised by an ISA-Certified arborist.
- Any and all exposed roots will be covered with a protective material during construction.
- Native tree replacement will be used to mitigate the removal of native trees within the area, subject to approval by the County.
- Procedures and protocols for tree preservation and protection will comply with standards established by the County.
- Oak trees required to be planted as a condition of construction will be maintained after completion of construction according to this Plan.

3.3 Proposed Revegetation And Restoration Plan

3.3.1 Required Oak Replacement Area

Option A requires that the oak replacement area shall equal, at a minimum, the total area of the oak canopy cover proposed for removal. As conceptually designed, a total of 14.1 acres (and likely up to 14.15 acres) within the Project are proposed for impact. Therefore, Option A

requires that 14.1 acres (and likely up to 14.15 acres) are planted as oak replacement. ECORP identified 15.0 acres of potential oak mitigation within the Open Space areas (See Section 3.3.1.1 for more detail).

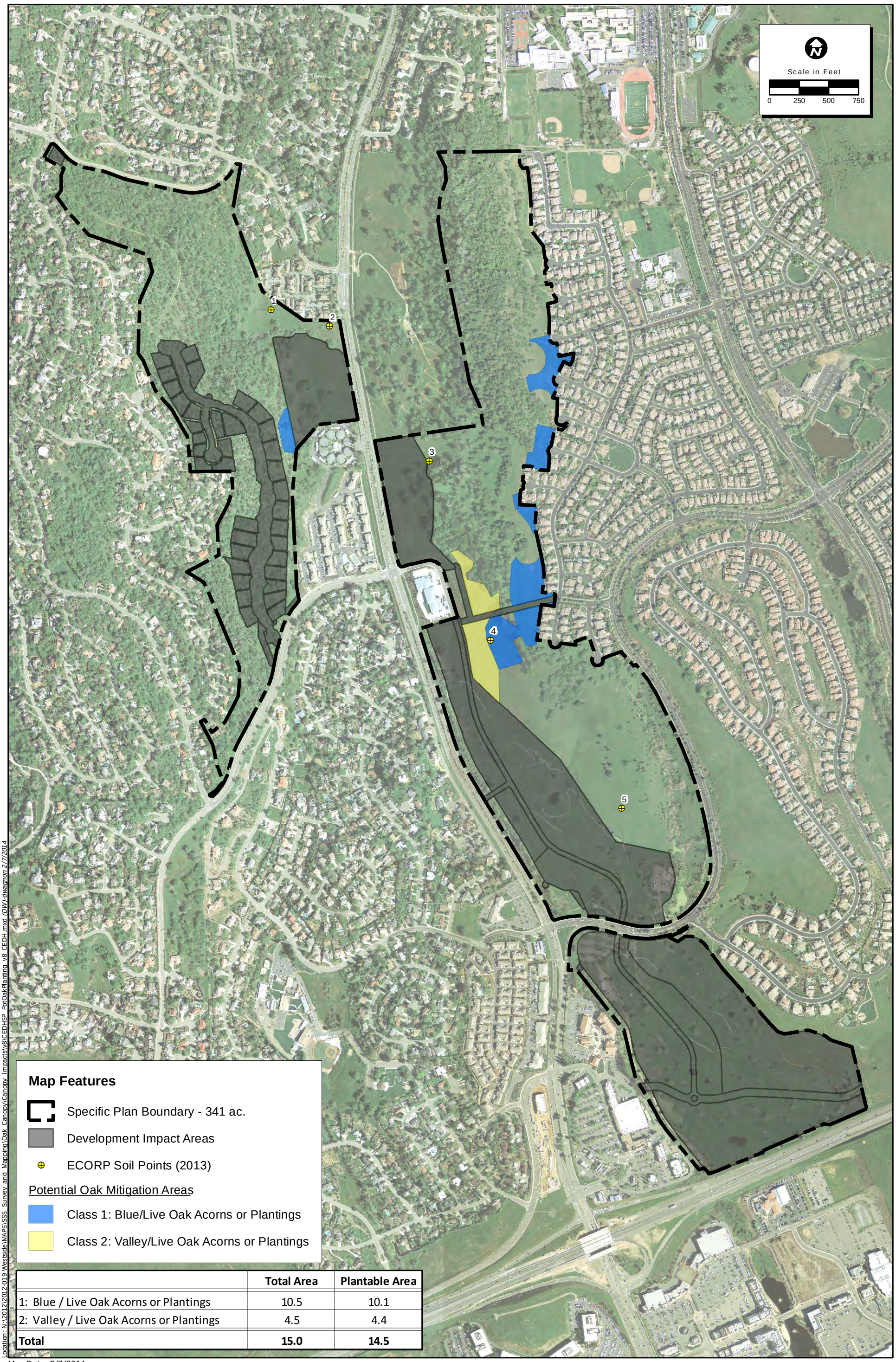
In addition to the mitigation required under Option A, the applicant proposes to do additional oak tree replacement and plantings within certain land use types (e.g., VRL and VRM – Low). These plantings will be a requirement of the proposed Design Guidelines to be developed and adopted for each use and enforced through the Project's Master Owners' Association or El Dorado Hills CSD Design Review Committee, or County of El Dorado. Both of these mitigation types are discussed in more detail below.

3.3.1.1 On-Site Oak Replacement Area

Within the CEDHSP Open Space areas, ECORP identified 15.0 acres of oak replacement areas that are suitable for oak mitigation (Figure 8. *Potential Oak Mitigation Areas*). Within these 15.0 acres, approximately 14.5 acres are considered plantable space given the existing oak canopy. Within these 14.5 acres of plantable space, two classes of species and planting type were established based on site suitability:

- Class 1 - blue/live oak acorns or saplings (10.1 acres); and
- Class 2 – Valley/live oak acorns or saplings (4.4 acres).

Approximately 10.1 acres are suitable for blue/live oak acorns or saplings (Class 1). The majority of Class 1 locations are within the Open Space areas along the eastern edge of the Westside parcel. In general, acorn plantings are ideal for rocky soils where digging is difficult and supplemental irrigation is unlikely to occur. Oak saplings are suitable for soils with fewer, smaller rocks and where water is available for irrigation. Acorns can also be planted in areas suitable for saplings. Irrigation is necessary for saplings, but not for acorns. However, if irrigation is feasible, it is recommended to ensure survivorship of the acorns.



	Total Area	Plantable Area
1: Blue / Live Oak Acorns or Plantings	10.5	10.1
2: Valley / Live Oak Acorns or Plantings	4.5	4.4
Total	**15.0**	**14.5**

Location: N:\2012\2012-019 Westside\MAPS\SSS Survey and Mapping\Oak Canopy\Canopy Impacts\v8\CEDHSP PotOakPlanting v8 CEDH.mxd (DW)-dwagnon 2/7/2014

Map Date: 2/7/2014
Photo Source: USGS 2011

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 8. Potential Oak Mitigation Areas

2012-019 Central El Dorado Hills Specfic Plan

Approximately 4.4 acres were identified as suitable for Valley and live oak saplings or acorns (Class 2). This area is located within the center of the Westside Parcel. Areas that are suitable for this Class included low gradient areas and/or areas adjacent to creek channels where there tends to be deep soils with higher soil-water content.

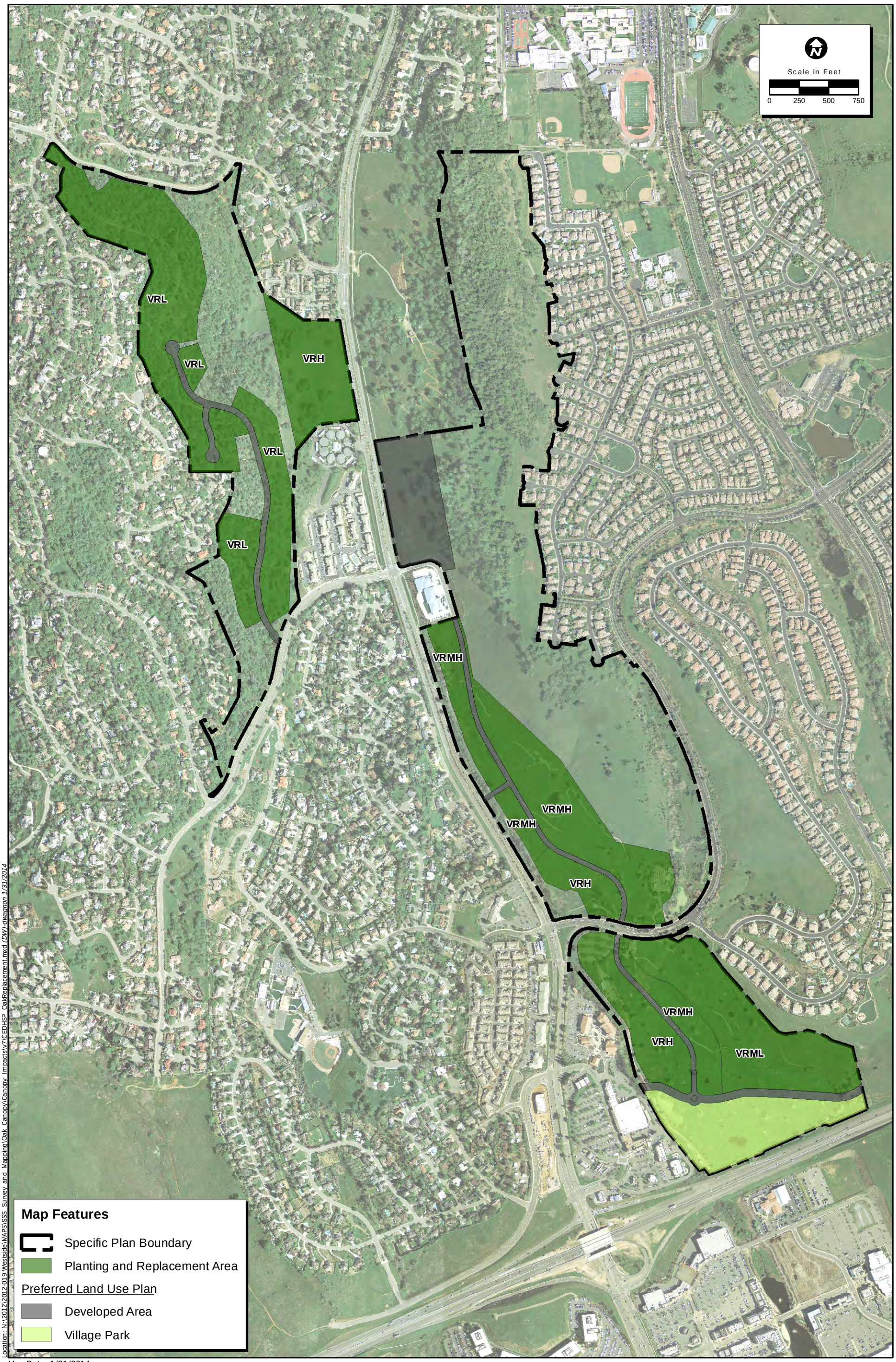
3.3.1.2 Development Area Replacement and Additional Plantings

Within several of the proposed land use types, the project design has incorporated minimization measures to reduce the amount of oak impacts (Figure 9. *Development Area Planting and Replacement Areas*). For example, within the VRL residential lots, grading and tree removal will only occur within the construction footprint for the proposed house, driveway, and limited ancillary features.

In addition, the Project proposes to plant a replacement tree for each tree removed within the footprint at a 1:1 ratio. All replacement plantings will occur within the same lot as the original tree removal. As a result, the lot will have, at minimum, the same number of trees after construction is completed and in time a similar acreage of oak canopy.

In addition, there will be oak tree plantings that will be required within each individual pad graded as well as for all multi-family attached product types. These minimum oak plantings will be required for both front and rear yards for single family detached lots, as well as a defined percentage of the common areas for attached type products. Commercial and other non-residential common areas will also be required to plant a certain percentage of oak trees.

Based on tentative lot design, it is anticipated that 873 trees will be replanted or planted within the proposed residential development areas. The applicant is proposing a credit of 0.5:1 for these trees and this credit will be applied to the final number of replacement trees that are required for the project. Section 3.3.2 discusses planting amounts in detail and how this credit would apply.



Location: N:\2012\2012-019 Westside\MAPS\SSS Survey and Mapping\Oak Canopy\Canopy Impacts\v7\CEDHSP OakReplacement.mxd (DW)-dwagnon 1/31/2014

Map Date: 1/31/2014
Photo Source: USGS 2011

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 9. Development Area Planting and Replacement Areas

2012-019 Central El Dorado Hills Specfic Plan

3.3.2 Planting Types and Amounts

Option A requires that the replacement of removed tree canopy shall be at a 200 trees per acre density or as recommended by a Qualified Professional. A replacement tree is defined by the County as either a one-gallon sapling or three acorns.

A total of 14.1 acres of oak canopy are required to be planted, based on the current conceptual design for the Project. At a rate of 200 trees/acre, a total of 2,820 one-gallon saplings or 8,460 acorns are required as mitigation. However, the project is likely to impact up to 14.15 acres as allowed by Option A. The above values give perspective on the number of saplings or acorns needed to meet the requirements of Option A, and there will be a combination of saplings and acorns used at the site as determined by the two Classes previously described. In addition, the plantings will be completed in a phased manner consistent with the phased approach of the Project.

Table 3, below, shows the planting class and available acres for the class within each mitigation type (on-site replacement area) based on an impact of 14.1 acres. The total number of acorns and/or saplings is also shown based on the density requirements of Option A (i.e. 200 trees per acre with one sapling or three acorns equaling one tree). The totals presented are based on the total plantable acreage within the mitigation site; however, more acreage is available than is needed to comply with Option A.

Table 3. On-Site Replacement Areas - Oak Mitigation Plantings

Planting Class	On-site Oak Replacement Area (acres)	Number of Saplings*
Class 1: Blue/Live Oak Saplings or Acorns	10.1	2,020
Class 2: Valley/Live Oak Saplings or Acorns	4.4	880
Total	**14.5**	**2,900**

**Assumes irrigation is available and only saplings are planted.*

Mitigation for the Project will be conducted in a phased manner and detailed phasing plans, as they become available, will be submitted to the County as part of each Tentative Map (for most projects) or grading permit (for infrastructure projects, as an example).

As mentioned in Section 3.3.1.2, additional mitigation will occur in the form of oak replacement and plantings within the VRL, VRM-Low, VRM – High, VRH Residential Lots. Based on calculation of anticipated impacts, a total of 873 trees will be planted or replaced within these lots.

The applicant is proposing a credit of 0.5:1 for these trees and this credit will be applied to the final number of replacement trees that are required for the project. Based on a total oak canopy impact of 14.1 acres for the current conceptual design, the project has to plant 2,820 trees. At a 0.5:1 ratio, the credit for the replacement trees equals 437 trees. The applicant is proposing this credit be subtracted from the final sapling requirement. Therefore, the applicant would be required to plant 2,383 trees within the above mentioned mitigation areas. If the total oak impacts increase to 14.15 acres, the applicant is required to plant 2,830 trees under Option A. With the credit applied, the applicant would plant 2,393 trees.

3.3.3 Planting Installation and Maintenance

3.3.3.1 Timing and Phasing

Option A requires that oak mitigation be completed prior to final grading or building inspection, but it also requires a very high success rate for mitigation plantings. To promote the highest success rate, it is important to properly install and maintain the mitigation plantings, and protect them from ground disturbing activities. As such, this plan proposes that grading will be completed and utilities installed prior to oak tree mitigation planting in order to provide the greatest protection of the replacement trees. To ensure seedling health, irrigation will be needed to supplement plant growth, but may not be feasible in many cases without an existing utility system in place. Irrigation is unnecessary (but recommended) for acorns and these may be planted prior to grading.

The installation and irrigation of the one-gallon saplings will be concurrent with Project phasing. The project proposes to overplant by at least 10% as contingency for potential mortality within the monitoring period. Project phasing will be contingent on market conditions and focus on providing the most appropriate product at the time of construction. The applicant will determine the project phasing with the submittal of each small lot tentative map or similar discretionary

application that proposes impacts to the oak canopy. At the discretionary permit stage, the applicant will submit a Tree Survey, Preservation, and Replacement Plan to the County that will identify impacts on a phase-by-phase basis, provide details on the mitigation plantings (saplings or acorns), and identify specific planting areas associated with that phase of development.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, the installation of the plantings will occur after construction is completed on a given pad.

3.3.3.2 Maintenance

Proper maintenance of the oak trees within the first few years will be critical, especially for acorn plantings, as invasive annual grasses are known to out-compete young plants. The trees will receive, at a minimum, quarterly maintenance as needed which should include applications of supplemental mulch and fertilizer, weeding around the plantings, and incidental litter removal, as needed. Maintenance should occur regularly during the first five years after planting. For trees receiving irrigation, monthly checks of the irrigation system during the dry season and irrigation system repairs should occur, as necessary.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the project's Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.3.4 Irrigation Schedule

Irrigation is necessary for the one-gallon plantings to survive. Plantings will be irrigated for a minimum of three years. While irrigation is not required for acorns, it is recommended in order to ensure a higher survival rate. Supplemental irrigation for acorns will be provided, where possible, during summer months. For irrigation of saplings, a recommended irrigation schedule is outlined in Table 4, but will be adjusted as needed after plantings are installed to account for site-specific soil conditions.

Table 4. Irrigation Schedule for Oak Plantings		
Duration	April 15th – September 30th	October 1st – April 15th
Year 1	8 gallons, once/7-10 days	Irrigation off
Year 2	10 gallons, once/14-20 days	Irrigation off
Year 3	10 gallons, once/21-30 days	Irrigation off
Year 4	Monitor	Discontinue system

** Recommended schedule. Actual schedule will depend on the weather pattern of that year.*

Irrigation will be gradually decreased and finally eliminated during the monitoring period to ensure the plantings will have long-term survival without irrigation. Irrigation will deliver deep, infrequent watering and will typically take place between April 15 and September 30 of each year. This will be adjusted for seasonal variations if a year is particularly hot earlier or later in the year.

If after the third year it is determined that irrigation of the planting should continue, then adjustments will be made accordingly to the irrigation schedule in Table 4. The irrigation system should remain in place until the end of the monitoring period. At the end of the monitoring period, the above-ground irrigation equipment can be removed. Irrigation should be timed to allow a minimum of one year of monitoring after irrigation has ceased.

Acorn collection, storage, and planting will occur according to Attachment C. Plant installation and establishment will follow conceptual plans described in Attachment D, Attachment E, and Attachment F. These detail installation timing, design, and planting as well as irrigation for planting and acorns.

3.4 Mitigation Monitoring And Reporting

3.4.1 Monitoring Schedule

Option A requires that one-gallon plantings be maintained and monitored annually for ten years, acorn plantings shall be maintained and monitored for 15 years, and a combination of plantings and acorns shall be maintained and monitored for 15 years. The Project will be

developed in a phased manner. Therefore, the required oak mitigation will also be phased based on the impacts for a given phase of development.

For replacement trees and additional plantings that will occur in VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the projects Master Owners' Association, or the El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.2 Monitoring Methods

Planted trees within oak mitigation areas will be monitored to ensure that success criteria are met. A representative sampling of vigor, height, and canopy diameter for each tree species will be conducted. Vigor will be based on qualitative comparisons to on-site conditions of leaf turgor, stem caliber, leaf color, and foliage density. Monitoring will be conducted over a 10 to 15 year period starting the year after initial installation.

Monitoring protocol will involve locating all previously numbered trees and shrubs to determine their survivorship, estimating height, assessing overall condition/health, and measuring DBH and drip line radius.

Plant condition will be ranked according to the following scale:

- Good - healthy foliage and vigorous growth;
- Fair - healthy foliage, but minimal apical growth;
- Poor - few green leaves present and no apparent apical growth; or
- Dead.

Plant height will be measured in feet and plants grouped according to the following height intervals:

- Less than two feet;
- Two feet to five feet; or
- Greater than five feet.

Calculated results will include the total number of plantings monitored, the condition and height class of each plant found, annual survival rate, and cumulative survival rate. The annual survival rate is calculated according to the following formula:

$$\text{Annual Survival Rate (\%)} = \frac{\text{total \# alive during survey}}{\text{total \# alive in previous season}} \times 100$$

The cumulative survival rate was calculated according to the following formula:

$$\text{Cumulative Survival Rate (\%)} = \frac{\text{total \# alive during survey}}{\text{required plantings}} \times 100$$

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the project's Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.3 Success Criteria

Option A requires that the canopy density achieved by the replacement oaks in the oak replacement area must match that of the canopy that was removed by the end of 15 years.

Achieving the original canopy density within 15 years will be challenging regardless of whether acorns or saplings are planted because the majority of the potential oak mitigation area is most suitable for blue oaks. Blue oaks grow slower than the other oak species (i.e., live, Valley, and black oaks). Faster-growing species of oaks could be planted in these locations, but they are not likely to be successful or persist in these locations. Regardless of oak species, the canopy density of the replacement oaks will be impracticable to measure after 15 years of growth. For this reason, success will be defined by survival rates rather than canopy cover.

Option A stipulates a 90% survival rate for planted trees. To achieve success with a 90% survival rate, overplanting will need to occur. This Project will overplant by at least 10% to ensure the 90% survival rate is achieved.

The proposed final success criterion and replanting criterion for the mitigation oak plantings is shown in Table 5.

Table 5. Proposed Success and Replanting Criteria for Oak Plantings
1) Plantings must have a 90% cumulative total survival rate at the end of the 10 to 15 year monitoring period for saplings and acorns, respectively.
2) Replanting must occur within one year of the cumulative survival rate dropping below 90%, and new plants will be monitored for an additional 15 year period.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the Project's Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.4.4 Reporting

An annual mitigation monitoring report documenting tree locations, a description of the planting areas, tree survivorship, an evaluation of the success rating per success criteria assessment, and a report concerning any necessary maintenance, complete with photographs taken at distinct photo points, will be submitted to the County by December 1 of each year for a ten-

year period for plantings and a 15-year monitoring period for acorns. Additionally, the monitoring report will include recommendations for action during the following years as specified in this document for the Project (e.g., reporting requirements, replacement criteria for replantings). The first report shall be submitted approximately one year after planting.

The provisions of the monitoring program shall be placed into a standard "Notice of Restriction" document and recorded on the title of the property. Once the 10 to 15 years of monitoring has been successfully completed, the County may record a release of the Notice of Restriction.

For replacement trees and additional plantings that will occur in the VRL lots, individual pad graded lot, and multi-family attached product types, maintenance will be enforced through the projects Master Owners' Association, or El Dorado Hills CSD Design Review Committee, or County of El Dorado will oversee the maintenance, care requirements, and replacement of dead trees within these areas.

3.5 Funding Mechanism

Funding mechanisms (i.e., endowments, performance bonds, HOA fees) for the installation, monitoring, maintenance, and replacement of failed plantings that may be needed during the required 10 to 15-year monitoring period, will be provided in or appended to the final draft of this report prior to the first small lot of tentative maps. Additionally, the financially responsible party, including name, address, telephone number, and email (if available) will be identified.

3.6 Findings and Recommendations

Based on the oak canopy retention and impact analysis, the 341-acre Project has 94.3 acres of oak canopy, and will be impacting 14.1 acres of oak canopy as the project is currently designed. However, the project is likely to impact up to 14.15 acres and still meet the 85% oak canopy retention requirement of Option A. As conceptually designed, the canopy retention of 77.8 acres meets the 85% oak canopy retention requirement of Option A.

Two mitigation options have been proposed for the Project to mitigate for the 14.1 acres of impact. First, approximately 14.5 acres of oak restoration areas have been identified within the Open Space areas within the Project. A combination of saplings and acorns will be planted in these areas. Second, the applicant proposes on-site oak replacement within certain land use types where canopy retention rates are already high (e.g., VRL lots). Replacement will occur at a 1:1 ratio and plantings will take place within the same lot where impacts occur. Also, additional oak plantings will be required within the individual pad graded lot, and multi-family attached product types. The applicant proposes a partial credit (0.5:1) towards the final number of required plantings for these replacement and additional trees.

The Project will be built in phases and the oak mitigation will follow this phased approach. Once grading has occurred and utilities have been installed within the Project, on-site oak plantings will occur, utilizing the previously discussed phased approach. Installing the plantings after initial phase build-out will reduce disturbance and ultimately lead to higher survival rates.

The Project will comply with the 90% survival rate at the end of the 10 to 15-year monitoring period. To achieve this, the Project will overplant by a minimum of 10% to ensure a 90% survival rate at the end of the monitoring period. Additionally, if the survival rate drops below 90%, replacement trees will be added the following year.

With proper protection of preserved trees during construction, installation and maintenance of plants within the appropriate planting sites, and the ability to provide necessary irrigation, the mitigation measures outlined in this Plan should sufficiently minimize impacts and protect existing oak woodlands and associated biological resources as required by the County General Plan.

4.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this Biological Resources Study and Important Habitat Mitigation Plan, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

SIGNED: _____ DATED: 2/10/14

5.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – Interim Interpretative Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A)

Attachment B – Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Attachment C – Proposed Guidelines for Acorn Collection, Storage and Planting

Attachment D – Proposed Conceptual Layout for Acorn Planting with Protection

Attachment E – Proposed Guidelines for Planting Oak Seedling with Shelter

Attachment F – Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns

ATTACHMENT A

Interim Interpretative Guidelines for El Dorado County General Plan Policy 7.4.4.4

(Option A)

INTERIM INTERPRETIVE GUIDELINES FOR EL DORADO COUNTY GENERAL PLAN POLICY 7.4.4.4 (OPTION A)

ADOPTED NOVEMBER 9, 2006
AMENDED OCTOBER 12, 2007

BACKGROUND

The adopted 2004 El Dorado County General Plan, Conservation and Open Space Element provides for the conservation and protection of soils, minerals, water, wildlife and fisheries, vegetation, cultural resources, and open space. Policies adopted in this element serve to guide the design of new development to meet these objectives. Policy 7.4.4.4 (Option A), reproduced below, addresses oak canopy retention standards. These Guidelines are intended to clarify the scope and implementation of Option A of this policy and provide for a process to consider limited modifications to oak canopy replacement and retention requirements for existing legal parcels if necessary to ensure reasonable use of those parcels. Option B (Mitigation Fee) will be available upon completion of the Oak Woodland Management Plan (OWMP) and related fee studies and implementing ordinances.

OBJECTIVE 7.4.4: FOREST AND OAK WOODLAND RESOURCES

Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

Policy 7.4.4.4

For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) The project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County's Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

Option A
The County shall apply the following tree canopy retention standards:

Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

- Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio.
- Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Program as described in Policy 7.4.2.8.
- Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Note: For purposes of implementing these guidelines, "tree canopy" retention shall mean oak tree canopy retention and replacement of "woodland habitat" shall mean replacement of oak canopy.

DEFINITIONS

For the purposes of these Guidelines, the following words and phrases shall have the meanings respectively ascribed to them by this section:

<u>1:1 Woodland Replacement (Replacement Land Area/Replacement Tree/Replacement Acorn-Density Ratio)</u>: Replacement of removed tree canopy shall be at a 200 trees (saplings or one gallon trees) per acre density or as recommended by a qualified professional. Replacement is subject to intensive to moderate management[1] and 10 to 15 years of monitoring, respectively. The survival rate shall be 90 percent as specified in the approved monitoring plan for the project, prepared by a qualified professional. Acorns may be used instead of saplings or one gallon trees. If acorns are used, they

[1] Management intensity assumes that 10 years after planting 1 year old saplings that trees that have been nurtured with high management intensity will be on average 2 inches DBH with 90 percent survival; moderate management intensity will result in trees that are on average 1.5 inches DBH with 85 percent survival. See Standiford et al 2002.

shall be planted at a 3:1 ratio as determined by the tree replacement formula[2]. The replacement is as follows:

- Replacement replanting from saplings or one-gallon trees, that are locally sourced, shall follow this formula for ratios:

  (Replacement Area in acres) x 200 trees per acre = the total number of replacement trees to be replanted

- Replacement replanting by acorn shall be from locally-sourced acorns (acorns gathered locally). The replacement ratio by acorn replanting shall be obtained by the following formula:

  (Replacement Area in acres) x (200 trees per acre) x (3 acorns per tree) = the total number of acorns to be replanted

Agricultural Conversion: As defined by General Plan Policy 7.1.2.7.

Agricultural Cultivation/Operations: As defined by General Plan Policy 8.2.2.1.

Agricultural Lands: As defined by General Plan Policies 2.2.1.2 and 8.1.1.8, and further, Policy 8.2.2.1.

Arborist: A person certified by the International Society of Arboriculture (I.S.A.) or other recognized professional organization of arborists that provides professional advice and licensed professionals to do physical work on trees in the County.

Biological Resources Study and Important Habitat Mitigation Program: The Biological Resources Study is an evaluation of a project site that quantifies the amount of important habitat, by habitat type, and addresses the potential for the project to adversely affect important habitat through conversion or fragmentation. The Important Habitat Mitigation Program identifies options that would avoid, minimize, or compensate for impacts on important habitats in compliance with General Plan policies 7.4.4.4 and 7.4.5.2, including a monitoring and reporting component (General Plan 2004 Measure CO-U). The Important Habitat Mitigation Program includes components which address "Certified Arborist Reports" and "Tree Protection Plans". The Biological Resources Study and Important Habitat Mitigation Program shall be prepared by a qualified professional. See separate guidelines for detailed requirements.

CDF: California Department of Forestry.

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[2] McCreary DD. 2001. *Regenerating rangeland oaks in California*. Berkeley (CA): University of California, Agriculture and Natural Resources. Communication Services Publication #21601. 62 p.

Construction/Disturbance Area: Any area in which movement of earth, alteration in topography, soil compaction, disruption of vegetation, change in soil chemistry, and any other change in the natural character of the land occurs as a result of site preparation, grading, building construction or any other construction activity.

Diameter at breast height (Dbh): The measurement of the diameter of the tree in inches, specifically four (4) feet six (6) inches above natural grade on the uphill side of the tree. In the case of trees with multiple trunks, the diameter of all stems (trunks) at breast height shall be combined to calculate the diameter at breast height of the tree.

Fire Safe Plan: Defined by the El Dorado County Department of Forestry Guidelines (http://www.co.el-dorado.ca.us/building/PDF/Booklets/Fire_safe_regs.pdf), and the CDF General Guidelines for Creating Defensible Spaces (http://www.bof.fire.ca.gov/pdfs/4291finalguidelines2_23_06.pdf), and as defined by Goal 6.2 Fire Hazards of the Public Health, Safety, and Noise element of the General Plan.

Given Unit of Land: The land contained within the project site. If the project site, prior to any proposed land division, is comprised of multiple parcels, the parcels may be treated as a single given unit of land for the purpose of calculating oak canopy cover and retention requirements.

Habitat: The physical location or type of environment in which an organism or biological population lives or can be found (General Plan 2004).

Heritage trees: Trees planted by a group or individuals or by the City or the County in commemoration of an event or in memory of a person figuring significantly in history (General Plan 2004).

Important Habitat: Defined as habitats that support important flora and fauna, including deer winter, summer, and fawning ranges and migration routes; stream, river, and lakeshore habitat; fish spawning areas; seeps, springs, and wetlands; oak woodlands; large expanses of native vegetation; and other unique plant, fish, and wildlife habitats generally located within or adjacent to designated Ecological Preserves, the Important Biological Resource Corridor Overlay, or in other locations otherwise recognized as being important habitat by Federal, State or County agencies.

Landmark Tree: Trees whose size, visual impact or association with a historically significant structure or event has led the government to designate them as landmarks (General Plan 2004).

Licensed engineers and land surveyors: Professionals that are licensed by the California Board for Professional Engineers and Land Surveyors.

Oak Canopy Cover: The area directly under the live branches of the oak trees, often defined as a percent, of a given unit of land.

Oak Woodlands: A given unit of land, with one or more groupings of live trees, where the dominant species (i.e. a plurality) of the live trees within the groupings are native oaks (genus quercus). "Stand" means a group or groupings of trees.

Oak woodlands with oak tree canopy coverage of less than 10 percent of the project site for parcels one acre or less in size, or oak woodlands with oak tree canopy coverage of less than 1 percent on parcels of land that are more than one acre in size, are **not** subject to the oak tree canopy cover retention requirements of Policy 7.4.4.4 Option A.

Protected Trees: Trees of the genus quercus (oak trees), landmark, and heritage trees, which are subject to County review pursuant to General Plan Policies 7.4.4.4, 7.4.5.1, and 7.4.5.2.

Qualified Professional: An arborist certified by the International Society of Arborists, a qualified wildlife biologist, or a registered professional forester (RPF).

Qualified Wildlife Biologist: A professional with a BA or BS or advanced degree in biological sciences or other degree specializing in the natural sciences; professional or academic experience as a biological field investigator, with a background in field sampling design and field methods; taxonomic experience and knowledge of plant and animal ecology; familiarity with plants and animals of the area, including the species of concern; and familiarity with the appropriate county, state, and federal policies and protocols related to special status species and biological surveys.

Registered Professional Forester (RPF): A Registered Professional Forester (RPF) is a person licensed by the State of California to perform professional services that require the application of forestry principles and techniques to the management of forested landscapes. RPFs have an understanding of forest growth, development, and regeneration; soils, geology, and hydrology; wildlife and fisheries biology and other forest resources. RPFs are also trained in fire management and, if involved in timber harvesting operations, have expertise in both forest road design and application of the various methods used to harvest timber (California Licensed Foresters Association).

Removal: The physical destruction, displacement or removal of a tree, or portions of a tree caused by poisoning, cutting, burning, relocation for transplanting, bulldozing or other mechanical, chemical or physical means.

Replacement: See 1:1 Woodland Replacement definition.

Self Certification: Acknowledgment by an applicant constructing a single-family dwelling or accessory structures and appurtenances to a single-family dwelling that the removal

of oak trees not otherwise in compliance with these interim guidelines and Policy 7.4.4.4, is in compliance with General Plan Policy 7.1.2.2 and are therefore exempt from the provisions of Policy 7.4.4.4 as "reasonable use."

Sensitive Habitat: In El Dorado County, this includes the following habitat types: montane riparian, valley-foothill riparian, aspen, valley oak woodland, wet meadow, and vernal pools (General Plan EIR).

Tree Survey, Preservation, and Replacement Plan: A plan that identifies trees at the project site, shows how specific trees shall be protected during development and related work, and includes any required mitigation measures and ensures viability of trees after construction. A Tree Survey, Preservation, and Replacement Plan is a stand-alone report, and is also included as part of an Important Habitat Mitigation Program. The plan shall be prepared by a qualified professional. See separate guidelines for requirements.

Woodland Habitats: Biological communities that range in structure from open savannah to dense forest. In El Dorado County, major woodland habitats include blue oak-foothill pine, blue oak woodland, montane hardwood, montane hardwood-conifer, and montane riparian.

Guidance for Application of Policy 7.4.4.4:

1. Trees subject to canopy retention and replacement – Policy 7.4.4.4 is intended to apply exclusively to retention and replacement of oak canopy within oak woodlands. All oak trees, of all sizes, are included in the measurement of oak canopy.

   Any oak tree canopy, landmark or heritage trees, including native oak trees that do not qualify for review as oak woodland under Policy 7.4.4.4 may be subject to review under Policy 7.4.5.2.

2. Minimum oak canopy area – The oak canopy retention requirements of Policy 7.4.4.4 are intended only to apply to:

   a. Parcels greater than 1.0 acre that contain 1 percent or more oak canopy cover; or

   b. Parcels 1.0 acre or smaller that contain 10 percent or more oak canopy cover.

3. Exceptions to oak canopy retention/replacement requirements – Policy 7.4.4.4 intends that the following activities are not subject to oak canopy cover retention or replacement requirements:

a. Agricultural cultivation/operations, whether for personal or commercial purposes, on land planned (AL, NR, RR, and Agricultural Districts [-A]) or zoned (AE, AP, A, PA, SA-10, RA, TPZ, and MR) for agricultural use per Policy 2.2.1.5 (Table 2-4 General Plan Land Use Designation and Zoning District Consistency Matrix, page 21), by the El Dorado County General Plan or Zoning Ordinance;

b. Tree removal associated with an approved Fire Safe Plan as necessary to protect an existing structure or structures. The Fire Safe Plan shall take into consideration the El Dorado County Department of Forestry SRA Fire Safe Regulations and the CDF General Guidelines for Creating Defensible Space. Fire Safe Plans are prepared by a RPF or other qualified professional subject to review and approval by the County. See Exhibit One for more information.

c. Development on parcels that are one acre or larger and have less than 1 percent total oak canopy cover;

d. Development on parcels that are less than one acre and have less than 10 percent total oak canopy cover; or

e. Oak trees determined to be dead or diseased and dying by a certified arborist or registered forester are excluded from calculations of canopy cover ~~and~~ retention and replacement requirements.

f. Applicant has "self certified" compliance with Policy 7.1.2.2. For properties located outside of an Important Biological Corridor (IBC) and Mitigation Area 0 of the Ecological Preserve (EP), the removal of natural vegetation, including oak trees (less than 36 inches dbh), is demonstrated to be limited to areas proposed to be graded or cleared for single-family residential development to include the following (for ministerial permits and Director approved design review applications):

- Primary residence
- Accessory structures (including secondary residence, garages, workshops, barns, swimming pools, decks, etc.)
- Driveways and parking area
- Septic systems
- Wells and storage tanks
- Propane tanks

- Yard areas immediately surrounding the primary residence and any accessory structure
- Yard areas immediately surrounding the primary and any accessory structures
- Retaining walls necessary for any of the above

Replacement of oak trees will be required on-site to the greatest extent feasible and an oak replacement agreement shall be recorded requiring self-monitoring and maintenance.

4. Qualified Professional – For the purposes of Policy 7.4.4.4, "Qualified Professionals", refers to professionals approved by Development Services, suitably trained and experienced in wildlife biology, botany, arboriculture, or forestry such as qualified wildlife biologists, I.S.A. certified arborists, or Registered Professional Foresters (RPFs) can determine "habitat" value and canopy cover of oak woodlands determined from baseline aerial photography. The professional may be under contract to either the County or the property owner. The professional should be able to perform a species-focused site survey, use GPS to locate species and habitat on a map or aerial photograph, and should be able to address oak tree corridors (if applicable) for Policy 7.4.4.5. The qualified professional will need to prepare a Biological Resources Study and Important Habitat Mitigation Program that satisfies County requirements. In the event that a dispute arises involving the contents of the Biological Resources Study and/or Important Habitat Mitigation Program the County may refer the matter to an outside qualified consultant, retained by the County and paid for by the applicant/property owner, to develop recommendations for dispute resolution.

   If there is a need to provide a survey level of detail to fully ascertain which canopy level applies per Policy 7.4.4.4, then the survey shall be conducted by a California professional engineer or a California professional land surveyor.

   Generalized maps may be provided by a qualified professional using GPS.

5. Site Assessment Form and Tree Survey, Preservation, and Replacement Plan Required: An initial Site Assessment Form (Attachment 1) and Tree Survey, Preservation, and Replacement Plan must be prepared by a qualified professional and submitted to the Planning Services Division for review for all projects proposing removal of oak canopy cover. The purpose of the Site Assessment is to determine if the proposed removal of oak canopy cover would impact any of the following:

   - Landmark or heritage trees (See Policy 7.4.5.2 A);

- Oak corridor continuity, between all portions of existing stands of oak woodland habitat with connecting corridors at a tree density that is equal to the density of the stand (See Policy 7.4.4.5);
- Sensitive or important oak woodland habitats (See Policy 7.4.5.2 A);
- Oak woodland within or directly adjacent to an important biological resource corridor overlay or an ecological preserve overlay (See Policies 7.4.2.9 and 7.4.1.4);
- Listed or special status plant or animal species observed or expected to occur on the project site or in adjacent areas that may be directly or indirectly affected by the project (See Policy 7.4.1.5); or
- Removal of oak canopy that exceeds retention requirements of Policy 7.4.4.4.

For discretionary projects, the Site Assessment must also include a conclusion by the qualified professional as to whether the proposed oak tree canopy cover removal would have the potential to cause a significant effect on the environment.

If the Site Assessment concludes that the project would not impact any of the above, and the County concurs, and the retention/replacement requirements of Policy 7.4.4.4 are satisfied, the proposed oak tree canopy cover removal may be found consistent with Policy 7.4.4.4 without preparation of a Biological Resource Study and Important Habitat Mitigation Program. A Tree Survey, Preservation, and Replacement Plan, prepared according to County requirements, shall be required prior to issuance of a grading or building permit for the project. The Tree Survey, Preservation, and Replacement Plan will address long term preservation as well as protection of oak trees required to be retained or replaced during grading and construction.

If the Site Assessment, or the County, concludes that the proposed project would impact any of the above resources, and/or for discretionary projects could have the potential to cause a significant impact on the environment, then a full Biological Resources Study and Important Habitat Mitigation Program for the project must be provided to the County for review and approval. For ministerial projects, this must occur prior to issuance of a grading or building permit for the project. For discretionary projects, this must occur as part of the environmental review process. The recommendations of the plan must be fully implemented prior to final grading or building inspection for the project.

6. Project Sites Within ~~or Directly Adjacent to~~ Important Biological Corridor Overlay or Ecological Preserve Overlay Areas: Any projects (ministerial or discretionary) proposing any oak canopy cover removal within ~~or directly~~

~~adjacent to the~~ an Important Biological Corridor Overlay Designation or Ecological Preserve Overlay Designation shall require the submittal of Oak/Canopy Site Assessment Form, tree survey, and biological report. Should a dispute arise regarding recommendations of the biological report, review by the Planning Commission will be required to ensure consistency with Policies 7.4.2.9 and 7.4.1.4 unless the subject property is also located within an Agricultural District Overlay or Agricultural Lands designation in which case it would not be subject to additional requirements per Policy 7.4.2.9. The Biological Resources Study and Important Habitat Mitigation Program must address the requirements of Policies 7.4.2.9 and 7.4.1.4, including, but not limited to the potential for higher oak canopy cover retention and mitigation standards than for projects located outside of the Important Biological Corridor Overlay and Ecological Preserve Overlay areas.

7. Replacement Provisions – Where Policy 7.4.4.4 requires oak canopy cover replacement, the replacement shall be at a 1:1 ratio of canopy removed to canopy replaced as defined in these Guidelines or as specified by a qualified professional approved by the County. The 1:1 replacement ratio can be determined by a simple projection of an aerial photograph justified to the same scale as the underlying parcel is sufficient to estimate the land area, measured in square feet, subject to oak canopy coverage (land area in square feet shall be converted to acreage). Replacement may be by one of the following methods, at the discretion of the Development Services Director (Director):

   a. On-Site Replacement Tree Planting. The replacement requirement is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Replacement trees are to be planted on-site to the satisfaction of the Development Services Director. The size of the designated replacement area shall equal at a minimum the total area of the oak canopy cover proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement trees planted. Maintenance and monitoring shall be required for a minimum of 10 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

   b. On-Site Planting of Acorns. Under the direction of a qualified biologist, certified arborist and/or registered professional forester, acorns may be planted at a density designed to achieve oak canopy coverage which will equal the canopy coverage removed within no more than 15 years from the date of planting. The

minimum replacement ratio for acorns is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Recommendations from the qualified professional shall include a minimum of: site planting design; acorn planting ratios to ensure success; acorn collection areas or nurseries; propagation measures; acorn protection techniques; maintenance, and monitoring and reporting. The size of the designated replacement area shall equal at a minimum, the total area of the oak canopy cover that is proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement acorns planted. Maintenance and monitoring shall be required for a minimum of 15 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

c. On-Site Replacement of Canopy Area. Under the direction of a qualified biologist, certified arborist and/or registered professional forester, acorns, oak trees or a combination of both may be planted on-site The replacement requirement is calculated as set forth in the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. Replacement plantings should be at a density designed to achieve oak woodland canopy coverage which will equal the canopy coverage removed within 15 years from date of planting or sooner.

Recommendations from the qualified professional shall include a minimum of: Site planting design; planting ratios to ensure success; any required acorn collection areas or nurseries; propagation measures; acorn and tree protection techniques; maintenance, monitoring and reporting requirements. The size of the designated replacement area shall equal at a minimum, the total area of the oak canopy cover that is proposed to be removed. An agreement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any replacement trees and/or acorns planted. Maintenance and monitoring shall be required for a minimum of 10 years after planting. Any trees that do not survive during this period of time shall be replaced by the property owner.

Replacement (and execution of related maintenance and monitoring agreements) shall be completed to the County's satisfaction prior to final grading or building inspection of the project.

d. Off-Site Replacement of Canopy Area. The applicant may be permitted to procure an off-site planting area for the replacement trees and/or planting of acorns, preferably in close proximity and/or in connection with any oak woodland contiguous to the project site or within or adjacent to an Important Biological Corridor or Ecological Preserve as designated in the General Plan, to implement the replacement planting. The size of the off-site replacement planting area shall equal at a minimum the total area of oak canopy cover proposed to be removed. Oaks planted shall have characteristics of the receiver site. Replacement shall occur at a 1:1 ratio as defined in these Guidelines or as otherwise specified by a qualified professional approved by the County. A Conservation Easement to the satisfaction of County Counsel and the Director shall be required to ensure the long term maintenance and preservation of any on or off-site replacement trees and/or acorns planted. The Conservation Easement shall provide for the preservation of the designated area in perpetuity and shall include such terms, conditions, and financial endowments for monitoring and management deemed necessary by the County to ensure the long term preservation of the oak woodland within the easement area. The Conservation Easement shall be in favor of the County or a County approved conservation organization. Maintenance and monitoring shall be required for a minimum of 10 years (15 years for acorns) after planting. Any trees that do not survive during this period of time shall be replaced by the property owner; or

e. Off-Site Conservation Easement to Protect Existing Oak Woodland in Lieu of Replacement. The applicant may obtain a Conservation Easement on property off-site with healthy oak woodland canopy area equivalent to 100 percent of the oak canopy area proposed to be removed. The conservation easement site should either be in close proximity and/or in connection with any oak woodland contiguous to the project site or within or adjacent to an Important Biological Corridor or Ecological Preserve as designated in the General Plan. The Conservation Easement shall provide for the preservation of the designated area in perpetuity and shall include such terms, conditions, and financial endowments for monitoring and management deemed necessary by the County to ensure the long term preservation of the oak woodland within the easement area. The Conservation Easement shall be in favor of the County or a County approved conservation organization.

8. Ministerial Projects on Existing Legal Lots for which Previous Approvals or Determinations of Developable Area have been made by County Decision-Makers: Previously approved discretionary projects that have conditions of approval and/or mitigation measures specifying detailed oak tree protection and mitigation plans shall not be required to demonstrate further consistency with Policy 7.4.4.4. However, canopy that was required to be retained in prior approvals must continue to be retained, unless modified by the decision-making authority for the original protection plan. This provision does not apply to any development project whose approval has expired and a time extension is applied for.

Reasonable Use Provisions for Development on Existing Legal Lots

A. Reasonable Use Related to Oak Canopy Cover Retention:

For existing legal lots, where strict compliance with the oak canopy cover retention requirements of Policy 7.4.4.4 could preclude reasonable use of the property or cause substantial inconsistencies with other General Plan policies protective of the environment, due to factors which are unique to the proposed property, such as topographic constraints, configuration of the remaining area useable for development, access requirements, lot size, and/or other physical or environmental limitations, or conflict with the requirements of an approved Fire Safe Plan, the Development Services Director may grant relief as described below, or the Planning Commission may grant relief to the retention requirements of Policy 7.4.4.4 for the project if the ~~following~~ findings are made pursuant to a noticed public hearing:

Development Services Director Relief:

The Director may grant a reduction in the retention requirements by up to 50 percent of what is specified in the Option A Retention Table after meeting all the required findings herein (subsection i. through iv.) and meeting one of the following conditions.

- For existing legal lots ½ acre in size or less with up to 100 percent disturbed area proposed; or

- For existing legal lots greater than ½ acre up to one acre in size with not more than 20,000 square feet of development/disturbed area proposed; or

- For existing legal lots greater than one acre in size but not greater than five acres in size with not more than 25,000 square feet of development/disturbed area proposed, excluding driveway access

removing oak canopy (intrusion of up to 25 percent of the dripline permitted).

- For existing legal lots greater than five acres with not more than 30,000 square feet of development/disturbed area proposed excluding driveway access removing oak canopy (intrusion of up to 25 percent of the dripline permitted).

If the lot is within an Important Biological Corridor or Ecological Preserve, relief may only be granted by the Planning Commission.

Planning Commission Relief:

Where the Director cannot grant relief, the Commission may grant relief when the following findings can be made.

i. The applicant demonstrates that the project is designed to maximize use of parcel area unconstrained by oak trees, unless precluded by other significant constraints such as steep slopes, streams, creeks, wetlands, or other sensitive environmental resources.

ii. The proposed project is limited to development and site disturbance that is typical and prevalent for the general area surrounding the project site.

iii. Soil disturbance and tree removal is minimized through the incorporation of some or all of the following measures into the project design:

   a. Stepped foundations are used on sloping areas rather than graded pads;
   b. Depth of excavation and/or fill outside of the building footprint is limited to no more than five feet measured vertically from the natural ground surface, except for grading necessary to install retaining walls designed to reduce the total area of tree canopy that will be removed and/or damaged;
   c. Structures and the configuration of the area of disturbance are designed to parallel the natural topographic contours to the greatest extent feasible;
   d. Patio decks are included in the design of dwellings to minimize the need for graded yard areas;

e. Design techniques such as clustering of buildings are proposed to take advantage of the portions of the property which are least constrained by oaks;

f. The project is designed to maximize consistency with all applicable policies of the El Dorado County General Plan. *It is recognized that more than one policy may have to be considered in the determination of reasonable use of a particular parcel.*

iv. If the project site is within ~~or directly adjacent to~~ an Important Biological Corridor Overlay or Ecological Preserve a Biological Resources Study and Important Habitat Mitigation Program have been prepared by a qualified professional and approved by the County and will be fully implemented by the applicant. The Study shall be prepared in accordance with the *Biological Resources Study and Important Habitat Mitigation Program Interim Guidelines*, adopted November 9, 2006.

Replacement of any oak tree canopy area allowed to be removed by the Planning Commission in excess of the retention standards in the General Plan shall be required. At a minimum, the replacement shall be completed in accordance with the tree replacement formula. Refer to the 1:1 Woodland Replacement definition. A 2:1 ratio or as otherwise specified by a qualified professional approved by the County, pursuant to the options and methods specified in these Guidelines, may be applied at the discretion of the Planning Commission. Further, for discretionary projects, any effects on biological resources will be analyzed in the environmental document and appropriate additional mitigation proposed as required by the California Environmental Quality Act, California Oak Woodlands Conservation Law and other applicable statutes.

B. Reasonable Use Related to Oak Corridor Retention:

In order to ensure that reasonable use of the property is provided, an applicant may request the Planning Commission to provide relief from the strict application of this corridor retention requirement (Policy 7.4.4.5) in the same manner as described above. In addition, for discretionary projects, any effects on biological resources will be analyzed in the environmental document and appropriate mitigation proposed as required by the California Environmental Quality Act, California Oak Woodlands Conservation Law and other applicable statutes.

GENERAL REQUIREMENTS APPLICABLE TO ALL PROJECTS

Compliance with the General Plan:

In addition to compliance with these guidelines for these Policies, the proposed development shall be in conformance with all other applicable policies of the County General Plan and any applicable Specific Plans and/or Development Agreements.

Compliance with the Zoning Ordinance and Grading Ordinance and Building Codes:

The proposed development shall be in compliance with all applicable requirements of the County Zoning Ordinance, Grading Ordinance, and Building Codes.

County, State, or Federal Agency Requirements:

County, State and Federal agencies have different jurisdictional authority which may result in different conditions for approval. In the event of multiple agency permit approval, the most restrictive set of conditions shall apply.

Important Biological Corridor Overlay Designation and Ecological Preserve Overlay Designation:

Proposals for removal of any oak canopy cover on property within or directly adjacent to an Important Biological Corridor Overlay (IBC) designation or Ecological Preserve Overlay (EP) designation pursuant to the General Plan shall require review by the Planning Commission to ensure consistency with the requirements of Policies 7.4.2.9 and 7.4.1.4. A Biological Resource Study and Important Habitat Mitigation Program shall be required.

SITE ASSESSMENT FORM REQUIREMENTS AND THE TREE SURVEY, PRESERVATION, AND REPLACEMENT PLAN REQUIREMENTS

The Site Assessment Form requirements are detailed in Attachment 1.

BIOLOGICAL RESOURCE STUDY AND IMPORTANT HABITAT MITIGATION PROGRAM REQUIREMENTS

Biological Resource Study and Important Habitat Mitigation Program requirements are detailed in Attachment 2.

ADMINISTRATION

The above guidelines are interim standards utilized by the Development Services Department of El Dorado County to provide for consistent review of projects for conformance with Policy 7.4.4.4 pending adoption of permanent regulations.

Penalties for Violation – ~~Pursuant to Policy 7.4.5.2 D,~~ If oak trees are removed prior to review by the County and without appropriate retention and replacement provisions implemented in anticipation of development of a site, the County may withhold and defer approval of any application for development of that property ~~for a period of up to five years. Additionally, fines may be applied as high as three times the current market value of replacement trees plus the cost of replacement, and/or replacement tree(s) may be required at a 3:1 ratio at sites approved by the County. The cost of maintenance, monitoring, and reporting of any replacement trees shall be paid for by the applicant.~~ until such time as the amount of oak tree canopy removed is determined and appropriate replacement and mitigation provisions are met in conformance with Policy 7.4.4.4 to the satisfaction of the Director.

INTERNET RESOURCES

California Department of Conservation, Office of Mine Reclamation, Fall 2005 SMARA Newsletter regarding the State Oak Woodlands Conservation Law
http://www.consrv.ca.gov/omr/smara/newsletter/Fall%202005.pdf

California Department of Forestry Fire Safe Plan
http://www.fire.ca.gov/php/education_100foot.php

California Department of Forestry Fire Safe Regulations
http://www.co.el-dorado.ca.us/building/FSArticle1.htm

California Licensed Foresters Association
http://www.clfa.org/registered_professional.htm

California Board for Professional Engineers and Land Surveyors:
http://www.dca.ca.gov/pels/

CDF General Guidelines for Creating Defensible Spaces
http://www.bof.fire.ca.gov/pdfs/4291finalguidelines2_23_06.pdf

El Dorado County Department of Forestry SRA Fire Safe Regulations
http://www.co.el-dorado.ca.us/building/PDF/Booklets/Fire_safe_regs.pdf

El Dorado County General Plan
http://www.co.el-dorado.ca.us/Planning/GeneralPlanAdopted.html

El Dorado County General Plan EIR
http://www.co.el-dorado.ca.us/Planning/GeneralPlanDraftEIR.htm

McCreary DD. 2001. *Regenerating rangeland oaks in California*. Berkeley (CA): University of California, Agriculture and Natural Resources. Communication Services Publication #21601. 62 p.

Standiford, Richard and Douglas McCreary and William Frost. 2002. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands.* USDA Forest Service Gen. Tech. Rep. PSW-GTR-184. Available at: http://danr.ucop.edu/ihrmp/proceed/standiford.pdf

Western Chapter – International Society of Arboriculture Publications (Guide for Plant Appraisal, Item # P1209, to determine market values of trees)
http://wcisa.wcainc.com/docs/Publication.pdf

ATTACHMENTS

Exhibit One	CDF Fire Safe Plan Brochure
Attachment 1	Site Assessment Form
Attachment 2	Biological Resources Study and Important Habitat Mitigation Program Requirements

ATTACHMENT B

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

AUBURN SERIES

The Auburn series consists of shallow to moderately deep, well drained soils formed in material weathered from amphibolite schist. Auburn soils are on foothills and have slopes of 2 to 75 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 60 degrees F.

TAXONOMIC CLASS: Loamy, mixed, superactive, thermic Lithic Haploxerepts
TYPICAL PEDON: Auburn silt loam - on an east facing slope of 10 percent under annual grass, oak and digger pine at 620 feet elevation. (Colors are for dry soil unless otherwise stated. When described on March 27, 1959, the soil was dry throughout.)

A1--0 to 1.5 inches; strong brown (7.5YR 5/6) silt loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; many very fine roots; many very fine and fine tubular pores; slightly acid (pH 6.4); clear smooth boundary. (1 to 8 inches thick)
A2--1.5 to 9 inches; yellowish red (5YR 5/6) silt loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and medium roots; many very fine and medium tubular pores; slightly acid (pH 6.4); gradual smooth boundary. (1 to 8 inches thick)

Bw--9 to 14 inches; yellowish red (5YR 5/8) silt loam, yellowish red (5YR 4/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; few thin clay films line pores; slightly acid (pH 6.5); abrupt wavy boundary. (5 to 12 inches thick)
R--14 to 24 inches; very pale brown (10YR 7/4) partly weathered amphibolite schist with reddish brown (2.5YR 4/4) colloidal stains in fracture planes; few roots in cracks; slightly acid (pH 6.5).

TYPE LOCATION: Amador County, California. About 3.5 miles northeast of Ione, 0.25 miles east and 100 feet north of the southeast corner of sec. 6 T. 6 N, R. 10 E. Irish Hill Quadrangle.

RANGE IN CHARACTERISTICS: The depth to bedrock ranges from 10 to 28 inches. These range from less than 20 inches to more than 20 inches within a linear distance of less than 140 inches. Dominantly the soils are 10 to 20 inches deep to rock over 50 to 90 percent of the area. The rest of the area, 10 to 50 percent, is 20 to 28 inches to rock. The contact with the bedrock is abrupt, although some slightly weathered fracture planes are present in some pedons. Rock fragments range from 0 to 25 percent and consist of pebbles, cobbles and stones. The soil between the depths of 8 and 20 inches or to a lithic contact is dry in all parts from June to mid-October and is moist in all parts from mid-November to May. The mean annual soil temperature is between 59 and 67 degrees F.

The A horizon is 7.5YR 4/4, 5/8, 5/6, 5/4, 6/6; 5YR 4/6, 5/4 or 5/6. Moist colors are 7.5YR 3/2, 3/3, 3/4, 4/4, 4/6, 5/4; 5YR 3/3, 3/4, 3/6 or 4/4. Mottles of lower chroma than the matrix may occur in the upper 2 or 3 inches. It is massive or has weak subangular blocky structure. It is loam, silt loam or clay loam or its gravelly, stony, or very stony equivalents. It is neutral to medium acid.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

The Bw horizon is 7.5YR 4/4, 5/4, 5/6, 5/8, 6/6; 5YR 4/4, 4/6, 5/4, 5/6, 5/8, 6/6 or 6/8. Moist colors are 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, 6/6, 6/8; 5YR 3/4, 4/4, 4/6, 5/6, 5/8, 6/6 or 6/8. It is loam, silt loam, clay loam, or its' gravelly equivalent. It is slightly to strongly acid. It has hues that are one unit redder or chromas that are brighter or there is weak structure or there is a slight clay increase.

COMPETING SERIES: These are the Daulton, Escondido, Exchequer, Hornitos, Maymen, eMillsholm, Sobrante, Temescal, and Toomes soils in other families. All these soils except Escondido and Sobrante are less than 20 inches deep to a lithic contact in all parts. In addition, Daulton, Millsholm, and Temescal soils lack reddish colors in hues of 7.5YR and 5YR. Exchequer soils are less than 10 inches deep. Hornitos and Maymen have a base saturation (ammonium acetate) of less than 60 percent throughout the 10 to 20 inch zone. Escondido and Sobrante soils are more than 20 inches deep to a lithic contact in all points. In addition, Sobrante soils have an argillic horizon.

GEOGRAPHIC SETTING: The Auburn soils are on undulating to very steep foothills with slopes of 2 to 75 percent. Rock outcrops are common. The soils formed in material weathered from metabasic or metasedimentary rock such as amphibolite schist, greenstone schist, or diabase. Elevations are 125 to 3,000 feet. The climate is subhumid with hot dry summers and cool moist winters. Mean annual precipitation is 20 to 40 inches. Mean January temperature is about 45 degrees F, and mean July temperature is 76 degrees F; mean annual temperature varies from 56 to 63 degrees F. Frost-free season is about 175 to 275 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Exchequer and Sobrante soils and the eArgonaut and Whiterock soils. Argonaut soils have argillic horizons and Whiterock soils lack reddish colors in hues of 7.5YR and 5YR.

DRAINAGE AND PERMEABILITY: Well drained; low to very high runoff; moderate permeability.

USE AND VEGETATION: Used for annual rangeland with small areas used for irrigated pasture. The native vegetation is typically annual grasses and forbs such as soft chess, wild oats, ripgut brome, and filaree with stands of oak and scattered digger pine and brush.

DISTRIBUTION AND EXTENT: Lower foothills of the Sierra Nevada Mountains of California. The soil is extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California
SERIES ESTABLISHED: Marysville and Sacramento Areas, 1913. The classification was updated in February 2001 using the Eighth Edition to Soil Taxonomy. This series was formerly classified as loamy, oxidic, thermic Ruptic-Lithic Xerochrepts. Competing series were not checked at that time.

REMARKS: Diagnostic horizons and features recognized in this pedon are:
Ochric epipedon - 0 to 9 inches (A1, A2)
Cambic horizon - 9 to 14 inches (Bw)
Lithic contact - depth to contact in 10 to 28 inches and is more than or less than 20 inches within short distances.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

Last major revision by the state on 5/88.
Edit log: 10/2006 minor edits, changed terminology for runoff

ADDITIONAL DATA: Two pedons in Amador County: NSSL Pedon S59CA-005-007 (series type location) and S59CA-005-008. Based on lab data this soil should NOT be oxidic and is mixed.

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Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

ARGONAUT SERIES

The Argonaut series consists of moderately deep, well drained soils that formed in materials weathered from meta-andesite. Argonaut soils are on foothills with slopes of 2 to 30 percent. The mean annual precipitation is 27 inches and the mean annual temperature is about 60 degrees F.

TAXONOMIC CLASS: Fine, mixed, superactive, thermic Mollic Haploxeralfs

TYPICAL PEDON: Argonaut gravelly loam-on a southwest facing slope of 6 percent under annual grass - oak cover at 1,360 feet elevation. (Colors are for dry soil unless otherwise stated. When described on March 24, 1959, the soil was slightly moist throughout.)

A1--0 to 2 inches; brown (7.5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; weak thin platy structure; hard, friable, nonsticky and nonplastic; many very fine, few fine and medium roots; many very fine pores; 21 percent pebbles; slightly acid (pH 6.1); abrupt smooth boundary. (2 to 3 inches thick)

A2--2 to 6 inches; yellowish red (5YR 5/6) gravelly loam, yellowish red (5YR 3/6) moist, massive; hard, friable, nonsticky and slightly plastic; common very fine, few fine and medium roots; common very fine and fine, few medium pores; few thin clay films line pores; 20 percent pebbles, cobbles and stones; slightly acid (pH 6.3); clear smooth boundary. (3 to 8 inches thick)

Bt1--6 to 10 inches; yellowish red (5YR 4/6) gravelly heavy loam, yellowish red (5YR 3/6) moist, massive; hard, friable, slightly sticky and plastic; common very fine, few fine and medium roots; common very fine and fine medium pores; common thin clay films line most pores; 15 percent pebbles, cobbles and stones; slightly acid (pH 6.2); clear smooth boundary. (3 to 6 inches thick)

Bt2--10 to 14 inches; yellowish red (5YR 5/6) clay loam, yellowish red (5YR 3/6) moist; massive; hard, firm, slightly sticky and plastic; few fine and medium roots; common very fine and fine, few medium pores; continuous thin clay films line pores; about 8 percent pebbles and cobbles; slightly acid (pH 6.1); abrupt boundary. (3 to 5 inches thick)

Bt3--14 to 21 inches; brown (10YR 5/3) gravelly clay, yellowish brown (10YR5/4) and brown (7.5YR 5/4) moist; brown (7.5YR 5/4) coatings; massive; very hard, firm, sticky and very plastic; few very fine and coarse roots; few very fine pores; continuous thick clay films line pores; few slickenslides; about 22 percent pebbles, cobbles and stones; slightly acid (ph 6.1); abrupt wavy boundary. (4 to 17 inches)

Cr--21 to 27 inches; light reddish brown (2.5YR 6/4) deeply weathered meta-andesite, light olive brown moist, yellowish red (5YR 4/6) moderately thick, continuous clay films and black stains along a few fracture planes; the weathered rock crumbles when disturbed but is firmer with increasing depth; neutral (pH 7.1).

TYPE LOCATION: Amador County, California; about 0.5 miles west of Martell, 1,800 feet south and 1,500 feet east of the NE corner of sec 19, T. 6 N, R. 11 E. Jackson Quadrangle.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

RANGE IN CHARACTERISTICS: Thickness of solum and depth to a paralithic contact is 20 to 40 inches. The mean annual soil temperature ranges from 59 to 67 degrees F. The soil between the depths of 8 and 24 inches or to a paralithic contact is dry in all parts from June 1 to October 15 (120 to 150 days) and is moist in all parts from November 15 to May 15 (165 to 195 days). Some rock fragments are present throughout the soil with about 2 to 25 percent in the lower Bt horizons and 5 to 35 percent in the A and upper Bt horizons. It has 2 to 6 percent organic matter in the upper 4 inches and more than 1 percent to a depth of 10 inches. The weighted average of the upper 20 inches of the Bt horizon is 35 to 50 percent.

The A horizon is 7.5YR 6/6, 5/6, 5/4, 4/6, 4/4; 5YR 5/3, 5/4, 5/6, 4/6, 4/4, or 4/6. Moist colors are 7.5YR 3/4, 4/4, 4/6; 5YR 3/4, 4/3, 4/4, or 4/6. The upper 4 inches have moist color values of 3. It is loam, silt loam or clay loam and may be gravelly or extremely stony. It is massive and hard or the upper few inches has weak platy, weak granular or weak subangular blocky structure. Reaction is moderately acid to neutral .

There is a transitional horizon between the A and B horizon or a gradual boundary occurs for the A horizon. The upper Bt horizon is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8; 5YR 5/3, 5/4, 5/6, 4/4, or 4/6. Moist colors are 7.5YR 4/4, 4/6; 5YR 4/4, 4/6, or 3/4. It is heavy loam, heavy silt loam, clay loam or its gravelly or cobbly equivalents. Reaction is moderately acid to neutral. An abrupt boundary is always present.

The lower Bt horizon is 10YR 5/3, 5/4, 5/6, 6/4; 7YR 5/4, 5/6, 4/6, 4/4; 5YR 4/6, 5/6, or 4/4. Moist colors are 10YR 5/3, 5/4, 5/6; 7.5YR 5/6, 5/4, 4/4, 4/6; 5YR 3/4, 4/4, 4/6, 4/8, or 5/6. It is heavy clay loam, gravelly clay or clay. Reaction is moderately acid to mildly alkaline. The clay increase between the upper Bt and lower Bt exceeds 15 percent. In some profiles a stone line separates these two horizons.

The Cr is 10YR 7/6, 2.5Y 7/4, or 6/4. Moist colors are 2.5Y 6/4 or 5/4.

COMPETING SERIES: These are the Conosta, Contra Costa, Francher, Kilaga, Phipps (T), and Trabuco. Conosta soils lack an argillic horizon with more than 15 percent clay increase within one inch. Contra Costa soils have a lithic contact between 20 and 40 inches. Francher soils have a CA/Mg ratio of less than 2:1. Kilaga and Phipps (T) soils are greater than 60 inches deep. Trabuco soils have a paralithic contact below 40 inches.

GEOGRAPHIC SETTING: The Argonaut soils are on undulating to hilly broad ridges and slightly concave slopes of 2 to 30 percent. The soils formed in material weathered from metamorphosed and intrusive basic rocks. Rock outcrops are common. Elevations are 200 to 2,500 feet. The climate is subhumid with hot dry summers and cool moist winters. Mean annual precipitation is 20 to 50 inches. Mean January temperature is about 44 degrees F.; mean July temperature is about 76 degrees F.; mean annual temperature is about 56 to 63 degrees F. Frost-free season ranges from 220 to 270 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Auburn, Rescue and Sobrante soils. Auburn soils lack argillic horizons. Rescue and Sobrante have less than 35 percent clay in all parts of the argillic horizon.

DRAINAGE AND PERMEABILITY: Well drained; slow to rapid runoff; very slow permeability.

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

USE AND VEGETATION: Mainly used for annual rangeland. Vegetation is soft chess, wild oats, ripgut brome, filaree with scattered foothill pine and scattered to dense thickets of blue oak, interior live oak and buckbrush.

DISTRIBUTION AND EXTENT: Foothills of the central Sierra Nevada in California. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Amador County, California, Amador Area 1963.

REMARKS: Diagnostic horizons and features recognized in the pedon are:
Ochric epipedon - 0 to 6 inches (A1, A2)
Argillic horizon - 6 to 21 inches (Bt1, Bt2, Bt3)
Paralithic contact at 21 inches.
This pedon was sampled by NSSL at Riverside in 1959. Pedon number S59CA-3-6-(1-6)
OSED scanned by SSQA. Last revised by state on 8/85.
Edit log: 4/2003 Proposed edits for use in Butte County. Expand reaction A horizon: moderately acid to neutral. Expand reaction lower Bt horizon: from slightly acid to moderately acid. Add the following colors: A horizon-dry colors: 7.5YR 4/6 and 5YR 4/6. Upper Bt horizon-dry colors: 7.5YR 4/4, 4/6. Lower Bt horizon dry colors: 7.5YR 4/4, 4/6. Moist colors: 5YR 3/4. Cr horizon-dry: 10YR 7/6. Expand elevation from 300 to 200 feet. Expand MAT from 62 to 63 degrees F. Changed digger pine to foothill pine.

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Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

RESCUE SERIES

The Rescue series is a member of the fine-loamy, mixed, thermic family of Mollic Haploxeralfs. Typically, Rescue soils have reddish brown, medium and slightly acid, sandy loam A horizons, yellowish red, slightly acid, sandy clay loam B2t horizons grading to weathered basic rock.

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

TYPICAL PEDON: Rescue sandy loam - annual range. (Colors are for dry soil unless otherwise noted.)

Al--0 to 5 inches; reddish brown (5YR S/4) sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; many very fine, common fine roots; many very fine tubular and interstitial, few fine tubular pores; moderately acid (pH 6.0); clear smooth boundary. (4 to 6 inches thick)

A3--5 to 10 inches; reddish brown (5YR 4/4) sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; many very fine, common fine roots; many very fine tubular pores; slightly acid (pH 6.2); clear wavy boundary. (2 to 7 inches thick)

B1t--10 to 14 inches; yellowish red (5YR 4/6) heavy sandy loam, yellowish red (5YR 3/6) moist; massive; hard, friable, sticky, plastic; common very fine and fine roots; common very fine tubular pores; many thin clay films line pores and as bridges; slightly acid (pH 6.2); gradual smooth boundary. (2 to 8 inches thick)

B2t--14 to 26 inches; yellowish red (5YR 4/6) sandy clay loam, dark red (2.5YR 3/6) moist; massive; extremely hard, firm, sticky, plastic; few fine, medium and coarse roots; few very fine and fine tubular pores; many moderately thick clay films line pores; slightly acid (pH 6.4); gradual smooth boundary. (7 to 14 inches thick)

B31t--26 to 34 inches; reddish yellow (5YR 6/8) heavy sandy loam, variegated reddish brown and reddish yellow (5YR 4/4, 6/6) moist; massive; extremely hard, firm, sticky, plastic; few fine, medium and coarse roots; few very fine tubular and interstitial pores; many thin clay films line pores and as bridges; slightly acid (pH 6.5); clear wavy boundary. (5 to 14 inches thick)

C1--34 to 55 inches; reddish yellow (5YR 7/8) coarse sandy loam, yellowish red (5YR 5/6) moist; massive; very hard, firm, slightly sticky, slightly plastic; few fine, medium and coarse roots; few very fine tubular and interstitial pores; few thin clay films line pores and as bridges; slightly acid (pH 6.5); clear wavy boundary. (10 to 22 inches thick)

C2--55 to 66 inches; very pale brown (10YR 7/4) loamy coarse sand, strong brown (7.5YR 5/6) moist; massive; slightly hard, firm, nonsticky, nonplastic; few fine, medium and coarse roots; few and very fine tubular and interstitial pores; slightly acid (pH 6.5).

Natural Resources Conservation Service Descriptions for Soils Observed During Field Surveys

TYPE LOCATION: El Dorado County, California; 2.0 miles north of Bass Lake, 50 feet east of Deer Valley Road, near center of NE114 SE1/4 of sec. 19, T.lON., R.9E.

RANGE IN CHARACTERISTICS: The solum is 30 to 70 inches thick. Depth to a paralithic contact of weathered rock is 40 to 80 inches. Mean annual soil temperature at a depth of 20 inches is 59 degrees to 65 degrees F. Coarse fragments in the profile range from about 3 to 25 percent. The larger amounts are in the upper A horizon or in the C horizon. Between the depths of about 5 and 15 inches the soils are usually continually moist but become dry in May or early June and remain dry all the time until sometime in October or early November. The soils are usually slightly or moderately acid throughout, but are neutral in the lower part of some pedons.

The A horizon is reddish brown or brown in hue of 7.5YR or 5YR. Moist chromas are 4 or more below a depth of 4 inches, or are 4 or more in all parts. It has 3 to 8 percent organic matter in the upper 4 inches and drops to levels of 0.5 to 1.5 percent at a depth of 10 inches. It is sandy loam or loam. Its lower boundary is gradual or there is either one or both an A3 horizon and a Bl horizon.

The B2t horizon is red, reddish brown, yellowish red or reddish yellow ln hue of 2.5YR or 5YR. It is clay loam or sandy clay loam with 27 to 35 percent clay and has 10 to 20 percent total coarse and very coarse sand. It averages 75 to 85 percent base saturation.

COMPETING SERIES: These are
the Academy, Blasingame, Burchell, Cajalco, Coarsegold, Honn, Jacinto, Los Robles, Marguerite, Modesto, Ojai, Pachappa, Perkins, Pleasanton, Sobrante, Trimmer, Whitney and Wyo series. Academy soils have sandstone at depths of 19 to 39 inches. Burchell, Jacinto, Marguerite, Pachappa and Wyo soils have no hue redder than 10YR, and Los Robles, Honn, Modesto and Pleasanton soils have no hue redder than 7.5YR in the B2t horizon. Blasingame soils have less than 1 percent organic matter ln all parts of the A horizon. Cajalco and Trimmer soils have a paralithic contact above 40 inches. Coarsegold soils have less than 10 percent coarse and very coarse sand and are micaceous. Ojai soils have very hard dry consistence in the Al horizon. Perkins soils have B2t horizons that are gravelly in the upper part and very gravelly in the lower part. Sobrante soils have a lithic contact above 40 inches. Whitney soils have a paralithic contact above 40 inches and no hue redder than 7.5YR.

GEOGRAPHIC SETTING: Rescue soils are on gently sloping to very steep uplands at elevations of 800 to 2,000 feet. They formed in residuum of gabbrodiorite rocks. Rock outcrops and stones are present in some units. The climate is moist subhumid with hot dry summers and cool moist winters. Annual precipitation 18 25 to 45 inches. Mean annual temperature ls about 59 degrees F., average January temperature about 44 degrees F., and the average July temperature about 75 degrees F.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Argonaut, Auburn,
and Boomer soils and the competing Sobrante soils. Argonaut soils have more than 35 percent

clay in the argillic horizon. Auburn soils lack an argillic horizon and are less than 20 inches deep to rock in part of each pedon. Boomer soils have a mean soil temperature of less than 59 degrees F.

DRAINAGE AND PERMEABILITY: Well-drained; medium to very rapid runoff; moderately slow to slow permeability.

USE AND VEGETATION: Annual range and watershed. Some areas are irrigated and produce pasture and deciduous fruit. Native vegetation is annual and perennial grasses, brush, scattered conifers, and oaks.

DISTRIBUTION AND EXTENT: Mainly on the western slopes of the Sierra Nevada range. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Nevada County, California, 1970.

REMARKS: The Rescue soils were formerly classified as Brunlzems.

The activity class was added to the classification in January of 2003. Competing series were not checked at that time. - ET

OSED scanned by SSQA. Last revised by state on 4/71.

ATTACHMENT C

Proposed Guidelines for Acorn Collection, Storage and Planting

Guidelines for Acorn Collection,
Storage, and Planting

- **Acorn Collection**
- All acorns should be from a source local to the mitigation sites.
- Collect acorns over an interval of a few weeks from late summer to mid fall, when the acorns have ripened, but before they have all fallen from the trees. Acorns can be harvested when they can be easily dislodged from their caps by gentle twisting and when they start to drop from the trees.
- If feasible, collect acorns directly from trees, rather than the ground, since acorns that are on the ground readily loose their moisture and are subject to predation.
- Place acorns in loosely sealed plastic bags that allow some gas exchange. Discard obviously damaged or deformed acorns.
- Store acorns in refridgerator just above freezing (34 degrees to 38 degrees F) for no more than one to two months before planting.

Planting Site Preparation

- All planting should be done in late fall or early winter, as soon as the soil is moist down to a depth of four+ inches.
- Soak acorns from eight to 48 hours prior to planting. Discard all acorns that float. Keep acorns cool during transport. Soaked acorns not planted must be discarded.
- Each planting site should be cleared of most vegetation around a four foot diameter area. Clear down to stubble and rake clean.
- Clear the center 12 inches of the planting site down to soil, removing all vegetation.
- Dig or auger a 12 inchs deep planting hole in this center area, removing all but very small rocks and debris. If shallow hardpan is found within the planting site, auger past the depth of the hardpan.
- Backfill with the loosened soil or, if necessary, sterile topsoil to fill the planting hole back up to original grade. Compact well using foot and hand tools. Do not compact by machine.

Planting

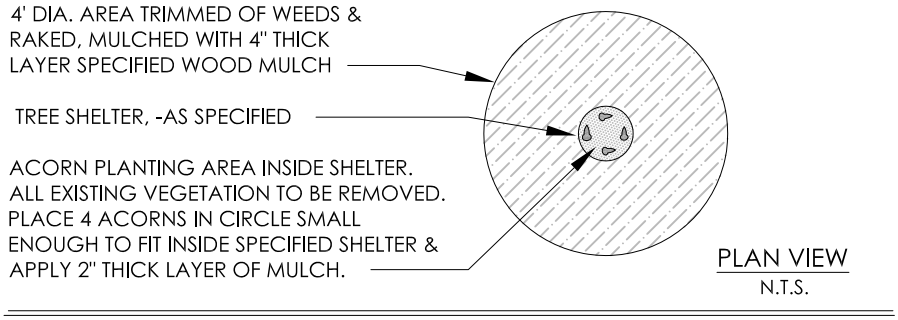
- Over the backfilled planting hole, place four evenly spaced acorns of the species specified on their sides and within a six inch diameter circle. The acorns should be spaced in an area smaller than the diameter of the specified tree shelter.
- Cover the acorns with one to two inches of the specified topsoil. Carefully but thoroughly compact backfill with hand or foot.
- Place the specified tree shelter over the covered acorns, inserting the bottom of the shelter four inches into the soil if vole predation is a consideration.
- Place shredded or chipped wood mulch four inches deep or sterile rice straw (compressed with foot) six inches deep outside of the shelter to cover the entire four foot diameter planting area.

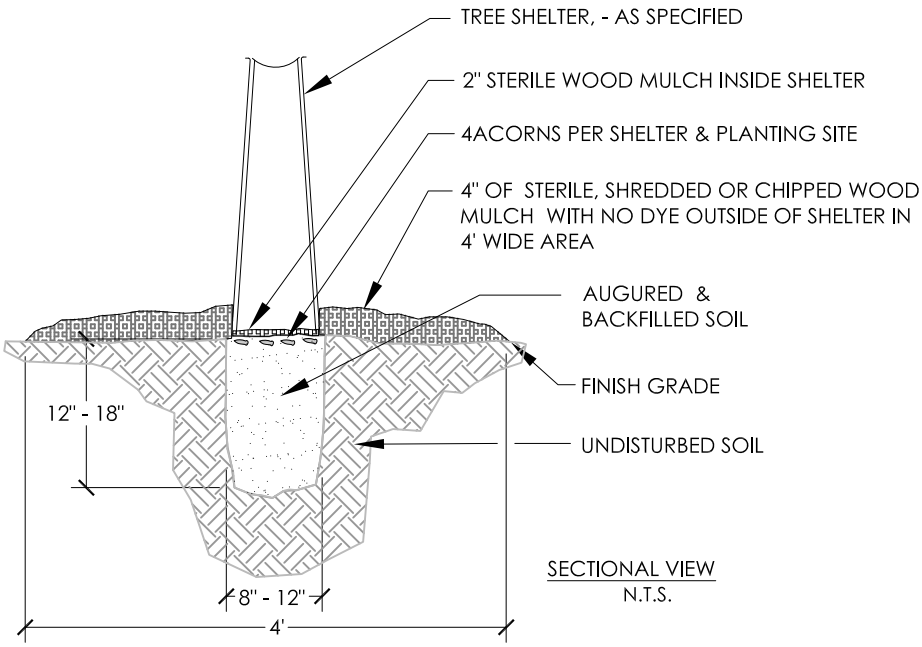
Maintenance

- Maintain a four-foot wide weed-free area around each acorn planting site for a minimum of three years by mowing or weedeating in mid spring. Initiate weed control in spring before weed seeds ripen. Additional late-season mowing or weedeating may be necessary. The elimination of surrounding weeds is vital to maintaining soil moisture, eliminating competition for light and space, and discouraging herbivory.
- The need for mowing may be reduced by additional applications of mulch or straw or by the application of approved pre- or post-emergent herbicides.
- Check for predation around tree shelters. Adjust position of the shelters and methods of weed control, if necessary.

ATTACHMENT D

Proposed Conceptual Layout for Acorn Planting with Protection





1. ACORN PLANTING SHOULD BE COMPLETED IN EARLY WINTER, JUST AFTER RAINS HAVE SUFFICIENTLY MOISTENED SOIL. SEE *GUIDELINES FOR ACORN COLLECTION AND PLANTING* (ECORP 2008).

2. REMOVE WEEDS FROM 4' DIA. CIRCLE AROUND ACORN PLANTING AREA. RAKE CLEAN.

3. REMOVE ALL VEGETATION FROM 12" DIA. SHELTER AREA.

4. AUGUR PLANTING HOLE AT LEAST 12" DEEP X 8" WIDE. REMOVE ROCKS & ALL VEGETATION. BACKFILL WITH NATIVE SOIL OR , IF NECESSARY, STERILE TOPSOIL.

5. PLACE 5 ACORNS ON THEIR SIDES WITHIN A CIRCLE SMALLER THAN THE DIAMETER OF THE SHELTER.

6. COVER ACORNS WITH $\frac{1}{2}$" TO 1" OF THE LOOSENED SOIL OR STERILE TOPSOIL.

7. SECURE TREE SHELTER AROUND ACORNS.

8. PLACE 1" THICK LAYER STERILE WOOD MULCH OVER ACORNS (WITHIN SHELTER) AND 4" THICK LAYER OUTSIDE SHELTER TO 4' DIAMETER.

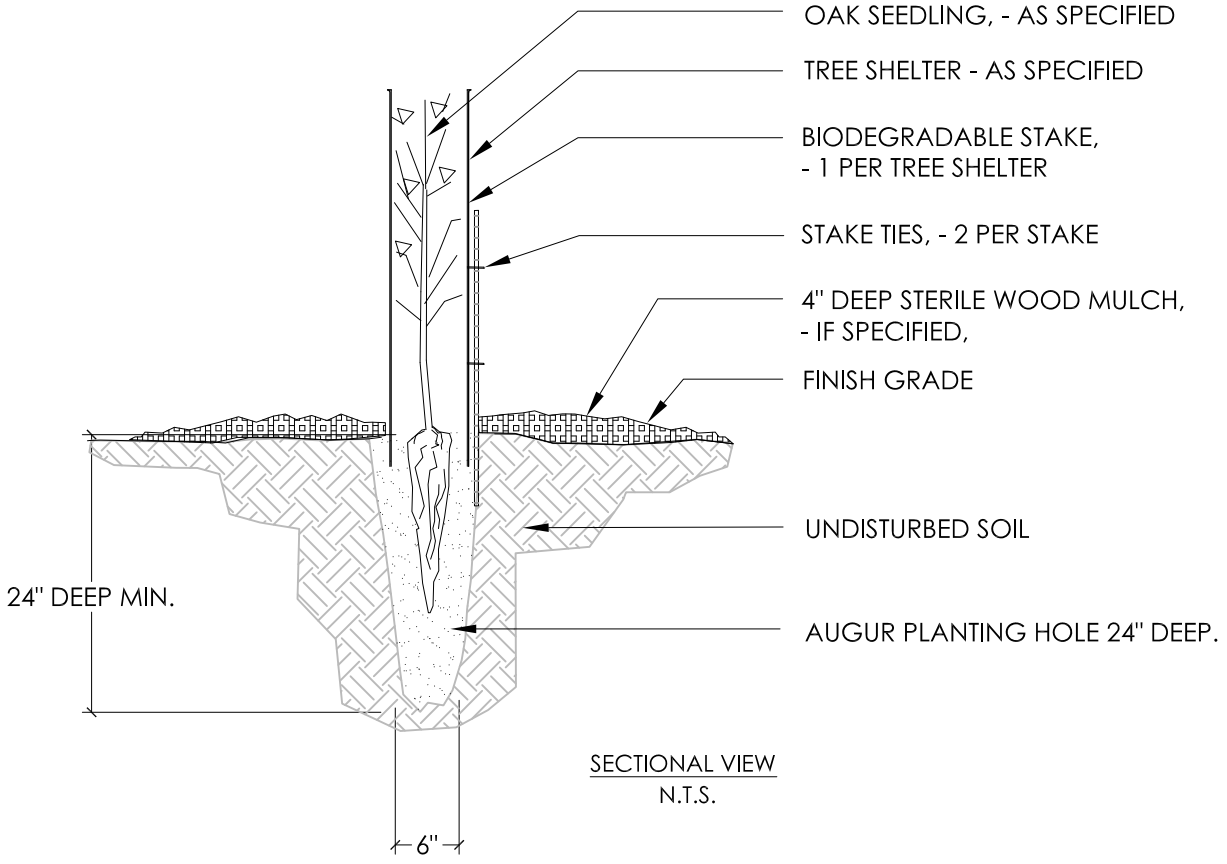
2 ACORN PLANTING AND PROTECTION

Detail for Acorn Planting

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT E

Proposed Guidelines for Planting Oak Seedling with Shelter



1. PLANTING HOLES SHALL BE AUGURED 6" WIDE X 24" DEEP.
2. ALL TREES TO RECEIVE SPECIFIED TREE SHELTER.
3. IF VOLE HERBIVORY NOTICED IN IMMEDIATE OR SURROUNDING AREAS PLACE BOTTOM OF SHELTERS 4" BELOW GRADE.

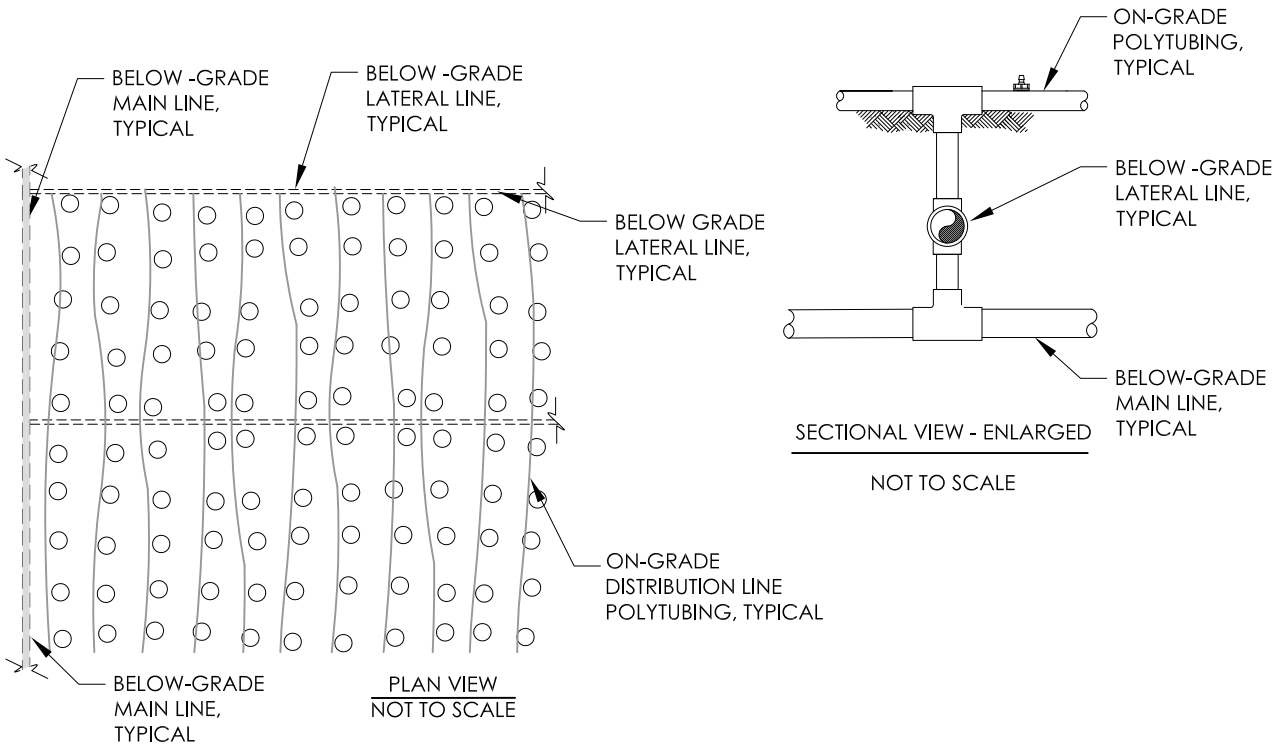
1 PLANTING OAK SEEDLING WITH SHELTER

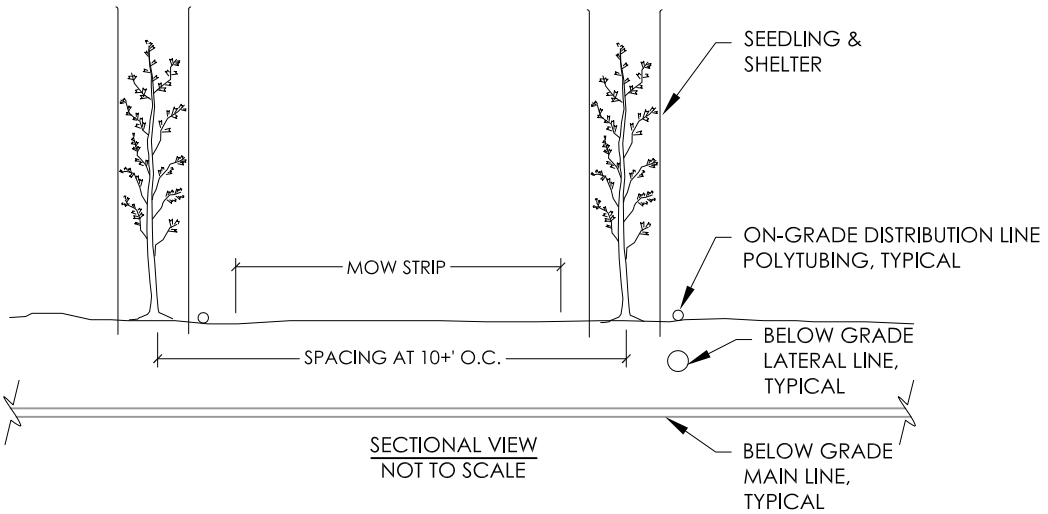
Detail for Oak Seedling Planting

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT F

Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns





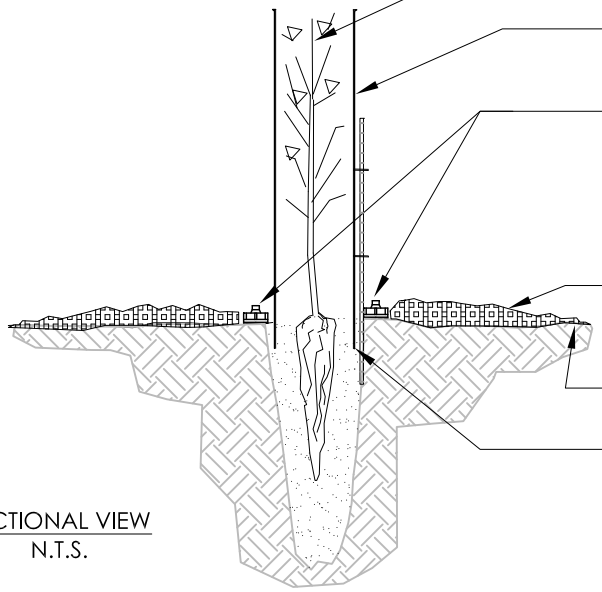
1. TO HELP ENSURE SUCCESS OF CANOPY COVER MITIGATION, PLANT OAK SEEDLINGS AT A DENSITY OF 400 TREES/ACRE.
2. SPACING SHALL BE EQUAL TO OR GREATER THAN 10' O.C.
3. PLANT IN UNDULATING (NOT STRAIGHT) ROWS TO MIMIC NATURAL PATTERN OF OAK WOODLAND.
4. TO ALLOW FOR ANNUAL MOWING, IRRIGATION MAINLINES & LATERAL LINES SHALL BE BURIED AND DISTRIBUTION LINES SHALL RUN IN ONE DIRECTION ONLY. SPACING BETWEEN DISTRIBUTION LINES SHALL EXCEED WIDTH OF MOWER.

4 CONCEPTUAL IRRIGATION LAYOUT FOR OAK SEEDLINGS & ACORNS

X:\2003-019 Gencorp\Landscape\Oak sdlng plant Spcing.dwg, 4/7/2009 10:20:55 AM, Adobe PDF

Detail for Oak Irrigation System Layout

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



SECTIONAL VIEW
N.T.S.

1. AT THE BEGINNING OF THE DRY SEASON, WATER SEEDLINGS DEEPLY, MOISTENING THE SURROUNDING SOIL TO A DEPTH OF AT LEAST 2'.

2. WATER INFREQUENTLY AND DEEPLY DURING THE DRY SEASON. SEE BELOW FOR TYPICAL IRRIGATION SCHEDULE, WHICH IS MEANT AS A GUIDE TO DETERMINE IRRIGATION FREQUENCY. ACTUAL SCHEDULE WILL BE DEPENDENT ON SOIL TYPE, EXPOSURE, AND LOCALE OF PLANTINGS. FOR EACH SUBSEQUENT WATERING, MOISTEN SURROUNDING SOIL TO A DEPTH OF AT LEAST 1'. NEWLY PLANTD SEEDLINGS WILL REQUIRE MORE FREQUENT WATERINGS.

3. ON LARGE-TRACK PLANTINGS, USE SOIL MOISTURE SENSOR WITH REMOTE CONTROL READER TO GUAGE WHEN SOIL IS DRY AND PLANTINGS SHOULD BE WATERED.

4. WATER DELIVERY DURING EACH WATERING CYCLE MUST PROVIDE ENOUGH WATER TO MOISTEN SOIL WITHIN TREE SHELTER.

IRRIGATION SCHEDULE GUIDELINES FOR OAK SEEDLINGS & ACORNS

SEASON	GOAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4
MID SPRING (TYPICALLY MID APRIL)	DEEP WATER, MOISTENING SOIL TO DEPTH OF 2'+.	ONCE	ONCE	ONCE	ONCE, IF NEEDED
EARLY SUMMER	DEEP WATER, MOISTENING SOIL TO DEPTH OF 1'+.	ONCE / 2 WEEKS	ONCE / 3 WEEKS	ONCE / 4 WEEKS	MONITOR ONLY
LATE SUMMER	DEEP WATER, MOISTENING SOIL TO DEPTH OF 1'+.	ONCE / 3 WEEKS	ONCE / 3-4 WEEKS	ONCE / 4 WEEKS IF NEEDED	MONITOR ONLY
FALL - MID SPRING	NO WATERING REQUIRED	NONE	NONE	NONE	SYSTEM DISCONNECTED

3 IRRIGATING OAK SEEDLINGS & ACORNS

Detail for Oak Seedling Irrigation

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT B

Tree Survey Table

Tree Number	Species	Date Collected	Diameter	Height	Dripline Radius	Condition/ Health	Multi-Trunk	Heritage Tree (>20 dbh)	Impact
100	Quercus wislizeni (interior live oak)	6/5/2017	15	25	12	Fair	Yes	N/A	Yes
101	Quercus lobata (valley oak)	6/5/2017	12	22	12	Fair	No	N/A	Yes
102	Quercus lobata (valley oak)	6/5/2017	8	17	10	Fair	No	N/A	Yes
103	Quercus lobata (valley oak)	6/5/2017	12	21	15	Normal	No	N/A	Yes
104	Quercus lobata (valley oak)	6/5/2017	12	25	12	Fair	No	N/A	Yes
105	Quercus lobata (valley oak)	6/5/2017	11	20	14	Fair	No	N/A	Yes
106	Quercus lobata (valley oak)	6/5/2017	8	17	9	Poor	No	N/A	Yes
107	Quercus lobata (valley oak)	6/5/2017	8	18	6	Poor	No	N/A	Yes
108	Quercus lobata (valley oak)	6/5/2017	12	19	13	Poor	No	N/A	Yes
109	Quercus lobata (valley oak)	6/5/2017	9	15	6	Poor	Yes	N/A	Yes
110	Quercus lobata (valley oak)	6/5/2017	6	13	6	Poor	Yes	N/A	Yes
111	Quercus lobata (valley oak)	6/5/2017	16	27	14	Normal	No	N/A	Yes
112	Quercus lobata (valley oak)	6/5/2017	18	25	15	Fair	No	N/A	Yes
113	Quercus x morehus (oracle oak)	6/5/2017	12	13	8	Poor	Yes	N/A	Yes
114	Quercus x morehus (oracle oak)	6/5/2017	13	12	10	Fair	Yes	N/A	Yes
115	Quercus lobata (valley oak)	6/5/2017	12	25	10	Normal	No	N/A	Yes
116	Quercus lobata (valley oak)	6/5/2017	12	20	10	Normal	No	N/A	Yes
117	Quercus wislizeni (interior live oak)	6/5/2017	24	18	12	Normal	Yes	Heritage Tree	Yes
118	Quercus wislizeni (interior live oak)	6/5/2017	20	15	12	Normal	Yes	Heritage Tree	Yes
119	Quercus lobata (valley oak)	6/5/2017	11	17	8	Normal	No	N/A	Yes
120	Quercus wislizeni (interior live oak)	6/5/2017	16	15	8	Normal	Yes	N/A	Yes
121	Quercus lobata (valley oak)	6/5/2017	12	22	9	Normal	No	N/A	No
122	Quercus lobata (valley oak)	6/5/2017	28	25	11	Fair	Yes	Heritage Tree	No
123	Quercus lobata (valley oak)	6/5/2017	5	17	6	Fair	Yes	N/A	Yes
124	Quercus lobata (valley oak)	6/5/2017	10	24	9	Normal	Yes	N/A	Yes
125	Quercus x morehus (oracle oak)	6/5/2017	13	13	6	Fair	Yes	N/A	Yes
126	Quercus lobata (valley oak)	6/5/2017	14	17	6	Fair	No	N/A	Yes
127	Quercus wislizeni (interior live oak)	6/5/2017	4	12	8	Poor	No	N/A	Yes

Tree Number	Species	Date Collected	Diameter	Height	Dripline Radius	Condition/ Health	Multi-Trunk	Heritage Tree (>20 dbh)	Impact
128	Quercus wislizeni (interior live oak)	6/5/2017	5	14	10	Poor	No	N/A	Yes
129	Quercus wislizeni (interior live oak)	6/5/2017	5	12	5	Normal	Yes	N/A	Yes
130	Quercus lobata (valley oak)	6/5/2017	15	30	17	Fair	No	N/A	Yes
131	Quercus lobata (valley oak)	6/5/2017	16	28	8	Normal	No	N/A	Yes
132	Quercus wislizeni (interior live oak)	6/5/2017	16	15	18	Fair	No	N/A	Yes
133	Quercus wislizeni (interior live oak)	6/5/2017	42	15	10	Normal	No	Heritage Tree	Yes
134	Quercus lobata (valley oak)	6/5/2017	44	22	15	Fair	Yes	Heritage Tree	Yes
135	Quercus lobata (valley oak)	6/5/2017	16	28	12	Fair	Yes	N/A	Yes
136	Quercus lobata (valley oak)	6/5/2017	16	28	10	Fair	No	N/A	Yes
139	Quercus lobata (valley oak)	6/5/2017	12	15	6	Poor	No	N/A	Yes
140	Quercus lobata (valley oak)	6/5/2017	10	12	5	Poor	No	N/A	Yes
141	Quercus lobata (valley oak)	6/5/2017	12	12	8	Poor	No	N/A	Yes
142	Quercus lobata (valley oak)	6/5/2017	11	11	6	Poor	No	N/A	Yes
143	Quercus lobata (valley oak)	6/5/2017	8	14	8	Poor	No	N/A	Yes
144	Quercus lobata (valley oak)	6/5/2017	11	13	6	Poor	No	N/A	Yes
145	Quercus lobata (valley oak)	6/5/2017	24	17	10	Poor	Yes	Heritage Tree	Yes
146	Quercus lobata (valley oak)	6/5/2017	13	16	8	Fair	No	N/A	Yes
147	Quercus lobata (valley oak)	6/5/2017	4	11	3	Poor	No	N/A	Yes
148	Quercus lobata (valley oak)	6/5/2017	5	10	4	Poor	No	N/A	Yes
149	Quercus wislizeni (interior live oak)	6/5/2017	7	15	6	Normal	No	N/A	Yes
150	Quercus lobata (valley oak)	6/5/2017	5	19	8	Fair	No	N/A	Yes
151	Quercus lobata (valley oak)	6/5/2017	4	18	5	Poor	No	N/A	Yes
152	Quercus lobata (valley oak)	6/5/2017	4	18	5	Fair	No	N/A	Yes
153	Quercus lobata (valley oak)	6/5/2017	16	25	17	Fair	No	N/A	Yes
154	Quercus lobata (valley oak)	6/5/2017	12	21	10	Poor	No	N/A	Yes
155	Quercus lobata (valley oak)	6/5/2017	11	19	8	Poor	No	N/A	Yes
156	Quercus lobata (valley oak)	6/5/2017	17	22	12	Poor	No	N/A	Yes
157	Quercus lobata (valley oak)	6/5/2017	10	18	10	Poor	Yes	N/A	Yes

Tree Number	Species	Date Collected	Diameter	Height	Dripline Radius	Condition/ Health	Multi-Trunk	Heritage Tree (>20 dbh)	Impact
158	Quercus lobata (valley oak)	6/5/2017	7	15	6	Poor	No	N/A	Yes
159	Quercus lobata (valley oak)	6/5/2017	9	17	10	Poor	No	N/A	Yes
160	Quercus lobata (valley oak)	6/5/2017	6	19	6	Poor	No	N/A	Yes
161	Quercus lobata (valley oak)	6/5/2017	7	17	6	Poor	No	N/A	Yes
162	Quercus lobata (valley oak)	6/5/2017	7	20	11	Poor	No	N/A	Yes
163	Quercus lobata (valley oak)	6/5/2017	16	23	15	Fair	No	N/A	Yes
164	Quercus lobata (valley oak)	6/5/2017	14	20	15	Poor	No	N/A	Yes
165	Quercus lobata (valley oak)	6/5/2017	4	12	6	Poor	No	N/A	Yes
166	Quercus lobata (valley oak)	6/5/2017	4	14	10	Poor	No	N/A	Yes
167	Quercus lobata (valley oak)	6/5/2017	4	13	8	Poor	No	N/A	Yes
168	Quercus lobata (valley oak)	6/5/2017	4	15	4	Poor	No	N/A	Yes
169	Quercus lobata (valley oak)	6/5/2017	6	14	6	Poor	No	N/A	Yes
170	Quercus lobata (valley oak)	6/5/2017	5	17	5	Poor	No	N/A	Yes
171	Quercus lobata (valley oak)	6/5/2017	8	17	5	Poor	No	N/A	Yes
172	Quercus lobata (valley oak)	6/5/2017	4	12	3	Poor	No	N/A	Yes
173	Quercus rubra (northern red oak)	6/5/2017	7	20	7	Fair	No	N/A	Yes
174	Quercus rubra (northern red oak)	6/5/2017	7	16	4	Poor	No	N/A	Yes
175	Quercus lobata (valley oak)	6/5/2017	18	25	12	Fair	No	N/A	Yes
176	Quercus lobata (valley oak)	6/5/2017	14	27	12	Fair	No	N/A	Yes
177	Quercus lobata (valley oak)	6/5/2017	16	33	18	Poor	No	N/A	Yes
178	Quercus agrifolia (coast live oak)	6/5/2017	14	22	10	Fair	No	N/A	Yes
179	Quercus agrifolia (coast live oak)	6/5/2017	7	18	15	Poor	No	N/A	Yes
180	Quercus agrifolia (coast live oak)	6/5/2017	22	22	18	Fair	Yes	N/A	Yes
181	Quercus agrifolia (coast live oak)	6/5/2017	20	25	18	Normal	No	N/A	Yes
182	Quercus lobata (valley oak)	6/5/2017	14	20	12	Fair	No	N/A	Yes
183	Quercus wislizeni (interior live oak)	6/5/2017	22	28	15	Fair	Yes	Heritage Tree	Yes
184	Quercus lobata (valley oak)	6/5/2017	16	33	18	Fair	No	N/A	Yes
185	Quercus agrifolia (coast live oak)	6/5/2017	15	21	10	Fair	No	N/A	Yes

Tree Number	Species	Date Collected	Diameter	Height	Dripline Radius	Condition/ Health	Multi-Trunk	Heritage Tree (>20 dbh)	Impact
186	Quercus agrifolia (coast live oak)	6/5/2017	11	17	8	Fair	No	N/A	Yes
187	Quercus agrifolia (coast live oak)	6/5/2017	18	18	10	Normal	No	N/A	Yes
188	Quercus agrifolia (coast live oak)	6/5/2017	20	30	15	Normal	No	N/A	Yes
189	Quercus lobata (valley oak)	6/5/2017	17	25	8	Poor	No	N/A	Yes
190	Quercus agrifolia (coast live oak)	6/5/2017	24	26	8	Fair	No	N/A	Yes
191	Quercus wislizeni (interior live oak)	6/5/2017	15	24	11	Fair	No	N/A	Yes
192	Quercus agrifolia (coast live oak)	6/5/2017	16	19	13	Fair	No	N/A	Yes
193	Quercus agrifolia (coast live oak)	6/5/2017	10	12	6	Normal	Yes	N/A	Yes
194	Quercus lobata (valley oak)	6/5/2017	12	22	8	Fair	No	N/A	Yes
195	Quercus lobata (valley oak)	6/5/2017	13	25	12	Fair	No	N/A	Yes
196	Quercus agrifolia (coast live oak)	6/5/2017	18	17	15	Normal	No	N/A	Yes
197	Quercus agrifolia (coast live oak)	6/5/2017	15	15	12	Poor	No	N/A	Yes
198	Quercus douglasii (blue oak)	6/5/2017	6	13	4	Fair	No	N/A	Yes
199	Quercus agrifolia (coast live oak)	6/5/2017	18	27	17	Normal	No	N/A	Yes
200	Quercus rubra (northern red oak)	6/5/2017	10	17	12	Fair	No	N/A	Yes
701	Quercus agrifolia (coast live oak)	6/5/2017	6	16	15	Normal	Yes	N/A	Yes
702	Quercus agrifolia (coast live oak)	6/5/2017	10	18	8	Fair	Yes	N/A	Yes
704	Quercus agrifolia (coast live oak)	6/5/2017	5	12	8	Poor	No	N/A	Yes
705	Quercus douglasii (blue oak)	6/5/2017	4	15	6	Fair	No	N/A	Yes
706	Quercus wislizeni (interior live oak)	6/5/2017	7	12	4	Fair	No	N/A	Yes
707	Quercus agrifolia (coast live oak)	6/5/2017	10	20	8	Poor	No	N/A	Yes
708	Quercus agrifolia (coast live oak)	6/5/2017	4	12	6	Poor	No	N/A	Yes
709	Quercus agrifolia (coast live oak)	6/5/2017	17	17	14	Poor	No	N/A	Yes
710	Quercus agrifolia (coast live oak)	6/5/2017	15	17	8	Fair	No	N/A	Yes
711	Quercus wislizeni (interior live oak)	6/5/2017	40	28	40	Poor	Yes	N/A	Yes
703	Quercus agrifolia (coast live oak)	6/5/2017	6	16	15	Poor	No	N/A	Yes

Appendix G

Native American Consultation Documentation

DEVELOPMENT SERVICES DEPARTMENT

COUNTY OF EL DORADO **http://www.edcgov.us/devservices**

PLACERVILLE OFFICE:
2850 FAIRLANE COURT PLACERVILLE, CA 95667
BUILDING (530) 621-5315 / (530) 622-1708 FAX
bldgdept@edcgov.us
PLANNING (530) 621-5355 / (530) 642-0508 FAX
planning@edcgov.us

LAKE TAHOE OFFICE:
3368 LAKE TAHOE BLVD. SUITE 302
SOUTH LAKE TAHOE, CA 96150
(530) 573-3330
(530) 542-9082 FAX
tahoebuild@edcgov.us

December 6, 2012

Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Re: Sacred Lands Search and contacts for the Lime Rock Valley, Central El Dorado Hills, Village of Marble Valley Specific Plans
File Nos. SP12-0001, SP12-0002, and SP12-0003

Dear Ms. Pilas-Treadway:

I am requesting a sacred lands search to identify the presence of any Native American cultural resources within the project area of each of the proposed specific plans in El Dorado County. I am also requesting a list of Native American contacts for the project area in order to request consultation in compliance with Senate Bill SB18. In the coming months, the County will be initiating the EIR process for these projects. For your reference and review, attached are each of specific plan area exhibits and maps depicting the quadrant identification and township and range (Exhibits A-D).

Your assistance and prompt feedback would be invaluable to this process. Should you have any questions, I can be reached directly at 530-621-5363 or via email at Rommel.Pabalinas@edcgov.us.

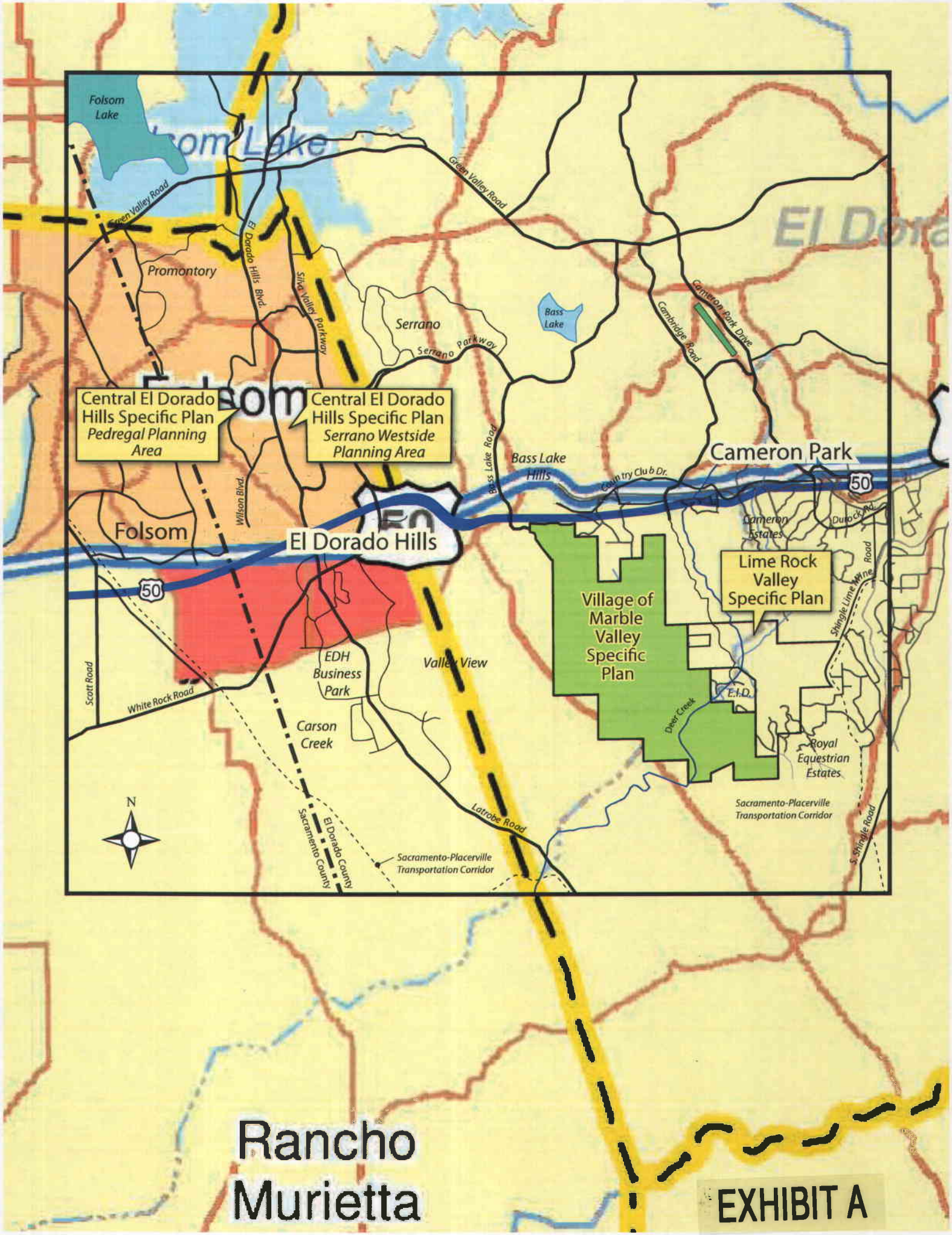
Cordially,

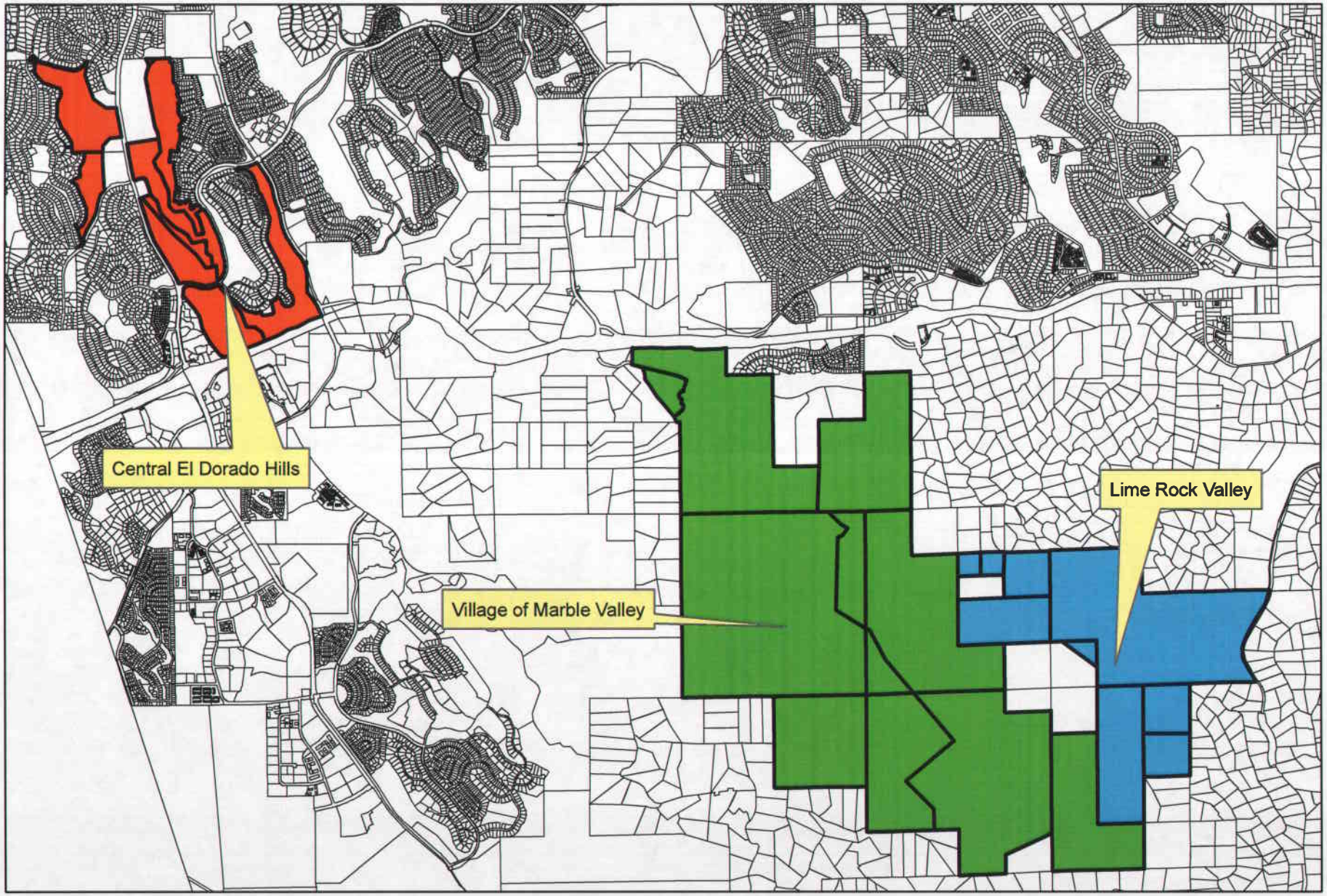
Mel Pabalinas, Senior Planner

Exhibits:

A. Composite Map of Lime Rock Valley, Central El Dorado Hills, Village of Marble Valley Specific Plans
B. Specific Plan- Project Parcels
C. Quadrant, Township, and Range Maps
D. Specific Plan Exhibits

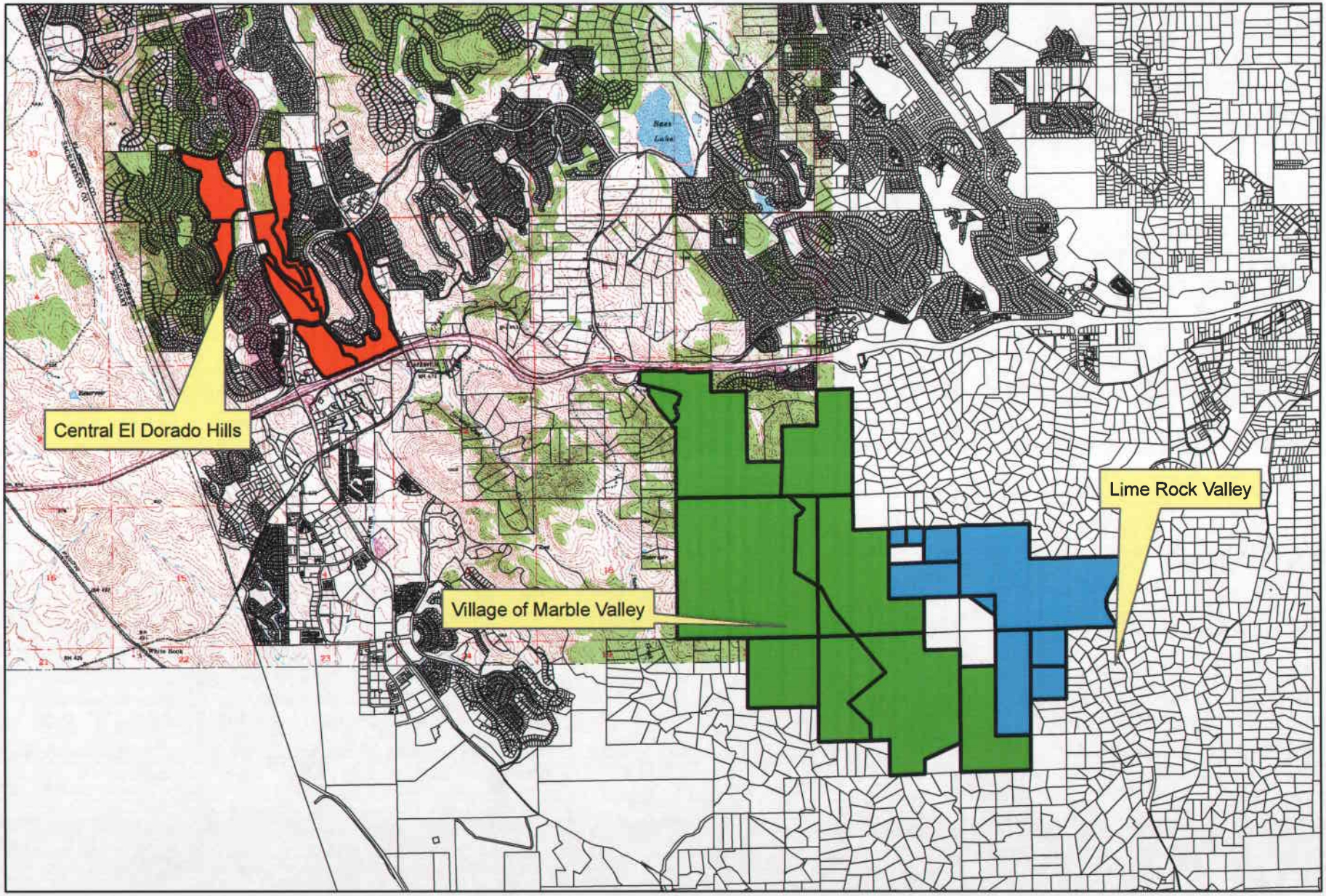
Cc. Project Files


Folsom Lake
Green Valley Road
El Dorado Hills Blvd.
Silva Valley Parkway
Promontory
Serrano
Serrano Parkway
Bass Lake
Cambridge Road
Cameron Park Drive
Central El Dorado Hills Specific Plan
Pedregal Planning Area
Central El Dorado Hills Specific Plan
Serrano Westside Planning Area
Bass Lake Road
Bass Lake Hills
Country Club Dr.
Cameron Park
50
Cameron Estates
Dunock Rd.
Folsom
Wilson Blvd.
El Dorado Hills
Lime Rock Valley Specific Plan
Shingle Line Road
Village of Marble Valley Specific Plan
Scott Road
White Rock Road
EDH Business Park
Valley View
E.I.D.
Deer Creek
Carson Creek
Royal Equestrian Estates
Sacramento-Placerville Transportation Corridor
N
Latrobe Road
Sacramento County
El Dorado County
Sacramento-Placerville Transportation Corridor
S. Shingle Road
Rancho Murietta
EXHIBIT A



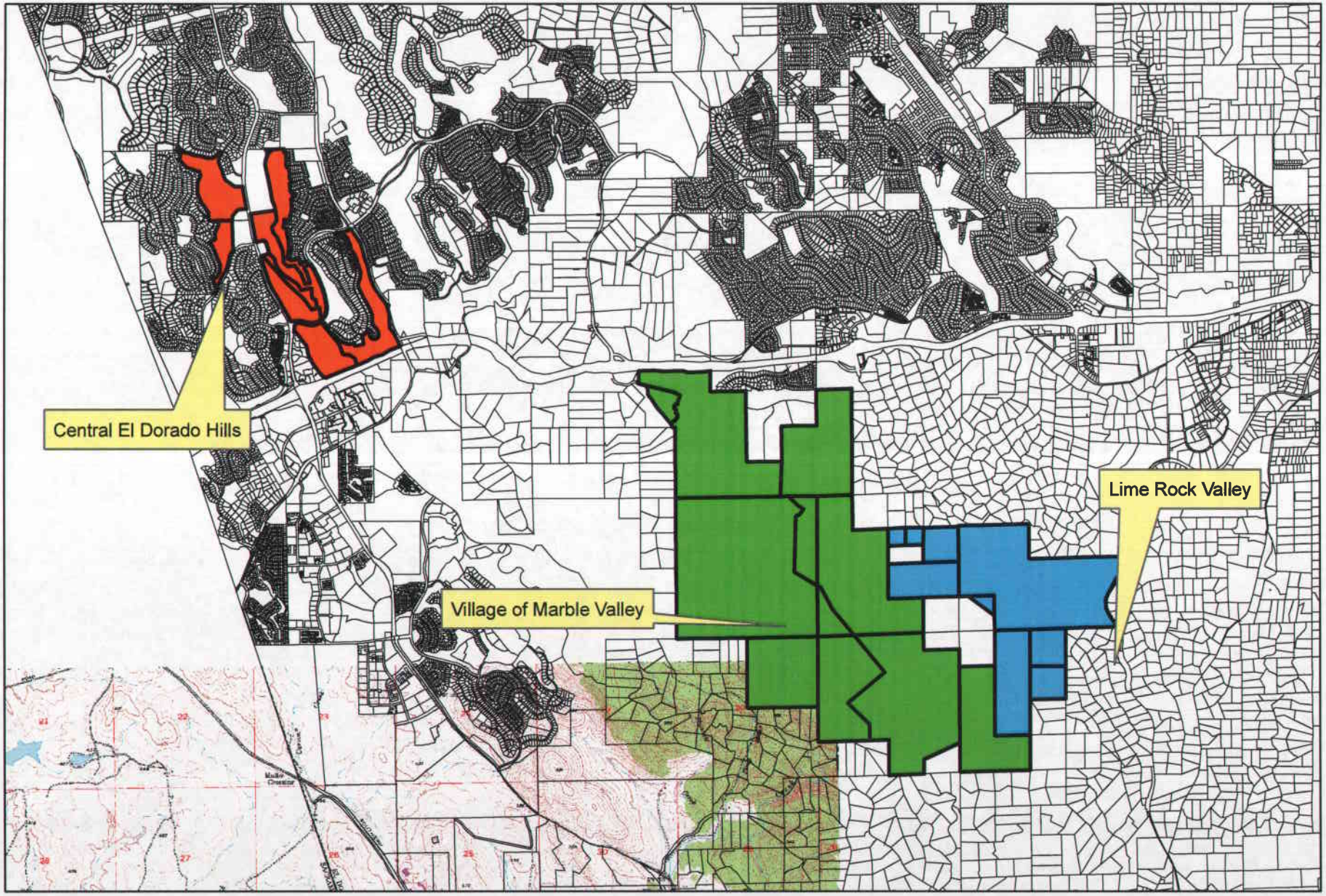
Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans

EXHIBIT B

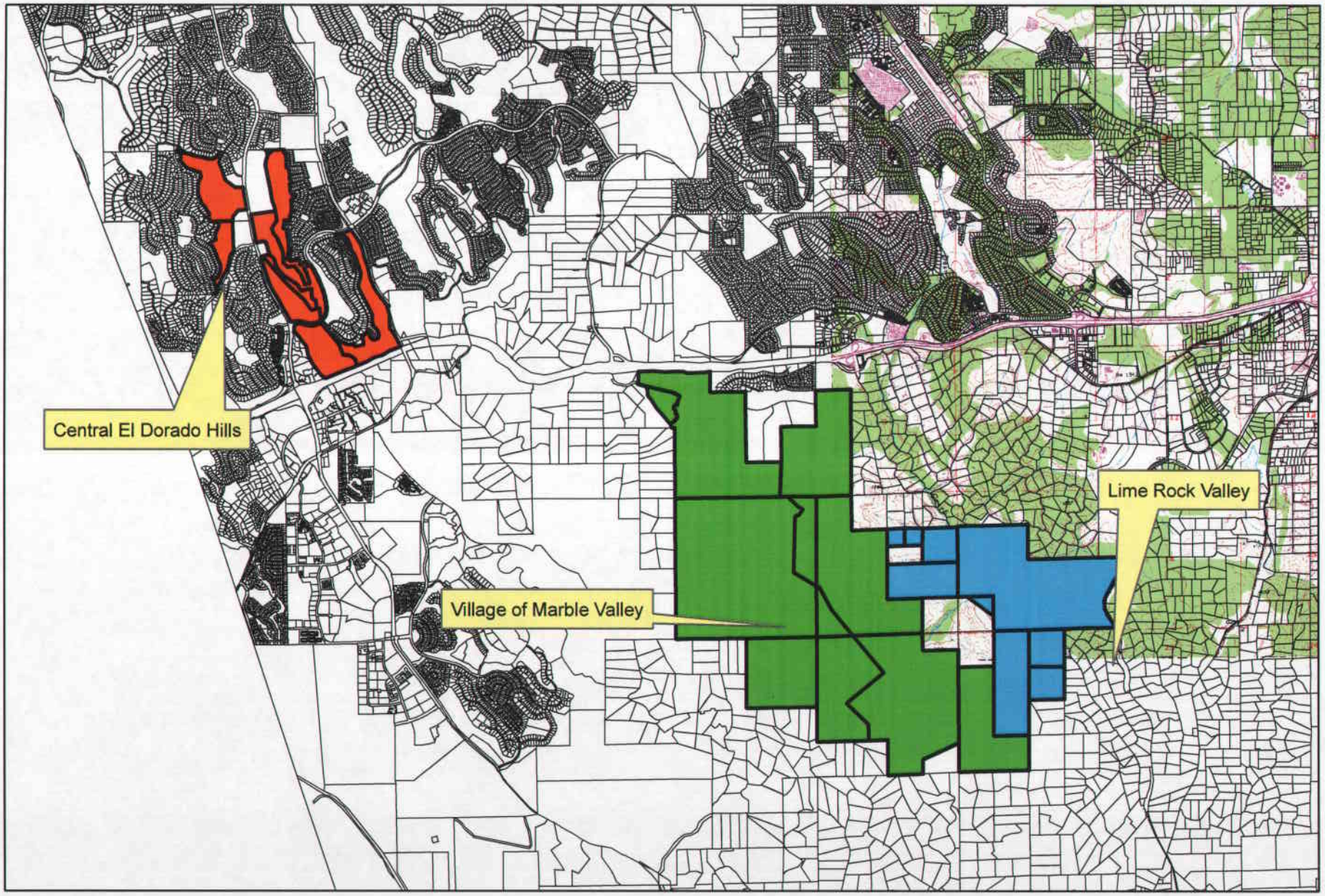


Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Clarksville Quadrant)

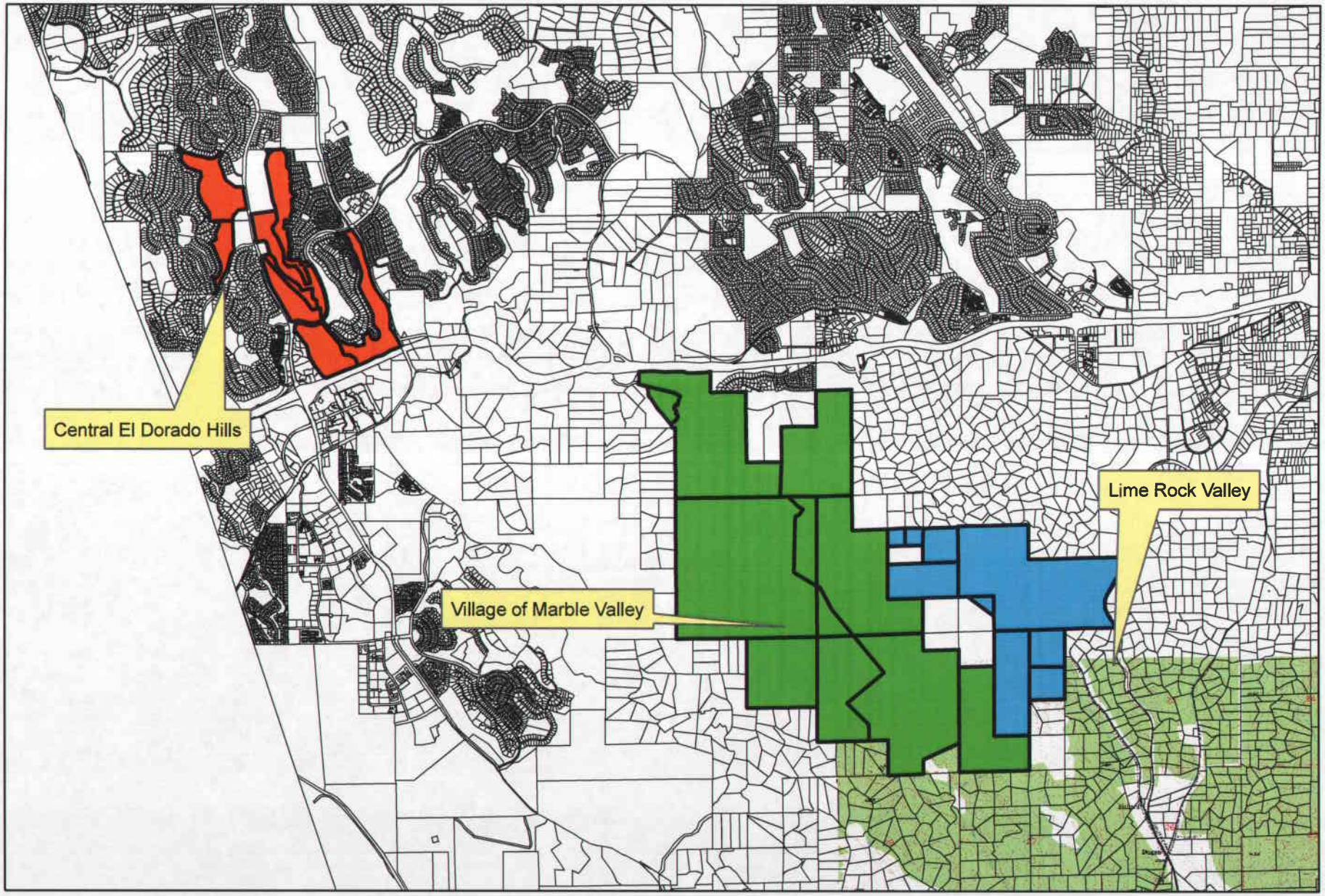
EXHIBIT C



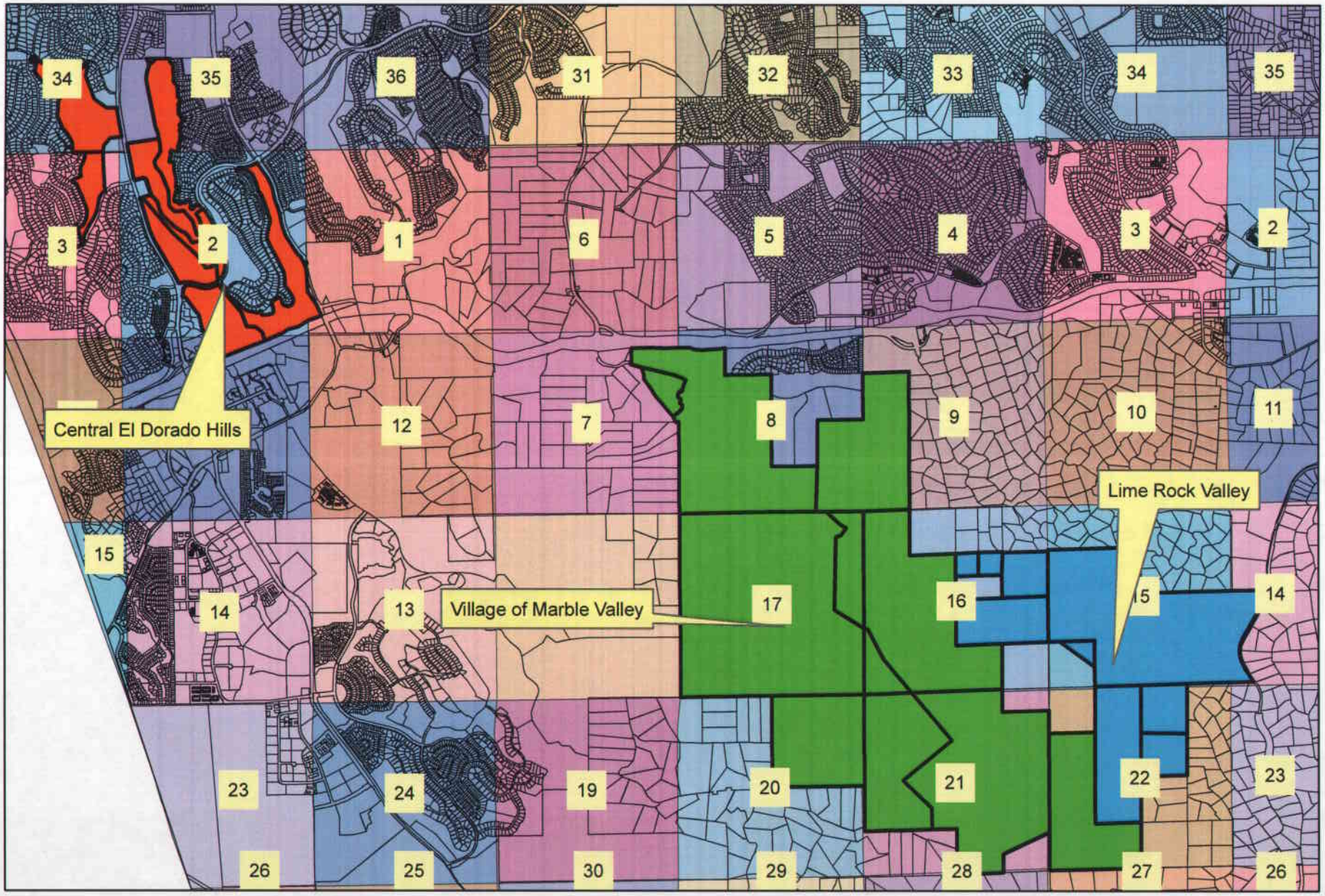
Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Folsom SE Quadrant)



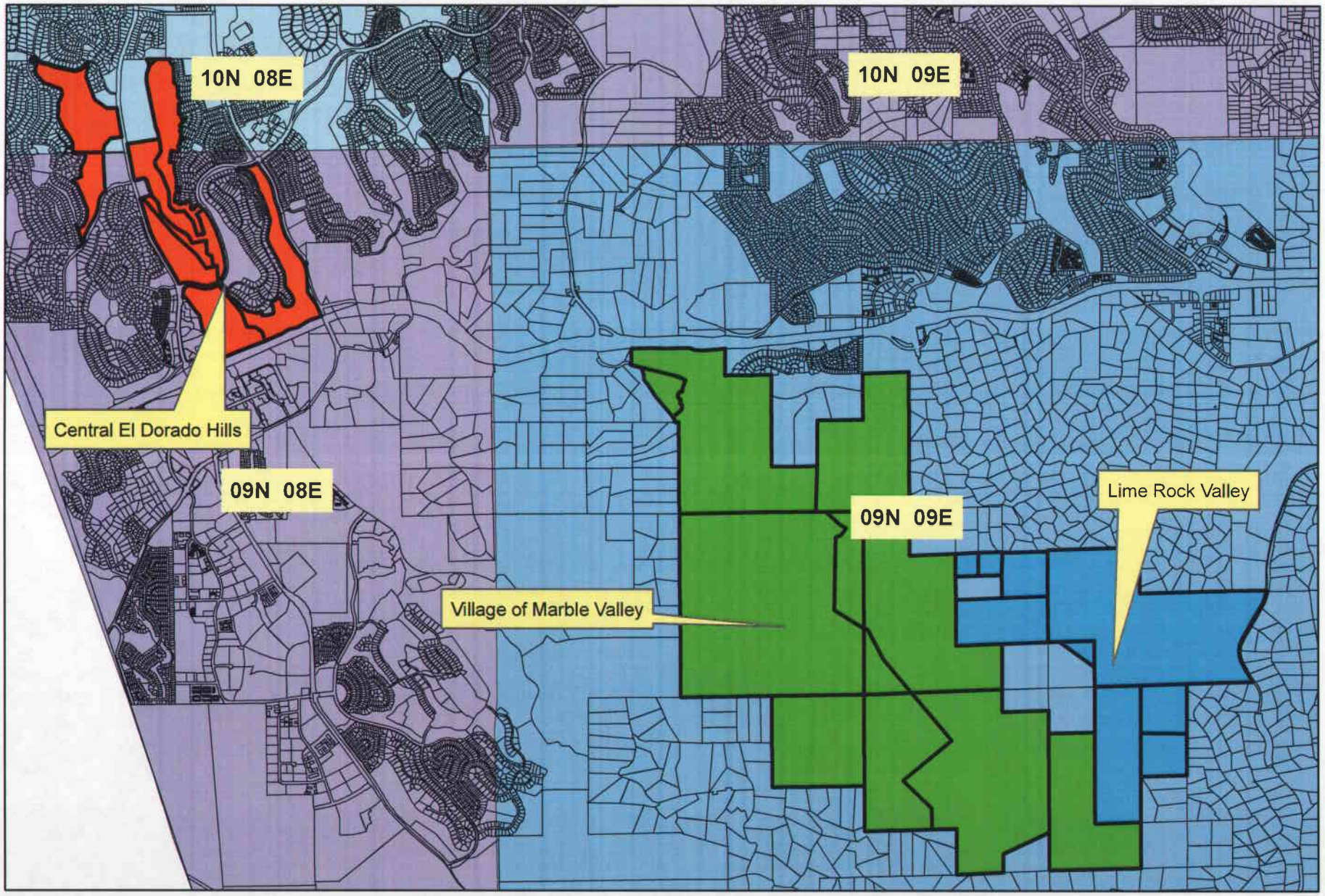
Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Shingle Springs Quadrant)



Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Latrobe Quadrant)



Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Sections)



Central El Dorado Hills, Village of Marble Valley and Lime Rock Valley Specific Plans (Township and Range)

CENTRAL EL DORADO HILLS SPECIFIC PLAN

AERIAL MAP OF PROJECT SITE WITH ADJACENT USES

COUNTY OF EL DORADO, CALIFORNIA

NOVEMBER 2012

0 200' 400' 800'

SCALE IN FEET

R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors

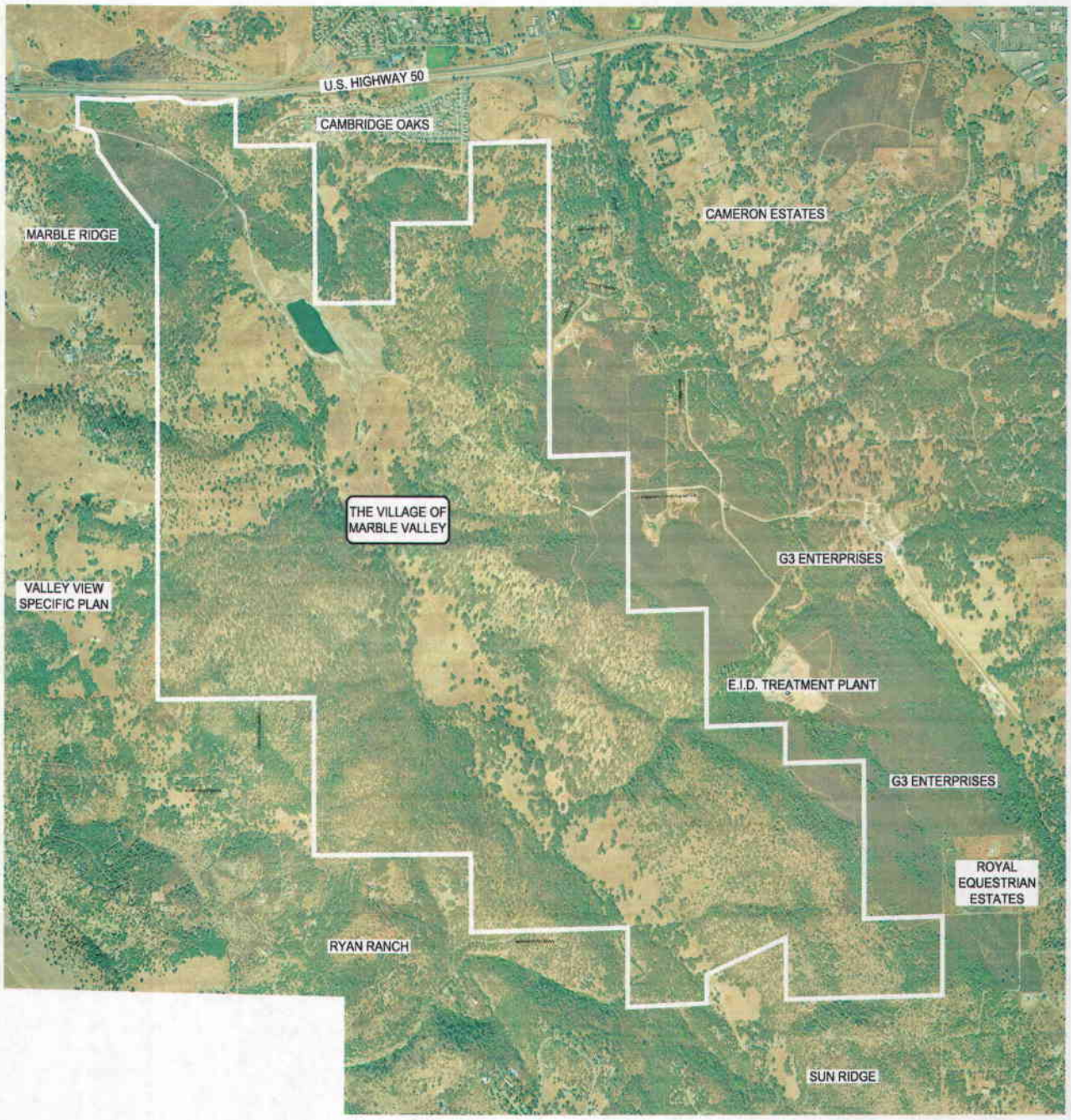
EXHIBIT D

THE VILLAGE OF MARBLE VALLEY SPECIFIC PLAN

AERIAL MAP OF PROJECT SITE WITH ADJACENT USES

COUNTY OF EL DORADO, CALIFORNIA

NOVEMBER 2012



0 400' 800' 1600'

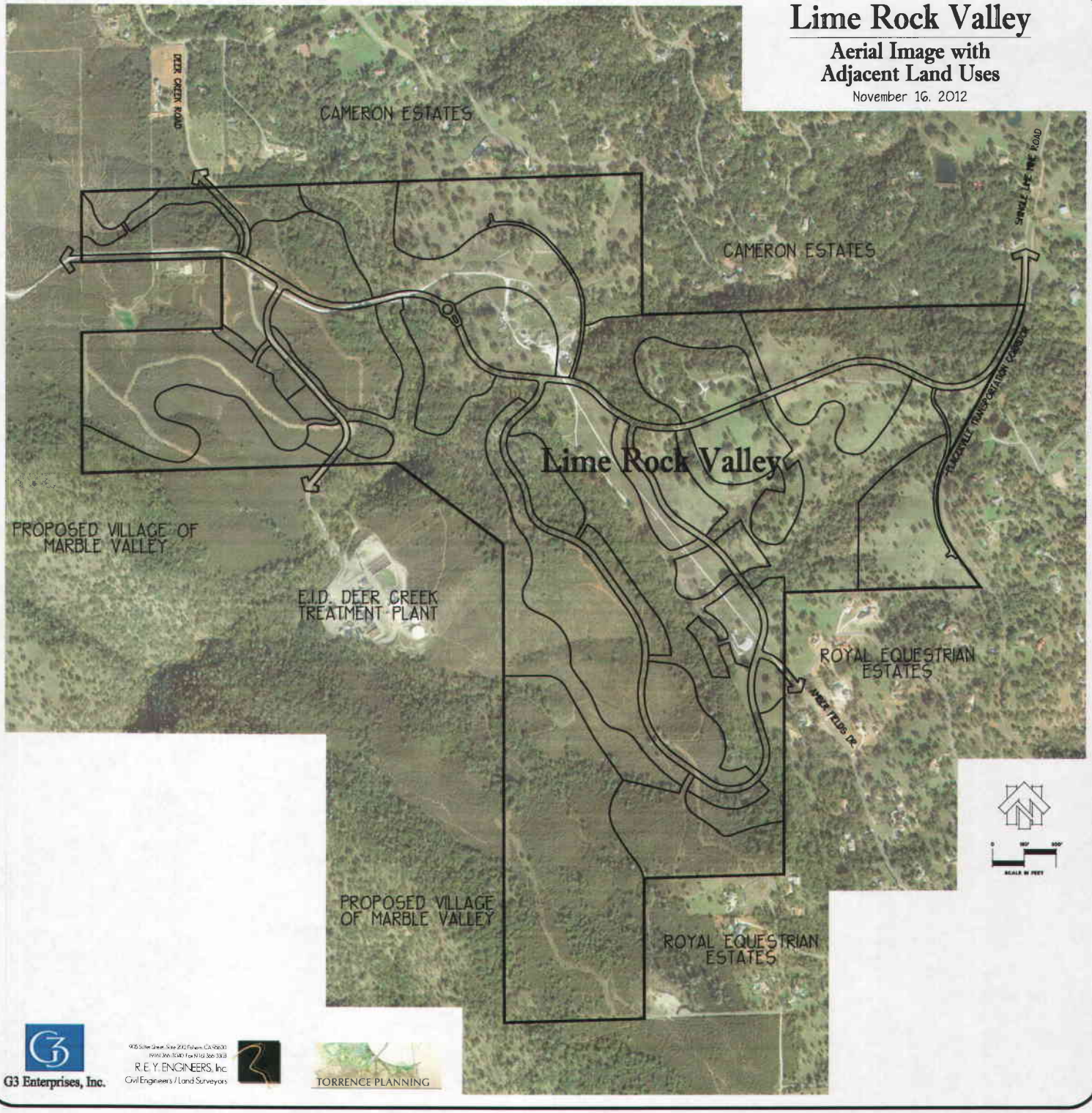
SCALE IN FEET

905 Sutter Street Suite 200 Folsom CA 95630
(916) 366-3040 Fax (916) 366-3303
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors

Lime Rock Valley

Aerial Image with Adjacent Land Uses

November 16, 2012



G3 Enterprises, Inc.

905 Sutter Street, Suite 200 Folsom, CA 95630
(916) 366-3040 Fax (916) 366-3303
R.E.Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors

TORRENCE PLANNING

Chiu, Bonnie

From: Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Sent: Tuesday, December 11, 2012 3:09 PM
To: nahc@pacbell.net
Cc: Pat Angell; Kent MacDiarmid; Chiu, Bonnie
Subject: Quadrant, Sections, Township for Specific Plans

Dear Ms. Fowler:

Thank you for contacting me. Per your request below are the quadrant, section, township information for the Central El Dorado Hills, Village of Marble Valley, and Lime Rock Valley Specific Plan. The information supplements the correspondence that I sent today and last week. Please let me know should you need any additional information.

Central El Dorado Hills Specific Plan

Quadrant: Clarksville
Sections: 1-3, 11, 34 and 35
Township: 10N 08E and 09N 08E

Village of Marble Valley Specific Plan

Quadrants: Clarksville, Folsom SE, Latrobe and Shingle Springs
Sections: 7-9, 16, 17, 20-22
Township: 09N 09E

Lime Rock Valley Specific Plan

Quadrant: Shingle Springs and Latrobe
Sections: 14-16, 22
Township: 09N 09E

==========

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Development Services Department
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

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Thank you.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390

January 15, 2013

Mel Pabalinas, Senior Planner
Development Services Department
County of El Dorado

Sent by Fax: 530-642-0508
Number of Pages: 2

RE: SB 18 Tribal Consultation and Sacred Lands File Check for the Lime Rock Valley, Central El Dorado Hills, Village of Marble Valley Specific Plans, File Nos. SP12-0001, SP12-0002, and SP12-0003; El Dorado County

Dear Mr. Pabalinas:

Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above general plan amendment.

As a part of consultation, the NAHC recommends that local governments conduct record searches through the NAHC and California Historic Resources Information System (CHRIS) to determine if any cultural places are located within the area(s) affected by the proposed action. A record search of the Native American Heritage Commission *Sacred Lands File* indicates the potential of Native American cultural resources in the project vicinity that may be impacted. The site is on the *Shingle Springs* USGS quadrangle (Township 9 north, Range 9 east, section 9). The site is known as the *Boychuk Site*. It is also a recorded archaeological site, number CA-ELD-225. For specific information regarding this site, please contact the Singles Springs Rancheria. The tribe's telephone number is on the attached list. Local governments should also be aware that records maintained by the NAHC and CHRIS is not exhaustive. A tribe may be the only source of information regarding the existence of a cultural place.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: rw_nahc@pacbell.net.

Sincerely,

Rob Wood
Associate Government Program Analyst

13 JAN 15 PM 2:11
RECEIVED
PLANNING DEPARTMENT

TRIBAL CONSULTATION LIST
El Dorado County
January 15, 2013

Wilton Rancheria
Andrew Franklin, Chairperson
9300 W. Stockton, Suite Miwok
Elk Grove , CA 95758
916-683-6000

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs, CA 95682 Maidu
nfonseca@ssband.org
(530) 676-8010

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
530-883-2390

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
valdezcom@comcast.net
916-429-8047 voice

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
PO Box 699 Miwok
Plymouth , CA 95669
(209) 274-6753

T'Si-akim Maidu
Grayson Coney, Cultural Director
P.O. Box 1316 Maidu
Colfax , CA 95713
akimmaidu@att.net
(530) 383-7234

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.com
916 491-0011

T si-Akim Maidu
Eileen Moon,Vice Chairperson
1239 East Main St. Maidu
Grass Valley, CA 95945
530-274-7497

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Section 65352.3.
Lime Rock Valley, Central El Dorado Hills, Village of Marble Valley Specific Plans, File NOS. SP12-0001, SP12-0002, and SP12-0003, El Dorado Co.

MIWOK United Auburn Indian Community
MAIDU of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Brenda Adams, Treasurer | Calvin Moman, Council Member

13 FEB 26 AM 11:59
RECEIVED
PLANNING DEPARTMENT

February 12, 2013

Mel Pabalinas
Development Services Department
County of El Dorado
2850 Fairlane Court
Placerville, CA 95667

Subject: SB 18 Consultation for the Central El Dorado Hills SP, Project File No. SP12-0002

Dear Mr. Pabalinas,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and ancestral territory spans into El Dorado, Nevada, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

In order to ascertain whether or not the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that have been, or will be, completed for the project. We also request copies of future environmental documents for the proposed project so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The UAIC would also like the opportunity to have our tribal monitors accompany you during the field survey. The information gathered will provide us with a better understanding of the project and cultural resources on site and is invaluable for consultation purposes.

The UAIC's preservation committee has identified cultural resources within your project area and in close proximity, and would like to request a site visit to confirm their locations and meet with you regarding this project. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the aforementioned documents as requested. Please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,

Gene Whitehouse,
Chairman

CC: Marcos Guerrero, CRM

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

Response to SB 18 Consultation Letter from United Auburn Indian Community

Rommel Pabalinas <rommel.pabalinas@edcgov.us> Fri, Mar 1, 2013 at 12:09 PM
To: Marcos Guerrero <mguerrero@auburnrancheria.com>

Hello, Marcos:

Per our discussion this morning, the response letter that I received from Gene Whitehouse appears to respond only to the Central El Dorado Hills Specific Plan (file number SP12-0002). As I indicated in our discussion, I distributed two other SB 18 Consultation letters involving Lime Rock Valley Specific Plan (SP12-0001) and Village of Marble Valley Specific Plan. Please let me know in writing if you would like to extend a similar request to be consulted on these two other projects.

Thank you.

--
==========
Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Development Services Department
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Wilton Rancheria
9300 W. Stockton Blvd., Suite 200
Elk Grove, CA 95758
Ph: (916) 683-6000
Fax: (916) 683-6015

13 MAR 18 PM 1:36
RECEIVED
PLANNING DEPARTMENT

March 15, 2013

To: Mel Pabalinas, Senior Planner

Development Services Department

County of El Dorado

2850 Fairlane Court

Placerville, CA 95667

Re: SB 18 Tribal Consultation for Central El Dorado Hills Specific Plan Project

File No. SP12-0002

Dear Mr. Pabalinas:

Thank you for your letter regarding the above named project. Wilton Rancheria is comprised of Miwok people whose ancestral territory spans are within El Dorado and surrounding Counties. Wilton Rancheria is concerned about development within its ancestral territory that has potential to impact the lifeways, traditional cultural properties and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

To determine whether or not the project could affect cultural resources that may be of importance to Wilton Rancheria, we would like to receive copies of any completed record searches and or archeological, cultural and environmental surveys that have been, or will be, completed for the project. The information gathered will provide us with a better understanding of the project and cultural resources on site and is invaluable for consultation purposes.

Thank you again for taking these matters into consideration, please contact Steven Hutchason, Director of Cultural Rights Protection, at (916) 683-6000 or email at shutchason@wiltonrancheria-nsn.gov if you have any questions.

Sincerely,

Steven Hutchason, Director Cultural Rights Protection
Cc: Roger Trout

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

September 13, 2005

Ms. Debbie Pilas-Treadway
Associate Governmental Program Analyst
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

RE: Cultural Resources Identification Effort at Pedregal Property, El Dorado County, California T 9N, R 8E, Section 3 and T 10N, R 8E, Section 34.

Dear Ms. Pilas-Treadway:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the parcel indicated above. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

Included is a map showing the project area outlined. We would appreciate input on this undertaking from the Native American community with concerns about possible traditional cultural properties or potential impacts within or adjacent to the area of potential effect. Please understand that this is not a request for location, data or any other information that may be deemed sensitive or confidential to individual Native Americans, Native American organizations, or Federally Recognized Tribes. Information on other parties that may have interests or concerns in the undertaking would be appreciated. Thank you in advance for your assistance in our cultural resource management consultation.

Sincerely,

Julia K Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

2260 Douglas Blvd., Suite 160
Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

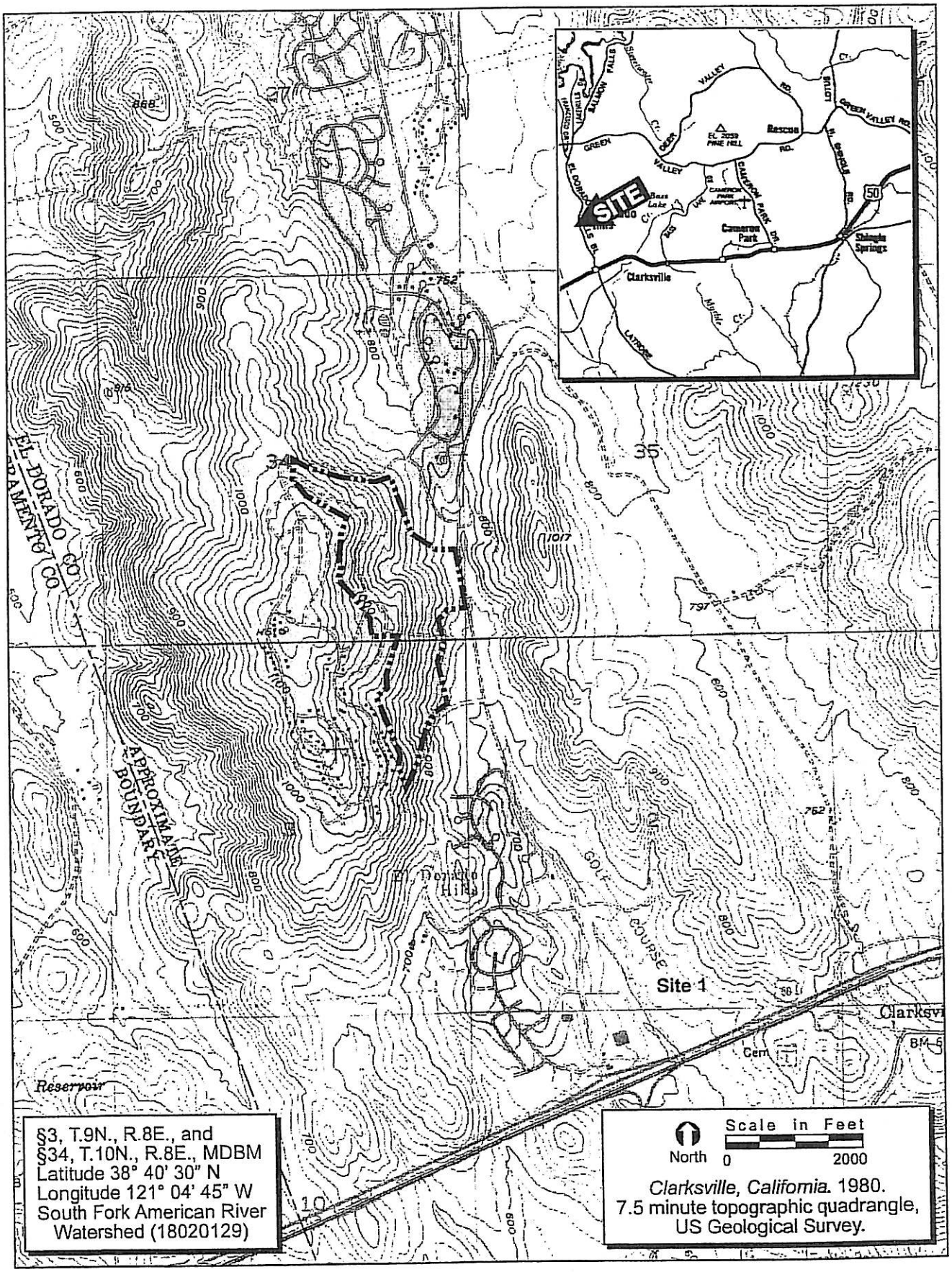

FIGURE 1. Project Site and Vicinity Map

2005-219 Pedregal Property

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
©2005

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

August 20, 2005 (correction: September 20, 2005)

Julia K. Green
ECORP Consulting, Inc.
2260 Douglas Blvd. Suite 160
Roseville, CA 95661

Sent by Fax: 916-782-9134
Number of Pages: 11

RE: **Proposed Pedregal Property, El Dorado Co., Foresthill Property, Placer Co., Loomis Town Center, Placer Co., Flaming Arrow Pipeline Alignment Project, Sacramento Co., Watt Elkhorn Project, Sacramento Co., Easton Place Project, Sacramento Co., Parkside Project, Sacramento Co., Whitlow Project, Sacramento Co.,**

Dear Ms. Green:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Karen Fowler

for Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
El Dorado County
September 20, 2005

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
(916) 421-1600
if not (916) 419-4331

El Dorado County Indian Council
P.O. Box 564 Miwok
El Dorado , CA 95623 Maidu
(530) 647-0423

El Dorado Miwok Tribe
Jeri Scambler, Chairperson
PO Box 1284 Miwok
El Dorado , CA 95623
miwoktribe@hotmail.com
530-363-3257

El Dorado Miwok Tribe
Ernest Faircloth, Cultural Preservation
PO Box 258 Miwok
El Dorado , CA 95623
(530) 626-7572

Ione Band of Miwok Indians
Glen Villa, Jr. Cultural Committee Chairperson
901 Quail Court Miwok
Ione , CA 95640
916-322-1617 w
209-274-5535 FAX

Ione Band of Miwok Indians
Pamela Baumgartner, Tribal Administrator
PO Box 1190 Miwok
Ione , CA 95640
admin@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
916-429-8047 voice
916-429-8047 fax
valdezcome@comcast.net

Shingle Springs Band of Miwok Indians
Jeff Murray, Cultural Resources Manager
P.O. Box 1340 Miwok
Shingle , CA 95682 Maidu
shingle_springs_rancheria@ho
(530) 676-8010
(530) 676-8033 Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle , CA 95682 Maidu
shingle_springs_rancheria@ho
(530) 676-8010
(530) 676-8033 Fax

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
PO Box 1490 Miwok
Foresthill , CA 95631 Maidu
tvmmcf@foothill.net
(530) 367-3893 - Voice / Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resource assessment for the proposed Pedregal Property, El Dorado County.

Native American Contacts
El Dorado County
September 20, 2005

United Auburn Indian Community of the Auburn
Jessica Tavares, Chairperson
575 Menlo Drive, Suite 2 Maidu
Rocklin , CA 95765 Miwok
916 663-3720
916 663-3727 - Fax

This list is current only as of the date of this document.

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This list is only applicable for contacting local Native Americans with regard to cultural resource assessment for the proposed Pedregal Property, El Dorado County.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Randy Yonemura
4305-39th Avenue
Sacramento, California 95824

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Randy Yonemura:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware the resource(s) exist.

If you have any questions, please do not hesitate to contact me at ECORP Consulting, Inc. at 916-782-9100. Thank you in advance for your participation in our cultural resource consultation.

Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

2260 Douglas Blvd., Suite 160
Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

El Dorado County Indian Council
P.O. Box 564
El Dorado, California 95623

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Sir or Madam:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

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Sincerely,

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Julia K. Green, M.A., RPA
Cultural Resource Manager

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Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Jeri Scambler, Chairperson
El Dorado Miwok Tribe
P.O. Box 1284
El Dorado, California 95623

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Jeri Scambler:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

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Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

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Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Ernest Faircloth, Cultural Preservation
El Dorado Miwok Tribe
P.O. Box 258
El Dorado, California 95623

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Ernest Faircloth:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

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Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

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Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Glen Villa, Jr., Cultural Committee Chairperson
Ione Band of Miwok Indians
901 Quail Court
Ione, California 95640

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Glen Villa, Jr.:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

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Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

2260 Douglas Blvd., Suite 160
Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Pamela Baumgartner, Tribal Administrator
Ione Band of Miwok Indians
P.O. Box 1190
Ione, California 95640

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Pamela Baumgartner:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

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Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

2260 Douglas Blvd., Suite 160
Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Jeff Murray, Cultural Resources Manager
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, California 95682

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Jeff Murray:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

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Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

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Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Nicholas Fonseca, Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle, California 95682

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Nicholas Fonseca:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

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If you have any questions, please do not hesitate to contact me at ECORP Consulting, Inc. at 916-782-9100. Thank you in advance for your participation in our cultural resource consultation.

Sincerely,

Julia K. Green (HC)

Julia K. Green, M.A., RPA
Cultural Resource Manager

2260 Douglas Blvd., Suite 160
Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Christopher Suehead, Cultural Representative
Todd Valley Miwok-Maidu Cultural Foundation
P.O. Box 1490
Foresthill, California 95631

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Christopher Suehead:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware the resource(s) exist.

If you have any questions, please do not hesitate to contact me at ECORP Consulting, Inc. at 916-782-9100. Thank you in advance for your participation in our cultural resource consultation.

Sincerely,

Julia K. Green

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ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Jessica Tavares, Chairperson
United Auburn Indian Community
575 Menlo Drive, Suite 2
Rocklin, California 95765

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Jessica Tavares:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware the resource(s) exist.

If you have any questions, please do not hesitate to contact me at ECORP Consulting, Inc. at 916-782-9100. Thank you in advance for your participation in our cultural resource consultation.

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ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 5, 2005

Cosme Valdez, Interim Chief Executive Officer
Nashville-El Dorado Miwok
P.O. Box 580986
Elk Grove, California 95758

RE: Cultural Resources Identification Efforts at the Pedregal Property, El Dorado County, California

Dear Cosme Valdez:

ECORP Consulting, Inc. is conducting an environmental and cultural resource study at the Pedregal Property. A record search of the project area has been conducted. A map showing the project study area is attached.

The State of California Native American Heritage Commission recommended that we contact you to provide an opportunity for you to contribute information about cultural resources within this project study area. An important element of our investigation is to identify sites, resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you might have concerning these resources in the project study area. If you cannot supply information, but know of others who can, we would appreciate it if you would provide us with the names of individuals.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware the resource(s) exist.

If you have any questions, please do not hesitate to contact me at ECORP Consulting, Inc. at 916-782-9100. Thank you in advance for your participation in our cultural resource consultation.

Sincerely,

Julia K. Green

Julia K. Green, M.A., RPA
Cultural Resource Manager

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Roseville, California 95661
Tele: (916) 782-9100
Fax: (916) 782-9134
Email: ecorp@ecorpconsulting.com
Web: www.ecorpconsulting.com

Native American Consultation for Pedregal: Follow-up of Testing Results

Conducted by: Marcos Guerrero	**Date: 14 March, 2005**
Contact: Randy Yonemura Title: Individual Representing: Miwok	Time: 11:30 am
Left Message.	
Contact: El Dorado County Indian Council Title: Representing: Miwok, Maidu	Time: 3:04 pm
Left Message	
Contact: Jeri Scambler Title: Chairperson Representing: Eldorado Miwok Tribe	Time: 1:15 pm
Left Message	
Contact: Ernest Faircloth Title: Cultural Preservation Representative Representing: Eldorado Miwok Tribe	Time: 3:45 pm
Left Message	
Contact: Glen Villa, Jr. Title: Cultural Committee Chairperson Representing: Ione Band of Miwok Indians	Time: 11:50 am
Left Message	
Contact: Pamela Baumgartner Title: Tribal Administrator Representing: Ione Band of Miwok Indians	Time: 11:55 am
Left Message	
Contact: Cosme Valdez Title: Interim Chief Executive Officer Representing: Nashville-Eldorado Miwok	Time: 10:20 am
Resent letter and had no comment.	
Contact: Jeff Murray Title: Cultural Resources Manager Representing: Shingle Springs Band of Miwok Indians	Time: N/A
Julia Green to email.	
Contact: Nicholas Fonseca Title: Chairperson Representing: Shingle Springs Band of Miwok Indians	Time: 11:00 am
Spoke with secretary and left a message.	
Contact: Christopher Suehead Title: Cultural Representative Representing: Todd Valley Miwok-Maidu Cultural Foundation	Time: 4:00 pm
Left Message	
Contact: Jessica Tavares Title: Chairperson Representing: United Auburn Indian Community of the Auburn	Time: 2:24 pm
Concerned with Placer and Nevada counties.	

Native American Consultation for Pedregal: Follow-up of Testing Results

Conducted by: Stephen Pappas	**Date: 19 December, 2006**
Contact: Randy Yonemura Title: Individual Representing: Miwok	Time: 10:45 am
Spoke with Randy, he is concerned about the project and wants to meet with archaeologist Stephen Pappas on 12/26/06 to discuss the sites and results of the testing report.	
Contact: El Dorado County Indian Council Title: Representing: Miwok, Maidu	Time: 10:55 am
Left Message	
Contact: Jeri Scambler Title: Chairperson Representing: Eldorado Miwok Tribe	Time: 10:57 am
Left Message	
Contact: Ernest Faircloth Title: Cultural Preservation Representative Representing: Eldorado Miwok Tribe	Time: 10:59 am
Left Message	
Contact: Glen Villa, Jr. Title: Cultural Committee Chairperson Representing: Ione Band of Miwok Indians	Time: 11:01 am
Left Message	
Contact: Pamela Baumgartner Title: Tribal Administrator Representing: Ione Band of Miwok Indians	Time: 11:05 am
Spoke w/ secretary and she stated she'd leave her a message but they are mainly concerned with Sacramento, Amador, and Calaveras Counties.	
Contact: Cosme Valdez Title: Interim Chief Executive Officer Representing: Nashville-Eldorado Miwok	Time: 11:08 am
Spoke with Cosme, he requested we re-send him the consultation letter with site vicinity map.	
Contact: Jeff Murray Title: Cultural Resources Manager Representing: Shingle Springs Band of Miwok Indians	Time: 11:15 am
Spoke with Jeff, he is very concerned about the project. He is requesting a copy of the testing report. He is familiar with the sites and states there were depressions outside of Peak's boundaries that could be possible house pits. He could not remember the exact locations of the house pits but would like to conduct a field visit of the sites with Stephen Pappas.	
Contact: Nicholas Fonseca Title: Chairperson Representing: Shingle Springs Band of Miwok Indians	Time: 1:00 pm
Spoke with secretary and left a message.	
Contact: Christopher Suehead Title: Cultural Representative Representing: Todd Valley Miwok-Maidu Cultural Foundation	Time: 1:04 pm
Left Message	
Contact: Jessica Tavares Title: Chairperson Representing: United Auburn Indian Community of the Auburn	Time: 1:48 pm
Left Message	

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

LETTER OF TRANSMITTAL

DATE: 31 May 2007

TO: Randy Yonemura
El Dorado Miwok Tribe
4305 39th Avenue
Sacramento, California 95824

Jeff Murray
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle, California 95682

FROM: Stephen Pappas

RE: ***Pedregal Property***

WE ARE SENDING:		DELIVERED BY:
CAD PLOT (S) ⇨	REPORT (S)	OVERNIGHT
BLUEPRINTS	LETTERS (S)	FEDERAL EXPRESS
DISKETTE	CONTRACT (S)	⇨ U.S. MAIL
AGENCY CORR.	OTHER	HAND

REMARKS:

For your review before the site visit on June 6, 2007, please find enclosed the driving directions to the Pedregal Site and the draft Test Program Results and Evaluation for Archaeological Sites in the Pedregal Project. If you have any questions, please feel free to call me at (916) 782-9100.

SIGNED:

Stephan Pappas
Associate Archeologist

2005-219: Cultural Resources/Test Report/Draft Letter Trans3

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

RECORD OF CONVERSATION

Project:	Pedregal
Date:	June 6, 2007
Time:	9:00 am – 12:30 pm
Location:	Pedregal Project Area, El Dorado Hills
Regarding:	Native American Consultation Site Visit
Attendees:	Lisa Westwood (Cultural Resources Manager, ECORP) Marcos Guerrero (Staff Archaeologist, ECORP) Stephen Pappas (Staff Archaeologist, ECORP) Randy Yomemura (Miwok) Brian Padilla (Miwok)
Absent, But Invited:	Jeff Murray (Cultural Resources Manager, Shingle Springs Band of Miwok) Project Proponent
Purpose:	To assist the lead agency (USACE) in meeting its legal obligations for Native American consultation under Section 106 of the National Historic Preservation Act (1966, as amended).

Upon arrival on site, the attendees reviewed the basic project description and project goals, which include the construction of a single family residential development and related utilities and infrastructure. LW advised RY and BP of pending consultation with the project manager to obtain additional details of the project description that are necessary in order to answer their specific questions. We discussed the field methods and previous research that was conducted on the property by Peak. **RY and BP requested the following:**

1. Two sets of project area maps showing: a) the project area boundaries and project details over a topographic map; b) project area maps and details showing boundaries and all sites on a topo map; and c) project area maps and details overlaying a current aerial photograph
2. The name of the USACE regulatory staff member who will be issuing the Section 404 permit
3. The approximate timeline of the project application, approval, and implementation
4. One copy of the biological (wildlife and botanical) and wetland delineation reports
5. An explanation for the recent ground disturbances
6. An answer to whether or not the project proponent is agreeable to capping the sites with soil to protect them
7. An answer to whether or not the new residents will have direct access to the open space areas with sites (indirect project impact to sites within the open space)

General comments provided by RY and BP (letter to follow, after they consult with the Miwok consortium):

1. Just because there are no subsurface archaeological deposits doesn't mean that the sites are not significant.
2. There is ethnographic (oral history) information among the Miwok that the ridge tops and sites along them are connected spiritually. RY specifically pointed to the ridge top above the current project area as being spiritually connected to the other local landforms. RY stated that this spiritual connection is significant to him.
3. Springs and permanent water sources are significant to the Miwok, even if there are no archaeological deposits directly associated with them.
4. The BRMs on the property may be related to the larger eligible site (1248) and archaeologists should not consider them as separate non-eligible/non-significant isolates or unrelated sites.
5. Requested receipt of items needed, time to review, and then another site visit with Jeff Murray also present.
6. Requested a meeting with the project proponent.
7. Would like to negotiate with lead agency and project proponent to maximize site avoidance through either extension of the open space area to encompass the sites or capping with soil, or both.

Record of Conversation

Project: Pedregal (2005-219)

Date: June 11, 2007

Time: 10:45 am

Location: Pedregal Project Area, El Dorado Hills

Regarding: Follow-up to Native American Consultation Site Visit

Caller: Lisa Westwood (Cultural Resources Manager, ECORP)

Person Called: Randy Yomemura (Miwok)

Purpose: To follow-up with Randy's requests for more information.

I called and Randy was not at home. I left a message with a woman, indicating that he and I met on a project site last week and at that time he had asked me for some more information. I told her that I was calling to provide him with some additional information and updates on his requests. I asked her to have him call me back at his earliest convenience.

Record of Conversation

Project: Pedregal (2005-219)

Date: June 11, 2007

Time: 12:30 pm

Location: Pedregal Project Area, El Dorado Hills

Regarding: Follow-up to Native American Consultation Site Visit

Caller: Lisa Westwood (Cultural Resources Manager, ECORP)

Person Called: Randy Yomemura (Miwok)

Purpose: To follow-up with Randy's requests for more information.

Randy returned my call from earlier in the day. I advised him of the following:

1. Project area maps and aerials with overlays are currently tentative, as we are very early in the process. Once a final site design has been settled upon, copies will be provided.
2. The identity of the USACE regulatory staff member has not been made available because a permit has not yet been applied for.
3. The approximate timeline of the project application, approval, and implementation is currently unknown, as other studies are currently in progress
4. One copy of the biological (wildlife and botanical) and wetland delineation reports can be provided after the client provides authorization. A request has been made.
5. The recent ground disturbances are due to unauthorized trespassing.
6. Capping the sites with soil to protect them has not been ruled out.
7. New residents will not likely have direct access to the open space areas with sites (indirect project impact to sites within the open space) because the USACE will want it protected and excluded from impacts.
8. I will contact him when there is movement on any of the above action items. Likewise, if he hasn't heard from me for a while, he may call me to ask for an update.

Randy mentioned that he will be meeting with Jeff Murray later in the week, and if, as a result, either of them have questions, they will contact me.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

19 July 2007

Randy Yonemura
4305-39th Avenue
Sacramento, California 95824

RE: Consultation at the Pedregal Property, El Dorado County, California (2005-219)

Dear Randy:

Earlier today, I had the opportunity to speak with representatives of the developer of the Pedregal Property in El Dorado County. We discussed your comments and concerns regarding the Native American cultural resources present on the property, which we toured with you on 6 June 2007.

The developer remains in the early planning stages of this project and is currently examining the property from the perspectives of many different environmental issues. A tentative subdivision map has not yet been prepared, and no applications for development rights have been submitted to any local, State, or Federal agencies. As a result, no determinations of impact to any resources have been determined. However, the developer remains open to the possibility of providing some protection for cultural resources on the property, and looks forward to continued discussions with the Native American community when, and if, the project moves forward.

If you have any questions, please feel free to contact me at (916) 782-9100 or by email at LWestwood@ecorpconsulting.com.

Respectfully,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resources Manager

2005-219 Cultural Resources/NA Consultation/Yonemura 07 19 2007

Record of Conversation (Message)

Project:	Pedregal (2005-219)
Date:	September 17, 2007
Time:	9:00 am
Regarding:	Status Update
Person Calling:	Lisa Westwood (Cultural Resources Manager, ECORP)
Person Called:	Randy Yonemura (Miwok)
Purpose:	To return his telephone message left with Stephen Pappas, and to inform him that we have not yet received direction from the client on moving forward with this project.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

May 8, 2008

Ms. Debbie Pilas-Treadway
Associate Governmental Program Analyst
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

RE: Cultural Resources Identification Effort at Executive Golf Course, El Dorado County, California T9N, R8E, Sections 1, 2, and 11.

Dear Ms. Pilas-Treadway:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

Included is a map showing the project area outlined. We would appreciate input on this undertaking from the Native American community with concerns about possible traditional cultural properties or potential impacts within or adjacent to the area of potential effect. Please understand that this is not a request for location, data or any other information that may be deemed sensitive or confidential to individual Native Americans, Native American organizations, or Federally Recognized Tribes. Information on other parties that may have interests or concerns in the undertaking would be appreciated. Please fax your response to my attention at (916) 782-9134. If you have any questions, please contact me at (916) 782-9100.

Thank you in advance for your assistance in our cultural resource management consultation.

Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

2525 Warren Drive, Rocklin, California 95677 • Tel: (916) 782-9100 • Fax: (916) 782-9134 • Web: www.ecorpconsulting.com

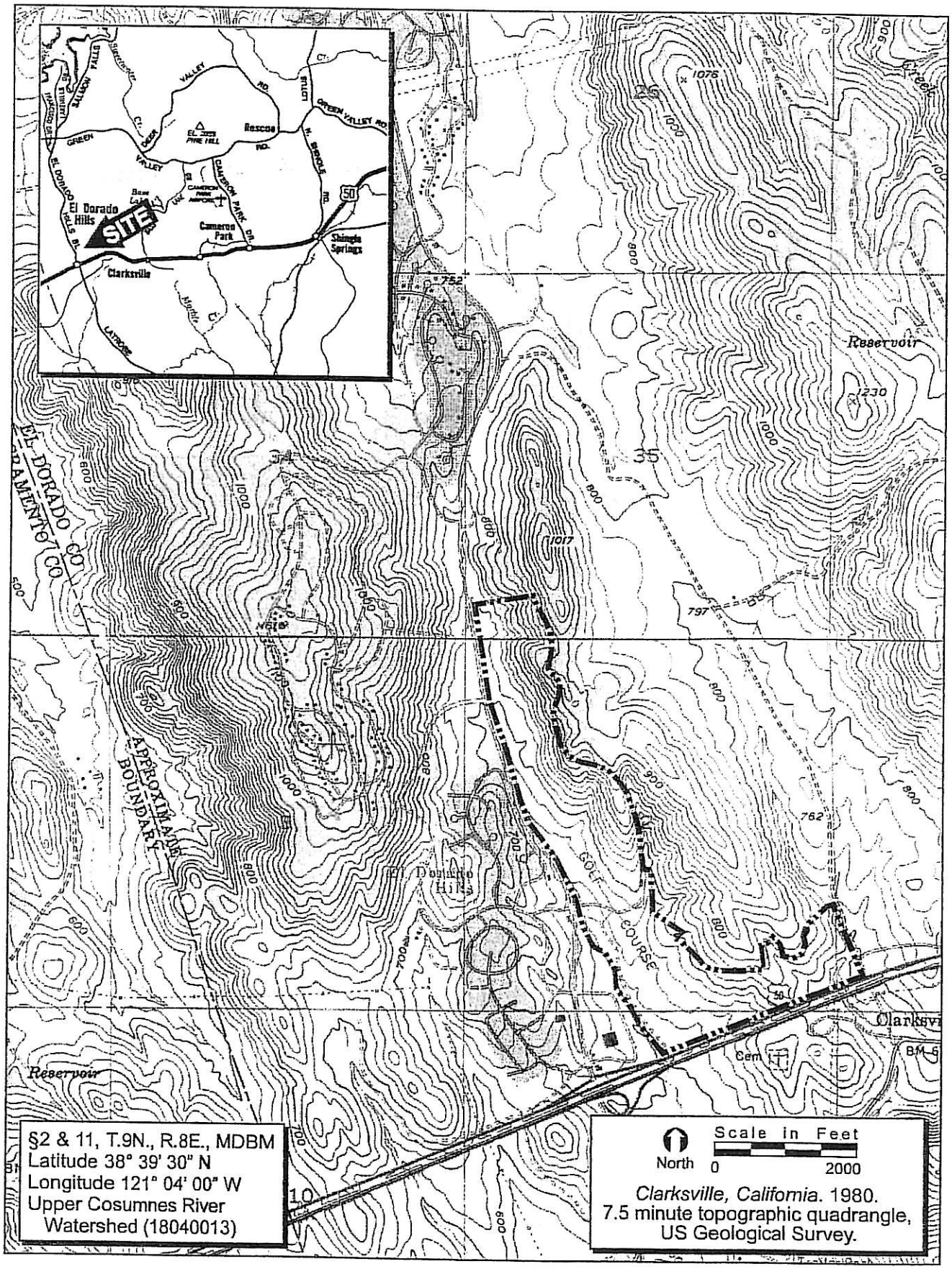

FIGURE 1. Project Site and Vicinity Map

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
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STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

May 12, 2008

Lisa Westwood
Cultural Resource Manager
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Sent by Fax: 916-782-9134
Number of Pages: 2

Re: Proposed: Executive Golf Course, El Dorado County.

Dear Ms. Westwood:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
El Dorado County
May 12, 2008

Kenneth Counsil
4209 V Street
Sacramento , CA 95817
mrken@sonic.net
916-457-7144 - Home
916-213-3934 - cell

Miwok
Maidu

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
PO Box 1490
Foresthill , CA 95631
tvmmcf@foothill.net

Miwok
Maidu

El Dorado County Indian Council
P.O. Box 564
El Dorado , CA 95623
(530) 647-0423

Miwok
Maidu

United Auburn Indian Community of the Auburn Rancheria
Jessica Tavares, Chairperson
10720 Indian Hill Road
Auburn , CA 95603
530-883-2390
530-883-2380 - Fax

Maidu
Miwok

Shingle Springs Band of Miwok Indians
John Tayaba, Vice Chairperson
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Shingle Springs , CA 95682
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(530) 676-8033 Fax

Miwok
Maidu

United Auburn Indian Community of the Auburn
Tribal Preservation Committee
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530-883-2380 - Fax

Maidu
Miwok

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nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

Miwok
Maidu

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Executive Golf Course, El Dorado County.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

June 19, 2009

Ms. Debbie Pilas-Treadway
Associate Governmental Program Analyst
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

RE: Cultural Resources Identification Effort at Pedregal, El Dorado County, California T9N, R8E, Section 3 and T10N, R8E, Section 34 (ECORP Project No. 2005-219).

Dear Ms. Pilas-Treadway:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

Included is a map showing the project area outlined. We would appreciate input on this undertaking from the Native American community with concerns about possible traditional cultural properties or potential impacts within or adjacent to the area of potential effect. Please understand that this is not a request for location, data or any other information that may be deemed sensitive or confidential to individual Native Americans, Native American organizations, or Federally Recognized Tribes. Information on other parties that may have interests or concerns in the undertaking would be appreciated. Please fax your response to my attention at (916) 782-9134. If you have any questions, please contact me at (916) 782-9100.

Thank you in advance for your assistance in our cultural resource management consultation.

Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

2525 Warren Drive, Rocklin, California 95677 • Tel: (916) 782-9100 • Fax: (916) 782-9134 • Web: www.ecorpconsulting.com

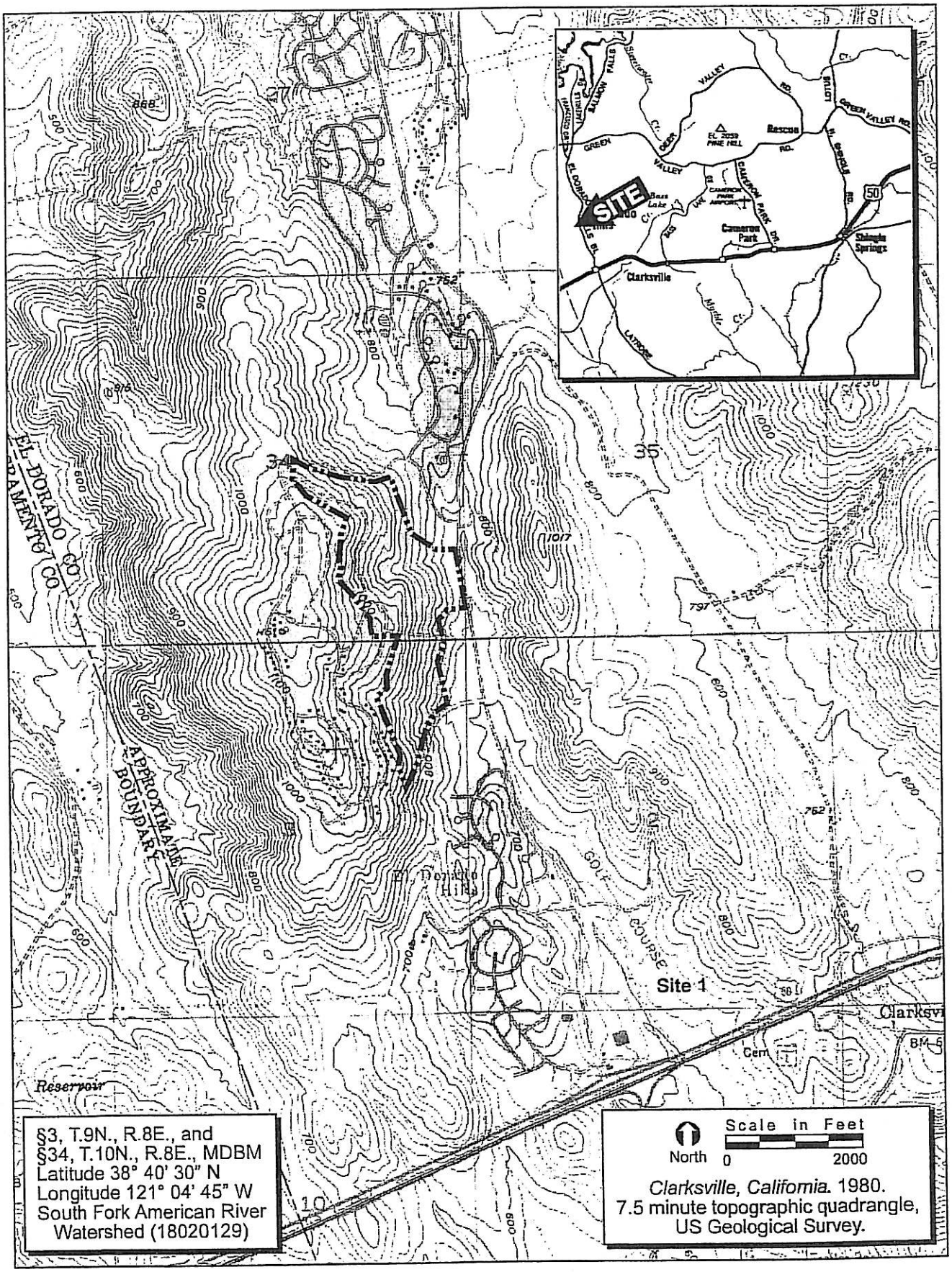

FIGURE 1. Project Site and Vicinity Map

2005-219 Pedregal Property

ECORP Consulting, Inc.
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STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390

June 26, 2009

Lisa Westwood
Cultural Resource Manager
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Sent by Fax: 916-782-9134
Number of Pages: 3

Re: Proposed: Pedregal Project, El Dorado County.

Dear Ms. Westwood:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

Native American Contact
El Dorado County
June 26, 2009

Shingle Springs Band of Miwok Indians
John Tayaba, Vice Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
(530) 676-8010
(530) 676-8033 Fax

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
PO Box 1490 Miwok
Foresthill , CA 95631 Maidu
tvmmcf@foothill.net

El Dorado County Indian Council
P.O. Box 564 Miwok
El Dorado , CA 95623 Maidu

Randy Yonemura
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Sacramento , CA 95824
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(916) 421-1600

United Auburn Indian Community of the Auburn Rancheria
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916-996-0384

Ione Band of Miwok Indians
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(209) 274-6753
(209) 274-6636 Fax

El Dorado Miwok Tribe
Brian Padilla
PO Box 2437 Miwok
Marysville , CA 95901

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Pedregal Project, ECORP Project No. 2005-219; El Dorado County.

Native American Contact
El Dorado County
June 26, 2009

Ione Band of Miwok Indians
Pamela Baumgartner Tribal Administrator
PO Box 1190 Miwok
Ione , CA 95640
pam@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
916-429-8047 voice
916-429-8047 fax

Ione Band of Miwok Indians
Tina Reynolds, Executive Secretary
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(209) 274-6636 Fax

Ione Band of Miwok Indians
Heritage Cultural Committee
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Ione , CA 95640
(209) 274-6753
(209) 274-6636 Fax

El Dorado Miwok Tribe
Wesly Yielding
3266 Cimmarron Road, Apt 38 Miwok
Cameron Park , CA 95682
530-672-9819

United Auburn Indian Community of the Auburn
Tribal Preservation Committee
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
530-883-2390
530-883-2380 - Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Pedregal Project, ECORP Project No. 2005-219; El Dorado County.

Native American Contacts
Westside, 2012-019, El Dorado County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Native American Heritage Commission 915 Capital Mall, Room 364 Sacramento, CA 95814	N/A	4/30/2012	N/A	N/A	Yes	No sacred lands
Sam Daniels, Vice Chairperson Shingle Springs Band of Miwok Indians P.O. Box 1340 Shingle, CA 95682 (530) 676-8010 (530) 676-8033 Fax	Miwok Maidu	5/8/2012	5/25/2012	5/29/2012	Yes	Left message 5/25 LW spoke with the receptionist on 5/29, who said that they received the letter, and that it has been forwarded to Daniel Fonseca for review, and that if he has any questions or comments, he will contact us.
Nicholas Fonseca, Chairperson Shingle Springs Band of Miwok Indians P.O. Box 1340 Shingle, CA 95682 Nfonseca @ssband.org (530) 676-8010 (530) 676-8033 Fax	Miwok Maidu	5/8/2012	5/25/2012	5/29/2012	Yes	Left message 5/25 LW spoke with the receptionist on 5/29, who said that they received the letter, and that it has been forwarded to Daniel Fonseca for review, and that if he has any questions or comments, he will contact us.
Daniel Fonseca Shingle Springs Band of Miwok Indians P.O. Box 1340 Shingle, CA 95682 (530) 676-8010 (530) 676-8033 Fax	Miwok Maidu	5/8/2012	5/25/2012	5/29/2012	Yes	Left message 5/25 LW spoke with the receptionist on 5/29, who said that they received the letter, and that it has been forwarded to Daniel Fonseca for review, and that if he has any questions or comments, he will contact us.
David Keyser, Chairperson United Auburn Indian Community of the Auburn Rancheria 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 (530) 883-2380 Fax	Maidu Miwok	5/8/2012	N/A	N/A	Yes	Letter received (dated 5/16/12), asking for copies of reports and a project area visit. Letter was forwarded to USACE with technical report for follow-up consultation.
Marcos Guerrero, Tribal Preservation Committee United Auburn Indian Community of the Auburn Rancheria 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2364 (530) 883-2320 Fax	Maidu Miwok	5/8/2012	N/A	N/A	Yes	Letter received (dated 5/16/12), asking for copies of reports and a project area visit. Letter was forwarded to USACE with technical report for follow-up consultation.

April Wallace Moore 19630 Placer Hills Road Colfax, CA 95713 (530) 637-4279	Nisenan-So Maidu Konkow Washoe	5/8/2012	5/25/2012	5/29/2012	No	Left message 5/25 LW spoke with April on 5/29, and she indicated that she did receive them and would like to take some more time to review them.
Eileen Moon, Vice Chairperson T si-Akim Maidu 1239 East Main Street Grass Valley, CA 95945 (530) 477-0711	Maidu	5/8/2012	5/29/2012	N/A	No	The phone number has been disconnected.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

30 April 2012

Ms. Debbie Pilas-Treadway
Associate Governmental Program Analyst
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

RE: Cultural Resources Identification Effort at Westside, El Dorado County, California, Sections 2, 3, and 11 of T9N/R8E and Sections 34 and 35 of T10N/R8E (ECORP Project No. 2012-019).

Dear Ms. Pilas-Treadway:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

Included is a map showing the project area outlined. We would appreciate input on this undertaking from the Native American community with concerns about possible traditional cultural properties or potential impacts within or adjacent to the Area of Potential Effects. Please understand that this is not a request for location, data or any other information that may be deemed sensitive or confidential to individual Native Americans, Native American organizations, or Federally Recognized Tribes. Information on other parties that may have interests or concerns in the undertaking would be appreciated. Please fax your response to my attention at (916) 782-9134. If you have any questions, please contact me at (916) 782-9100.

Thank you in advance for your assistance.

Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

2525 Warren Drive, Rocklin, California 95677 • Tel: (916) 782-9100 • Fax: (916) 782-9134 • Web: www.ecorpconsulting.com

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390

May 3, 2012

Lisa Westwood
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Sent by Fax: 916-782-9134
Number of Pages: 2

Re: Westside, El Dorado County.

Dear Ms. Westwood:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
El Dorado County
May 2, 2012

April Wallace Moore
19630 Placer Hills Road
Colfax , CA 95713
530-637-4279

Nisenan - So Maidu
Konkow
Washoe

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road
Auburn , CA 95603
530-883-2390
530-883-2380 - Fax

Maidu
Miwok

Shingle Springs Band of Miwok Indians
Sam Daniels, Vice Chairperson
P.O. Box 1340
Shingle Springs , CA 95682
(530) 676-8010
(530) 676-8033 Fax

Miwok
Maidu

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
10720 Indian Hill Road
Auburn , CA 95603
mguerrero@auburnrancheria.com
530-883-2364
530-883-2320 - Fax

Maidu
Miwok

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340
Shingle Springs , CA 95682
nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

Miwok
Maidu

Shingle Springs Band of Miwok Indians
Daniel Fonseca
P.O. Box 1340
Shingle Springs , CA 95682
(530) 676-8010
(530) 676-8033 Fax

Miwok
Maidu

T si-Akim Maidu
Eileen Moon,Vice Chairperson
1239 East Main St.
Grass Valley , CA 95945
(530) 477-0711

Maidu

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Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Westside project, El Dorado County

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

Sam Daniels, Vice Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle, CA 95682

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Mr. Daniels:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

The purpose of the study is to identify cultural resources that could be affected by the proposed project, as required by Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The investigation included a records search conducted with the North Central Information Center at California State University-Sacramento and a search of the Native American Heritage Commission's Sacred Lands File. The search of the Sacred Lands file did not identify any known Native American cultural resources within the immediate project vicinity; however, the Commission provided us with your name and contact information.

As part of this study, ECORP would like to identify archaeological, historic resources, or locations that are of cultural importance to the local Native American community. We would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location that could be affected by the proposed development of the parcel. We invite you to offer comments on the project, and we will forward them to the Section 106 lead agency for consideration and appropriate action. The lead agency will respond to your comments as soon as the Section 106 process is initiated. At this time, however, cultural resources investigations are being conducted for project planning purposes only. ECORP is gathering information on potentially unrecorded cultural resources that might be affected by this project.

We encourage you to participate in this process, so that potential impacts to Native American resources can be proactively addressed and minimized to the greatest extent feasible. We would like to receive a response from you about this project within the next two weeks. If we have not heard from you within 30 days of the receipt of this letter, we will assume that you do not wish to comment on this project. If you have any questions, please feel free to call me at (916) 782-9100 or via email at lwestwood@ecorpconsulting.com. Thank you for your assistance and participation in this project.

Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

Nicholas Fonseca, Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle, CA 95682

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Mr. Fonseca:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

Daniel Fonseca
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle, CA 95682

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Mr. Fonseca:

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

David Keyser, Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Mr. Keyser:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

Marcos Guerrero, Tribal Preservation Committee
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Mr. Guerrero:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

April Wallace Moore
19630 Placer Hills Road
Colfax, CA 95713

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Ms. Moore:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8 May 2012

Eileen Moon, Vice Chairperson
T si-Akim Maidu
1239 East Main Street
Grass Valley, CA 95945

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Ms. Moon:

ECORP Consulting, Inc. is currently conducting a cultural resources inventory of property located near El Dorado Hills in El Dorado County. The study is being conducted in advance of approval of the proposed Westside project. The project area is situated in Sections 2, 3, and 11 of Township 9 North, Range 8 East and Sections 34 and 35 of Township 10 North, Range 8 East, MDBM. For your reference, the boundaries of the project area are marked on the enclosed topographic quadrangle map.

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Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Cultural Resource Manager

Enclosures, as stated

MIWOK
MAIDU

United Auburn Indian Community
of the Auburn Rancheria

David Keyser
Chairman

Kimberly DuBach
Vice Chair

Gene Whitehouse
Secretary

Brenda Adams
Treasurer

Calvin Moman
Council Member

May 16, 2012

Lisa Westwood
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Subject: Westside Project, No. 2012-019

Dear Ms. Westwood,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and ancestral territory spans into El Dorado, Nevada, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

In order to ascertain whether or not the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that have been, or will be, completed for the project. We also request copies of future environmental documents for the proposed project so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The UAIC would also like the opportunity to have our tribal monitors accompany you during the field survey. The information gathered will provide us with a better understanding of the project and cultural resources on site and is invaluable for consultation purposes.

The UAIC's preservation committee has identified cultural resources within your project area and in close proximity, and would like to request a site visit to confirm their locations and meet with you regarding this project. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the aforementioned documents as requested. Please contact Marcos Guerrero, Tribal Historic Preservation Officer, at (530) 883-2364 or email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,

David Keyser,
Chairman

CC: Marcos Guerrero, THPO

SHINGLE SPRINGS RANCHERIA

Shingle Springs Band of Miwok Indians,
Shingle Springs Rancheria
(Verona Tract), California
5281 Honpie Road, Placerville, CA 95667
P.O. Box 1340, Shingle Springs, CA 95682
(530) 676-8010 Office (530)676-8033 Fax

May 14, 2012

ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

RE: Cultural Resources Identification Effort at Westside, El Dorado County (ECORP Project No. 2012-019).

Dear Lisa Westwood

The Most likely Descendant, Daniel Fonseca would like to initiate consultation process with ECORP Consulting, Inc. for the proposed Westside Project located in El Dorado County. Among other things, we would like this consultation to address the cultural and historic resource issues, pursuant to the regulations implementing Section 106 of the National Historic Preservation Act.

Prior to meeting we would like to request any and all completed record searches and or surveys that were done in or around the project area up to and including environmental, archaeological and cultural reports.

Please let this letter serve as a formal request for the Shingle Springs Band of Miwok Indians to be added as a consulting party in identifying any Traditional Cultural Properties (TCPs) that may exist within the project's Area of Potential Effects (APE).

Please contact Crystal Dilworth, Cultural Resource Office Manager at 530-698-1471 to schedule a consultation meeting pursuant to Section 106 of the NHPA.

Sincerely,

Daniel Fonseca
Cultural Resources Director

Appendix H

Determination of MTP/SCS Consistency for the Central El Dorado Hills Specific Plan

Appendix H

Determination of MTP/SCS Consistency for the Central El Dorado Hills Specific Plan

Summary

Pursuant to Senate Bill (SB) 375, streamlined California Environmental Quality Act (CEQA) review and analysis is available to residential or mixed-use residential projects that are consistent with an adopted Sustainable Communities Strategy (SCS). SB 375 requires consistency with the SCS to be determined by the CEQA lead agency (in this case, El Dorado County [County]). SB 375 provides several CEQA reform provisions including streamlined review and analysis of residential or mixed-use projects consistent with the SCS. In addition, an environmental impact report (EIR) prepared for this type of project is not required to reference, describe, or discuss any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

The Sacramento Area Council of Governments (SACOG) Board adopted the SCS as part of the Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035 (MTP/SCS) on April 19, 2012. The California Air Resources Board (ARB) issued an Acceptance of Greenhouse Gas (GHG) Quantification Determination for the SACOG SCS on June 12, 2012.

This Determination of MTP/SCS Consistency for the Central El Dorado Hills Specific Plan (CEDHSP) finds the following.

- The CEDHSP meets the definition of Residential or Mixed-Use Residential Project pursuant to Public Resources Code (PRC) Section 21159.28(d).
- The CEDHSP is consistent with the General Land Use Designation, Density and Intensity in MTP/SCS.
- The CEDHSP is consistent with the MTP/SCS.
- The CEDHSP qualifies for CEQA streamlining and pursuant to subdivisions (a) and (b) of PRC Section 21159.28, its environmental document will not need to reference, describe or discuss: (1) growth-inducing impacts; (2) a reduced-density alternative to address impacts on transportation or climate change of increased car and truck vehicle miles traveled (VMT) induced by the project; and (3) any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

By approving this Determination of MTP/SCS Consistency for the CEDHSP, the County will be able to take advantage of the CEQA streamlining provisions pursuant to PRC Section 21159.28 allowed for in the MTP/SCS. In turn, the County and greater Sacramento region benefits from better development and improved air quality conditions.

Introduction

Background

Under the provisions of SB 375, an EIR prepared for a residential or mixed-use residential project that is consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in an SCS for which ARB has accepted a metropolitan planning organization's determination that the SCS would achieve its GHG emissions reduction target, "is not required" to discuss growth inducing impacts, or any project specific or cumulative impacts from cars and light-duty truck trips on global warming, or on the regional transportation network (PRC Section 21159.28[a]; Gov. Code, Section 65080[b][2][I]).

In addition, an EIR prepared for a residential or mixed-use residential project that qualifies for the streamlining provisions is not required to reference, describe, or discuss a reduced residential density alternative to address the effects of car and light-duty truck trips generated by the project as part of its alternatives analysis (PRC Section 21159.28[b]).

Purpose

SB 375 places the authority and responsibility of making the determination on the use of CEQA streamlining with the local lead agency. Therefore, for purposes of the CEDHSP, the County has the responsibility to make the final determination on the use of CEQA streamlining and the applicable and appropriate CEQA streamlining, if any. As such, the County has decided to prepare this Determination of MTP/SCS Consistency. If it is determined that the CEDHSP meets the definition of Residential or Mixed-Use Residential Project (pursuant to PRC Section 21159.28[d]) and is consistent with the MTP/SCS, then the County will use the applicable CEQA streamlining for the proposed CEDHSP. Applicable CEQA streamlining for a plan defined as a Residential or Mixed-Use Residential Project (see *Consistency Determination* section of this document), is provided in PRC Section 21159.28. Its environmental document will not be required to reference, describe, or discuss the following.

(1) Growth-inducing impacts.

(2) A reduced-density alternative to address impacts on transportation or climate change of increased car and truck VMT induced by the project.

(3) Any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

Consistency Determination

The following analysis is guided by SACOG's July 31, 2012 "DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET for Qualifying Transit Priority Projects and Residential/Mixed-Use Residential Projects." SACOG developed the worksheet to aid local agencies in determining consistency of projects with the SCS. Although it is not binding on the County, it offers a convenient and logical approach to the consistency determination. The section numbers below correspond to the numerical organization of the worksheet.

Assumptions

In preparing this consistency determination, the County has made the following assumptions for the CEDHSP based on air quality model defaults and input from the project applicant.

- Assumed total residential square footage is 1,128,000.
- Assumed square footage of non-residential uses is 50,000.
- Total proposed building square footage (residential and non-residential) is 1,178,000.

Residential or Mixed-Use Residential Project Designation for Projects Located Outside of an MTP/SCS Transit Priority Area [Section 2]

A residential or mixed-use residential project using the streamlined CEQA review to complete an EIR pursuant to PRC Section 21159.28(a) must meet the following requirement.

Section 2.A.

At least 75% of the total building square footage of the project consists of residential use.

Calculation

Total CEDHSP *residential* square footage [1,128,000]÷Total CEDHSP *building* square footage [1,178,000] = [96%](Should be ≥ 75%).

Section 2 Conclusion

[X] The proposed CEDHSP meets the requirements of Section 2.A and therefore qualifies as a residential or mixed-use residential project.

[ ] The proposed project does not meet the requirements of Section 2.A and therefore does not qualify as a residential or mixed-use residential project.

Required Consistency with the SCS: General Land Use Designation, Density and Intensity, and Applicable MTP/SCS Policies [Section 3]

3.A. Applicable MTP/SCS Policies

For the purposes of determining SCS consistency, the policies of the MTP/SCS are embedded in the metrics and growth forecast assumptions of the MTP/SCS. Projects consistent with the growth forecast assumptions of the MTP/SCS, as determined by application of items 3.B. and 3.C., are consistent with the MTP/SCS and its policies.

3.B. Applicable Community Type

The MTP/SCS land use forecast is illustrated using Community Types (see Figure 1). In order to determine the general land use designation, density and intensity of the project area within the MTP/SCS, the CEDHSP must be located within a Community Type designated in the MTP/SCS. The MTP/SCS defines density/building intensity in terms of the amount of growth (residential and non-residential) forecasted and the amount of build out potential within each Community Type area. SACOG monitors development activity on an annual basis to check that the amount of development is consistent with the growth forecast of the MTP/SCS.

For the purposes of the lead agency's determination of SCS consistency, MTP/SCS Appendix E-3 is used to identify the Community Type for the CEDHSP and fill in the applicable information, below for 3.B.1 and 3.B.2.

3.B.1.

The CEDHSP is located in the following Community Type:

[ ] Center and Corridor Community

[X] Established Community (project area west of El Dorado Hills Boulevard)

[X] Developing Community (project area east of El Dorado Hills Boulevard)

[ ] Rural Residential Community

3.B.2

[X] Development from the CEDHSP when added to other entitled projects will not exceed the MTP/SCS build out assumptions for the area within this Community Type, which is 6,198 new housing units and 14,925 new employees for the Established Community within El Dorado Hills west of El Dorado Hills Boulevard and 5,107 new housing units and 691 new employees for the Developing Community within El Dorado Hills east of El Dorado Hills Boulevard.[1]

3.C. General Land Use Designation, Density and Building Intensity

The foundation of the land use designations for the MTP/SCS is adopted and proposed local general plans, community plans, specific plans and other local policies and regulations. A project is consistent with the MTP/SCS if its uses are identified in the applicable MTP/SCS Community Type **and** its uses meet the general density and building intensity assumptions for the Community Type. The proposed project does not have to include all allowed uses in the MTP/SCS.

3.C.1. Determine consistency of the proposed project using one of the methods below

<u>Option A</u>

[X] The project is located in a **Center and Corridor Community or an Established Community** and the plan uses are consistent with the allowed uses of the applicable adopted local land use plan as it existed in 2012 and are at least 80% of the allowed density or intensity of the allowed uses. Therefore, the CEDHSP is consistent with the MTP/SCS.

Option A Discussion: Designation as Established Community

The CEDHSP is located in an Established Community, which, as defined in the MTP/SCS Update, is "typically the areas adjacent to, or surrounding, Center and Corridor Communities. Local land use plans aim to maintain the existing character and land use pattern in these areas. Land uses in Established Communities are typically made up of existing low- to medium-density residential neighborhoods, office and industrial parks, or commercial strip centers. Depending on the density of existing land uses, some Established

[1] MTP/SCS 2035 Update, Appendix E-3, Land Use Forecast Background Documentation.

Communities have bus service; others may have commuter bus service or very little service."[2]

The Serrano Westside planning area is approximately 240 acres. The land use designations, as identified in the County General Plan (2004), are Open Space (OS), Commercial (C), and Adopted Plan (AP) associated with the El Dorado Hills Specific Plan (EDHSP). The existing approved plan allows for 763 dwelling units, 15 acres of public village parks, 11 acres of recreational use, and 130 acres of natural open space. The Pedregal planning area is approximately 102 acres. The land use designations, as identified by the County General Plan (2004), are High-Density Residential (HDR) and Multifamily Residential (MFR). The existing approved land use plan allows for 237 dwelling units and 39 acres of natural open space.

The CEDHSP proposes a mix of uses from high- to low-density residential with an average density of approximately 9 units per acre. This exceeds 80% of the allowed density or intensity of the allowed uses under the existing County General Plan for the planning areas. The MTP/SCS proposes to increase the residential density for Established Communities from 3.8 to 4.1 between 2008 and 2035. Accordingly, the average density of the CEDHSP is well above the long-range goal of the MTP/SCS and will help facilitate regional goals for compact development.[3]

Option B

[ ] The project is located in a **Center and Corridor Community or an Established Community** and the project uses have been reviewed in the context of, and are found to be consistent with, the general land use, density, and intensity information provided for this Community Type in Appendix E-3 of the MTP/SCS. Therefore, the project is consistent with the MTP/SCS.

This option is not applicable to the CEDHSP.

Option C

[ ] The project is located in a **Rural Residential Community** and the project residential density does not exceed the maximum density of one unit per acre as specified in the MTP/SCS, and employment development in the project is at least 80% of the allowed intensity of the land use designations of the adopted general plan. Therefore, the project is consistent with the MTP/SCS.

This option is not applicable to the CEDHSP.

Option D

[X] The Project is located in a **Developing Community** and the project's average net density meets or exceeds the average net density described for this specific Developing Community (as referenced by name of applicable specific plan, master plan, or special plan in MTP/SCS Appendix E-3) and employment development in the project is consistent with the general

[2] MTP/SCS 2035 Update, Chapter 3, page 32.

[3] As defined in the MTP/SCS 2035, density is "housing units divided by net residential acres (land on which housing is built, exclusive of public rights-of-ways, parks, schools and public areas)." Factors affecting the net density calculation, once the final developable acreage is determined for the CEDHSP, include, but are not limited to, parks and open space, roads, drainage easements, slopes, swales and ponds, and detention/retention areas.

employment land uses described for this specific Developing Community. Therefore, the project is consistent with the MTP/SCS.

Option D Discussion: Designation as Developing Community

The CEDHSP is also located in a Developed Community, which, as defined in the MTP/SCS Update, is "typically, though not always, situated on vacant land at the edge of existing urban or suburban development. Developing Communities are identified in local plans as special plan areas, specific plans, or master plans and may be residential-only, employment-only, or a mix of residential and employment uses. Transportation options in Developing Communities often depend, to a great extent, on the timing of development. Bus service, for example, may be infrequent or unavailable today, but may be available every 30 minutes or less once a community builds out. Walking and bicycling environments vary widely, though many Developing Communities are designed with dedicated pedestrian and bicycle trails."[4].

The Serrano Westside planning area is approximately 240 acres. The land use designations, as identified in the County General Plan (2004), are Open Space (OS), Commercial (C), and Adopted Plan (AP) associated with the El Dorado Hills Specific Plan (EDHSP). The existing approved plan allows for 763 dwelling units, 15 acres of public village parks, 11 acres of recreational use, and 130 acres of natural open space. The Pedregal planning area is approximately 102 acres. The land use designations, as identified by the County General Plan (2004), are High-Density Residential (HDR) and Multifamily Residential (MFR). The existing approved land use plan allows for 237 dwelling units and 39 acres of natural open space.

The CEDHSP proposes a mix of uses from high- to low-density residential with an average density of approximately 9 units per acre. This exceeds 80% of the allowed density or intensity of the allowed uses under the existing County General Plan for the planning areas. Accordingly, the average density of the CEDHSP is well above the long-range goal of the MTP/SCS and will help facilitate regional goals for compact development.[5]

Section 3 Conclusion

Consistency with General Land Use Designation, Density and Intensity in MTP/SCS

The 1,000 residential units constructed by the CEDHSP would increase the County's population by approximately 2,618 residents (refer to the draft EIR Section 3.11, *Population and Housing*). Based on SACOG's growth forecast outlined in Appendix E-3 of the MTP/SCS, the number of new housing units and estimated direct population increase associated with the project would be within the projections of the MTP/SCS (6,198 new housing units and 14,925 new employees for Established Communities within the project area of El Dorado Hills west of El Dorado Hills Boulevard and 5,107 new housing units and 691 new employees for Developing Communities within the project area of El Dorado Hills east of El Dorado Hills Boulevard). The 50,000 square feet of civic–limited commercial use would slightly increase employment. However, this growth is not expected to substantially alter

[4] MTP/SCS 2035 Update, Chapter 3, page 32.

[5] As defined in the MTP/SCS 2035, density is "housing units divided by net residential acres (land on which housing is built, exclusive of public rights-of-ways, parks, schools and public areas)." Factors affecting the net density calculation, once the final developable acreage is determined for the CEDHSP, include, but are not limited to, parks and open space, roads, drainage easements, slopes, swales and ponds, and detention/retention areas.

the existing state of the area's jobs/housing balance. Thus, employment growth associated with the project is assumed within the forecast projections of the MTP/SCS.

Consistency with the Adopted MTP/SCS

The proposed CEDHSP is located in area designated as an Established Community and a Developing Community (see Figure 1). As a specific Established Community and Developing Community of the MTP/SCS, and specifically described in Appendix E-3 of the MTP/SCS, the following tables account for the CEDHSP in the MTP/SCS: Table 3.9, *Summary of Housing Product Distribution by Community Type for 2020 and 2035 Growth;*[6] Table 3.10, *Summary of Housing Product Distribution by Community Type for 2008-2020 and 2021-2035;*[7] and Table 3.11, *Summary of Expected Developed Acres by Community Type.*[8]

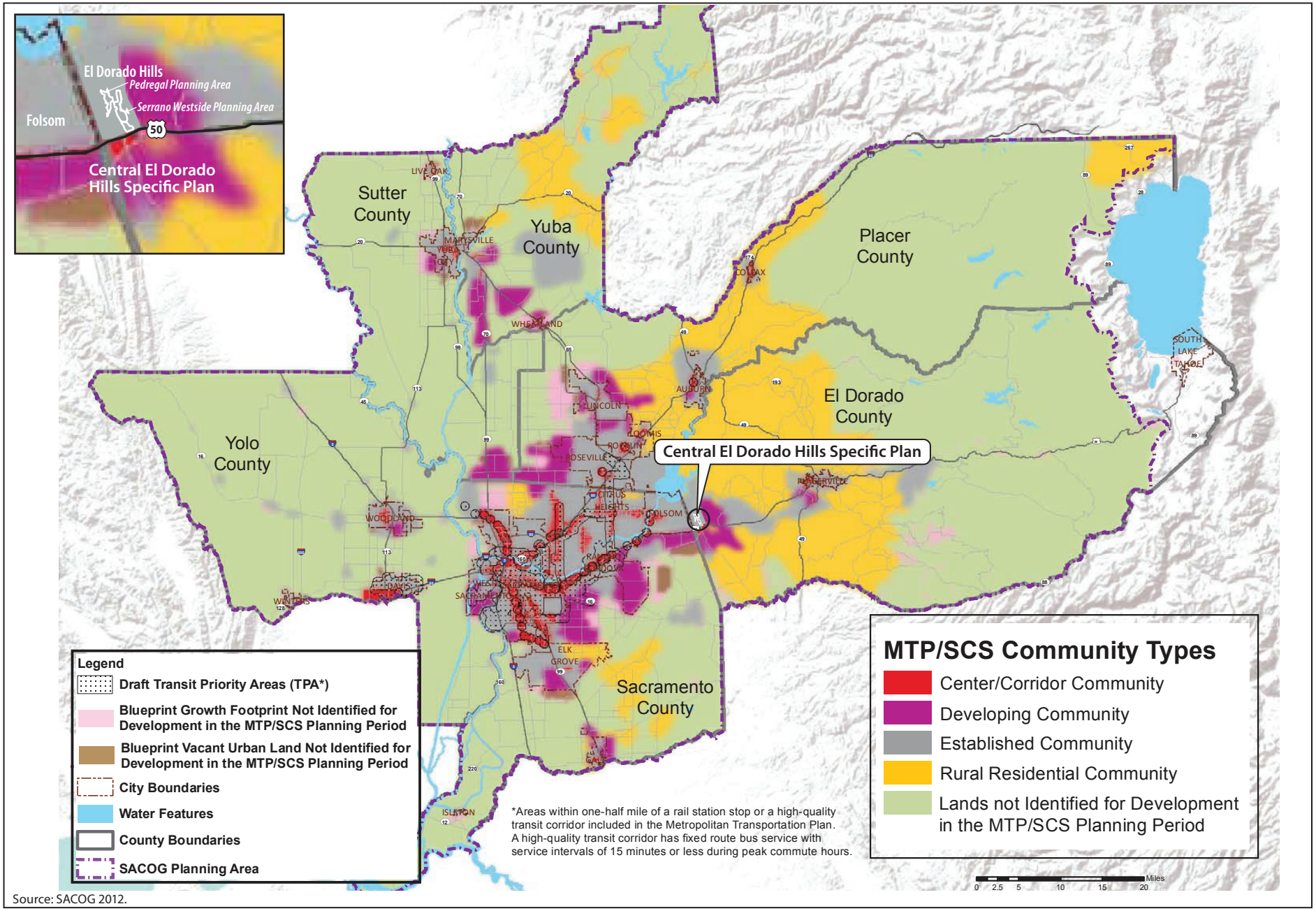
Therefore, in accordance with Table 3.15, *SB 375 CEQA Benefits*[9] (and pursuant to PRC Section 21159.28), the CEDHSP qualifies for CEQA streamlining that is applicable to residential or mixed-use projects, and is not required to reference, describe or discuss the following.

(1) Growth-inducing impacts.

(2) A reduced-density alternative to address impacts on transportation or climate change of increased car and truck VMT induced by project.

(3) Any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation.

[6] MTP/SCS 2035 Update, Chapter 3, page 40.
[7] MTP/SCS 2035 Update, Chapter 3, page 40.
[8] MTP/SCS 2035 Update, Chapter 3, page 42.
[9] MTP/SCS 2035 Update, Chapter 3, page 51.



Source: SACOG 2012.

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Figure 1
MTP/SCS Map with Central El Dorado Hills Specific Plan Location

Appendix I

Drainage Analysis

CENTRAL EL DORADO HILLS SPECIFIC PLAN

DRAINAGE ANALYSIS

August 28, 2014

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916. 774. 1111
pstiehr@wtrmark.com

Central El Dorado Hills Specific Plan Drainage Analysis

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OVERVIEW

The Central El Dorado Hills Specific Plan (CEDHSP) is composed of two planning areas; the Westside planning area and the Pedregal planning area. The proposed Westside planning area is located east of El Dorado Hills (EDH) Boulevard and the La Borgata/Raley's Shopping Complex, just north of Highway 50. Much of the area was part of the EDH Golf Course which closed several years ago. The proposed Pedregal planning area is located on the east side of EDH Boulevard, just northwest of the Westside planning area with much of the proposed development on steep hillsides and a 13-acre High Density Residential area adjacent to EDH Boulevard. The CEDHSP is a 341 acre comprehensively planned community which will include a mixture of residential densities, commercial, parks and open spaces. At build-out, CEDSHP will accommodate as much as 1,000 dwelling units and 169 acres of natural open space. The open space element will comprise fifty percent of the projects total acreage. Higher density residential, civic and commercial development will be located adjacent to EDH Boulevard with lower density residential located on the surrounding sloped areas. Figure 1 shows the location and conceptual layout of the proposed development.

North of Highway 50, EDH Boulevard generally goes north along the bottom of a small valley. A drainage channel parallels the road and then continues south along the east or back side of the Raley's Shopping Complex, discharging via a double box culvert under Highway 50. The proposed CEDHSP development drains to this channel, both upstream and downstream of the Serrano Parkway crossing.

Immediately downstream of Highway 50, the drainage channel continues through significant nature preserves and storage areas that are part of the Town Center amenities, then into Carson Creek, about one-half mile farther south.

PURPOSE

The purposes of this drainage study are as follows:

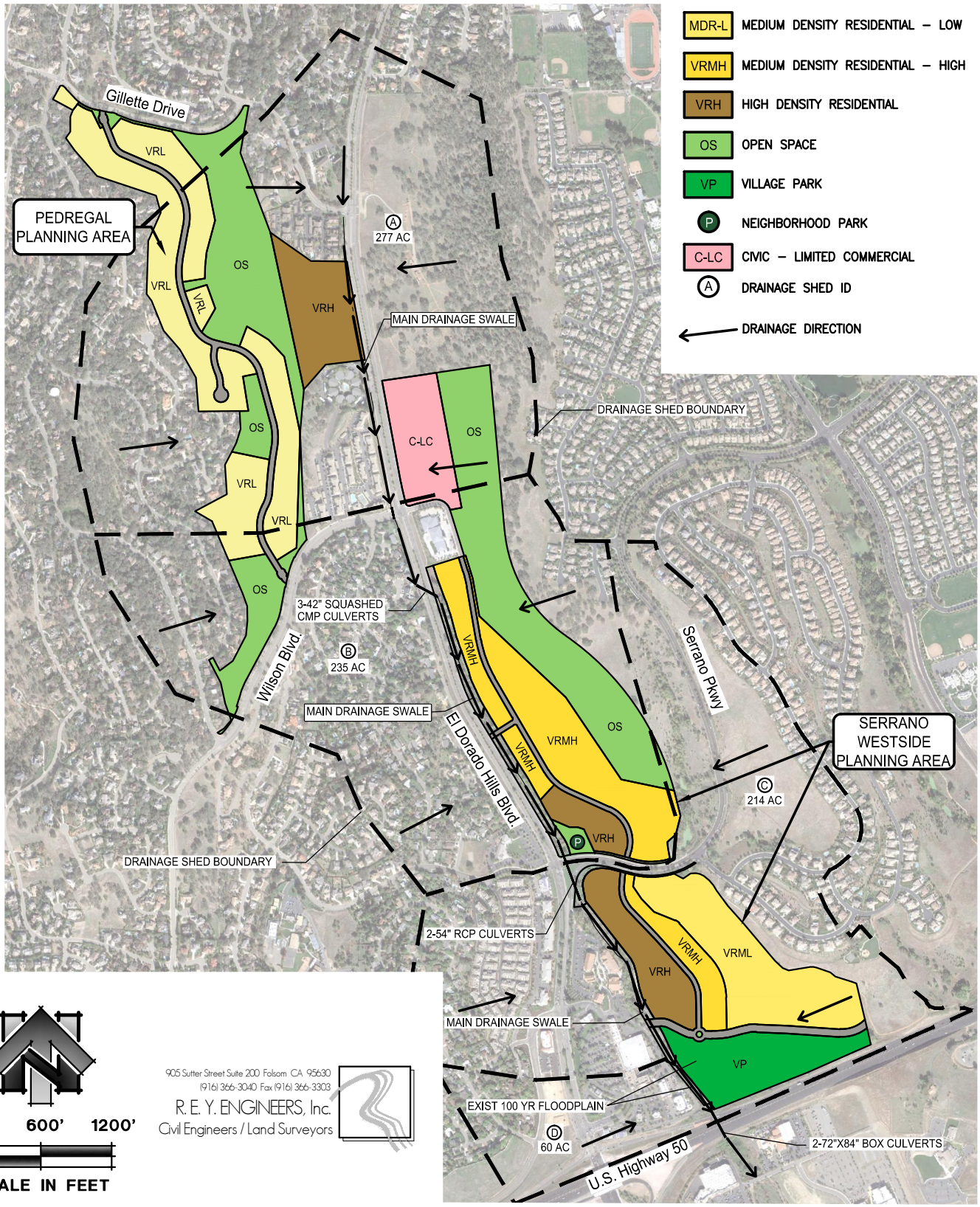
- to estimate 2-, 10-, & 100-yr peak flows for existing and developed conditions;
- to determine the limits of 100-year flooding along the channel;
- to provide a floodway analysis along portions of the creek where development will encroach onto the floodplain;
- to determine storage requirements for the Pedregal HDR site to attenuate 100-year flows to approximate existing-conditions flows; and
- to present conceptual water quality facilities for the development.

HYDROLOGY

Both sides of the valley drain to the channel that parallels EDH Boulevard. The watershed was divided into four subsheds. The SCS methodology within the XP-SWMM software was used to generate hydrographs and determine peak runoff for the design storms. Figure 1 shows the entire shed area and the location of the Westside and Pedregal planning areas. Table 1 provides a summary of the pertinent basin parameters. Table 2 provides a summary of design flows for the selected storms for both existing and developed conditions. The

Figure 1
CENTRAL EL DORADO HILLS SPECIFIC PLAN

DRAINAGE SHED MAP
COUNTY OF EL DORADO
CALIFORNIA



estimated 2-year and 10-year flows are shown but were not used for the analyses within this document.

Table 1. Subshed Parameters

Shed ID	Area (ac)	SCS CN	% Imp (Exist)	% Imp (Dev)	Lag (min) (Exist)	Lag (min) (Dev)
5.5-A	277	80	20	35	55	50
31.5-B	235	80	15	30	45	40
S12.5-C	214	80	10	50	45	40
S19.5-D	60	80	80	80	30	30
Pedregal	13	80	2	80	15	10

Table 2. Summary of Peak Flows

Shed ID	Area (ac)	2-yr Pk Flows (cfs)		10-yr Pk Flows (cfs)		100-yr Pk Flows (cfs)	
		Exist	Dev	Exist	Dev	Exist	Dev
5.5-A	277	72	96	159	194	284	329
31.5-B	235	61	84	142	175	259	301
S12.5-C	214	51	102	122	190	227	307
S19.5-D	60	45	45	74	74	109	109
Pedregal	13	5	12	11	19	19	28

The estimated runoff volumes and differences between existing and developed conditions are shown in Table 3.

Table 3. Summary of Storm Volumes

Event	Exist Vol (af)	Dev Vol (af)	Increase (af)
2-yr	62.6	81.5	18.9
10-yr	124.2	150.8	26.6
100-yr	213.0	246.8	33.8

WESTSIDE PLANNING AREA HYDRAULICS

The XP software was also used to compute the water surface elevations for the design storms at the selected cross-sections. The XP-SWMM software is graphics based with numerous error routines and graphic aids to assist the modeler. The runoff model has numerous hydrologic methods available to generate runoff hydrographs. The hydraulics module transports the computed subshed runoff through a system of pipes, channels, storage/treatment devices, pumps, and regulators. The program can track the quantity and quality of runoff generated within each subshed, and the flow rate, flow depth, and quality of water in each pipe and channel during the simulation period comprised of multiple time steps.

XP-SWMM is approved by FEMA for use to update or complete Flood Insurance Studies. Sacramento County uses XP-SWMM extensively.

Map 1 provides a schematic of the computed flows through the study area. Figures 2 and 3 show the 100-year water surface profiles for the reaches upstream and downstream of Serrano Parkway, respectively.

The computed water elevations are provided in Appendix A of this document. The limits of the 100-year storm are shown on the folded Map (Map 2).

The maximum computed flow through the double 6 x 7 foot concrete box culvert at Highway 50 is about 630 cfs for 100-year existing conditions and 735 cfs for the 100-year developed conditions. The additional backwater upstream of the culverts for developed conditions is approximately 0.8 foot higher compared to existing conditions (water surface elevation 605.8 versus 605.0 ft).

No analyses of the Town Center facilities have been done as part of the CEDHSP study. It has been assumed that the Town Center facilities were designed assuming fully developed conditions upstream of Highway 50. In addition, the culvert crossing under Highway 50 attenuates the amount of flow that can pass under the freeway.

Based on the assumptions described above, no detention or attenuation facilities are proposed as part of the Westside planning area. The limits of the 100-year storm are provided, and development will typically be outside the floodplain and above the 100-year surface elevation. The exceptions are just upstream of Serrano Parkway and upstream of Highway 50.

A floodway analysis was made for these two reaches based on the layout of the proposed development. Table 4 provides the offset stationing for existing and encroached conditions for the affected cross-sections. See Map 2 for the locations of the cross-sections.

Table 4. Floodway Analysis

X-Sec ID	Existing Cond.- Distance (ft) from C/L to East EW	Developed Cond.- Distance (ft) from C/L to East EW	Node ID	Developed 100-yr WSE. (ft)	Encroached 100-yr WSE (ft)	Increase of WSE (ft)
27+	34	36	27.5	641.0	641.3	0.2
28+	80	56	28.5	641.0	641.2	0.2
29+	130	61	29.5	640.9	641.2	0.3
30+	171	100	30.5	640.9	641.2	0.3
31+	179	165	31.5	640.9	641.2	0.3
S13+	55	55	S13.5	612.6	612.6	0.0
S14+	132	116	S14.5	612.0	612.0	0.0
S15+	218	145	S15.5	611.3	611.3	0.0
S16+	49	49	S16.5	610.7	610.7	0.0
S17+	136	131	S17.5	607.9	607.9	0.0
S18+	190	143	S18.5	607.2	607.2	0.0
S19+	221	122	S19.5	606.9	606.9	0.0
S20+	177	120	S20.5	606.3	606.3	0.0
S21+	225	112	S22.2	605.8	605.8	0.1°
S22+5	260	135	S22.5	605.7	605.8	0.1

EW: Edge of Water; WSE: Water Surface Elevation; °: Difference not apparent because of rounding.

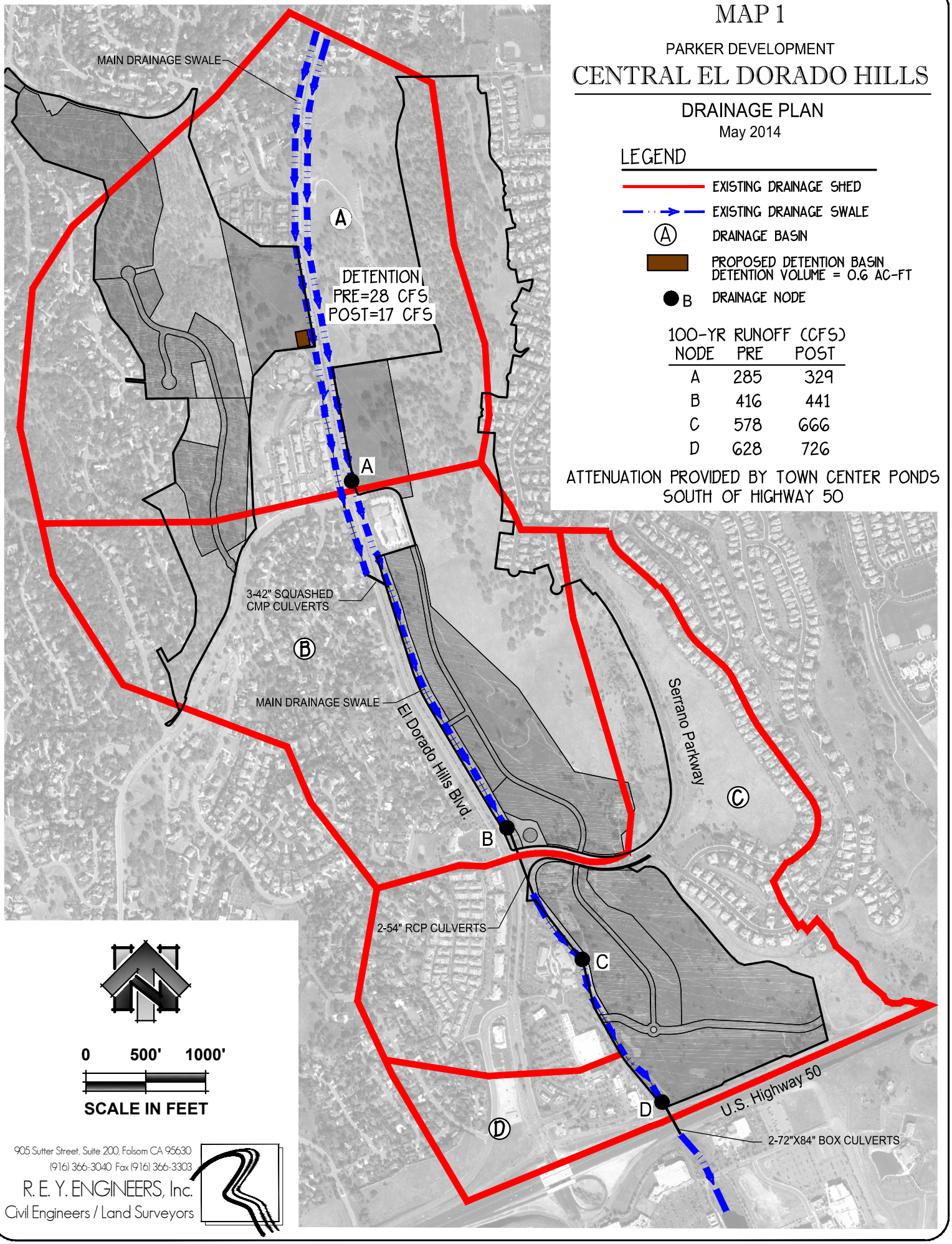
MAP 1

PARKER DEVELOPMENT

CENTRAL EL DORADO HILLS

DRAINAGE PLAN

May 2014



LEGEND

- EXISTING DRAINAGE SHED
- EXISTING DRAINAGE SWALE
- (A) DRAINAGE BASIN
- PROPOSED DETENTION BASIN DETENTION VOLUME = 0.6 AC-FT
- ● B DRAINAGE NODE

100-YR RUNOFF (CFS)

NODE	PRE	POST
A	285	329
B	416	441
C	578	666
D	628	726

ATTENUATION PROVIDED BY TOWN CENTER PONDS SOUTH OF HIGHWAY 50

905 Sutter Street, Suite 200, Folsom CA 95630
(916) 366-3040 Fax (916) 366-3303
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors

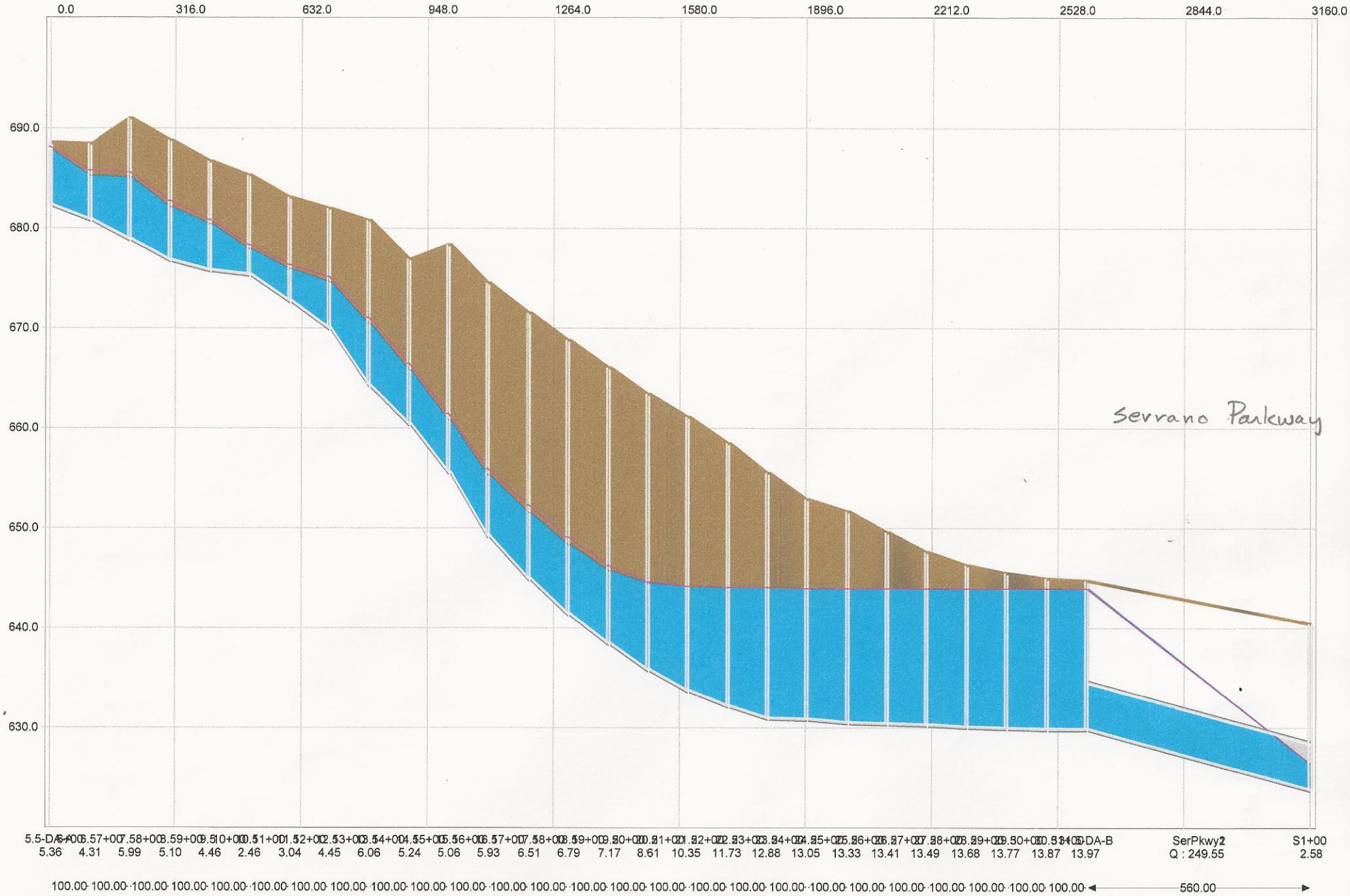

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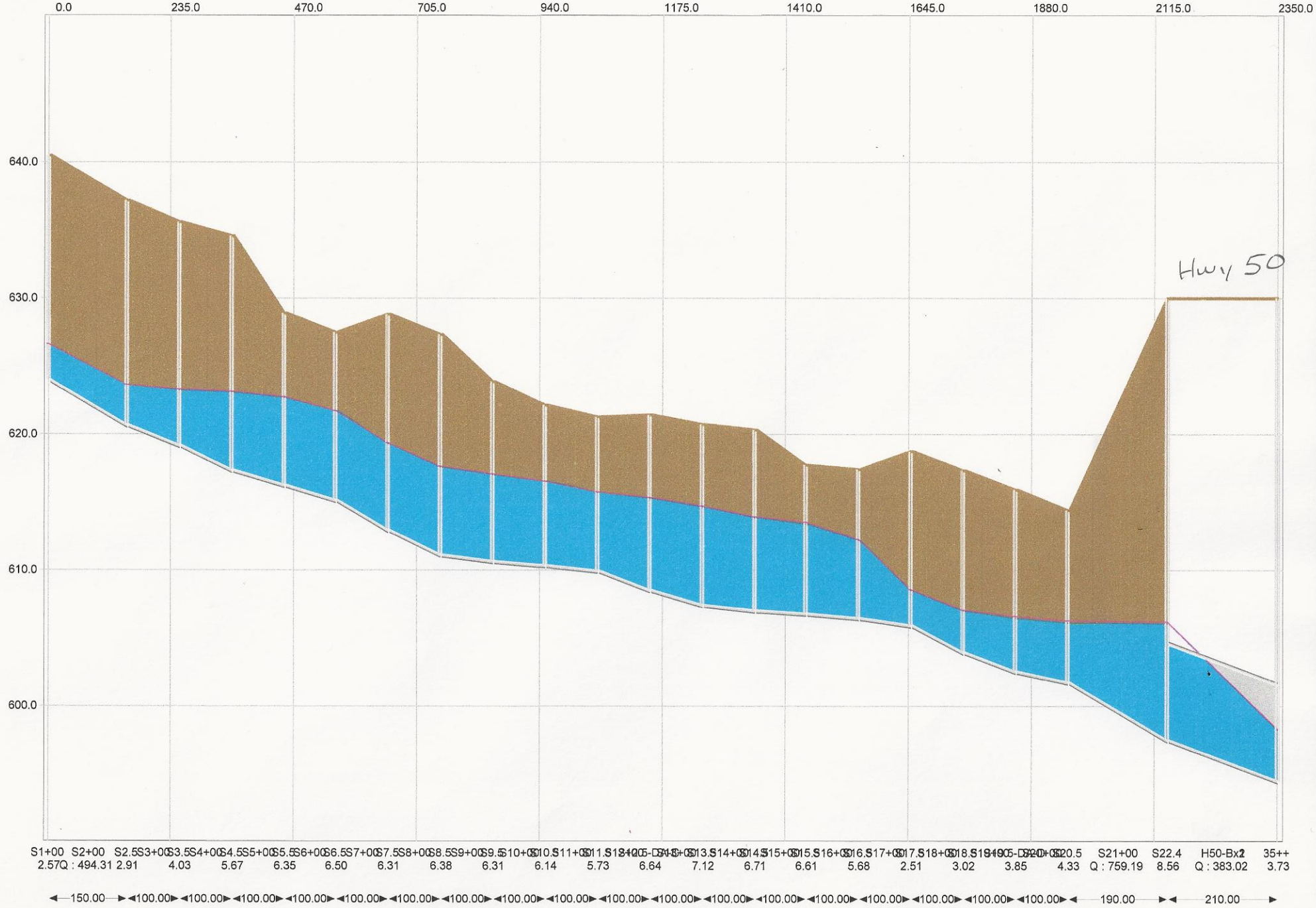
FIGURE 2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S2.5 2.91
S3+00 4.03
S3.5 4.03
S4+00 5.67
S4.5 5.67
S5+00 6.35
S5.5 6.35
S6+00 6.50
S6.5 6.50
S7+00 6.31
S7.5 6.31
S8+00 6.38
S8.5 6.38
S9+00 6.31
S9.5 6.31
S10+00 6.14
S10.5 6.14
S11+00 5.73
S11.5 5.73
S12+00 6.64
S12.5 6.64
S13+00 7.12
S13.5 7.12
S14+00 6.71
S14.5 6.71
S15+00 6.61
S15.5 6.61
S16+00 5.68
S16.5 5.68
S17+00 2.51
S17.5 2.51
S18+00 3.02
S18.5 3.02
S19+00 3.85
S19.5 3.85
S20+00 4.33
S20.5 4.33
S21+00 Q : 759.19
S22.4 8.56
H50-Bx2 Q : 383.02
35++ 3.73
150.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
190.00
210.00

FIGURE 3

It is recommended that the grade of any proposed development be a minimum of two feet above the computed water levels. Also, development upstream of Serrano Parkway should be a minimum of two feet above the minimum road elevation of the Parkway.

PEDREGAL PLANNING AREA HYDRAULICS

A separate analysis was completed to estimate storage requirements to attenuate the developed 100-year peak flow down to existing conditions at the proposed Pedregal planning area High Density Residential site. This site is relatively flat and is the only area where attenuation is proposed.

All of the other proposed development on the east side of EDH Blvd is Low Density Residential and is sited on relatively steep terrain. With low-permeable soils and steep slopes, runoff is relatively high under existing conditions. It is assumed that the flattening of the residential lots will effectively reduce the slope of the subshed which will tend to reduce peak flows. Any landscape areas will also tend to reduce peak flow. Conversely, the Low Density Residential development will increase the imperviousness of the subshed which will tend to increase peak flows. The assumption is that existing and developed conditions are essentially equivalent and therefore, peak flows from the development will remain similar to peak flows under existing conditions

Approximately 25,000 cubic feet of storage will be needed to attenuate the peak flow from the High Density Residential site from about 28 cfs to 17 cfs for the 100-year storm. A basin with a bottom dimension of 50 feet wide by 100 feet long, with 5 to 1 side slopes, about 5 feet deep, will provide the needed storage with approximately one foot of freeboard. Note that the actual configuration of the basin is open to conditions at the site. However, the stage-storage relation and outfall configuration are important design components. Appendix B provides additional details and support information for the attenuation analysis in the Pedregal planning area.

It is assumed the basin will be dry except during runoff events. Additional storage and an outfall structure with a low-flow component could be incorporated into the facility to provide water quality treatment.

WATER QUALITY

Two water quality ponds are proposed, one upstream of Serrano Parkway and one east of the Raley's Shopping Complex, to provide water quality treatment for the urban runoff and minor attenuation of storm water runoff. Alternatively, a single larger pond could be utilized east of the Raley's Shopping Complex. Two ponds are assumed for this analysis for greater flexibility as the development moves forward. Please note that these ponds could be phased or combined, depending on development schedule and needs.

The project water quality features will consist of two detention basins, located northeast of the intersection of EDH Blvd and Serrano Parkway and northeast of the Raley's Shopping Center and Highway 50. This would be in addition to the existing water quality features downstream of Highway 50 at the Town Center. The design of the wet basins will generally follow the criteria developed by Sacramento County and cities. General design recommendations are shown in Table 5.

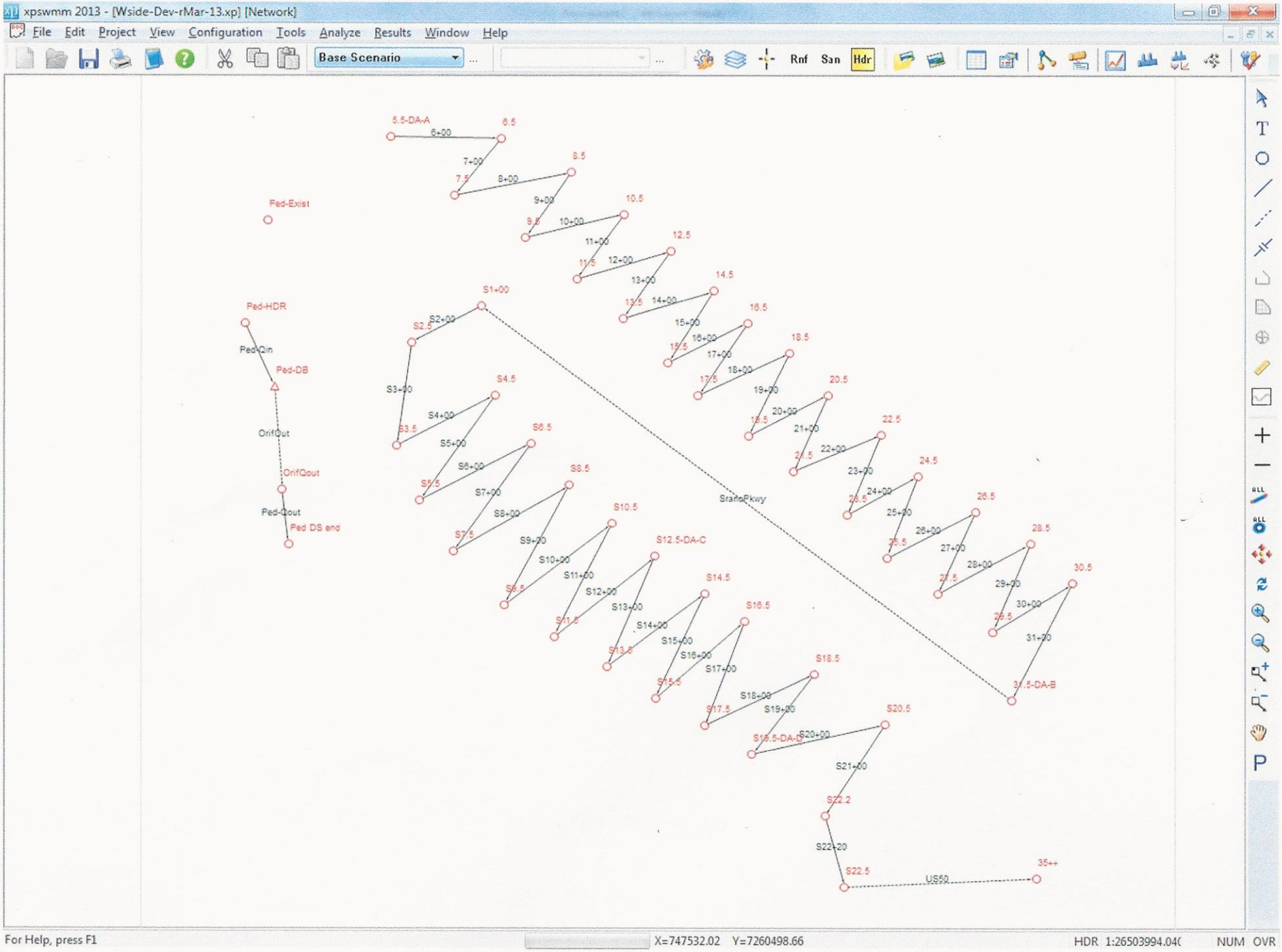
Table 5. General Guidelines for Lakes/ Water Quality Basins

Site ID	Trib Area (ac)	% Imp	WQ Vol. (af)	Min Pond Vol. (af)
Basin 1-Upstream	27*	81.2	1.5	1.9
Basin 2- Downstream	35*	79.5	1.9	2.4

*Development area only

Additional design criteria include design depth of 4 to 8 feet, side slopes of 3:1 to 4:1, and the basin shape be designed for maximize distance between the inflow and outflow. Depending on phasing and grading design, runoff from all of the tributary area or only the development area will flow through the basins. A low-flow release plus an emergency spillway will be part of the design of the basins. See Appendix C.

Additionally, Water quality Best Management Practices (BMPs) will be implemented based on the most current NPDES Phase II Small MS4 General Permit and El Dorado County Storm Water Quality Standards, effective at the time of approval. Once more detailed, parcel specific, design information becomes available, Low Impact Design (LID) credits can be developed to determine treatment control and hydromodification control necessity or extent which may affect water quality pond sizing, locations or necessity.



Appendix A Modeling Map

2 of 2

Node Name (Analysis Pt)	Max Crown Elev (ft)	Exist Max WSE (ft)	Dev Max WSE (ft)	Enrcoached Max WSE (ft)	Invert Elevation ft	Water Level Rise (Encroach-Dev) (ft)	Comments
5.5-DA-A	688.6	687.9	688.0	688.0	682.5	0.0	Shed A- US End of Study Reach
6.5	688.5	685.2	685.5	685.5	681.0	0.0	
7.5	691.0	685.0	685.3	685.3	679.1	0.0	
8.5	688.9	682.0	682.3	682.3	677.0	0.0	
9.5	686.8	680.4	680.6	680.6	676.0	0.0	
10.5	685.3	677.9	678.1	678.1	675.5	0.0	
11.5	682.9	675.8	676.0	676.0	672.9	0.0	
12.5	682.0	674.5	674.8	674.8	670.2	0.0	
13.5	680.8	670.3	670.6	670.6	664.4	0.0	
14.5	677.0	665.7	666.0	666.0	660.6	0.0	
15.5	678.4	660.7	661.0	661.0	655.8	0.0	
16.5	674.6	655.1	655.5	655.5	649.4	0.0	
17.5	671.6	651.4	651.7	651.7	645.1	0.0	
18.5	668.9	648.1	648.5	648.5	641.6	0.0	
19.5	666.1	645.2	645.6	645.6	638.6	0.0	
20.5	663.5	642.7	643.2	643.2	636.0	0.0	
21.5	661.2	641.0	641.8	642.0	633.9	0.2	Encroachment along LB
22.5	658.5	640.4	641.4	641.6	632.4	0.2	
23.5	655.6	640.1	641.2	641.5	631.2	0.2	
24.5	652.9	640.0	641.2	641.4	631.0	0.3	
25.5	651.7	639.9	641.1	641.4	630.7	0.3	
26.5	649.6	639.8	641.1	641.3	630.6	0.3	
27.5	647.6	639.7	641.0	641.3	630.5	0.3	
28.5	646.3	639.6	641.0	641.2	630.3	0.3	
29.5	645.7	639.6	640.9	641.2	630.2	0.3	
30.5	645.6	639.6	640.9	641.2	630.1	0.3	
31.5-DA-B	645.5	639.5	640.9	641.2	630.0	0.3	Inflow from Shed B
							Serrano Parkway
S1+00	643.0	626.4	626.4	626.5	624.0	0.0	
S2.5	637.2	623.2	623.4	623.4	620.7	0.0	
S3.5	635.6	622.8	622.9	623.0	619.2	0.0	
S4.5	633.8	622.6	622.8	622.8	617.4	0.0	
S5.5	628.5	622.2	622.3	622.4	616.3	0.0	
S6.5	627.5	621.3	621.5	621.5	615.2	0.0	
S7.5	628.8	618.9	619.1	619.1	613.0	0.0	
S8.5	627.0	617.1	617.3	617.3	611.2	0.0	
S9.5	623.8	616.6	616.7	616.7	610.7	0.0	
S10.5	621.9	616.1	616.2	616.2	610.4	0.0	
S11.5	621.2	615.0	615.2	615.2	610.0	0.0	
S12.5-DA-C	620.0	614.5	614.7	614.7	608.5	0.0	Inflow from Shed C
S13.5	619.8	612.4	612.6	612.6	607.7	0.0	
S14.5	619.0	611.9	612.0	612.0	606.9	0.0	
S15.5	617.4	611.1	611.3	611.3	605.9	0.0	
S16.5	617.2	610.5	610.7	610.7	604.8	0.0	
S17.5	617.1	607.7	607.9	607.8	603.8	0.0	
S18.5	616.1	606.9	607.2	607.2	602.7	0.0	
S19.5-DA-D	615.1	606.6	606.9	606.9	601.7	0.0	Inflow from Shed D
S20.5	614.2	606.0	606.3	606.3	600.8	0.0	Encroachment along LB
S22.2	612.0	605.0	605.8	605.8	598.0	0.1	
S22.5	611.5	605.0	605.7	605.8	597.5	0.1	
35++	601.5	597.7	598.1	598.1	594.5	0.0	DS of 2x 7'hx6'w RCB at Hwy 50

xpswmm 2012 - [Dynamic Section View]

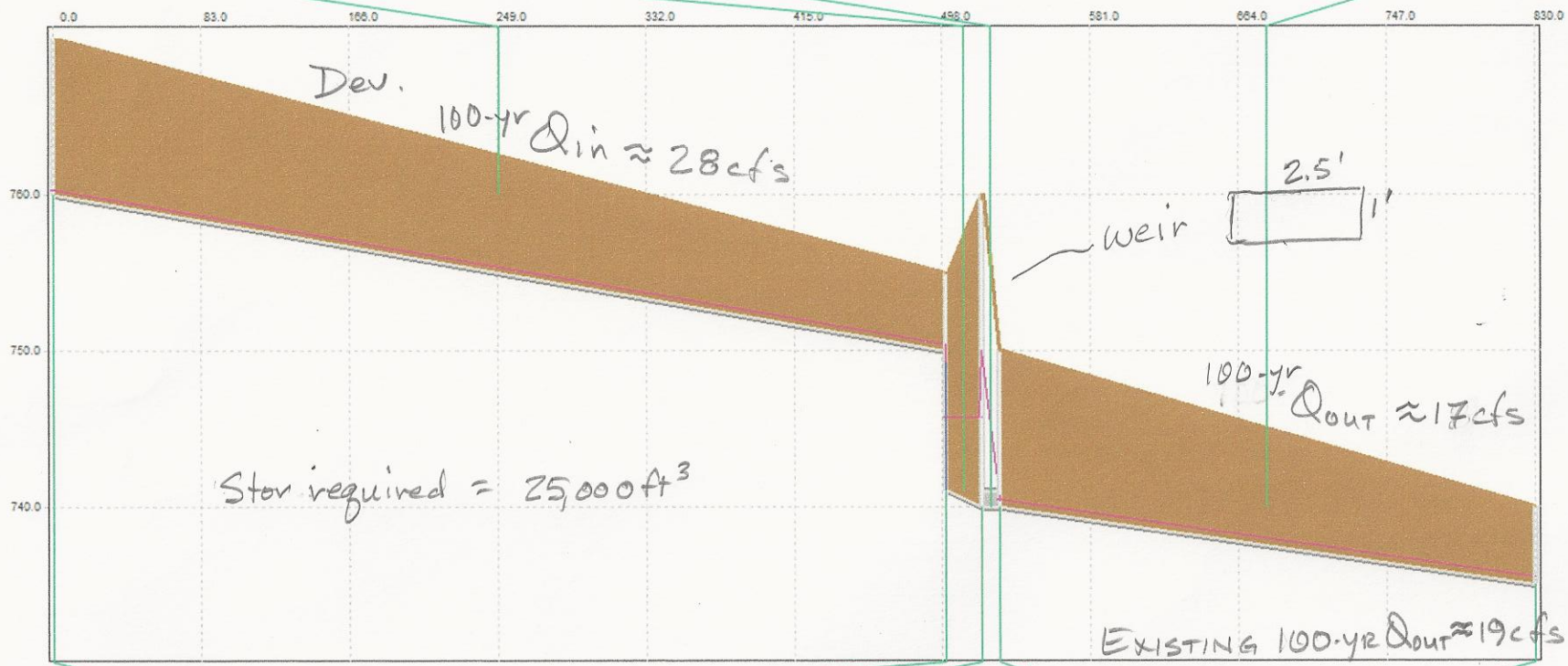
File Window

Base Scenario

100-year Water Surface Profile- Westside
Day [0] Time 00:03:00 Step 6

Table E1 | Link | WEILink | LinkPlotData

	HDR	Link529	PedWr	PedWr	DBOrif	chnl
Upstream No	Ped-HDR	Node537	Ped-DB	Ped-DB	Ped-DB	PedOut
Link Name	HDR	Link529	OrifOut	OrifOut	OrifOut	chnl
Max Flow	27.866	27.120	15.210	27.843	18.797	18.796



	Ped-HDR	Node537	Ped-DB	PedOut	DSend
Subcatchme	1				
Node Name	Ped-HDR	Node537	Ped-DB	PedOut	DSend
Area	13.000	0.000	0.000	0.000	0.000
Max Flow	27.887	0.000	0.000	0.000	0.000
Max Water El	760.364	745.768	745.768	740.447	735.447

Node | WEINode | PlotData

App B 1 of 2

Attachment C Schematic of Drainage Facilities with Peak Flows

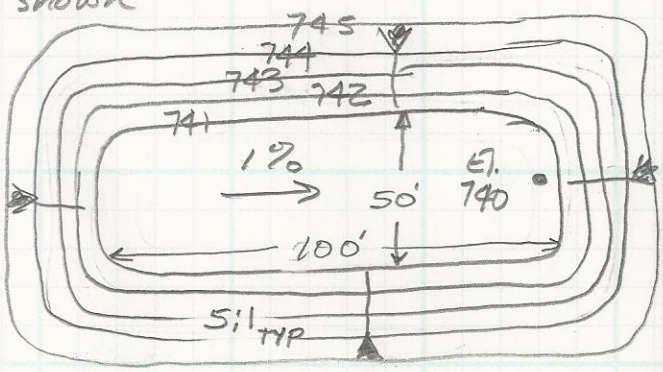
Watermark Engineering, Inc.
3153 Jenna Court
Roseville, CA 95747
(916) 774-1111 Fax (916) 774-1181
pstiehr@wtrmark.com

JOB Westside - Pedregal
SHEET NO _____ OF _____
CALCULATED BY PLS DATE 5-24-14
CHECKED BY _____ DATE _____

APPENDIX B
2 of 2

Detention Analysis for Pedregal

Assumed rectangular dry basin as shown

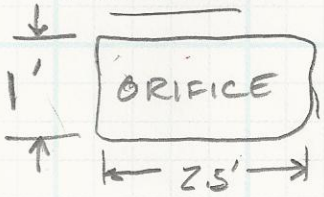


Stage-Storage Relation

	Depth	Area (ac)	Cum. Stor (ft³)
740	0	0.01	0.0
741	1	0.11	2,220
742	2	0.15	7,860
743	3	0.19	15,250
744	4	0.24	24,600
745	5	0.29	36,100

100 WSE
= 744.0

OUTFALL



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(916) 774-1111 Fax (916) 774-1181
pstiehr@wtrmark.com

JOB Westside Water Quality
SHEET NO _____ OF _____
CALCULATED BY PS DATE 5.24-14
CHECKED BY _____ DATE _____

APPENDIX C

WET BASIN Upstream of Serrano Parkway

* Appendix E Sac WQ Manual

HDR	17.1 ac	80% imp
MF	4.5 ac	70% "
Roads	5.2 ac	95%
	26.8 ac	81.2%

Volume Required (0.67 in)* 26.8 ac = 1.5 af = WQV

Wet Basin = 1.25 (WQV) = 1.25(1.5) = 1.9 af

Min Permanent Pool Storage = 1.9 af

Wet Basin Downstream of Serrano Parkway

HDR	20.5 ac	80
MF	9.2	70
Roads	5.1	95
	34.8	79.6 wt%

Vol = 34.8 (0.64 in)* = 1.9 af

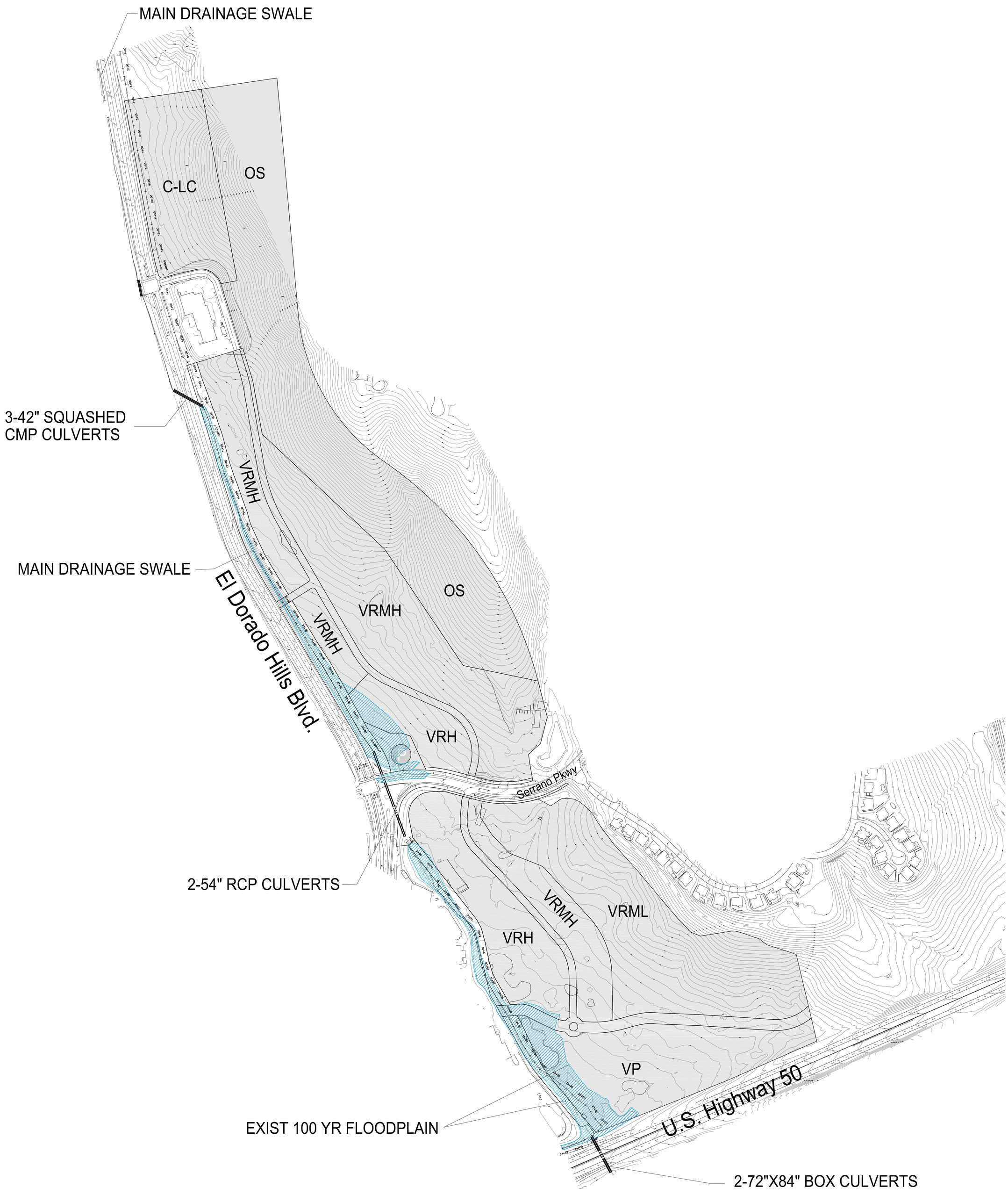
Min Permanent Pool = 1.25(1.9) = 2.4 af

MAP 2

CENTRAL EL DORADO HILLS SPECIFIC PLAN

100-YR FLOOD PLAIN

COUNTY OF EL DORADO
CALIFORNIA



0 100' 200' 400'
SCALE IN FEET

905 Sutter Street Suite 200 Folsom CA 95630
(916) 366-3040 Fax (916) 366-3303
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors

R:\2677\181-Westside\Exhibits\Drainage\Westside-Drainage Exhibit.dwg Aug 12, 2014 - 11:13am, DSagan

Watermark Engineering, Inc.

Date: February 23, 2015

To: County of El Dorado Transportation Division

From: Patrick Stiehr

RE: Additional Analysis of Drainage Facilities Downstream of Westside Development

OVERVIEW

The proposed Westside development is located east of El Dorado Hills (EDH) Boulevard and the La Borgata/Raley's Shopping Complex, just north of Highway 50. Much of the area was part of the EDH Golf Course which closed several years ago. The development will cover about 104 acres, consisting of high density residential, multifamily, a park, and open space.

North of Highway 50, EDH Boulevard generally goes north along the bottom of a small valley. A drainage channel parallels the road and then continues south along the east or back side of the Raley's Shopping Complex, discharging via a double box culvert under Highway 50. This drainage channel has been identified as Tributary 2 in Carson Creek Regional Drainage Study completed in 1996 by Shari Bottorff and as Channel 2 within the Wood Rodgers' drainage studies. The proposed Westside development drains to Tributary 2 both upstream and downstream of the Serrano Parkway crossing.

Immediately downstream of Highway 50, Tributary 2 continues through significant nature preserves and storage areas that are part of the Town Center amenities. It then flows under White Rock Road and twice under Concordia Drive, discharging into the main stem of Carson Creek several hundred farther downstream.

A drainage study was prepared for Westside by Watermark Engineering dated August 28, 2014. That study stopped at Highway 50 with the following explanation taken from that study.

> *No analyses of the Town Center facilities have been done as part of the Westside study. It has been assumed that the Town Center facilities were designed assuming fully developed conditions upstream of Highway 50. In addition, the culvert crossing under Highway 50 slightly attenuates the amount of flow that can pass under the freeway.*
>
> *Based on the assumptions described above, no detention or attenuation facilities are proposed as part of the Westside development. ...*

The drainage studies prepared for the Town Center improvements were hard to locate in order to confirm or reject the above assumption. Recently, several studies were located. Review of the applicable studies indicates the original 1996 land use assumptions upstream of Highway 50 were used without consideration of land use changes that have occurred or are expected in the future..

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This analysis was therefore necessary to determine if adequate storage was available within the Town Center facilities to attenuate developed flows for the proposed Westside development.

TOWN CENTER IMPROVEMENTS

The available Wood Rodgers drainage reports for the Town Center improvements were as follows:

- *Tributary 2 Floodplain Analysis for Town Center Development*, May 2002;
- *On-Site Drainage Analysis for Town Center East Commercial Development*, June 2002;
- *Drainage Analysis for Town Center Development*, September 2002; and
- *Carson Creek Tributary Channel Analysis*, August 2003.

There were three main drainage improvements for the Town Center Development. The existing facilities and proposed improvements were as follows:

1. The downstream end of the attenuation storage, downstream of the rock weir and identified as the South Crossing, was controlled by three large CMP arches (103" by 71"). The proposed improvements were to leave the one arch with the lowest flowline elevation in place, remove the other two, and install a single-smaller CMP arch at a flowline elevation higher than the one that remained in place. A recent field inspection indicates that the lower arch is in place as proposed, the second arch was completely plugged, and the lower 3.5± feet of the third existing arch was filled with concrete.
2. The existing crossing at White Rock was two 6'x 5' concrete box culverts (RCBs). The recommended improvements were four 6' x 4' RCBs and those four culverts are in place.
3. Channel enlargement along the right bank and cleaning was proposed from the South Crossing downstream to the White Rock Road culverts. During the site visit, the extent of the channel work was not clear. The estimation was that some or most of the excavation had been completed, but there was significant vegetation in the channel.

This is a separate comment but during the site visit, it was noted that there is a large (6"- 9" dia.) branch growing across the mouth of the lowest arch culvert at the South Crossing. It is part of a mature willow tree growing at the right side of the culvert entrance. The tree could be left in place but the branches affecting the entrance should be removed.

ANALYSIS

The XP-SWMM model used for Tributary 2 upstream of Highway 50 for the Westside Study was extended downstream based on cross-section plots and other information available from the Wood Rodgers (WR) drainage reports.

Forty-eight cross-sections were used to define the downstream channel and six crossings from the south side of Highway 50 to approximately 1400 feet downstream of the first Concordia Way crossing. There were no changes to the facilities downstream of White Rock Road, so the reach downstream of Concordia was the last reach evaluated. Roughness values and geometric data were also taken from the existing reports.

The peak flow estimates for both pre and developed conditions for the subsheds upstream of Highway 50 were taken from the Westside Drainage Study. Peak flow estimates for both pre and

post developed conditions for subsheds that are tributary to the Town Center area were generated based on the same hydrologic methodology (SCS Curve Number) and subshed parameters as those presented in the WR reports.

Table 1 provides a summary of the basin parameters. The basin boundaries upstream of Highway 50 are the same as shown in the Westside Drainage Study and the boundaries for the sheds downstream of Highway are shown within the WR studies.

Table 1. Subshed Parameters

Shed ID	Area (ac)	SCS CN	% Imp (Exist)	% Imp (Dev)	Lag (min) (Exist)	Lag (min) (Dev)
5.5-A	277	80	20	35	55	50
31.5-B	235	80	15	30	45	40
S12.5-C	214	80	10	50	45	40
S19.5-D	60	80	80	80	30	30
Downstream Of Hwy 50		**Pre Dev**	**Post Dev**	**Not used**		
CM83	34	84	94		11.5	No change
CM82	25	84	94		11.5	“
CM81	26	84	94		11.5	“
CM8R	14	84	94		11.5	“
CM8	28.5	82	89		9	“
CU	87	88	88		29	“

Table 2 provides a summary of 100-year peak flows from the selected subsheds. The peak flows were the same as presented in the respective studies upstream and downstream of Highway 50.

Table 2. Summary of 100-year Peak Flows

Shed ID (us of Hwy 50)	Area (ac)	100-yr Pk Flows (cfs)			Shed ID (ds of Hwy 50)	Area (ac)	100-yr Pk Flows (cfs)	
		Exist	Dev				Exist	Dev
5.5-A	277	284	329		CM83	34	34	72
31.5-B	235	259	301		CM82	25	43	53
S12.5-C	214	227	307		CM81	26	45	55
S19.5-D	60	109	109		CM8R	14	24	30
					CM8	28.5	47	56
					CU	87	141	141

Table 3 provides a summary of flows and maximum water elevations at selected points along Tributary 2 from Serrano Parkway downstream about 1000 feet south of the first Concordia Way crossing. Three conditions were analyzed to determine the impact the Westside Development would have on the Town Center facilities.

Figure 1 shows the locations of the Analysis Points. Attachment 1 is a XP-SWMM plot of water levels through the Town Center for “all developed conditions”.

Table 3. Summary of Peak Flows and Water Surface Elevations along Channel 2

Description/Location	Pre Development		Westside Exist, Town Center Dev		Westside & Town Center Developed	
	Flow (cfs)	Elev (ft)	Flow (cfs)	Elev (ft)	Flow (cfs)	Elev (ft)
US of Serrano Parkwy	394	640.5	394	640.5	422	642.3
US of Hwy 50	619	604.9	619	604.9	714	605.7
North Crossing	607	595.7	607	595.7	697	596.2
Conspan Crossing	606	590.0	605	590.0	697	590.1
Rock Weir	627	590.0	630	590.0	722	590.1
South Crossing	631	583.6	567	588.0	626	589.2
White Rock Road	638	583.0	575	579.6	635	580.0
Concordia Way	675	578.1	599	577.7	661	578.0
DS of Concordia Way	675	565.4	599	565.2	661	565.3

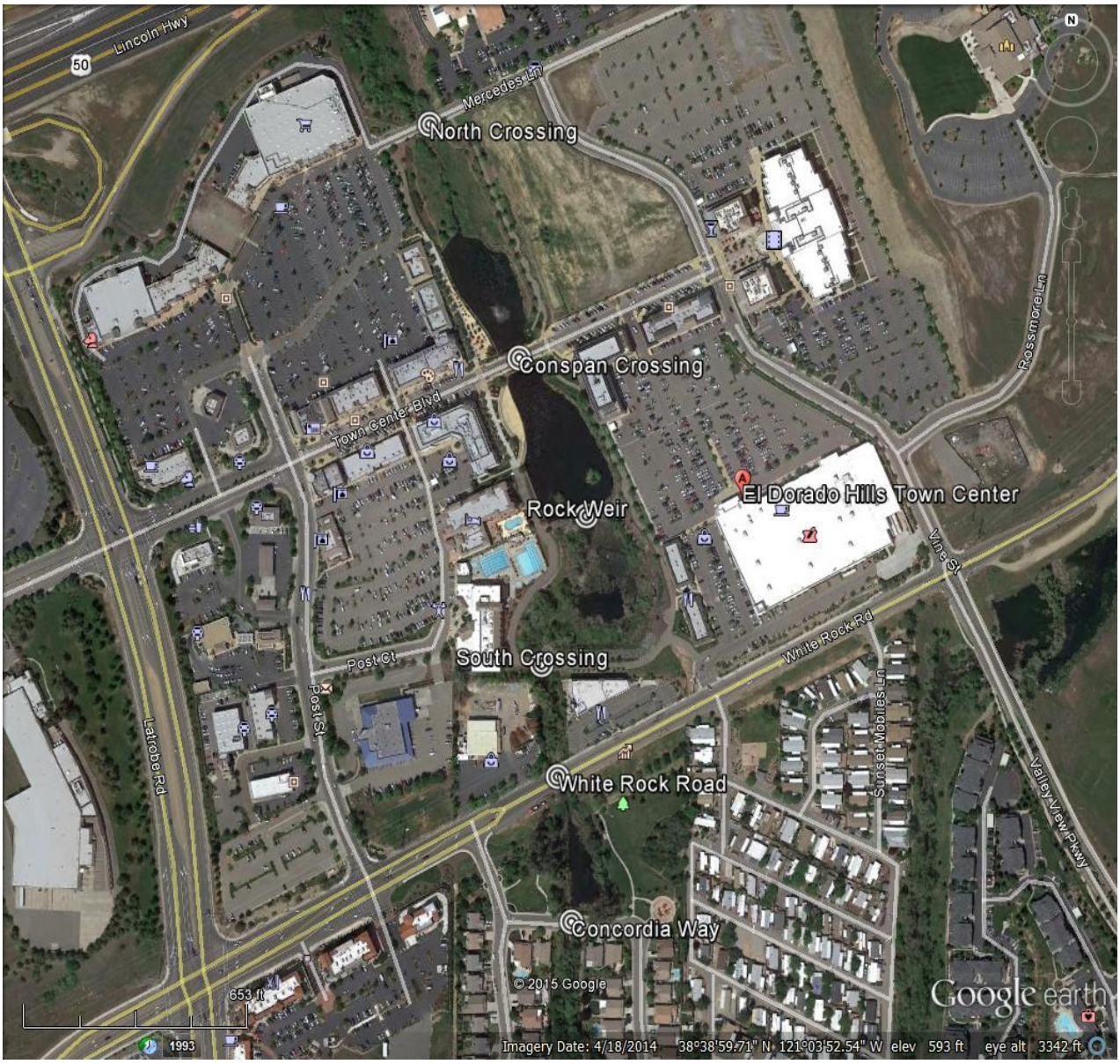


Figure 1. Location of Analysis Points at Town Center, downstream of Highway 50.

The locations downstream of Highway 50 where the water surface elevation is higher under the "all developed" scenario are at the upstream analysis points and at the South Crossing. The higher water levels upstream of the South Crossing are the results of the higher incoming flow. The higher water level at the South Crossing is the result of the design feature to store more water by reducing the size and conveyance of the South Crossing culverts.

There is attenuation such that downstream flows and corresponding water levels are at or below predevelopment levels, including the Westside development. There is acceptable freeboard (2+ feet) within the pool upstream of the South Crossing. There is also an emergency spillway if the culverts become restricted by debris during a major storm event.

Although not specifically designed to attenuate developed flows from Westside, the existing facilities at Town Center do provide the necessary attenuation so that flows entering Carson Creek downstream of Tributary 2 are at or below predevelopment levels.

Additional modeling information and the electronic XP-SWMM files are available upon request.

xpswmm 2014 - [Dynamic Long Section]

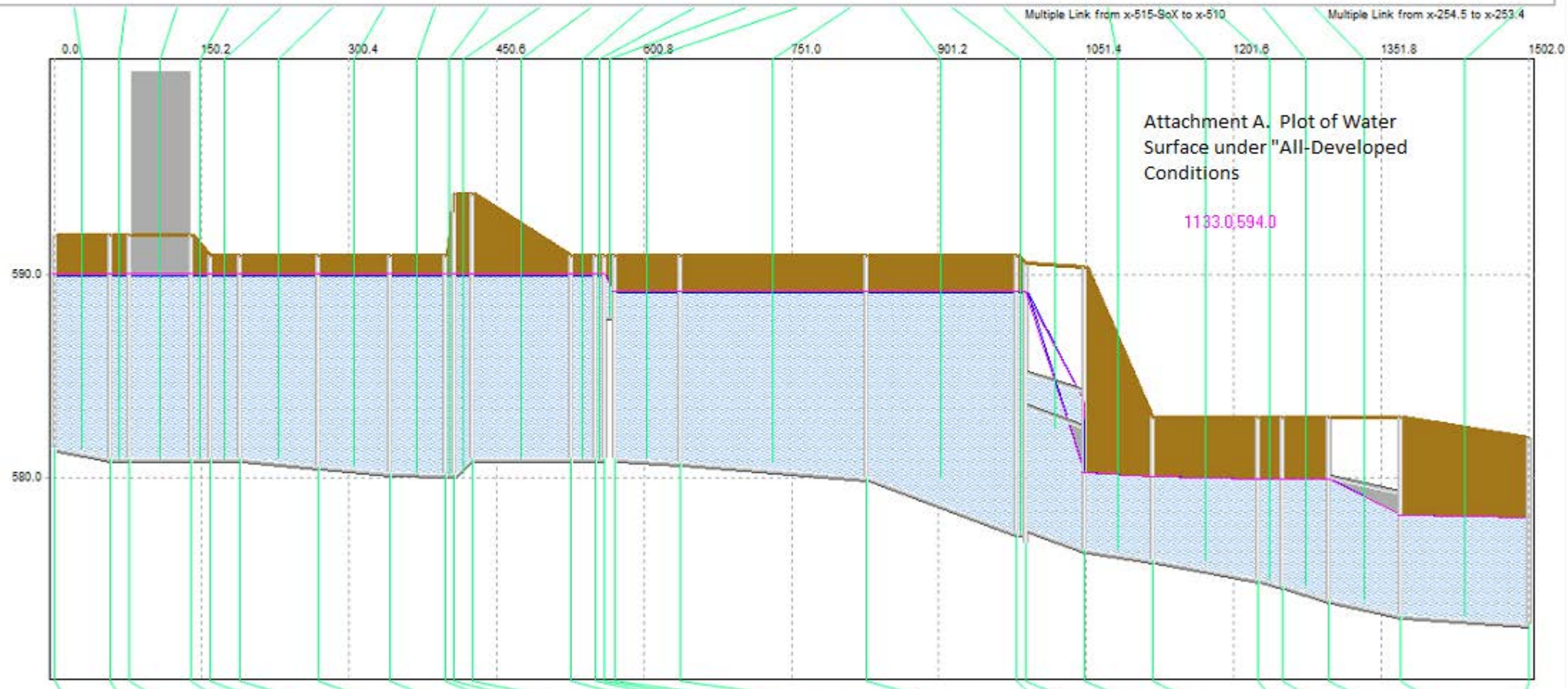
File View Window

Base Scenario | 100-yr | Active Subcatchments | Close

100-year Water Surface Profile- W100-year Water Surface Profile- Westside
Day [0] Time 11:21:00 Step 1362

Table E1 | Link | WEILink | LinkPlotData

	Rx-57	Rx-56	Cons	Rx-555	Rx-55	Rx-55	Rx-54	Rx-543	Rx-54	Rx-53	Rx-537	Rx-53	Rx-53	Rx-53	Rx-531	Rx-53	Rx-52	Rx-51	LitlAr	BigAr	Rx-51	Rx-495	Rx-49	Rx-25	WiteR	WiteR	WiteR	WiteR	Rx-253
Storm	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr
Upstream No	x-570	x-566	x-565	x-555-	x-554	x-550	x-547	x-543	x-540	x539.5	x-537	x-533	x-532-	x-531.	x-531	x-530	x-520-	x-515-	x-515-	x-515-	x-510	x-495	x-490-	x-255.	x-254.	x-254.	x-254.	x-254.	x-253.
Link Name	Rx-57	Rx-56	Consp	Rx-555	Rx-55	Rx-55	Rx-54	Rx-543	Rx-54	Rx-53	Rx-537	Rx-53	Rx-53	Rx-53	Rx-531	Rx-53	Rx-52	Rx-51	Rx-515	Rx-51	Rx-51	Rx-495	Rx-49	Rx-25	WhiteR	WhiteR	WhiteR	WhiteR	Rx-253
Max Flow	696.6	696.7	696.7	711.9	712.0	712.0	711.9	711.8	711.8	711.8	711.6	711.5	722.4	722.4	712.1	672.9	638.0	628.6	95.2	531.2	626.4	626.4	634.9	634.9	158.7	158.7	158.7	158.7	635.0



	x-570	x-566	x-565	x-555-	x-554	x-550	x-547	x-543	x-540	x539.5	x-537	x-533	x-532-	x-531.7	x-531	x-530	x-520-	x-515-	x-515-S	x-510	x-495	x-490-	x-255.5	x-254.5	x-253.4	x-252-
Storm	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr	100-yr
Subcatchme				1									1				1	1				1				1
Node Name	x-570	x-566	x-565	x-555-C	x-554	x-550	x-547	x-543	x-540	x539.5	x-537	x-533	x-532-C	x-531.7	x-531	x-530	x-520-C	x-515-C	x-515-S	x-510	x-495	x-490-C	x-255.5	x-254.5	x-253.4	x-252-C
Area	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	26.0	14.0	0.0	0.0	0.0	28.5	0.0	0.0	0.0	87.0
Max Flow	0.0	0.0	0.0	72.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.3	0.0	0.0	0.0	55.4	29.8	0.0	0.0	0.0	56.0	0.0	0.0	0.0	140.6
Max Water El	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	590.1	589.2	589.2	589.2	589.2	589.2	580.3	580.1	580.0	580.0	580.0	578.2	578.1

Node | WEINode | PlotData | weiTable

Appendix J

CEQA Guidelines Appendix F: Energy Conservation

APPENDIX F:
ENERGY CONSERVATION

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,

(2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and

(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, cost effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production.

II. EIR Contents

Potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances specific items may not apply or additional items may be needed. Where items listed below are applicable or relevant to the project, they should be considered in the EIR.

A. Project Description may include the following items:

1. Energy consuming equipment and processes which will be used during construction, operation and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
2. Total energy requirements of the project by fuel type and end use.
3. Energy conservation equipment and design features.
4. Identification of energy supplies that would serve the project.
5. Total estimated daily vehicle trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials maybe discussed.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.

6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:

1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy, increase water conservation and reduce solid waste.
3. The potential for reducing peak energy demand.
4. Alternate fuels (particularly renewable ones) or energy systems.
5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the project's energy costs over the project's lifetime.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21000-21176. Public Resources Code.

Revised 2009

SUMMARY OF SPECIFIC PLAN POLICIES AFFECTING ENERGY

Appendix C

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Policy # [1]	Policy

C.1 AIR QUALITY AND PUBLIC HEALTH

8.51 (M)	Installation of open-hearth wood-burning fireplaces shall be prohibited in favor of more energy-efficient and less polluting heating devices using cleaner burning fuels, such as natural gas. All fireplaces and stoves shall be natural gas fired.

C.2 CIRCULATION

4.1	The Plan Area must include choices among methods of transportation, including roadways, bikeways, and pedestrian ways that are well-connected for a walkable community.
4.2	Design the land use plan in a manner that accommodates a potential connection between the Serrano Westside Planning Area and Silva Valley Parkway as a collector road and parallel capacity to U.S. Highway 50.
4.3	Design the local roadways in the Plan Area as internal systems that do not connect to existing roadways in neighboring subdivisions, unless required for Emergency Vehicle Access (EVA).
4.5	Development of the Plan Area shall comply with General Plan Policies TC-Xa through TC-Xi (Measure Y).

C.5 ENERGY EFFICIENCY

8.11 (M)	All buildings shall exceed energy efficiency standards in Title 24, Part 6 of the 2008 California Building Standards Code by a minimum of 15 percent, according to the performance method prescribed in the code (CALGreen Residential: A4.203.1; Nonresidential: A5.203.1; CAPCOA BE-1).
8.12 (V)	All buildings should, if feasible, incorporate site design measures that reduce heating and cooling needs by orienting buildings on the site to reduce heat loss and gain, depending on the time of day and season of the year.

[1] *Policies noted with a (V) or (M) indicate the voluntary or mandatory nature of the CALGreen standards and illustrate how this Specific Plan exceeds CALGreen requirements. Notwithstanding the voluntary or mandatory nature of the CALGreen code, the policies stated herein become the adopted policies of the Specific Plan and shall apply in the respective circumstances as worded by the policies.*

Policy # [1]	Policy
8.13 (V)	Cool roofing materials shall be encouraged in both residential and nonresidential buildings, consistent with CalGreen Tier 1 voluntary measures (CALGreen A4.106.5 for Residential; A5.106.11.2 for Nonresidential).
8.14 (M)	All buildings shall be designed to incorporate the use of high quality, energy-efficient glazing to reduce heat loss and gain.
8.15 (V)	All buildings shall include programmable thermostats, home energy management systems, or other similar technologies (CAPCOA BE-2).
8.16 (V)	Appliances and any applicable equipment installed prior to occupancy shall be EnergyStar certified, including residential appliances and HVAC systems, nonresidential appliances, office equipment, HVAC, and lighting control systems (CAPCOA BE-4).
8.17 (V)	Any covenants, conditions, and restrictions shall allow for the temporary use of clothes lines, drying racks, or similar temporary structures, in order to encourage natural air-drying of laundry and conservation of energy.
8.18 (V)	The use of vegetative or man-made shading devices for east-, south-, and west-facing walls with windows shall be encouraged in order to reduce heat gain. Where feasible, wall surface materials shall be minimum SRI 25 (aged), for 75 percent of opaque wall areas (CALGreen A5.106.7).
8.19 (V) (M)	All new construction shall obtain third-party commissioning and verification prior to occupancy to ensure that all building systems and components are planned, designed, installed, tested, and operated and maintained to meet the owner's project requirements (CALGreen 5.410.2 for commercial (M), A4.207.2 for residential (V); CAPCOA BE-3).
8.20 (V)	Lighting in publicly- or commonly-accessed outdoor areas in all Village Residential - Medium and Village Residential - High, Civic-Limited Commercial, and Village Park designations shall both minimize energy use and protect dark-sky conditions through the installation of high-efficiency LED or similar lighting with automatic, dimmable controls (CAPCOA LE-1; LE-2).
8.21 (V)	Public street-lighting shall be high-efficiency LED (light emitting diode) or incorporate similar technologies, and be designed with automatic, dimmable controls to both minimize energy use and protect dark-sky conditions, as allowed by the local public agency (CAPCOA LE-1).
8.22 (V) (M)	Commercial, residential, and public buildings shall be designed to allow for the installation of renewable energy systems including active solar, wind, or other emerging technologies, and shall comply with the following standards: ▪ All buildings shall, at a minimum, be prewired for future solar photovoltaic (PV) system installation. Conduit shall be installed from the building roof or eave to a location within the building identified as suitable for future installation of a charge controller (regulator) and inverter (CALGreen A5.211.4) (V); ▪ Where applicable, rooftop PV arrays or solar water heating systems (SWHS) shall be installed in accordance with the State Fire Marshal safety regulations and guidelines (M);

Policy # [1]	Policy
	▪ Standard rooftop mechanical equipment shall be located in a manner that does not preclude the installation of solar panels (V); ▪ Alternative energy mechanical equipment and accessories installed on the roof of a building shall be integrated with roofing materials and/or blend with the structure's architectural form, if feasible (V); and ▪ Any covenants, conditions, and restrictions shall allow for the installation of appropriate solar energy collection systems or other architectural features to collect, store, or utilize renewable energy on-site, provided that the systems comply with design guidelines and height limits established in the Specific Plan development standards and applicable provisions of the County Code.
8.23 (V)	Solar water heating systems, radiant heating systems, or similar types of energy efficient technologies, shall be required in commercial and multi-family buildings, and encouraged in single-family homes and swimming pools, where applicable.

C.9 LAND USE

3.2	Establish new residential uses in a manner that blends densities with existing subdivisions and locate multi-family sites in proximity to existing services or public transit opportunities to minimize automobile use.
8.1 (V)	Minimum off-street parking requirements shall be flexible where shared parking arrangements, on-street parking, car-sharing, or other applicable measures or programs lead to reduced peak parking demand ((CAPCOA) PDT-1; CALGreen A5106.6 Parking Capacity).
8.2 (V)	Short term and long term bicycle parking and support facilities shall be provided in all Civic-Limited Commercial, Village Park, Village Residential - Medium, and Village Residential - High designations in accordance with CALGreen Nonresidential Tier 1 Voluntary Measures (see CALGreen A5 106.4; CAPCOA SDT-6 and 7).
8.3 (V)	Off-street parking in all Civic-Limited Commercial, Village Park, Village Residential - Medium, and Village Residential - High land use designations shall include a minimum number of dedicated public parking spaces for Low-Emitting and Fuel-Efficient Vehicles , in accordance with CALGreen Nonresidential Tier 1 Voluntary Measures (see CALGreen A5.106.5.1 for specific standards).
8.4 (V)	Off-street parking in all Civic-Limited Commercial, Village Park, and Village Residential - High designations shall provide some dedicated parking for plug-in electric vehicles (PEVs) and install minimum Level 2 PEV charging stations in each dedicated PEV parking space, in accordance with CALGreen Nonresidential Tier 1 Voluntary Measures (see CALGreen A5.106.5.3 for specific standards; CAPCOA SDT-8).
8.5 (V)	Off-street parking in private garages or other dedicated enclosed off-street parking spaces in all Village Residential - Low and Village Residential - Medium designations are encouraged to be pre-wired for future installation of minimum Level 2 PEV charging stations, in accordance with Section 406.7 of the California Building Code.

Policy # [1]	Policy
8.6 (V)	Electrical outlets shall be provided along the front and rear exterior walls in all Residential designations to allow for the use of electric landscape maintenance tools (CAPCOA A-3).
8.7 (V)	The use of "*cool pavement*" materials will be encouraged, where feasible and subject to the approval of the local agency, in the designs and specifications for all paved surfaces, including, but not limited to, sidewalks, driveways, parking lots, and streets; thereby reducing surface temperatures and radiant heat from paved surfaces. Cool pavements include those meeting Solar Reflectance Index (SRI) values of 29 or greater (LEED-ND GIB Credit 9: Heat Island Reduction).
8.8 (V)	Trees shall be interspersed throughout all parking lots so that in fifteen (15) years, fifty (50) percent of the parking lot will be in shade at high noon. At planting, trees shall be equivalent to a 15 gallon container or larger.
8.9 (V)	Solar canopies, intended to both shade parking lots and generate renewable energy, shall be encouraged.

C.11 MOBILITY AND CONNECTIVITY

4.6	Reserve a location in the southwest segment of the Serrano Westside Planning Area for a U.S. 50 Highway pedestrian overcrossing. The incorporation of public art features is strongly encouraged to highlight El Dorado County's agri-tourism industry.
4.7	Develop a cohesive pedestrian network of public sidewalks and street crossings that make walking a convenient and safe way to travel. Provide direct links between streets and major destinations, such as future transit stops, parks, and shopping centers, when feasible.
4.8	Relocate the Class I bike path on El Dorado Hills Boulevard between Wilson Boulevard and Serrano Parkway to a riparian area on the western edge of the Serrano Westside Planning Area to improve pedestrian safety and eliminate potential vehicular conflicts.
4.9	Utilize the existing undercrossing at Serrano Parkway to provide an un-interrupted bikeway from Wilson Boulevard to U.S. Highway 50.
8.10 (V)	The Master Owners' Association (MOA) shall work with area residents, businesses, and other interested parties, such as the Highway 50 Corridor TMA, to create or participate in a transportation management association (TMA), and prepare and implement a multi-strategy Transportation Management Plan (TMP) for the Plan Area. The TMP shall incorporate transportation demand management strategies as described in Section 8.4.2 (Transportation Demand Management), and will be managed through the TMA, as administered by the MOA or other similar organizations (CAPCOA TRT-1 through TRT-15).

Policy # [1]	Policy

C.15 POTABLE WATER, RECYCLED WATER, WASTEWATER, AND DRY UTILITIES

7.1	Design and construct the necessary potable water, recycled water for irrigation, wastewater, and storm water infrastructure required to serve the Plan Area. All infrastructure improvements shall follow the conceptual Water, Wastewater, Recycled Water, and Storm Water Master Plans, and shall be constructed in sequence to meet the immediate needs of the individual development projects.
7.2	Final master utility plans for water, recycled water, and wastewater shall be reviewed and approved by EID in a Facility Plan Report (FPR) at the improvement plan stage.
7.3	Final master utility plans for dry utilities (gas, electric, telephone, and cable) shall be reviewed and approved by the appropriate public utility purveyor in joint trench designs and composite plans at improvement plan stage.

C.16 PUBLIC SERVICES *(Fire Protection, Solid Waste Collection, Schools, and Parks)*

6.21	All construction projects shall be consistent with the County's Construction and Demolition Debris Diversion Ordinance to reuse or recycle a minimum of 65 percent (consistent with Policy 8.29 of this Specific Plan) of construction and demolition debris.
6.22	Green waste service for residential units shall be provided to the maximum extent feasible, and as determined by the El Dorado Hills CSD's Multi-Cart program and franchise agreement with El Dorado Disposal.

C.17 RECREATION

3.10	Provide private neighborhood parks and public village parks at an overall minimum standard of 5 acres per 1,000 residents, linking them to residential areas and activity centers through a network of sidewalks, bike paths, and trails.
3.11	All multi-family and high-density residential sites are encouraged to incorporate on-site recreational amenities for their residents.
6.1	To promote walking and cycling, village and neighborhood parks shall be connected to the pedestrian and bicycle network.

Policy # [1]	Policy
6.2	Locate neighborhood parks reasonably central to the neighborhoods they are intended to serve.
6.7	Village parks shall be located adjacent to public arterial or collector roadways.
6.12	Master plans shall be prepared for all public village parks and shall include a lighting plan, if applicable.
6.13	All park lighting fixtures shall be shielded and energy efficient.
6.14	Design and landscape parks to provide shade, easy maintenance, and water efficiency.

C.19 TRAFFIC CALMING

4.11	Reduce vehicular speed by designing local roads with narrower traffic lanes, roundabouts, well-marked pedestrian crossings, bulb-outs, or median treatments to improve pedestrian travel and comfort.

C.20 WASTE REDUCTION AND RECYCLING

8.24 (V)	Residential construction shall incorporate foundation systems, which result in not less than a 20 percent reduction in cement use in the foundation mix design through use of fly ash, slag, silica fume, or rice hull ash (CALGreen Residential A4.403.2).
8.25 (V)	Nonresidential construction shall use cement and concrete made with recycled products (CALGreen Nonresidential A5.405).
8.26 (V)	Residential and nonresidential construction shall incorporate efficient framing techniques, where applicable (Residential: CALGreen A4.404; Nonresidential: A5.404.1).
8.27 (V)	Residential and nonresidential construction shall incorporate sustainably-sourced, regional, bio-based, and reused materials, where applicable and available (CALGreen Res. A4.405 and Nonres. A5.405, CAPCOA MISC-3).
8.28 (M)	Prior to construction, applicants shall prepare a construction waste management plan for individual construction projects, in accordance with local and state requirements (El Dorado County C&D Waste Ordinance, CALGreen mandatory measures 4.408, 5.408).

Policy # [1]	Policy
8.29 (V)	A minimum of 65 percent of the non-hazardous construction waste generated at a construction site shall be recycled or salvaged for reuse (CALGreen A4.408.1, CAPCOA SW-2).
8.31 (M)	One hundred percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing associated with subdivision construction shall be reused or recycled, to the extent feasible (CALGreen Mandatory Measure 5.408.4).
8.32 (V)	Any covenants, conditions, and restrictions shall allow for on-site composting of residential yard waste and non-hazardous household food waste.
8.33 (V)	On-site composting of commercial food waste, landscaping green waste, and other forms of organic waste shall be allowed in Civic-Limited Commercial and Village Park designations, in accordance with any applicable local and state regulations.
8.34 (V)	On-site reuse of compost and mulch shall be encouraged in privately-owned gardens and landscaping or within common landscaped areas in the Plan Area.
8.35 (V)	Easily-accessible, screened, and well-maintained recycling and composting areas shall be provided for the depositing, storage, and collection of all non-hazardous recyclable or compostable materials (including paper, plastic, glass, metal, and yard and food waste).

C.21 WATER CONSERVATION

8.36 (M)	Residential indoor water use shall be reduced by a minimum of 20 percent from the 2008 Plumbing Code baseline as demonstrated by the prescriptive fixture-based method or according to a water use baseline, in accordance with CALGreen Mandatory Measures (CALGreen Residential 4.303 and Nonresidential 5.303, CAPCOA WUW-1).
8.37 (V)	Nonresidential indoor water use shall be encouraged to be reduced by a minimum of 30 percent as demonstrated by the prescriptive fixture-based method or according to a water use baseline, in accordance with CALGreen Nonresidential Voluntary Tier 1 Measures (CALGreen Nonresidential 5.303, CAPCOA WUW-1).
8.38 (V)	Maximum flow rates for residential kitchen sink faucets shall not be greater than 1.5 gallons per minute at 60 psi (CALGreen Residential A4.303.1, CAPCOA WUW-1).
8.39 (V)	Waterless urinals and toilets shall be encouraged in all Civic-Limited Commercial and Village Park buildings or facilities, where applicable (CALGreen Residential A4.303.2, CAPCOA WUW-1).

Policy # [1]	Policy
8.40 (V)	A backbone recycled water system shall be designed and installed within the Serrano Westside Planning Area to supply recycled water to residential yards, commercial landscaping, park sites, landscape corridors, and other landscaped spaces. (CAPCOA WSW-1, EID Board Policy 7010).
8.41 (V)	The use of site-specific gray-water irrigation systems shall be encouraged within residential buildings in the Pedregal Planning Area, in accordance with CALGreen Tier 1 Voluntary Measures (CALGreen Residential A4.305.1, Nonresidential A5.304.8).
8.42 (V)	Nonresidential buildings and facilities in the Serrano Westside Planning Area shall be dual-plumbed for potable and recycled water systems for toilet flushing when indoor recycled water is available for use, if allowed by the enforcing authority (CALGreen A5.305.5).
8.43 (V) (M)	Outdoor water conservation measures shall include weather-based irrigation controllers (M), low-water consumption irrigation systems, the establishment of water budgets, and other measures where applicable (V) (CALGreen Residential 4.304 (M) and A4.304 (V), Nonresidential 5.304 (M), CAPCOA WUW-3,4 (V)).
8.44 (V)	Hydro-zoning techniques shall be incorporated into landscape designs for all post-construction landscapes (CALGreen A4.106.3, CAPCOA WUW-3).
8.45 (V)	A minimum 75 percent of the Plan Area planting palette shall feature California Central Valley and foothills native plant species as described in the most current edition of River-Friendly Landscape Guidelines and drought tolerant adaptive plant species (CALGreen A4.160.3; CAPCOA WUW-3, -5, -6). Neighborhood entry gateways and similar high visibility locations in the Plan Area may feature conventional ornamental plant species.
8.46 (V)	Consistent with CALGreen Tier 2 voluntary measures, all non-public uses within the Plan Area shall limit the use of turf to no more than 25 percent of the total landscaped area (CALGreen A4.106.3, CAPCOA WUW-5).
8.47 (M)	The use of turf is not allowed on slopes greater than 25 percent where the toe of the slope is adjacent to an impermeable hardscape (Model Water Efficient Landscape Ordinance, Section 492.6).

Table J-1. Estimated Construction GHG Emissions (metric tons per year)

Construction Year	CO_2	CH_4	N_2O	Other	CO_2e
2016	745	0.20	<0.01	0.00	751
2017	831	0.16	0.01	1.42	837
2018	941	0.27	<0.01	0.00	948
2019	1,024	0.26	<0.01	0.12	1,031
2020	525	0.09	<0.01	0.00	527
2021	384	0.08	<0.01	0.27	386
2022	577	0.14	<0.01	0.00	581
2023	576	0.14	<0.01	0.00	580
2024	355	0.08	<0.01	0.00	357
2025	309	0.07	<0.01	0.00	311
2026	0	0.00	0.00	0.00	0
2027	215	0.07	<0.01	0.00	217
2028	392	0.11	<0.01	0.00	395
2029	666	0.09	<0.01	0.00	670
2030	564	0.02	<0.01	1.55	565
Total construction emissions	8,103	1.77	0.02	3.36	8,157
Maximum annual emissions (2019)	1,024	0.27	0.01	1.55	1,031
Regional draft GHG threshold	–	–	–	–	1,100

Source: CalEEMod version 2013.2.2 and RCEM version 7.1.5.1(based on ICF modeling).

Appendix K-1

Water Supply Assessment

El Dorado Irrigation District

SB 610 Water Supply Assessment for the Central El Dorado Hills Specific Plan

SB 610 Water Supply Assessment

Prepared for the
Central El Dorado Hills Specific Plan

Final

August 2013

Prepared by:

Tully & Young
Comprehensive Water Planning

Prepared for:

El Dorado Irrigation District

Approved by Eldorado Irrigation District Board of Directors
on August 26, 2013 as action item #8

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SECTION 1 – PROJECT INTRODUCTION

1.1 INTRODUCTION

In December 2012, the El Dorado Irrigation District (EID) received a letter from the El Dorado County Planning Department (County) requesting the completion of a Water Supply Assessment (WSA) for the Central El Dorado Hills Specific Plan (hereafter referred to as the "Proposed Project"). As the proposed water supply purveyor for the Proposed Project, EID has prepared this WSA to assess the availability and sufficiency of EID's water supplies to meet the Proposed Project's estimated water demands. This document provides the necessary information to comply with the assessment of sufficiency as required by statute.

Statutory Background

Enacted in 2001, Senate Bill 610 added section 21151.9 to the Public Resources Code requiring that any proposed "project," as defined in section 10912 of the Water Code, comply with Water Code section 10910, et seq. Commonly referred to as a "SB 610 Water Supply Assessment," Water Code section 10910 outlines the necessary information and analysis that must be included in an environmental analysis of the project (e.g. CEQA compliance) to ensure that proposed land developments have a sufficient water supply to meet existing and planned water demands over a 20-year projection.

Proposed "projects" requiring the preparation of a SB 610 water supply assessment include, among others, residential developments of more than 500 dwelling units, shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space and projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.[1]

The Proposed Project requires a WSA because it contemplates more than 500 new dwelling units as detailed in Section 1.2.

Document Organization

This WSA supports the Proposed Project's environmental review process and analyzes the sufficiency of water supplies to meet projected water demands of the Proposed Project through the required planning horizon. The WSA is organized according to the following sections:

- **Section 1: Proposed Project Introduction**. This section provides an overview of WSA requirements, and a detailed description of the Proposed Project, especially the land-use elements that will require water service.

[1] Water Code § 10912, subdivision (a).

- **Section 2: Proposed Project Estimated Water Demands**. This section describes the methodology used to estimate water demands of the Proposed Project and details the estimated water demands at build-out of the Proposed Project.

- **Section 3: Other Estimated Water Demands**. This section details the other water demands currently served by EID and anticipated to be served based on information in the El Dorado County's (County) General Plan as well as known and potential planned modifications since the County's adoption of the General Plan.

- **Section 4: Water Supply Characterization**. This section characterizes the EID water supply portfolio that will serve the Proposed Project along with other current and future water demands. Water rights, along with water service contracts and agreements are characterized for normal, single dry, and multiple dry year conditions.

- **Section 5: Sufficiency Analysis**. This section assesses whether sufficient water will be available to meet the Proposed Project water demands, while recognizing existing and other potential planned water demands within the EID service area. To provide the necessary conclusions required by statute, the analysis integrates the demand detailed in Section 2 and Section 3 with the characterization of EID's water supply portfolio detailed in Section 4.

1.2 PROPOSED PROJECT DESCRIPTION

The Proposed Project is an infill development along El Dorado Hills Boulevard, north of Highway 50 encompassing approximately 256 acres in the unincorporated community of El Dorado Hills (see **Figure 1-1**).

The Proposed Project includes 1,028 residences, limited commercial space, a large active use park, a smaller neighborhood park, and open space. Proposed residential dwelling units include 65 ½ to 1-acre custom lots, 123 lots with densities of 5 to 8 dwelling units per acre (designated "medium density-low"), 310 lots with densities of 9 to 14 dwelling units per acre (designated "medium density-high"), and 530 high-density units. The large park for active use will be approximately 15 acres, while the neighborhood park will be about 2 acres. The Proposed Project also includes a civic-limited commercial land use designation that includes 11 acres of civic or recreational use, or a maximum of 50,000 finished square feet of commercial/general office use.

The development is split into two planning areas: Serrano Westside Planning Area (Area 1), and Pedregal Planning Area (Area 2). Area 1 runs along the east side of El Dorado Hills Boulevard, while Area 2 is located on the west side north of Wilson Boulevard and south of Gillette Drive. **Table 1-1** summarizes the proposed land use acreages.

Figure 1-1 – Proposed Project Location and Land Uses

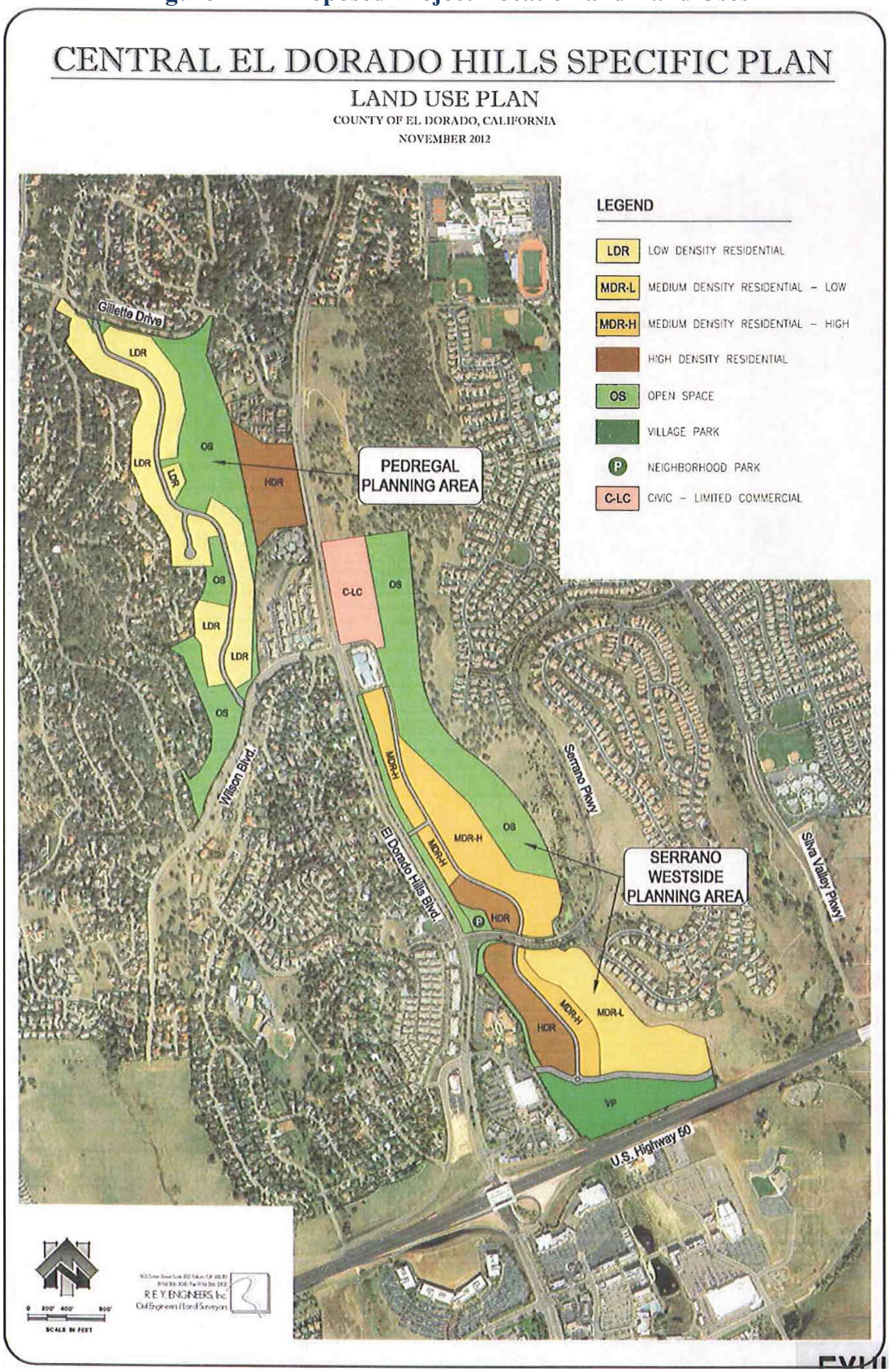

Table 1-1 – Summary of Proposed Project Land Uses and Acreages[2]

Planning Area	Land Use	Section 2.4 Comparison	Acres	Units
2	Low Density Residential	.5-1 Acre Lots	43	65
1	Medium Density Residential - Low	5,000-7,000 sf lots	23	123
1	Medium Density Residential - High	Condo/Townhomes	36	310
1	High Density Residential	Apartments	16	330
2	High Density Residential	Apartments	13	200
1	Limited Commercial	--	11	--
1	Village Park	--	15	--
1	Open Space	--	46	--
2	Open Space	--	39	--
1	ROW and Landscaping	--	8	--
2	ROW and Landscaping	--	6	--
		Total	**256**	**1,028**

1.3 Proposed Project Phasing

Table 1-2 describes the Proposed Project's three construction phases. Each phase represents a portion of the development, focusing on particular land-use classifications. Before constructing homes, commercial space, or other parts of the development, the proponents will begin site grading and project-wide infrastructure development. Some infrastructure and site grading will continue throughout all phases of the Proposed Project, as necessary. These activities include installing facilities for potable water, recycled water (as appropriate for the Proposed Project), sewer, electric, telecommunications, gas, stormwater, and roads. During these activities, a small water demand will exist – referred to in this Water Supply Assessment as "construction water." This demand is included in the yearly water demands presented in Section 2.

The initial phase will result in approximately one third of the Proposed Project demanding water service by 2020, with the two subsequent phases each adding an additional third as they are completed. All construction is planned to be completed by 2030, within the 20-year planning horizon of this WSA.

Table 1-2 – Proposed Number of Units per Project Phase

Land Use	Phase 1 By 2020	Phase 2 2021-2025	Phase 3 2026-2030	Total
Low Density Residential	5	60	--	65
Medium Density Residential - Low	60	63	--	123
Medium Density Residential - High	104	206	--	310
High Density Residential	230	--	300	530

[2] The Specific Plan Land Use Summary was provided by El Dorado County of Development Services Department.

SECTION 2 – PROPOSED PROJECT ESTIMATED WATER DEMANDS

2.1 INTRODUCTION

This section describes the methodology, provides the supporting evidence, and presents the estimated water demands for the Proposed Project. For the purpose of estimating water demand, the Proposed Project is planned to develop according to the phasing in **Table 1-2**.

2.2 DETERMINING UNIT WATER DEMAND FACTORS

As detailed in Section 1, the Proposed Project has specific residential and non-residential land-uses with defined residential lot-sizes, types of commercial uses and other characteristics. As these attributes vary among the types of proposed land-uses, so too will the water needs. To understand the water needs of the entire Proposed Project, unique demand factors that correspond with each unique land use are necessary. This subsection presents the methodology for determining the baseline unit water use demand factors that become the basis of the Proposed Project water demand estimates. Two distinct groups of demand factors are presented: (1) residential, and (2) non-residential.

2.3 PRIMARY SOURCE OF BASELINE WATER USE DATA

Because the Proposed Project is very similar in nature to particular elements built as part of the Serrano and El Dorado Hills developments over the past few decades, recent water use data for comparable products in these neighborhoods provides a reliable foundation for EID to establish new project-specific water demands. Through comparison of Proposed Project land-use elements to existing land uses, EID determined appropriate existing, established neighborhoods and non-residential facilities that best aligned with each unique residential and non-residential project element. For each comparable neighborhood, EID gathered and assessed total annual water use for the years 2008 through 2012. This selected period of water use best represents 1) the greatest number of homes occupied within each selected area (including established back-yard landscapes), and 2) varied water use over a range of climatic conditions reflecting various rainfall amounts and timing. Average annual uses were derived from the data and are discussed under the respective land-use categories.

2.4 BASELINE RESIDENTIAL WATER USE DEMAND FACTORS

The Proposed Project anticipates specific residential products that fall within general lot-size designations. The size of the lot will have the largest impact on the annual per-lot demand for water. Indoor demands remain relatively consistent regardless of lot size, with the exception of apartments, which tend to have fewer people living in each unit and thus a slightly lower indoor use.

For purposes of this WSA, the per-lot demand for residential lots will be described as "the acre-feet of water use annually per dwelling unit" – or simply put, acre-feet/dwelling unit (af/du). This value will reflect indoor and outdoor uses expected for a typical dwelling unit for each of the following classifications:[3]

- ½-acre to 1-acre custom/production lots
- 5,000 to 7,000 square-foot production lots
- Condominiums/townhouses
- Multi-family housing with community facilities including pool and/or clubhouse

The method and basis for determining the baseline unit water demand factor for each of these classifications is detailed in the following subsections.

½ Acre to 1-Acre Custom/Production Lots

Water demand factors for the proposed large lots are based on recent water use data records for residential lots in the Serrano development – specifically existing residential lots located on Renaissance Way and Renaissance Place. The proposed lots range in size from ½-acre to 1-acre. However, this WSA assumes that the larger 1-acre lots will have restrictions placed on each lot that limits the developable area to no more than ½-acre. For instance, a lot may include hillside and/or areas of oak woodland that must be protected, resulting in a diminished area for the home's footprint, outdoor hardscapes, and landscaping. Generally, the house itself is large, with extensive outdoor features including pools, hardscapes, water features, and significant landscaping with well-maintained turf areas.

Based on available historic meter data for similar developments served by EID, the baseline unit water demand factor for this land-use category is approximately 0.87 af/du.

5,000 to 7,000 square-foot Production Lots

The Proposed Project includes several lots designated in this approximate size classification. These lots typify residential subdivisions built throughout the region – including ample size homes, but with nominal outdoor area for hardscapes and landscaping. As a result of the limited outdoor area, many of these lots are limited to front-yard landscaping with well-maintained turf, and back yards often only including hardscapes, pools or other amenities, and lower water using landscapes. Unit water demands are based on recent water use data records for similar lots in the Serrano development – specifically Village D1A and Village E, which include numerous similar-sized lots.

Based on the available historic meter data for similar developments served by EID, the baseline unit water demand factor for this land-use category is 0.50 af/du.

[3] These classifications reflect EID's defined water demand factor categories as EID believes they best relate to the Proposed Project's land-use classifications as shown in the Table 1-1.

Condominiums/Townhouses

The Proposed Project includes numerous proposed lots characterized as "medium density-high" (9 to 14 units per acre). These proposed lots are anticipated to be similar to projects in the El Dorado Hills area, most notable the Regalo Project in Serrano. The Proposed Project includes large attached housing units, with large individual landscape yards and common areas.

Based on the available historic meter data for similar developments served by EID, the baseline unit water demand factor for this land-use category is 0.40 af/du.

Multi-family Housing

The Proposed Project includes numerous multi-family housing elements. These lots will include community landscaping, multi-story housing structures, community pools and other amenities. These projects are anticipated to be similar to the existing indoor and outdoor demands of the Sterling Apartment and Vineyard Apartment properties currently served by EID. Although both of these properties differ in their layouts and landscape types and coverage, both use approximately the same quantity of water on a per-dwelling unit basis.

Based on the available historic meter data for similar developments served by EID, the baseline unit water demand factor for this land-use category is 0.16 af/du – inclusive of both indoor and outdoor demands.

Residential Indoor Water Use

Based on EID meter data for the past several years, indoor water use for typical single-family homes averages about 0.18 af/du.[4] The value drops for apartments as a result of less people on average living in each apartment unit.[5] This value can be used to derive separation of residential demands that could be served with non-potable supplies, such as recycled water from the Deer Creek and/or El Dorado Hills wastewater treatment facilities (see Section 2.7.2).

2.5 MODIFYING BASELINE VALUES

All of the above-developed water demand factors for the residential classifications are based on similar existing developments in the El Dorado Hills area. However, since construction of the existing houses, a few changes have occurred that will reduce the Proposed Project's water demands from the baseline unit water demands derived from existing meter data. These include:

- CAL Green Code
- California Model Water Efficient Landscape Ordinance

[4] This value is a subset of the total usage estimated for a dwelling unit under each land-use category. Data from 2012 Water Resources and Service Reliability Report, EID, August 13, 2012, Appendix Table A, p.42

[5] El Dorado County indicates the average household size is 2.63 persons per occupied unit. (El Dorado County General Plan, 2008 Housing Element, August 2008 (Amended April 2009), p. 4-7).

CAL Green Code

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CAL Green Code) that requires the installation of water-efficient indoor infrastructure for all new projects beginning January 1, 2011. CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations.[6] The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. All proposed land uses must satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code. The CAL Green Code requires residential and nonresidential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside the building by 20 percent. The 20 percent water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building "water use baseline."[7] The Proposed Project will satisfy one of these two requirements through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, as well as Energy Star and California Energy Commission-approved appliances.

California Model Water Efficient Landscape Ordinance

In 2006, the Water Conservation in Landscaping Act was enacted, which required the Department of Water Resources to update the Model Water Efficient Landscape Ordinance (MWELO).[8] In fall of 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required that a retail water supplier adopt the provisions of the MWELO by January 1, 2010 or enact its own provisions equal to or more restrictive than the MWELO provisions.

The provisions of the MWELO are applicable to new construction with a landscape area greater than 2,500 square feet.[9] The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency. Finally, MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then assign a unique valve for each hydrozone (low, medium, high water use).[10] The design of landscape irrigation systems is anticipated to better match the needs of grouped plant-types and thus result in more efficient outdoor irrigation.

Applying Conservation to Baseline Demand Factors

Collectively, these and other factors will put downward pressure on the baseline residential unit water demand factors – potentially dropping each unit demand by up to 10 percent for the larger

[6] The CAL Green Code is Part 11 in Title 24.
[7] See CAL Green Code.
[8] Gov. Code §§ 65591-65599
[9] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.
[10] CCR Tit. 23, Div. 2, Ch. 27, Secs. 492.3(a)(2)(A) and 492.7(a)(2).

lots. Table 2-1 provides a summary of the baseline demand factor for each residential land-use category, the anticipated savings from the conservation mandates, and the resulting unit demand factor used to estimate the Proposed Project's water use.

Table 2-1 – Summary of Residential Baseline and Proposed Project Demand Factors

EID Water Demand Category (Relates to Table 1-1 Land Use)	Density Range	Current Factor (af/du)	Conservation Applied	Factor Used (af/du)
1/2 to 1 Acre Custom Lots	1-2 DU/Ac	0.87	8%	0.80
5,000-7,000 sf Lots	5 - 8 DU/Ac	0.50	5%	0.48
Condominiums/Town Homes	9 - 14 DU/Ac	0.40	5%	0.38
Multi-Family Housing[1]	15 - 24 DU/Ac	0.16	2%	0.16

1. The Multi-family Housing values remain constant due to rounding. The "current factor" was determined to be 0.165 af/du.

2.6 Baseline Non-Residential Water Use Demand Factors

Similar to the residential water demand factors, non-residential factors are based upon recent water use trends for similar types of land classifications.

For purposes of this WSA, the per-lot demand for non-residential lots is described as "the acre-feet of water use annually per acre of land" – or simply put, acre-feet/acre (af/ac). This value reflects indoor and outdoor water needs expected for a typical non-residential use for each of the following classifications:

- Neighborhood commercial
- Public and neighborhood parks
- Other miscellaneous uses, including street medians and environmental mitigation

The method and basis for determining the baseline unit water demand factor for each of these classifications is detailed in the following subsections.

Civic/Limited Commercial

The proposed civic/limited commercial facilities are anticipated to be "office space" in nature, rather than retail. However, analysis of recent meter data for both the La Borgata retail facility on El Dorado Hills Boulevard and the Village Green office/public facility at the corner of Silva Valley and Serrano Parkways indicates that water use on a per-acre basis is nearly consistent, with the retail space using about 2.15 af/ac and the office facility using 1.95 af/ac. Although the Village Green indoor facilities have lower use, the area has more turf landscaped area (not including Village Green park), which matches, on a gross acre-by-acre comparison with the higher indoor retail demands and limited landscaping of the restaurants at La Borgata.

Based on the available historic meter data for similar facilities served by EID, the unit water demand factor is 2.0 af/ac.

Public and Neighborhood Parks

The Proposed Project includes both a "Village" park and a neighborhood park that will include expansive turf areas, playfields and other park amenities. Based upon recent water meter data for similar park facilities in the El Dorado Hills area – namely Bella Terra Park, Allan Lindsey Park, and the Village A, C, L3, and L4 parks – a representative water demand factor was identified. A "smart meter" controls the irrigation system at each existing park. These devices adjust water use to actual climate data, including precipitation events. Thus, the recent meter data is very indicative of expected demands for the new parks, which will also be outfitted with similar technology.

Based on the available historic meter data for similar facilities served by EID, the unit water demand factor is 2.77 af/ac.

Other Miscellaneous Uses

The Proposed Project has additional miscellaneous uses including environmental mitigation requirements and construction water. These uses have minimal impacts to the overall per-project total water use due to their limited size and water needs and are temporary in nature.

Oak Woodlands Management

As of the preparation of this WSA, the mitigation requirements for impacts to oak woodlands resulting from the Proposed Project are as detailed in the County's Policy 7.4.4.4.[11] For purposes of estimating the water demands of this Proposed Project element, the WSA assumes mitigation will include establishing new trees, likely with associated irrigation water to assure seedlings are established. As defined in the County's Oak Woodland Management Plan Monitoring Program:

> *"Replacement of removed tree canopy . . . is subject to intensive to moderate management and 10 to 15 years of monitoring, respectively. The survival rate shall be 90 percent as specified in the approved monitoring plan for the project, prepared by a qualified professional. Acorns may be used instead of saplings or one gallon trees."*

[11] The County Board of Supervisors has an Oak Woodland Management Plan (OWMP) codified as Chapter 17.73 of the County Code (Ord. 4771. May 6, 2008.). The primary purpose of this plan is to implement the Option B provisions of Policy 7.4.4.4. On September 24, 2012, the Board of Supervisors directed the Development Services Department to prepare a General Plan amendment to amend Policies 7.4.2.8, 7.4.2.9, 7.4.4.4, 7.4.4.5, 7.4.5.1, and 7.4.5.2 and their related implementation measures to clarify and refine the County's policies regarding oak tree protection and habitat preservation. (This excerpt was copied from the following El Dorado County web site: http://www.edcgov.us/Government/Planning/General_Plan_Oak_Woodlands.aspx on May 4, 2013.)

"Management intensity assumes that 10 years after planting 1 year old saplings that trees that have been nurtured with high management intensity will be on average 2 inches DBH with 90 percent survival; moderate management intensity will result in trees that are on average 1.5 inches DBH with 85 percent survival."

More precisely, an intensive management program is required to obtain 90 percent survival. The management includes10 years of monitoring for one-gallon/one year old saplings and 15 years of monitoring if acorns are planted. Any trees/acorns that do not survive within the monitoring periods are to be replaced within that time, so that 90 percent survival is achieved at the end of the monitoring period.

Because establishment of new trees is highly dependent on site conditions (soil depth and composition, depth to water table, slope, aspect, existing vegetation), planting conditions (water year, starting from acorns or saplings, weed mats, mulch, density of plantings and other adjacent veg, etc.), establishment and maintenance practices (manual or installed irrigation systems, and irrigation intervals), and the required success criteria (target % survival), the estimated water demands are difficult to predict.[12] However, in order to be reasonably conservative, this WSA assumes that each acre of habitat mitigation will require 1 acre-foot per acre of annual irrigation for a period of 15 years.[13] For instance, if the Proposed Project must mitigate with 10 acres of woodland, the demand would be 10 acre-feet annually. All oak woodland will be established prior to build-out and require no on-going irrigation.

Construction Water

As stated in Section 1, early phases of the Proposed Project will include site grading and infrastructure installation. These and other construction elements will require dust suppression and other incidental water uses. These are estimated to be nominal, and do not continue beyond the construction phases of the Proposed Project. For purposes of identifying incremental water demands, construction water is assumed within this WSA to be 2 af per year (this is well over 600,000 gallons – or over 150 fill-ups of a 4,000 gallon water truck).

Modifications to Reflect Additional Water Use Reductions

Similar to the residential demand factors, the above-developed water demand factors for the non-residential classifications are based on similar existing developments in the El Dorado Hills area. Considerations to reduce these baseline values for conservation factors, however, are not required, since demand factors for many of the landscaped features, such as parks, will not change from the existing values – with the exception of commercial land-uses. The landscape-

[12] A qualified professional will likely develop the project specific oak management plan. More detailed water use will be available in this plan. Review of information from oak mitigation projects in the area revealed a range of planting types, irrigation methods, and management time frames. Overall, irrigation demands were all low as would be expected for a native species.

[13] A conservative water demand number and a long management window were assumed to provide the Proposed Project applicants flexibility in meeting the oak woodland mitigation requirements.

dominant demand factors are affected primarily by climatic conditions that drive plant evapotranspiration. In other words, an acre of turf at a park will still use the same amount of water in the new parks as the existing parks. Commercial land-uses, however, are adjusted downward slightly to reflect the CAL Green Code and likely modifications to landscape designs (compared to existing establishments) to limit outdoor water use. **Table 2-2** provides a summary of the non-residential demand factors used to estimate the Proposed Project's future demands.

Table 2-2 – Summary of Non-Residential Demand Factors

Land Use	Current Factor (af/ac)	Conservation % Applied	Factor Used (af/ac)
Commercial	2.00	3%	1.94
Parks	2.77	0%	2.77
ROW Landscaping	3.30	0%	3.30
Open Space	0.00	0%	0.00

2.7 Proposed Project Water Demand Projection

Combining the Proposed Project's land-use details and phasing as summarized in **Table 1-1** and **Table 1-2** with the demand factors presented in **Table 2-1** and **Table 2-2**, the water demands for the project from initiation to build-out are estimated. At completion, the Proposed Project is estimated to need 398 acre-feet of water annually (prior to considerations of non-revenue water, described in the next subsection) as shown in **Table 2-3**.

2.7.1 Non-Revenue Water Demands

The demand factors presented earlier in this section represent the demand for water at the customer's meter for each category. To fully represent the demand on EID's water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially un-metered uses such as fire protection, hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings.[14] In most instances, the predominant source of non-revenue water is from system leaks – the loss from fittings and connections from EID's water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems. Because a significant portion of the delivery system used to bring water to the Proposed Project already exists, the benefits of new piping within the Proposed Project has limited effect on the overall percentage of non-revenue water necessary to operate the system

[14] The American Water Works Association and the California Urban Water Conservation Council recognize the inherent non-revenue water that is either lost or mis-accounted in urban treated water distribution systems and suggest purveyors strive for a value of 10% of all delivered water. Obtaining this value is dependent on numerous factors including the age and extent of distribution system infrastructure, meter rehabilitation programs, and how a purveyor accounts for actions such as fire flows and hydrant flushing.

Although EID has an established program for identifying and accounting for most unbilled and other system losses, there are still pipeline leaks, unmetered uses, unauthorized connections, meter inaccuracies, and other losses that are difficult to specifically quantify. Consistent with the District's methodology for calculating future water meter availability, as defined in the *2012 Water Resources and Service Reliability Report,* non-revenue water is projected at a fixed rate of 13 percent. Non-revenue demand is estimated to add 52 acre-feet per year at build-out to the Proposed Project's land-use demands, bringing the estimated build-out water demand attributed to the Proposed Project to 450 acre-feet annually (see **Table 2-3**).

2.7.2 Recycled Water Demand

A portion of the Proposed Project's demands (Serrano Westside Planning Area, see **Figure 1-1**) could partially be met with recycled water provided by EID (see Section 4.3). As previously noted, other than the high-density multi-family units, residential potable demands require about 0.18 acre-feet annually per household. The remaining portion of the unit demand factor for each type of residential lot could be met with recycled water (see **Table 2.1** for unit demand factors). For the high-density residential units, the potable water requirement is lower due to fewer customers per unit on average when compared to other housing types. Using these unit water demand assumptions, coupled with the number of residential units, the Proposed Project could meet approximately 140 acre-feet of the 314 acre-feet of residential water demand with recycled water – prior to consideration of non-revenue water demands.

Non-residential components of the Proposed Project could also be met with recycled water, especially the parks. Removing the small potable demands for parks and the limited commercial properties, the Proposed Project could meet 79 acre-feet of the 84 acre-feet of total demand with recycled water – prior to the consideration of non-revenue water demands. Combined, recycled water could serve about 219 acre-feet of the Proposed Project's demand (see **Table 2-4**).

Table 2-4 – Estimated Demand Met with Recycled Water

	Demand (af/yr)		
	Residential	Non-Res	Total
Potable	174	5	179
Recycled	140	79	219
Total Demand	**314**	**84**	**398**

Table 2-3 – Estimated Proposed Project Water Demands from Start-up to Build-out

	Unit Count or Acreage						Demand Factor (af/du or af/ac)						Demand (af/yr)					
Category	Current	2015	2020	2025	2030	2035	Current	2015	2020	2025	2030	2035	Current	2015	2020	2025	2030	2035
Residential																		
1/2 to 1 Acre Custom Lots	0	0	5	65	65	65	0.87	0.80	0.80	0.80	0.80	0.80	0	0	4	52	52	52
5,000-7,000 sf Lots	0	0	60	123	123	123	0.50	0.48	0.48	0.48	0.48	0.48	0	0	29	58	58	58
Condominiums/Town Homes	0	0	104	310	310	310	0.40	0.38	0.38	0.38	0.38	0.38	0	0	40	118	118	118
Multi-Family Housing	0	0	230	230	530	530	0.16	0.16	0.16	0.16	0.16	0.16	0	0	37	37	86	86
												Subtotal		0	109	266	314	314
Commercial																		
Limited Commercial	0	0	0	0	12	12	2.00	1.94	1.94	1.94	1.94	1.94	0	0	0	0	23	23
Park Alternative	0	0	0	5	5	5	2.77	2.77	2.77	2.77	2.77	2.77	0	0	0	14	14	14
												Subtotal		0	0	14	37	37
Public																		
Village Park	0	0	0	15	15	15	2.77	2.77	2.77	2.77	2.77	2.77	0	0	0	41	41	41
Neighborhood Park	0	0	2	2	2	2	2.77	2.77	2.77	2.77	2.77	2.77	0	0	6	6	6	6
Open Space	0	85	85	85	85	85	0	0	0	0	0	0	0	0	0	0	0	0
												Subtotal		0	6	47	47	47
Other																		
Mitigation	0	10	25	25	15	0	1	1	1	1	1	1	0	10	25	25	15	0
Construction Water	0	2	2	2	0	0	1	1	1	1	1	1	0	2	2	2	0	0
												Subtotal		12	27	27	15	0
												Total Water Demand	**0**	**12**	**142**	**354**	**413**	**398**
												Non-Revenue Demand at 13%	0	2	18	46	54	52
												Total Proposed Project Demand	**0**	**14**	**160**	**400**	**466**	**450**

SECTION 3 – OTHER ESTIMATED WATER DEMANDS

3.1 INTRODUCTION

As stated in this excerpt from Water Code Section 10910(b)(3): *"[T]he water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available…will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses…"* This section details EID's other "existing and planned future uses." For purposes of this WSA, existing and planned future uses are subdivided into the following:

- **Other Currently Proposed Projects** – in addition to the Proposed Project, El Dorado County (County) is the Lead Agency (pursuant to CEQA) for four additional proposed development projects. As Lead Agency, the County has requested separate WSAs from EID for each of these other projects. Because detailed land-use information is available for three of the four projects and separate WSAs are being developed for these three in parallel to this WSA, each of these three projects have unique water demand estimates that are included in this WSA.[15]

- **All Other Existing and Planned Future Uses –** in addition to the Proposed Project and the Other Currently Proposed Projects, existing customers and anticipated growth in the County must be quantified. The subdivisions of this category are:

    - **Current Customers and Uses** – using 2012 as a baseline condition, this category reflects the current range of EID's potable and recycled water customers. Because these customers and uses already exist, keeping them separate from planned future uses allows an analysis to reflect anticipated reductions in use over time as EID continues to implement its urban water conservation programs targeted at many of the existing customers.[16]

    - **Adjusted General Plan Update Land Use Growth** – in addition to the identified development projects currently undergoing County CEQA review, the County's 2004 General Plan Update (GPU) anticipates continued urban growth throughout the EID service area. This growth is accounted for in the EID *Integrated Water*

[15] EID understands the fourth project, San Stino, to be undergoing changes to its land-use plans at the time of drafting this WSA. Lacking the details needed to determine water demands similar to the other WSAs currently being completed, the San Stino project is reflected in the next subgroup of demands (see Section 3.3).

[16] New customers added to EID's system will have lower demand factors, as discussed in Section 2, and will be less likely to implement additional conservation or see much reduction when changes are made. For instance, many existing customers may still have 3 gallon per flush toilets or even 1.6 gallon per flush toilets, which when replaced, will likely only use 1.28 gallons. New houses will be constructed, per the CAL Green Code, with 1.28 gallon per flush toilets. EID has had conservation and incentives programs for more than 20 years.

Resources Master Plan (IWRMP) and serves as the primary water demand driver into the future. Adjustments to anticipated GPU growth to reflect the "Other Currently Proposed Projects" and other proposed land-use changes, however, must be made. The adjustments discussed under this category include: (1) potential changes in the 2004 General Plan land use designations as identified in Facility Improvement Letters received and analyzed by EID; and (2) the removal of the Proposed Project and other proposed project uses being developed under concurrent WSAs.

- **Other Authorized Uses** – EID does not anticipate increases above 2012 levels in other authorized potable water uses such as fire flows, meter testing, water quality flushing, and ditch system operations. Demands for this category of water use is removed from the general plan growth and included separately.

- **Non-Revenue Water** – As discussed in Section 2.7.1, an additional demand is seen by EID to treat and deliver water to all customers. Referred to as non-revenue water, this water demand represents a 13 percent increase added to estimated customer demands. This value represents a long-term average experienced by EID.

3.2 OTHER CURRENTLY PROPOSED PROJECTS

As mentioned in the previous section, El Dorado County is the Lead CEQA Agency for four additional proposed development projects and has requested EID to prepare WSA's for each development concurrent with this Proposed Project WSA. EID is currently drafting three of these four WSAs.[17] The estimate of water demand for each WSA follows the same methods used in Section 2 of this WSA, with specific unit demand factors applied to each unique land use element. The other projects are:

- The Village of Marble Valley Specific Plan – located southeast of the Proposed Project, this development features many additional water use elements such as vineyards, schools, parks, a large lake, and a diverse range of housing types and lot sizes.
- Lime Rock Valley Specific Plan – located adjacent to the Village of Marble Valley, this development is a planned residential community with a variety of lot sizes and housing types.
- Dixon Ranch Residential Project – located northeast of the Proposed Project, this development is a planned residential community with a range of lot sizes and housing types, including a number of "age-restricted" units, accompanied by a community club house, parks, ponds, and trails.

[17] EID understands that the San Stino development project is undergoing changes to the land-use plans previously submitted to the County. Therefore, EID has not begun the WSA for that project.

Based on the detailed analysis completed in the other WSAs, these "Other Currently Proposed Projects" represent approximately 2,900 acre-feet per year of new demand by 2035. **Table 3-1**, presented later in this section, summarizes the estimated water demands as determined and detailed in the concurrent WSAs for each unique project. The values shown are the estimated customer and use demands and do not include the additional water associated with non-revenue percentages attributable to the treatment and distribution for each project (see Section 3.5).

3.3 All Other Existing and Planned Future Uses

In simple terms, this category of use would typically reflect all the other water demands anticipated by EID that are in addition to the Proposed Project. However, because of the unique circumstance that other WSAs are concurrently being drafted by EID, this category must be adjusted to remove those other well-defined water demands. Furthermore, because other potential changes to the 2004 GPU have been brought to EID's attention, and EID anticipates changes to current customer uses, a more detailed assessment of future demands is warranted. This subsection describes:

- Current Customers and Uses
- Adjusted GPU Land Use Growth
- Other Authorized Uses

3.3.1 Current Customers and Uses

Current customers and uses in the contiguous EID service area provide a baseline from which to assess additional demand from the Proposed Project and other potential planned uses. For purposes of the WSA, the deliveries to current customers in 2012 were used to define this baseline. Based on the 2012 EID *Water Diversion Report*, EID diverted 36,580 acre-feet into its potable water system. In addition to the potable water, EID served 2,404 acre-feet of recycled water to meet customer demands.[18] Combined, the current water demand is represented as 38,984 acre-feet. This value includes the non-revenue water (see Section 2.7.1), including system losses, necessary to deliver these supplies from their respective treatment plants to the customer meter. This value also includes 1,269 acre-feet sold to the City of Placerville.[19]

Since the WSA uses 2012 as a baseline, the "current" demand varies from that used in the recently adopted IWRMP, which used the year 2008 for its baseline.[20] Given on-going conservation efforts, adoption of new rate structures, and other drivers, EID has seen an overall decrease in the annual customer use since the IWRMP selected its baseline. Therefore the 2012

[18] See EID 2013 Water Resources and Reliability Report (Table 14)
[19] See EID Consumption Report: Reporting Year 2012 (Table on p. 7)
[20] The IWRMP, adopted by the EID Board in March 2013, began several years ago and at the time used 2008 as a baseline. Since that time, EID's annual diversions have dropped from a high in 2008 of about 45,000 acre-feet to 35,678, 33,453, and 36,580 in 2010, 2011, and 2012, respectively. Combined with recycled water deliveries, the 2012 demand is lower than that used for the 2013 IWRMP, but greater than 2010 and 2011.

baseline used for this WSA is more representative of the baseline use expected into the future from these existing customers and uses.

A slight adjustment to this baseline is necessary, however, to project it into the future. Although this demand will remain relatively constant since it does not add any new uses (additional uses are discussed in the next subsections), a slight decrease is assumed that reflects on-going implementation of conservation and instillation of new water-using fixtures by existing customers. EID's continued leadership in conservation will enable existing customers to retrofit toilets, receive appliance rebates for new household items such as dishwashers, water heaters and clothes washers, and implement irrigation efficiency improvements through various incentives. Additional reductions in existing customer demands will also occur simply as a result of the natural replacement of old fixtures and appliances with lower water-use devices. For purposes of the WSA, EID estimates the reduction in current customer demand will be approximately 2% by 2020 and an additional 1% by 2035. This is consistent with EID's expectations necessary to meet its per-capita water use targets as detailed in the 2010 Urban Water Management Plan.[21]

3.3.2 Adjusted GPU Land Use Growth

In the 2004 GPU, the County made growth projections using land-use zoning throughout the County. Within the contiguous EID water service area, the GPU land-use zoning correlates to EID defined unit water demand factors. During preparation of the recently adopted 2013 IWRMP, EID used GIS-based land-use designations, combined with the water demand factors, to develop estimated growth in water demand. Absent any changes to the 2004 GPU land-use designations, the 2013 IWRMP demand projections would provide a valid representation of future water needs. However, because several proposed changes to the GPU land-use designations have been submitted – both through the County's formal process, such as is the situation with the Proposed Project and Other Planned Projects, and through an EID process explained below – the 2013 IWRMP demand projections require refinement. The steps to adjust these demands included:

- Removal of Proposed Project and Other Planned Projects water demands
- Modifying land-use zoning based on Facility Improvement Letters
- Determining Growth to Year 2035

Once these steps were completed, the analysis reassessed the water demand using the water demand factors applied in the 2013 IWRMP.

Step 1: Removal of Proposed Project and Other Planned Project Water Demands

The first step in adjusting the water demands was to remove the detailed water demands estimated in this WSA for the Proposed Project and for the Other Planned Projects (see

[21] See Section 3 of the 2010 UWMP available here: http://www.eid.org/modules/showdocument.aspx?documentid=338

Section 2 and Section 3.2). This step involved removing the specific acreage and water demand factors from the 2013 IWRMP analysis. The 2004 GPU included land-use zoning for the lands underlying the Proposed Project as well as the Other Planned Projects. In the 2013 IWRMP, water demands were estimated using the existing zoning. Removing these land uses eliminates the potential to double-count the associated acreage when assessing the remaining GPU expected growth.

Step 2: Modifying Land-use Zoning based on FILs

When investigating water service from EID for development projects (e.g. lot splits, land use changes, and new service to existing parcels), existing landowners submit a Facilities Improvement Letter (FIL). This document allows EID to assess whether infrastructure or supplies are available to serve the proposed project. In some instances, the FILs include proposed land-use zoning changes not previously incorporated into EID water demand projections. By using GIS to map the locations of the FILs requesting a change in land-use zoning, EID was able to identify where changes to the 2013 IWRMP demand estimates would occur. About 25 specific FILs were identified as having land-use designation changes. These identified parcels were removed from the prior analysis to eliminate potential double counting of demands.

In a separate analysis, the water demand for this subset of parcels was recalculated using the appropriate water demand factor for the new proposed land-use classification (e.g. water needs for these parcels may have previously been calculated based on very-low density housing, but is requesting a change to higher density housing). Through the analysis, an increased demand of approximately 3,000 acre-feet over the 2013 IWRMP projections was identified.

Step 3: Determining Growth to 2035

The GPU identifies anticipated build-out conditions for the County and, as a subset, for the EID contiguous water service area. Since this WSA assesses water demands in 5-year increments only to 2035 – well short of the anticipated timing of the County's build-out – the amount of build-out growth occurring by 2035 must be determined. This was done for both the parcels identified with new land-use zoning through the FIL analysis, and for the remaining parcels with original GPU land-use designations.

Because there is little detail about planned development rates for the FIL-related parcels, this WSA assumed that these parcels would have full water demand usage by 2035.[22] This is a conservative estimate, since some of these lands may not develop by 2035 or may never

[22] This assumption also considers that a landowner would likely only submit a FIL to EID if they are seriously contemplating the development activity. Thus, there is a higher likelihood that these parcels will develop at a faster rate than other generally anticipated growth for the remaining parcels in the GPU.

develop. Thus, the estimated increase in demand of approximately 3,000 acre-feet was assumed to occur by 2035 with the 2013 IWRMP growth rate applied.

For the remaining parcels, growth rates used to determine the degree of development were based on EID's 2013 IWRMP. In the 2013 IWRMP, growth rates for the El Dorado Hills, and Western/Eastern water service areas were identified for specific year-ranges.[23] This WSA uses those growth rates for the remaining parcels. Using the 2013 IWRMP growth rates, the analysis determined build-out for the El Dorado and Western/Eastern service areas occurs after 2035.

During this adjustment, special attention was provided to the City of Placerville. The City purchases potable water from EID for distribution to its residents. The 2013 IWRMP projected future water demands for the City based on the City's existing General Plan. This WSA assumes the same rate of growth and build-out demand as the 2013 IWRMP for the City.

Upon completion of these steps, the adjusted demand for the GPU land uses was determined. **Table 3-1** summarizes the anticipated increase in water demand during each 5-year increment as a result of these adjustments to the GPU land-uses.

3.3.3 Other Authorized Uses

In addition to the sale of water to metered customers, EID has a set of water demands it refers to as "Other Authorized Uses." This designation is for the following existing uses:

- Knolls Reservoir Assessment District
- Private Fire Services
- Temporary Water Use Permit
- Bulk Water Stations - Permanent
- Bulk Water Stations - Temporary
- Lift Stations
- Collection System Flushing
- Spills, Overflows, and Flushing
- Clear Creek Aesthetics Flow Maintenance District

Of these, the Clear Creek aesthetic flows comprise over 80 percent of the annual authorized uses. Lift stations and temporary use permits comprise another 10 percent. The current demand of approximately 2,200 acre-feet is already reflected in the "Current Customers and Uses." EID anticipates no growth in these authorized water uses, with the total demand to remain constant at 2,200 acre-feet through 2035.

[23] EID Integrated Water Resources Master Plan, adopted March 2013 (Table 9-2).

3.4 NON-REVENUE WATER DEMANDS

The subtotal values in **Table 3-1** represent the demand for water at the customer's meter for each category. To fully represent the demand placed on EID's water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the meter and reflects distribution system leaks, water demands from potentially un-metered uses of fire protection, fire hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings.[24] In most instances, the predominant source of non-revenue water is from system losses – the loss from fittings and connections from the District's water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems.

Although the District has an established program for identifying and accounting for most unbilled and other system losses, there are still pipeline leaks, unmetered uses, unauthorized connections, meter inaccuracies, and other losses that are difficult to specifically quantify. Consistent with the District's methodology for calculating future water meter availability, as defined in the *2012 Water Resources and Service Reliability Report,* non-revenue water is projected at a fixed rate of 13 percent.

As shown in **Table 3-1**, non-revenue demand for Existing and Planned Future Uses is estimated to be about 7,700 acre-feet per year by 2035.

3.5 ESTIMATED EXISTING AND PLANNED FUTURE USES

Combining the estimated water demand for Other Currently Planned Projects (see Section 3.2 with the All Other Existing and Planned Future Uses demand (Current Customers and Uses plus the Adjusted GPU Land Use values), the total estimated demand during each 5-year increment to 2035 is derived (see subtotal water demand in **Table 3-1)**.

[24] See footnote 14

Table 3-1 – All Other Existing and Planned Future Uses

Category	Estimated Demand (af/yr)					
	Current	2015	2020	2025	2030	2035
Other Currently Proposed Projects	0	275	1,193	1,836	2,505	2,861
Current Customers and Uses [1]	38,984	34,154	33,809	33,694	33,579	33,464
Adjusted GPU Land Use [2]	0	514	2,853	7,975	14,718	22,830
Subtotal Water Demand	**38,984**	**34,944**	**37,855**	**43,505**	**50,803**	**59,156**
	Current	2015	2020	2025	2030	2035
Non-Revenue Water at 13%	--	4,543	4,921	5,656	6,604	7,690
Total Water Demand	**38,984**	**39,486**	**42,777**	**49,161**	**57,407**	**66,845**

1. The "Current Customers and Uses" demand value includes the "Other Authorized Uses." The Value is greater under the "Current" condition because "Non-Revenue Water" is included in the current year. All other years will have "non-revenue water" added on a separate line. A 3% conservation decrease occurs by 2035.
2. "Adjusted GPU Land Use" reflects changes to the 2004 GPU as determined by FILs submitted to EID. This value also does NOT include the other proposed projects currently undergoing County CEQA review.

3.6 TOTAL ESTIMATED DEMAND

The other existing and planned future water demands described in this section represent the total demands anticipated *in addition to* the water demands of the Proposed Project. Combining the estimated Proposed Project water demands of 450 acre-feet annually (see **Table 2-3**) with the estimated Existing and Planned Future water demands of approximately 66,850 acre-feet annually (see **Table 3-1**), a total estimated demand for EID water supplies by 2035 is determined. Estimated existing and planned future water demands, inclusive of non-revenue water needs, for each 5-year increment to 2035 are presented in **Table 3-2**. The estimated demand for EID Water supplies is 67,295 acre-feet annually.

Table 3-2 – Total Estimated Water Demands

Category	Estimated Demand (af/yr)					
	Current	2015	2020	2025	2030	2035
Proposed Project	0	14	160	400	466	450
Existing and Planned Future Uses	38,984	39,486	42,777	49,161	57,407	66,845
Total Water Demand	**38,984**	**39,500**	**42,937**	**49,560**	**57,874**	**67,295**

Of note is that the estimated water demand for 2035 presented in **Table 3-2** fits within the range of total demands presented in Table 9-1 of the 2013 IWRMP (estimated to be between 61,262 acre-feet and 77,315 acre-feet). The primary differences is that the 2013 IWRMP used 2008 as a baseline demand, which is substantially higher than EID has seen in the last several years. This WSA uses 2012 as a baseline. The 2008 value was approximately 45,000 acre-feet, while the 2012 value is 38,984 – or about 39,000 acre-feet. This represents a difference of about 6,000

acre-feet. Starting from a different baseline quantity and year, and then applying the 2013 IWRMP growth rates, results in a different estimated total demand when reaching 2035.

SECTION 4 – WATER SUPPLY CHARACTERIZATION

4.1 INTRODUCTION

This section explains the intended water supply that EID will use to serve the Proposed Project.[25] EID will meet the Proposed Project's water demands by utilizing water assets derived from its existing sources as well as through future asset acquisition efforts with El Dorado County Water Agency. This section details the Proposed Project's available water supplies and entitlements as well as its planned water supplies and entitlements in both normal water years and dry water years. The Proposed Project exists completely in El Dorado Irrigation District's contiguous water service area (see **Figure 4-1**) and may be served with both treated water and recycled water.[26]

El Dorado Irrigation District maintains two primary interconnected water systems in its contiguous service area: the El Dorado Hills system and the Western/Eastern system, along with a separate recycled water system. The El Dorado Hills water system obtains its primary supplies under rights and entitlements from Folsom Reservoir. The Western/Eastern system derives its supplies from sources under rights and entitlements emanating from further up the American River watershed and the Cosumnes River watershed. The recycled water system serves treated wastewater from the El Dorado Hills wastewater treatment plant and the Deer Creek wastewater treatment plant.

The water assets can be further categorized by the service area they primarily serve and the treatment plant they flow through. Water derived from Folsom Reservoir is delivered to the El Dorado Hills water treatment plant and serves the El Dorado Hills area. Water derived from upstream American River watershed diversions and storage reservoirs generally use the Reservoir 1 Water Treatment Plant while the Cosumnes River diversions use Reservoir A Water Treatment Plant to serve the Western/Eastern area. Water assets from these upstream diversions can be delivered by gravity feed to the El Dorado Hills area, but assets from Folsom Reservoir are not delivered outside the El Dorado Hills area due to infrastructure limitations. The following subsections describe these water supplies and delivery mechanics in more detail.

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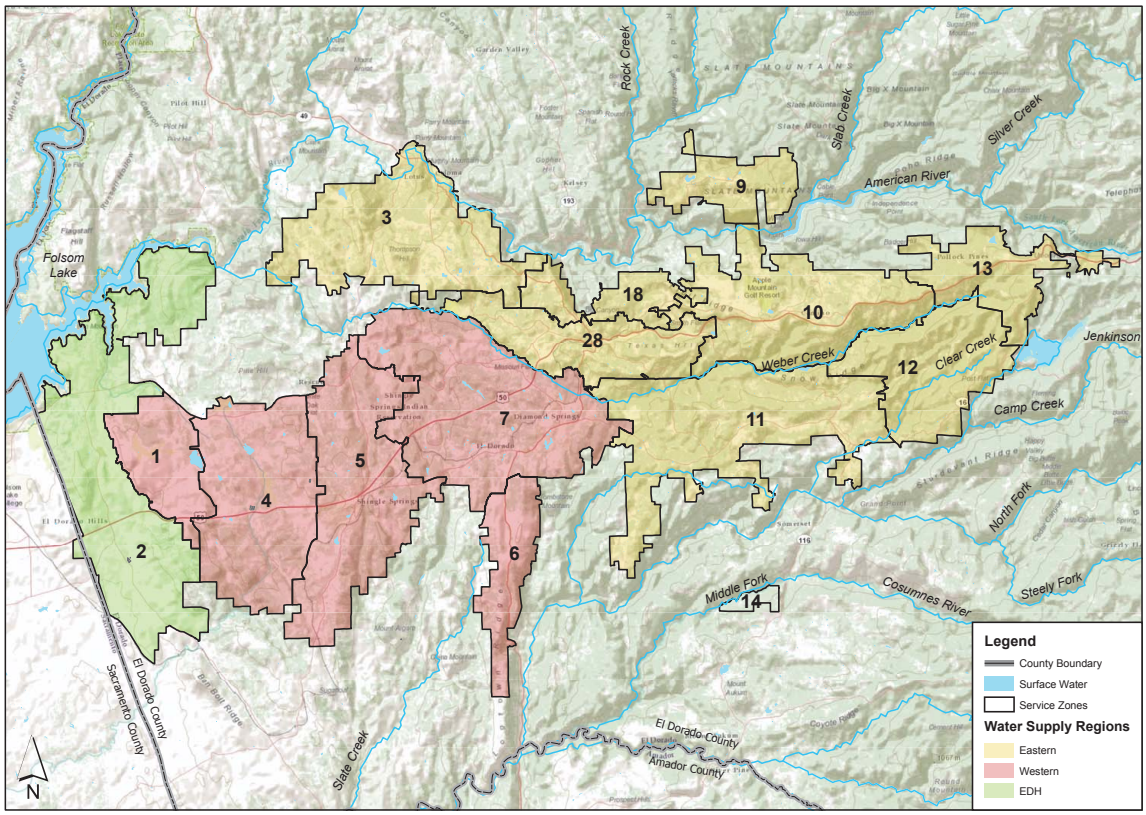
[25] CWC § 10910(d)(1) requires that "The assessment… include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system…under existing water supply entitlements, water rights, or water service contracts. (2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system…shall be demonstrated by providing information related to all of the following: (A) Written contracts or other proof of entitlement to an identified water supply. (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system. (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply. (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply."

[26] EID also has surface water assets that it serves to two non-contiguous areas as well as raw water assets that are used for agricultural purposes. These water assets are irrelevant to the Proposed Project contemplated in this Water Supply Assessment and are, therefore, not analyzed.

Figure 4-1 – El Dorado Irrigation District Service Area
(from Figure 8-7, Integrated Water Resources Master Plan, EID, March 2013)



4.2

TREATED WATER SUPPLIES

EID's treated water supplies identified for the Proposed Project are derived from a number of water rights and entitlements as detailed in **Table 4-1**. The maximum available water assets column in **Table 4-1** does not account for other hydrological, technical, regulatory, and contractual limitations that apply to the water assets for normal year and dry year deliveries. These issues are addressed in the other two columns in the table. EID's water assets available for the Proposed Project include water rights and entitlements that EID currently has in its possession and planned water rights and entitlements that it will control in the future.

4.2.1 Water Rights and Entitlements Description

Generally, EID's water assets are derived from pre-1914 appropriative water rights, licensed and permitted appropriative water rights, Central Valley Project (CVP) contracts, Warren Act contracts (that allow non-federal water assets to be wheeled through the federal storage and conveyance facilities), and recycled water generated from the effluent treated at the District's two wastewater treatment plants. The District's counsel has recently confirmed all of these water rights and entitlements. Pertinent information regarding these water assets is included in **Appendix A** of this document as required by Water Code section 10910(d).

Water for the Proposed Project will be derived from both Folsom Reservoir and upstream American River and Cosumnes River diversions. As shown in **Table 4-1**, the primary water assets for diversion at Folsom Reservoir are: CVP Contract 14-06-200-1375A-LTR1, and License 2184 and several pre-1914 water rights incorporated into Warren Act contract 06-WC-20-3315. EID is seeking to finalize its Warren Act contract for diversions of Permit 21112 at Folsom Reservoir. EID also has additional water assets under the El Dorado – SMUD Cooperation Agreement and a Central Valley Project water entitlement derived from El Dorado County Water Agency's Fazio water supply. These water assets will be described in **Section 4.2.2**.

Table 4-1 – Water Rights, Entitlements, and Supply Availability

Water Right or Entitlement	Maximum Water Assets Available (Ac-ft)	Normal Year Planned Supply Availability (Ac-ft)	Dry-Year Planned Supply Availability (Ac-ft)
License 2184 and pre-1914 ditch rights including Warren Act Contract 06-WC-20-3315	4,560	4,560	3,000
Licenses 11835 and 11836	33,400	23,000	20,920 [A]
CVP Contract 14-06-200-1375A-LTR1	7,550	7,550	5,660
Pre-1914 American River diversion and storage rights	15,080	15,080	15,080
Permit 21112	17,000	17,000	17,000
Subtotal Existing	**77,590**	**67,190**	**61,660**
Central Valley Project Fazio water entitlement (PL 101-514 (1990) Fazio) [D]	7,500	7,500	5,625
Applications 5645X12, 5644X02 and partial assignment of Applications 5645, 5644 with El Dorado-SMUD Cooperation Agreement [E]	40,000 [B]	30,000	5,000 [C]
Subtotal Planned	**47,500**	**37,500**	**10,625**
Recycled Water	5,600	5,600	5,600
Total	**130,690**	**110,290**	**77,885**

[A] This is the modeled safe-yield of this water right during a single dry-year. For planning purposes, the second and third dry years of a three-year dry period are assumed to be 17,000 acre-feet, and 15,500 acre-feet, respectfully
[B] Section 5.1.1 of the El-Dorado SMUD Cooperation Agreement indicates that 40,000 acre-feet of SMUD water will be available after 2025. For conservative Normal Year planning purposes, the District uses 30,000 acre-feet of available supply.
[C] Available supply is 15,000 acre-feet in a single dry year but in preparing for multiple dry years EID anticipates using only 5,000 acre-feet per year for a three-year period.
[D] Available starting in 2015
[E] Available starting in 2025

License 2184 and Pre-1914 Water Rights

Water rights associated with Weber Dam, Weber Creek (Farmer's Free Ditch), Slab Creek (Summerfield Ditch), and Hangtown Creek (Gold Hill Ditch) are available to be diverted at Folsom Reservoir under a long-term Warren Act Contract, with approximately 4,560 acre-feet available each year from these sources. A Warren Act Contract allows the use of federal facilities to take non-CVP water such as these supplies. The 40-year contract commenced on

March 1, 2011 and has a maximum net contract amount of 4,560 acre-feet per year. The contract total also assumes a 15% conveyance loss between the former points of diversion and Folsom Reservoir, which can be adjusted at a later date by mutual agreement without amending the contract. The annual water diversion season is limited to April through November 15 and the water must be used for municipal and industrial purposes in the El Dorado Hills and Cameron Park areas.

Licenses 11835 and 11836

Licenses 11835 and 11836 allow for 33,400 acre-feet of diversion in EID's upstream system in the Cosumnes River watershed. These diversions are stored in Jenkinson Lake, the largest storage reservoir in EID, formed by two earth and rock dams across Sly Park Creek near Pollock Pines with a maximum capacity of 41,033 acre-feet. The dam was constructed as a portion of the United States Bureau of Reclamation (USBR) CVP in 1955. With the transfer of ownership from the USBR of the Sly Park dam and associated lands and facilities in 2003, EID not only operates and maintains the Jenkinson Lake and Sly Park Dam facilities, including recreational aspects, but also holds the water rights. The average annual use from this facility is approximately 23,000 acre-feet, though EID's annual water right is for 33,400 acre-feet of total beneficial use. This water supply is used entirely within EID's contiguous service area. Under average flow conditions, Jenkinson Lake is operated to maintain 14,000 to 18,000 acre-feet of carryover storage each year. The outlet works at Sly Park Dam have a maximum capacity of 125 cfs. Water is released to the Reservoir A Water Treatment Plant for subsequent treatment, transmission, and distribution.

Jenkinson Lake contributes approximately 20,920 acre-feet per year to EID's system firm yield. Over the past five years, EID's annual diversions from Jenkinson Lake have averaged approximately 22,600 acre-feet per year. EID's maximum and minimum diversions from this particular water source during this five-year period were 25,745 and 20,800 acre-feet per year, respectively.

USBR CVP Contract 14-06-200-1375A-LTR1

Surface water from Folsom Reservoir is provided to the El Dorado Hills area. By contract with the USBR for Folsom Reservoir water, EID is entitled to 7,550 acre-feet per year. The contract includes provisions for use in a particular area that generally encompasses the El Dorado Hills and Cameron Park areas. Folsom Reservoir is operated by the USBR as part of the CVP, a multipurpose project that provides flood control, hydroelectricity, drinking water, and water for irrigation.

The El Dorado Hills County Water District entered into a USBR Contract in 1964 for water supply from Folsom Reservoir. The contract had a not-to-exceed limit of 37,600 acre-feet per year. When EID annexed the El Dorado Hills County Water District in 1973, the contract was assigned to EID, and subsequently, in 1979, an amendatory contract replaced the original 1964

contract and reduced the maximum annual supply quantity of Folsom Reservoir water to 6,500 acre-feet per year. In 1983, the USBR increased the maximum annual supply quantity from 6,500 to 7,500 acre-feet per year. EID also annexed and succeeded to a USBR Contract for 50 acre-feet per year to supply the Lakehills area in El Dorado Hills. In 2006, these two contracts were consolidated into a single 40-year USBR Contract with a maximum quantity of 7,550 acre-feet per year.

Pre-1914 South Fork American River and Project 184

EID acquired Project 184 from Pacific Gas and Electric (PG&E) in 1999. Project 184 includes reservoirs and associated dams, 22 miles of canals, a 21 Mw powerhouse, and other ancillary facilities. Prior to the transfer of ownership and water rights, EID held a contract to purchase water from PG&E and its predecessor, Western States Gas and Electric Co. The original water rights claims date back to 1856, with additional claims being filed in the 1860s and 1870s. The water rights for diversions from Echo Lake were established in 1880 in a California Supreme Court decision. Then, in 1918, the California Railroad Commission (predecessor to the California Public Utilities Commission) recognized the use of water from the El Dorado Canal for irrigation and domestic purposes.

The sources of this water supply include natural flows in the South Fork American River and its tributaries, and stored water in Silver, Aloha, Echo, and Caples Lakes. The supply is diverted from the South Fork American River at Kyburz and is conveyed via the El Dorado Canal to the El Dorado Forebay. Some additional water is obtained by diversions into the El Dorado Canal from streams tributary to the South Fork American River. EID takes consumptive use of the water supply at the Main Ditch Intake, located at the El Dorado Forebay. This particular supply contributes 15,080 acre-feet per year to EID's system firm yield.

Water diversions of up to 156 cfs can be made from the South Fork American River at the diversion dam. In addition to these direct diversion rights, EID also has pre-1914 diversion and storage rights associated with portions of the waters stored in Silver Lake, Caples Lake, and Lake Aloha and all of the waters stored in Echo Lake.

El Dorado Forebay is filled by the surface water supply from the Project 184 facilities upstream in the South Fork American River basin and at Echo Lake. EID has a consumptive water entitlement of 15,080 acre-feet per year delivery at the Forebay. The entitlement is a pre-1914 water right, and diversions are made in compliance with the 40-year Federal Energy Regulatory Commission Project 184 operating license issued to EID in October 2006. Because the full entitlement can be provided in all years including the most severe historic single dry year of 1977, this source of water is considered assured, and not subject to shortage from hydrologic droughts.

Permit 21112 and Warren Act Contract

The State Water Resources Control Board (SWRCB) issued EID a water right permit in 2001 for an additional 17,000 acre-feet per year of water supply associated with Project 184 facilities and power operations to be taken at Folsom Reservoir. This water supply was authorized under Permit 21112 for diversion and consumptive use anywhere within EID's contiguous service area. There are no cutback provisions on this supply.

The El Dorado County Water Agency (EDCWA) and EID applied to the SWRCB to obtain water rights for consumptive use of waters previously stored and released for power generation from Caples, Silver, and Aloha Lakes, as well as certain direct diversions from the South Fork American River, all of which have been used by Project 184 for hydroelectric power generation or instream flows. The EDCWA later assigned all of its rights under this application to EID. The SWRCB granted the right to appropriate 17,000 acre-feet per year of water. Permit 21112 allows EID to make direct diversions from the South Fork American River at Folsom Reservoir; to store in Caples, Silver, and Aloha Lakes; and to re-divert the water released from storage. The sole approved point of take for consumptive purposes is Folsom Reservoir.

A diversion from Folsom Reservoir requires acquiescence from the USBR and issuance of a Warren Act Contract. EID has diverted water under this right under a temporary urgency basis and the Warren Act Contract is pending.

Recycled Water Supplies

EID produces recycled water at both the El Dorado Hills and Deer Creek wastewater treatment plants which is then used by EID's customers for irrigation of residential landscape and commercial landscape. The availability of recycled water is currently limited to the El Dorado Hills and Cameron Park areas. EID anticipates a 2035 recycled water supply totaling 5,600 acre-feet per year (see Section 4.3 for further details).

4.2.2 Planned Water Supplies

EID has plans to acquire and use two additional water supplies from EDCWA for use within its service area to make available for the Proposed Project – water under the El Dorado-SMUD Cooperation Agreement and water under EDCWA's Fazio CVP supply. This section describes these supplies.

El Dorado-SMUD Cooperation Agreement

As shown in **Table 4-1**, the additional supplies include a grouping of water right applications and assignment of existing water right applications totaling approximately 40,000 acre-feet of water. This supply is being developed by the El Dorado Water and Power Authority (EDWPA). EDWPA is a Joint Powers Authority consisting of El Dorado County, El Dorado County Water Agency and El Dorado Irrigation District (collectively, El Dorado Parties). EDWPA was formed to pursue additional water supplies for the western slope of El Dorado County as determined by

the El Dorado County General Plan. This need is identified in the El Dorado County Water Agency Water Resources Development and Management Plan (Water Plan).[27] The Water Plan is designed to coordinate water resource planning activities within El Dorado County and identifies water supply needs for the western slope of El Dorado County of approximately 34,000 acre-feet per year at the 2025 demand level.

In 2005, the El Dorado Parties signed the "El Dorado – SMUD Cooperation Agreement" (included within **Appendix A**), which would help meet the Water Plan's identified water supply needs. This Agreement requires SMUD to make annual deliveries of up to 30,000 acre-feet of water through 2025 and 40,000 acre-feet thereafter from SMUD's Upper American River Project (UARP) to the El Dorado Parties. In 2008, EDWPA petitioned the SWRCB for partial assignment of two applications for diversion and storage to obtain water supplies necessary to trigger SMUD's obligations. A Draft Environmental Impact Report has been prepared in support of the water rights application and was circulated in July 2010. EDWPA is currently in the protest settlement phase and the CEQA process is anticipated to be completed in 2014 with award of water rights shortly thereafter.

The El Dorado-SMUD Cooperation Agreement also obliges SMUD to provide carryover storage and delivery to EID of up to 15,000 acre-feet of drought protection water supplies to be obtained by EDWPA. Based on demand projections, EID anticipates that only 30,000 acre-feet of the 40,000 acre-feet identified in the water right applications and the El Dorado – SMUD Cooperative Agreement will be available to EID in normal years. Moreover, EID has planned that a mere 5,000 acre-feet of the water supply will be available for EID's uses in each dry year. This number is derived from Appendix H of the El Dorado – SMUD Cooperation Agreement describing deliveries available from carryover storage. Both of these conservative assumptions are shown in **Table 4-1**. EID has planned this supply to be available starting in 2025.

Fazio CVP Supply

EID is also in the final stages of securing 7,500 acre-feet of CVP water supplies in conjunction with EDCWA. In 1990, Congress directed the Secretary of the Interior, through the USBR, to enter into a new CVP Municipal and Industrial (M&I) water service contract with EDCWA for up to 15,000 acre-feet of water annually (Section 206 of P.L. 101-514). The CVP water service contract requires requisite compliance by EDCWA and the USBR with CEQA, NEPA, and ESA statutes.

In 2009, a draft EIS/EIR was released for public review and comment for the CVP M&I water rights contract. In 2010, USBR advised EDCWA that it would take another 5 years before the CVP-Operations Criteria and Plan (OCAP) related litigation would allow the EIS to move forward. As a result, EDCWA made the decision to detach the EIR from the EIS – essentially separating the CEQA and NEPA processes. EDCWA certified the Final EIR and approved the

[27] http://www.edcgov.us/water/final_water_resources_plan.html

project in January 2011. EDCWA then prepared and submitted to USBR a draft Biological Assessment (BA) in September 2011 and a draft Final EIS in October 2011. USBR submitted the draft Final EIS to NOAA Fisheries in December 2011. Final EIS completion and contract execution is pending completion of ESA consultation with NOAA Fisheries.

The CVP contract seeks to acquire 15,000 acre-feet of CVP project water, of which at least 7,500 acre-feet would be made available to EID by subcontracts with EDCWA.[28] Diversions by EID would occur at its existing intake in Folsom Reservoir, conveyed to the El Dorado Hills Water Treatment Plant, and delivered to a specific place of use location in El Dorado Hills and Cameron Park areas as shown in Figure ES-2 of EDCWA's EIR.

The contract negotiations and environmental compliance efforts are ongoing. These actions allow EID to use this water supply in this WSA as a planned supply that will be available to EID in the future to serve the Proposed Project. The approval of the contract terms as well as finalization of the environmental documents will allow EID to apply the water supplies under this contract entitlement to municipal and industrial beneficial uses. EID has planned this water supply to be available starting in 2015.

4.2.3 Normal Year Water Supply Availability

As shown in **Table 4-1**, EID's total water entitlements under its existing and planned supplies does not equate to the amount of water available in normal years in the future. The normal year water supplies will be described in this section.

Excluding recycled supplies, EID's secured water rights and entitlements available for the Proposed Project total 67,190 acre-feet. As shown in the sufficiency analysis in Section 5, this amount is insufficient to serve EID's future demand incorporating the Proposed Project and all planned future projects. Accordingly, this section assesses both EID's secured supplies and additional planned supplies. EID's water supplies associated with the entire secured and planned water assets totals 110,290 acre-feet per year.

The 67,190 acre-feet of secured supplies include appropriative water right license 2184 and pre-1914 appropriative water rights associated with Slab Creek, Hangtown Creek and Weber Creek. As described above, these rights are collectively combined for conveyance purposes in a Warren Act Contract, No. 06-WC-20-3315, that allows for storage in and diversion from Folsom Reservoir. The total volume is 4,560, net of a negotiated 15% conveyance loss under the terms of the Warren Act contract. For purposes of serving the Proposed Project, EID assumes full diversion at 4,560 in normal years under these water assets.

[28] Central Valley Project Water Supply Contracts Under Public Law 101-514 (Section 206): Proposed Contract Between the U.S. Bureau of Reclamation and the El Dorado County Water Agency, and Proposed Subcontracts Between the El Dorado County Water Agency and the El Dorado Irrigation District, and Between the El Dorado County Water Agency and the Georgetown Divide Public Utility District Final Environmental Impact Report at ES-1, January 2011.

Appropriative water right licenses 11835 and 11836 are also secured supplies. These supplies can be diverted from several creeks in the Cosumnes River watershed (Camp, Hazel, and Sly Park) and are typically stored in Jenkinson Lake. The maximum rate of diversion is 500 cfs for a total possible diversion volume of 33,400. However, due to limitations in storage availability in Jenkinson Lake assessed through OASIS hydrologic modeling, the maximum available normal year supply for the Proposed Project is 23,000 acre-feet.[29] Although EID has diverted as much as 25,745 acre-feet from this reservoir, EID does not anticipate using more than 23,000 acre-feet under this right for its normal year diversions in the future.

Central Valley Project Contract 14-06-200-1375A-LTR1 is a secured supply available for immediate use for the Proposed Project. This CVP contract entitlement requires the USBR to deliver up to 7,550 acre-feet of water from its SWRCB water right permits on the American River to EID.

As described in Section 4.2.1, EID also has a number of pre-1914 appropriative water rights on the American River with storage components in Silver Lake, Lake Aloha, Caples Lake, and Echo Lake. For purposes of this document, these are collectively called the pre-1914 American River water rights.[30] The total volume of water available under the pre-1914 American River water rights is 15,080 acre-feet in normal years.

Appropriative water right permit 21112 is a secured supply for purposes of this WSA. Permit 21112 allows EID to divert up to 17,000 acre-feet of water per year from Folsom Reservoir to be used in EID's service area. EID has diverted water under this permit as part of a temporary urgency in 2008. EID must finalize its Warren Act Contract to divert this water at Folsom Reservoir. However, based upon the availability of the supply in Permit 21112, the ability to store the water in Caples, Silver, and Aloha lakes, and the pending conveyance agreement with USBR, the normal-year availability of this supply is 17,000 acre-feet.[31]

As described in Section 4.2.2, EID's planned water supplies include the CVP Fazio supply of 7,500 acre-feet as authorized under federal law. Once secured, EID should receive normal-year deliveries of the full entitlement just as USBR promises to other CVP M&I contract holders on the American River system. There is no reason to believe that this contract entitlement will be different than other CVP contract entitlements on the American River system.

Last, as described in Section 4.2.2, EID's planned water supplies derived from the EDWPA appropriative water right applications filings and assignments, as well as the El Dorado – SMUD Cooperation Agreement, indicate that EID should receive normal-year water deliveries of 30,000

[29] 2013 Water Resources Report

[30] California Water Code section 10910(d)(2)(A) requires "proof of entitlement" of each individual water right that is combined into this pre-1914 American River water rights grouping. These documents are contained in **Appendix A** of this Water Supply Assessment.

[31] EID Urban Water Management Plan 2010 Update, July 2011 at page 4-7 of 22. Follow-up discussion with EID Counsel on water availability on April 23, 2013.

acre-feet per year starting in 2025 and then as much as 40,000 acre-feet of deliveries thereafter. Based on demand projections, the District uses 30,000 acre-feet of normal-year deliveries under these collective applications and the El Dorado-SMUD Cooperation Agreement.

4.2.4 Dry-Year Water Supply Availability

As shown in **Table 4-1**, EID anticipates less water being available in dry years than is otherwise available in normal years as described in Section 4.2.3. Dry-year supplies include supply reductions attributable to hydrologic droughts and regulatory curtailments. The dry-year water supplies are described in this section.

EID's entire normal-year secured and planned water assets total 110,290 acre-feet per year. In dry years, EID's total water assets equal 77,885 acre-feet. Of this total supply, 61,660 acre-feet are secured water assets and 16,225 acre-feet are planned water assets.

As described in Section 4.2.3, the secured water assets include License 2184 and the additional pre-1914 appropriative rights that are included in Warren Act contract 06-WC-20-3315, Licenses 11835 and 11836, CVP Contract 14-06-200-1375A-LTR1, the pre-1914 American River water rights grouping, and Permit 21112. All of these water rights are subject to different regulatory and hydrological restrictions that could result, in some instances, in reduction of the water supplies available under the right or entitlement in dry years.

The water rights contained in the Warren Act Contract 06-WC-20-3315 have some level of regulatory restrictions and hydrological uncertainty. EID's 2010 UWMP indicates that the estimated dry-year yield associated with this water asset is 3,000 acre-feet per year based upon regional hydrologic conditions.[32] Accordingly, based upon the presumed hydrologic conditions, the dry-year reliability for this supply in three consecutive dry years is 3,000 acre-feet per year.

Licenses 11835 and 11836 have a full diversion entitlement of 33,400 acre-feet per year. Of that amount, carryover storage in Jenkinson Lake and diminished inflow reduce that entitlement to a normal-year supply of 23,000 acre-feet per year. In dry years, this amount is further reduced based upon hydrologic conditions as well as carryover storage needs for future years from Jenkinson Lake. Accordingly, based upon the OASIS hydrologic modeling report, EID reduces this supply's availability to 20,920 acre-feet in a single dry year. Thus, 20,920 acre-feet per year is used in this WSA as the dry-year safe yield number for a single dry year. To be conservative, EID plans for this supply to be further reduced during year two and again in year three of and three consecutive dry years. This WSA uses 17,000 acre-feet and 15,500 acre-feet as the available supply in year two and year three of a multi-year drought, respectfully.

[32] EID Urban Water Management Plan 2010 Update, July 2011 at page 4-6 of 22. Follow-up discussion with EID Counsel on water availability on April 23, 2013.

CVP Contract 14-06-200-1375A-LTR1 has a normal-year entitlement of 7,500 acre-feet per year. The USBR, however, assesses the dry-year supply availability of its CVP M&I contracts through the CVP M&I Shortage Policy. Based on inflow and storage criteria developed at the joint operations center, USBR can reduce contract water supplies under the CVP M&I Shortage Policy by up to 25% of historic use with various adjustments made for population, use of non-CVP water and extraordinary conservation actions.[33] With these adjustments in mind, USBR calculates the reduced CVP M&I delivery essentially based upon the average of the three previous normal years of use under the CVP contract. Under the strictest interpretation of this policy, if the water under the CVP contract was not used, then the dry year water is not available. But, USBR has considered that use of non-CVP supplies in lieu of CVP water use may be used to calculate use under this shortage policy. For purposes of this analysis, however, we have determined that based upon normal growth in demand in EID's service area, EID's customers would utilize the entire contract entitlement in normal years in the future. As such, EID calculates its dry-year reduction for this Proposed Project based upon three years of full use of its contract allocation. Accordingly, the dry year supply under this water contract entitlement is 5,660 acre-feet per year.

EID's pre-1914 American River water rights-grouping has a normal-year reliability of 15,080 acre-feet per year. Based upon the early priority date of these water assets and the storage capability within EID's system associated with these water assets, they are not reduced at all in a single dry year or three consecutive dry years.

Permit 21112 is another secure dry-year water asset. EID's 2010 UWMP states "there are no cutback provisions on this supply."[34] As such, the dry year reliability of Permit 21112 is 17,000 acre-feet per year.

As described in Section 4.2.2, EID's planned supplies include the CVP Fazio supply, and the several rights and contract that make up the UARP SMUD water. All of these assets combined have a three consecutive dry year supply reliability of 10,625 acre-feet per year.

The CVP Fazio supply is another CVP M&I contract supply that is subject to the same Municipal and Industrial shortage provisions described above for EID's other CVP contract entitlement. EID's expected portion of the Fazio supply has a normal-year contract allocation of 7,500 acre-feet per year. Assuming under the rules described above that EID is able to use its entire contract entitlement in the future, a 25% reduction from the contract entitlement reduces the delivery by 1,875 acre-feet per year. As such, the single dry year reliability and three consecutive dry year reliability under this contract is 5,625 acre-feet per year.

[33] Reclamation has the authority to reduce the supply volumes even further under extreme conditions – Health and Safety criteria – but this sort of supply reduction would only occur in extreme drought and would be offset by reductions in demand in EID's service area, as needed, to maintain basic Health and Safety conditions. The District's drought contingency plans address these situations.

[34] This assertion was confirmed in a telephone conversation with the District's Counsel on April 23, 2013.

Last, the UARP SMUD water that is derived from the numerous water right applications and assignments as well as the El Dorado-SMUD Cooperative Agreement indicates that the water available under these components in dry years could be severely curtailed. Appendix H of the Agreement states that annual deliveries can be superseded and deliveries from carryover drought storage can be reduced to as little as 5,000 acre-feet in a declared Critically Dry year if SMUD reservoir storage drops below 100,000 acre-feet (approximately 25%). Out of an abundance of caution, EID anticipates only 5,000 acre-feet of carryover drought-supply water would be available each year over the course of a three-year drought.

4.3 RECYCLED WATER SUPPLIES

EID uses recycled water to meet some current non-potable demands within its service area. EID may expand its development and use of recycled water in the future to meet a portion of the non-potable demands associated with the Proposed Project and other anticipated new demands. EID's current recycled water use is about 2,200 acre-feet per year. This use will expand incrementally over time. By 2035, EID anticipates a supply of 5,600 acre-feet of recycled water per year within its service area.[35]

EID's recycled water system consists of supply from the El Dorado Hills wastewater treatment plant and the Deer Creek wastewater treatment plant. These treatment plants have an interconnected network of transmission and distribution pipelines, pump stations, storage tanks, pressure reducing stations, and appurtenant facilities located within the communities of El Dorado Hills and Cameron Park.[36] EID mandates the use of recycled water through Board Policy 7010, wherever economically and physically feasible as determined by the Board, for non-domestic purposes.[37] At this time, non-domestic use includes commercial landscape irrigation, residential or multi-family dual-plumbed landscape irrigation, construction water, and recreational impoundments.

Recycled water availability is an outcome of increased municipal and domestic demand and wastewater production as a byproduct of this demand. In other words, annual recycled water production capabilities are based on the total wastewater flows to the treatment plants. With the population and industrial demands growing in this region, as described in Section 3, the availability of recycled water will increase. EID is taking a conservative view of the growth in recycled water based upon its current production levels, estimated regional population growth, facility expansion identified in its 2013 IWRMP and WWFMP, treated water discharge requirements, and its ability to capture and store recycled water supplies in the future. The total recycled water available for use in 2035 is estimated to be 5,600 acre-feet per year.[38]

[35] EID Integrated Water Resources Master Plan, March 31, 2013
[36] EID Urban Water Management Plan 2010 Update, July 2011 at page 4-10 of 22.
[37] EID Urban Water Management Plan 2010 Update, July 2011 at page 4-6 of 22.
[38] EID Integrated Water Resources Master Plan, March 31, 2013 at page 221.

Accordingly, Table 4-2 shows the incremental recycled water assets that would be available over time for the District's non-potable water uses.

Table 4-2 – Timing of Recycled Water and Quantities

Year	Recycled Water Supply (acre-feet)
Current	2,200
2015	2,400
2020	2,600
2025	3,100
2030	4,200
2035	5,600

4.4 Facility Costs and Financing

EID's recently completed 2013 IWRMP and WWFMP identify and allocate the future costs of capital expansion and replacement needs, and addresses financing mechanisms for EID's water assets. These costs and financing mechanisms are hereby incorporated by reference.

The District establishes and periodically updates its Facility Capacity Charges (FCCs) to recover the cost of those portions of existing District facilities that will be used by future customers and to fund needed expansion, or additional capacity, of District facilities to serve new users. The District periodically reviews its FCCs to ensure they accurately reflect the costs of providing service to new customers. Currently the District is updating the FCCs to incorporate projects identified in the adopted 2013 IWRMP. The FCC update is currently under review by the Board and a developer committee, and the District anticipates adoption of the updated FCCs in August 2013.

4.5 Regulatory Approvals and Permits

As described in Section 4.2.2, EID has water assets that require further regulatory approvals, permit compliance, and contract approvals. Each water asset has its own set of regulatory requirements that are assessed in this section.

Appropriative water right Permit 21112 issued by the SWRCB has not been perfected. In order to perfect an appropriative water right, EID must put all of the water assets under that permit to beneficial use. Upon putting the water to beneficial uses and meeting all of the other conditions in the water right permit, EID will be eligible to obtain a water right license for this appropriative water right. Attaining a water right license further fortifies the legitimacy of the water right for EID's continual use in the future. There is no indication that EID will have difficulty in obtaining a water right license for Permit 21112.

Permit 21112 also requires a Warren Act Contract to be negotiated and approved by the USBR. The Warren Act Contract will allow EID to divert water from Folsom Reservoir for delivery to the El Dorado Hills Water Treatment Plant. Although the District may choose to divert some of the water upstream of Folsom Reservoir through other SWRCB regulatory processes, a Warren Act Contract is essential for any diversions emanating from Folsom Reservoir. EID is currently in negotiations with USBR to obtain a long-term contract. While those negotiations continue, short-term Warren Act Contracts are also obtainable, if needed. There are no foreseeable reasons that these negotiations will not succeed. Both EID's Board of Directors and USBR officials will need to execute the contract once the terms have been drafted, and EID will need to obtain judgment in a judicial action to validate the contract.

The Fazio water supply also has additional regulatory approvals and permits pending. This CVP contract entitlement is authorized by Public Law 101-514. The 15,000 acre-feet of water supply is contemplated to be split equally between Georgetown Divide Public Utilities District and EID. As described in Section 4.2.2, EDCWA is negotiating with USBR on behalf of EID to secure the CVP contract entitlement authorized by this federal statute and finalize the EIS. Accordingly, EID will continue to work with EDCWA and USBR to finalize acquisition of this water supply. Upon completion of the EIS, the EDCWA's designee and USBR officials will need to execute the CVP water supply contract, and EDCWA may need to obtain judgment in a judicial action validating the contract.

The pending water right applications and application assignments before the SWRCB as well as the El Dorado – SMUD Cooperation Agreement constitute the last water supply that is pending further regulatory approvals. As described in Section 4.2.2, EDWPA is awaiting approvals from SWRCB for these water assets. Upon SWRCB approval, EID will obtain 30,000 acre-feet of water under the El Dorado – SMUD Cooperation Agreement.

The SWRCB water right process requires the SWRCB to conduct an internal project review of the applicable technical and hydrological information as well as consider the broader effects on other legal users of water throughout the watershed before issuing a permit. This regulatory process may eventually necessitate a SWRCB hearing where testimony from proponents and opponents of the water right permit is heard and weighed by the SWRCB Board Members before issuing the conditioned permits. Once permits have been issued, then the District must comply with the permit terms and perfect application of the water supplies to beneficial use in order to acquire water right licenses associated with the appropriative water rights.

The El Dorado – SMUD Cooperation Agreement is an agreement among the various parties to cooperate in facilitating the storage and delivery of these water assets to the identified purveyors. As such, through the processing of the water right applications and the furtherance of compliance with the terms of those agreements, the water assets considered there are likely to be available to

EID. The regulatory approvals and permits needed to finalize EID's control over these water assets are moving forward.

4.6 SUPPLY SUMMARY

EID has two broad categories of water assets that are available for the Proposed Project – the secured water assets and planned water assets. Collectively, these supplies total 110,290 acre-feet in normal water years and 77,885 acre-feet in a single dry water year. In year two and year three of a multi-year drought, supplies are further reduced to 73,965 acre-feet and 72,465 acre-feet, respectfully.

As described above, the secured water assets include appropriative water right License 2184 and the accompanying pre-1914 appropriative water rights held under Warren Act Contract 06-WC-20-3315, appropriative water right Licenses 11835 and 11836, CVP Contract 14-060200-1375A-LTR1, the pre-1914 American River storage and diversion appropriative water rights, and Permit 21112. The normal year water supplies available to EID under the secured assets total 67,190 acre-feet per year. In dry years, the water supplies available to EID under the secured assets totals 61,660 acre-feet per year.

The planned water assets, although partially secured, are not yet fully available for EID's use to serve the Proposed Project contemplated in this WSA. As described above, these assets are sufficiently secure to be considered planned supplies for the Proposed Project in 2035. In normal years, the water supplies under these assets total 37,500 acre-feet. In dry years, the water supplies under these assets total 10,625 acre-feet.

Finally, the recycled water assets in both normal and dry years, derived from planned growth and continual indoor water usage regardless of year type, total 5,600 acre-feet in 2035.

SECTION 5 – SUFFICIENCY ANALYSIS

5.1 INTRODUCTION

The analysis detailed in this section provides a basis for determining whether sufficient water supplies exist to meet the estimated water demand of the Proposed Project.[39]

This section includes:

- Analysis of sufficiency, considering variations in supply and demand characteristics under normal, single-dry and multi-dry hydrologic conditions,
- Analysis conclusions

5.2 SUFFICIENCY ANALYSIS

The sufficiency analysis integrates the water demands detailed in Section 2 and Section 3 with the water supplies characterized in Section 4. The results are presented in **Table 5-1** beginning with "current" conditions (recognized as 2012) and continuing with 5-year increments from 2015 through 2035. While the analysis at various intervals before build-out is important, the most critical projection for the sufficiency analysis occurs in 2035. This analysis assumes that the Proposed Project, along with the other projects simultaneously undergoing a WSA analysis (see Section 3.3), are fully constructed by 2035, and other anticipated growth continues as described in Section 3.4.

Table 5-1 incorporates the Proposed Project water demand projection in **Table 2-3**, assuming the Proposed Project develops as detailed in Section 1, and the estimated water demands for all other existing and planned future uses through 2035 as detailed in **Table 3-2**. **Table 5-1** also presents the available water supplies for the contiguous EID service area during normal, single-dry and multiple-dry years, as detailed in Section 4. The water demands and available supplies in a single dry-year and multiple dry-year condition are discussed in the following subsections.

[39] CWC § 10910 (c)(4) provides that "If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

Table 5-1 – Comparable Analysis of Supply and Demand

Year	Project Water Demand (af/yr)	All Other EID Water Demands (af/yr)	Total Water Demands (af/yr)	Non-Revenue Water @ 13%	Demands with Loss	EID Water Supplies: Surface Water: Hydrologic Year Type		EDH Service Area (af/yr)	West/East Service Area (af/yr)	Total (af/yr)	Recycled Water (af/yr)	Total Available Water Supply (af/yr)	Projected Surplus/ (Shortfall) (af/yr)
Current	0	38,984	38,984	N/A	38,984	Normal		29,110	38,080	67,190	2,200	69,390	30,406
	0	40,933	40,933	N/A	40,933	Single Dry		25,660	36,000	61,660		63,860	22,927
	0	40,933	40,933	N/A	40,933	Multiple Dry	Year 1	25,660	36,000	61,660		63,860	22,927
	0	38,068	38,068	N/A	38,068		Year 2	25,660	32,080	57,740		59,940	21,872
	0	34,793	34,793	N/A	34,793		Year 3	25,660	30,580	56,240		58,440	23,647
2015	12	34,944	34,956	4,544	39,500	Normal		36,610	38,080	74,690	2,400	77,090	37,590
	13	36,691	36,704	4,771	41,475	Single Dry		31,285	36,000	67,285		69,685	28,210
	13	36,691	36,704	4,771	41,475	Multiple Dry	Year 1	31,285	36,000	67,285		69,685	28,210
	12	34,123	34,134	4,437	38,572		Year 2	31,285	32,080	63,365		65,765	27,193
	11	31,187	31,198	4,056	35,254		Year 3	31,285	30,580	61,865		64,265	29,011
2020	142	37,855	37,997	4,940	42,937	Normal		36,610	38,080	74,690	2,600	77,290	34,353
	149	39,748	39,897	5,187	45,084	Single Dry		31,285	36,000	67,285		69,885	24,801
	149	39,748	39,897	5,187	45,084	Multiple Dry	Year 1	31,285	36,000	67,285		69,885	24,801
	139	36,966	37,104	4,824	41,928		Year 2	31,285	32,080	63,365		65,965	24,037
	127	33,786	33,912	4,409	38,321		Year 3	31,285	30,580	61,865		64,465	26,144
2025	354	43,505	43,859	5,702	49,561	Normal		19,610	85,080	104,690	3,200	107,890	58,329
	371	45,681	46,052	5,987	52,039	Single Dry		14,285	58,000	72,285		75,485	23,446
	371	45,681	46,052	5,987	52,039	Multiple Dry	Year 1	14,285	58,000	72,285		75,485	23,446
	345	42,483	42,828	5,568	48,396		Year 2	14,285	54,080	68,365		71,565	23,169
	316	38,828	39,144	5,089	44,233		Year 3	14,285	52,580	66,865		70,065	25,832
2030	413	50,803	51,216	6,658	57,874	Normal		19,610	85,080	104,690	4,100	108,790	50,916
	433	53,343	53,777	6,991	60,768	Single Dry		14,285	58,000	72,285		76,385	15,617
	433	53,343	53,777	6,991	60,768	Multiple Dry	Year 1	14,285	58,000	72,285		76,385	15,617
	403	49,609	50,012	6,502	56,514		Year 2	14,285	54,080	68,365		72,465	15,951
	368	45,342	45,710	5,942	51,652		Year 3	14,285	52,580	66,865		70,965	19,313
2035	398	59,156	59,554	7,742	67,295	Normal		19,610	85,080	104,690	5,600	110,290	42,995
	418	62,113	62,531	8,129	70,660	Single Dry		14,285	58,000	72,285		77,885	7,225
	418	62,113	62,531	8,129	70,660	Multiple Dry	Year 1	14,285	58,000	72,285		77,885	7,225
	389	57,765	58,154	7,560	65,714		Year 2	14,285	54,080	68,365		73,965	8,251
	355	52,796	53,152	6,910	60,061		Year 3	14,285	52,580	66,865		72,465	12,404

5.2.1 Single Dry Year Supply and Demand Conditions

Under this condition, EID would anticipate a variance from the normal-year analysis, including: (1) shortage in full availability of supplies as detailed in **Section 4**, and (2) an increase in water demand. The increase in demand is based on the following:

- Landscape irrigation demands will increase to reflect the generalized earlier start of the landscape irrigation season due to limited rainfall in the single driest year. Since this increase only applies to the outdoor portion of a customer's demand, an adjustment factor of 5 percent is applied to the total normal-year water demand values.
- Historically, during single dry year circumstances, EID does not implement its shortage contingency plan,[40] since the extent of the dry conditions into future years is unknown. EID follows adopted policies and its 2008 *Drought Preparedness Plan* when implementing any voluntary or mandatory demand reduction measures.

As a result of these factors, the Proposed Project water demand and those of the other existing and planned uses is expected to increase in a single dry year above the demand expected under normal hydrologic circumstances. Additionally, as detailed in Section 4, EID anticipates a decrease in available water supplies. These changes are shown in **Table 5-1**.

5.2.2 Multi-Dry Year Supply and Demand Conditions

When a single dry year expands into a series of dry years, water supply and demand conditions will continue to evolve. Under such a multi-dry year, EID would anticipate many similar conditions that were assumed for the single-dry year, including: (1) shortage in full availability of supplies as detailed in Section 4, and (2) increases in projected demands. However, when entering the second and third year of a sequence of dry-years, EID would implement necessary policies to manage limited water supplies.[41] Demands over a series of three dry years are adjusted as follows:

- Year 1 – the first year mimics a "single-dry year" condition, where demands increase approximately 5 percent and EID shortage policies are not yet invoked (see Section 5.2.1).
- Year 2 – The demands again mimic a "single-dry year" and would be expected to increase by 5 percent above normal year conditions. However, when recognizing a second dry-year, EID would invoke the first stage of the Drought Preparedness Plan. This stage states: "*The objective of Stage 1 is to initiate public awareness of predicted water shortage conditions, and encourage voluntary water conservation to decrease*

[40] See EID Board Policy AR 5011-Water Supply Management Conditions (available at http://www.eid.org/modules/showdocument.aspx?documentid=2687).
[41] See EID Board Policy AR 5011-Water Supply Management Conditions (available at http://www.eid.org/modules/showdocument.aspx?documentid=2687).

normal demand up to 15%."[42] As part of this stage, EID implements drought water rates among other specified activities to encourage conservation. For purposes of this WSA, the demand reduction achieved under Stage 1 is estimated to be 7 percent of the already higher single dry-year demand.

- Year 3 – Upon entering the third dry year, EID would invoke the second stage of the Drought Preparedness Plan. This stage states: "*The objective of Stage 2 is to increase public understanding of worsening water supply conditions, encourage voluntary water conservation measures, and then if necessary, enforce mandatory conservation measures in order to decrease normal demand up to 30%.*"[43] Under this Stage, EID increases efforts to reduce demand. For purposes of this WSA, the savings achieved under Stage 2 is estimated to be 15 percent of the already higher single dry-year demand.

As a result of these factors, the Proposed Project water demand and those of the Other Existing and Planned Uses is expected to increase in the first year of a multi dry-year condition above that estimated during normal hydrologic circumstances. In subsequent years, the demand will drop as elements of EID's Drought Preparedness Plan are implemented. These changes are shown in **Table 5-1**.

5.2.3 Analysis

As shown in **Table 5-1**, the demand and supply are compared under each hydrologic condition for each 5-year increment out to 2035. The resulting "supply surplus" or "supply shortfall" is shown in the final column. Based on the analyses, EID anticipates it will have sufficient water under all hydrologic conditions in each of the 5-year increments through 2035. Notably, the "surplus" supply is lowest during a single-dry year and the first year of a multi-dry year condition, since this is the circumstance where demand increases, while supplies are constrained. Yet, even under such circumstances, sufficient water should be available.

5.3 SUFFICIENCY ANALYSIS CONCLUSIONS

As detailed in **Section 2**, this WSA estimates water demands for the Proposed Project of 450 acre-feet per year at build-out (including non-revenue water demands). The annual water demand estimate for all existing and planned projects in the contiguous EID service area, as detailed in **Section 3**, is approximately 67,295 acre-feet per year by 2035. After accounting for these demand projections for the next twenty years, EID should have sufficient water to meet the demands of the Proposed Project and its other service area demands for at least the next 20 years.

[42] See EID Board Policy AR 5011.2-Water supply slightly restricted Drought Stage 1 – Voluntary reductions in use (available at http://www.eid.org/modules/showdocument.aspx?documentid=2687).
[43] See EID Board Policy AR 5011.3-Water supply slightly restricted Drought Stage 2 – Voluntary and mandatory reductions (available at http://www.eid.org/modules/showdocument.aspx?documentid=2687).

The conclusion that EID should have sufficient water available to meet the needs of the Proposed Project, in addition to the other demands in its service area through 2035, rests on the following set of assumptions:

- EID, EDCWA, and EDWPA successfully execute the contracts and obtain the water right permit approvals for currently unsecured water supplies discussed in Section 4. Absent these steps, the water supplies currently held by EID and recognized to be diverted under existing contracts and agreements would be insufficient in 2035 to meet the Proposed Project demands along with all other existing and planned future uses.
- EID will commit to implement Facility Capacity Charges in an amount sufficient to assure the financing is available as appropriate to construct the necessary infrastructure as detailed in the March 2013 EID *Integrated Water Resources Master Plan*.
- Demand in single-dry years includes an additional 5 percent of demand over the normal year demand during the same time period. This conservative assumption accounts for the likelihood that EID customers will irrigate earlier in the season to account for dry spring conditions. This hypothetical demand augmentation may or may not manifest in dry years, but this conservative assumption further tests the sufficiency of water supplies during dry conditions.
- The estimated demands include 13 percent to account for non-revenue water losses (e.g. distribution system losses).

The finding of this WSA is that EID should have sufficient water to meet the demands of Proposed Project and its other service area demands for the next 20 years.

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MEMORANDUM

To: Shahira Ashkar, ICF International

Date: May 30, 2014

From: Greg Young, Tully & Young

Subject: Water Supply Options to El Dorado Irrigation District's Long-Term Planned Water Supplies for use in the Central El Dorado Hills CEQA Compliance Document

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The purpose of this memorandum is to document the water supply options to El Dorado Irrigation District's (hereafter the "EID") long-term planned water supplies as detailed in the Central El Dorado Hills Specific Plans Water Supply Assessment (hereafter "Central EDH WSA") adopted by EID on August 26, 2013. The information and text included in this memorandum can be directly inserted, as best determined by ICF, into the body of the CEQA document that ICF is preparing for the subject project.[1]

In *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal 4th 412 (hereafter *Vineyard*), the California Supreme Court identified specific requirements for an adequate analysis of water supply issues in an Environmental Impact Report (EIR). The court explained that future water supplies identified and analyzed in an EIR must be reasonably likely to prove available. Speculative water sources and unrealistic water allocations do not provide an adequate basis for a public agency's decision-making. The Supreme Court said that when a full analysis of future water supplies for a project leaves some uncertainty regarding the availability of the identified future supplies, the EIR must discuss possible replacement or alternative supply sources. In addition, the EIR must discuss the environmental effects of resorting to those alternative supply sources. The court held that it is not sufficient to address issues relating to future water supplies by simply stating that future development will not go forward in the absence of a sufficient water supply. (*Vineyard* at 431).

[1] Tully & Young must have an opportunity for review and approval of any changes to the information and/or text presented in this memo that may be recommended by ICF in its adaptation of information into the Central El Dorado Hills Specific Plan's CEQA documentation.

The court also recognized that the ultimate question under CEQA "is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project." (*Vineyard* at 450). Accordingly, if uncertainties inherent in long-term planning make it impossible to identify the future water sources with certainty, an EIR may satisfy CEQA if it acknowledges the degree of uncertainty involved, discusses the reasonably foreseeable water supply alternatives, and discloses the significant foreseeable environmental effects of each alternative, as well as mitigation measures to minimize each adverse impact. (*Vineyard* at 434).

Accordingly, the *Vineyard* opinion outlined the following general principles governing an EIR's analysis of water supply issues:

- An adequate environmental impact analysis for a long-range development plan cannot be limited to the water supply for the first stage of development. It must consider supplies necessary for the entire development.
- Future water supplies identified and analyzed in an EIR must be reasonably likely to prove available. Speculative sources and unrealistic paper allocation do not provide an adequate basis for decision making under CEQA.
- When, despite a full analysis, "it is impossible to confidently determine that anticipated future water sources will be available," CEQA requires some discussion of possible replacement or alternative supply sources, and of the environmental consequences of resorting to those sources. (*Vineyard* at 432)
- An EIR for a land use plan need not demonstrate that the water supply for the project is assured through enforceable agreements with a provider and built or approved treatment and delivery facilities. To interpret CEQA as requiring firm assurances of future water supplies at early stages of the planning process would be inconsistent with the water supply statutes, which call for an assured supply only at the end of the approval process. (*Vineyard* at 432).
- The "ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project." (*Vineyard* at 434)

For the El Dorado County development that is the subject of this analysis, the Central EDH WSA identified a potential water shortfall in very dry years absent planned water supplies (as detailed below). Accordingly, under the guidance of the *Vineyard* decision, the information that follows characterizes alternative water sources for the identified development.

As detailed in Section 4 of the Central EDH WSA and summarized in the Central EDH WSA's Table 4-1 (included below), the EID water supplies are separated into two classifications: existing and planned. Combined, the Central EDH WSA concluded that these supplies provide sufficient water for the proposed project (see **Figure 1**).

While there is reasonable certainty that all of the existing EID water supplies are available, there is a degree of uncertainty whether the planned Central Valley Project Fazio water entitlement (hereafter the "Fazio supply"), or the supplies anticipated under the El Dorado-SMUD Cooperation Agreement (hereafter the "UARP supply") will manifest in the quantities or on the schedule currently planned as EID proceeds through regulatory approval and contracting processes.

Therefore, as directed by the *Vineyard* principles outlined previously, an analysis of options that would provide sufficient water for the proposed project is necessary. The following discussion characterizes three water supply options (hereafter "Water Supply Options") that are viable alternative sources that could reasonably be available to serve the project.

Figure 1 – Project Water Supplies from the Central EDH WSA

Table 4-1 – Water Rights, Entitlements, and Supply Availability

Water Right or Entitlement	Maximum Water Assets Available (Ac-ft)	Normal Year Planned Supply Availability (Ac-ft)	Dry-Year Planned Supply Availability (Ac-ft)
License 2184 and pre-1914 ditch rights including Warren Act Contract 06-WC-20-3315	4,560	4,560	3,000
Licenses 11835 and 11836	33,400	23,000	20920[A]
CVP Contract 14-06-200-1375A-LTR1	7,550	7,550	5,660
Pre-1914 American River diversion and storage rights	15,080	15,080	15,080
Permit 21112	17,000	17,000	17,000
Subtotal Existing	**77,590**	**67,190**	**61,660**
Central Valley Project Fazio water entitlement (PL 101-514 (1990) Fazio) [D]	7,500	7,500	5,625
Applications 5645X12, 5644X02 and partial assignment of Applications 5645, 5644 with El Dorado-SMUD Cooperation Agreement [E]	40,000[B]	30,000	5,000[C]
Subtotal Planned	**47,500**	**37,500**	**10,625**
Recycled Water	5,600	5,600	5,600
Total	**130,690**	**110,290**	**77,885**

[A] This is the modeled safe-yield of this water right during a single dry-year. For planning purposes, the second and third dry years of a three-year dry period are assumed to be 17,000 acre-feet, and 15,500 acre-feet, respectfully
[B] Section 5.1.1 of the El-Dorado SMUD Cooperation Agreement indicates that 40,000 acre-feet of SMUD water will be available after 2025. For conservative Normal Year planning purposes, the District uses 30,000 acre-feet of available supply.
[C] Available supply is 15,000 acre-feet in a single dry year but in preparing for multiple dry years EID anticipates using only 5,000 acre-feet per year for a three year period.
[D] Available starting in 2015
[E] Available starting in 2025

Quantity of Water to Replace

To understand the quantity each Water Supply Option must provide, an evaluation of the Central EDH WSA's conclusions about surplus water is necessary. Table 5-1 of the Central EDH WSA summarizes the assessment of supply and demand for the year 2035. As demonstrated in that table, surplus water exists under all hydrologic conditions: normal, single-dry, and multi-dry years. Absent the Fazio and the UARP water supplies, however, the surpluses shown in the Central EDH WSA Table 5-1 are reduced or even become shortfalls under some conditions. **Table 1** presents the surplus as analyzed in the Central EDH WSA and the resulting change when the Fazio and UARP planned water supplies are removed.

Table 1 – Comparison of Surplus/Shortfall Conditions with and without Planned Supplies at Build-out Conditions (2035)

Hydrologic Year Type	Surplus Water (T. 5-1 of WSA) acre-feet/year	Quantity of "Planned Supplies" acre-feet/year		Surplus/(Shortfall) Water w/o "Planned Supplies" acre-feet/year
		Fazio	UARP	
Normal	42,995	7,500	30,000	5,495
Single Dry	7,225	5,625	5,000	(3,400)
Multi dry (Year 1)	7,225			(3,400)
Multi dry (Year 2)	8,251			(2,374)
Multi dry (Year 3)	12,404			1,779

As demonstrated in **Table 1**, at build-out conditions (2035) during a normal year there is still surplus water even absent the planned supplies, and thus no alternative supply is necessary.

However, during single-dry and multi-dry hydrologic conditions, the absence of the "planned supplies" causes a shortfall under several circumstances. The worst-case shortfall occurs during a single-dry hydrologic year – when supplies are curtailed, demands are elevated due to limited rainfall, and temporary demand management efforts are yet to be triggered by EID. Under these hypothetical shortfall conditions, EID would not have sufficient water to serve the proposed project and other existing and planned uses. Thus, as directed by the *Vineyard* decision, an alternative water supply that would provide up to 3,400 acre-feet during a single dry-year must be identified and its impacts assessed.

Water Supply Options

To enable an assessment in the EIR of Water Supply Options, this memorandum characterizes three Water Supply Options that have been developed to meet the 3,400 ac-ft shortfall:

- Option 1 – Construct Alder Reservoir
- Option 2 – Construct recycled water seasonal storage and implement additional conservation

- Option 3 – Participate in regional groundwater banking and exchange programs

Option 1 – Construct Alder Reservoir

Water Supply Option 1 (Option 1) envisions the construction of a new dam and storage reservoir in the Alder Creek watershed. Option 1 would provide more than ample dry-year water supplies to meet the targeted shortfall identified in **Table 1**. A storage facility on Alder Creek has been studied for many years, with the most recent analysis included in EID's 2013 *Integrated Water Resources Master Plan* (IWRMP). In the IWRMP, construction of the Alder Reservoir is an integral part of the EID recommended water resources plan. The IWRMP is included in this memo by reference.[2]

As described in the IWRMP:

> *"[T] he Alder Dam would be a rock-fill dam approximately 143 feet high with a crest length of 800 feet and width of 30 feet at elevation 5,333 feet. The Alder Reservoir would have a capacity of 31,700 ac-ft and capture approximately 23,100 ac-ft of water in an average runoff year from the Alder Creek drainage basin of 18.6 square miles. A new penstock and 10 MW powerhouse would be located near the existing El Dorado Canal allowing water withdrawn from Alder Reservoir to be used for hydroelectric generation and released into the El Dorado Canal downstream of the Alder Creek inverted siphon."*(IWRMP, p. 201)

Figure 2 represents the proposed location of Alder Dam and the resulting footprint of Alder Reservoir. The new reservoir is projected to provide a dry-year safe yield of 11,250 acre-feet.

Water captured and stored during the spring snowmelt runoff period would be released throughout the remaining months at either (1) Jenkinson Lake via the Hazel Creek Tunnel, (2) the Forebay Reservoir, (3) Folsom Reservoir, or (4) a new point of diversion such as the proposed White Rock diversion.

While the estimated safe yield of 11,250 acre-feet is more than three times the quantity necessary for a Water Supply Option, the Alder Reservoir project as currently planned by EID provides a well-documented alternative that has already undergone assessment and is included in the EID Board-adopted IWMRP.

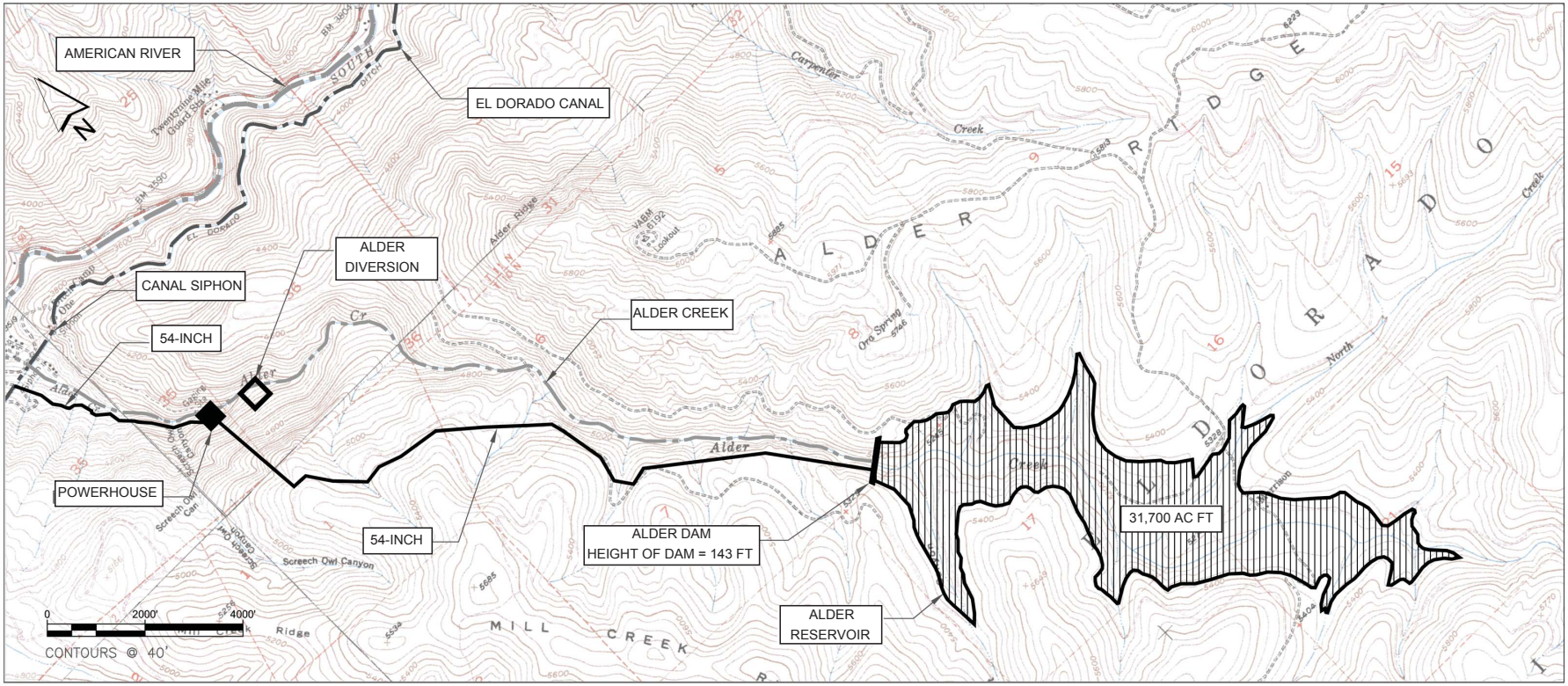
Water Supply Certainty

As detailed in the IWRMP, Alder reservoir would have a capacity of 31,700 acre-feet, capturing about 23,000 acre-feet in an average runoff year from the Alder Creek watershed. The safe yield of the reservoir is estimated to be about 11,250 acre-feet per year. This option provides significantly more water than is necessary to replace the WSA's planned water supplies. Thus,

[2] Integrated Water Resource Master Plan, March 2013, accessed on EID's website via http://www.eid.org/modules/showdocument.aspx?documentid=3554

even if the hydrology estimates produced lower runoff quantities, there would still be significantly more water than is required for replacement of the Central EDH WSA's "planned supplies," resulting in a high level of certainty of availability during dry-years.

Figure 2 – Location of Alder Dam and resulting Alder Reservoir
(source: EID IWRMP, Figure 8-4, p 203)



Source: EID Water Supply Optimization Study, Conceptual Designs and Cost Analyses TM (Domenichelli & Assoc., Inc., 2011)

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Alder Reservoir Facilities
Figure 8-4

Option 2 – Construct Recycled Water Seasonal Storage and Implement Additional Conservation

Water Supply Option 2 (Option 2) includes two components: (1) a recycled water seasonal storage reservoir to capture treated wastewater produced by EID that is otherwise in excess of the daily demand for recycled water, and (2) additional water conservation actions implemented by EID and its customers to reduce customer demand and/or reduce delivery system losses.

Seasonal Storage Reservoir

The first component, seasonal storage for recycled water, has been analyzed by EID. In a report published in May of 2011, EID detailed an assessment of potential seasonal storage locations (see *Basis of Design Report - EID Recycled Water Seasonal Storage Reservoir*, May 2011 [hereafter referred to as the "Design Report"]), included as **Attachment 1**.

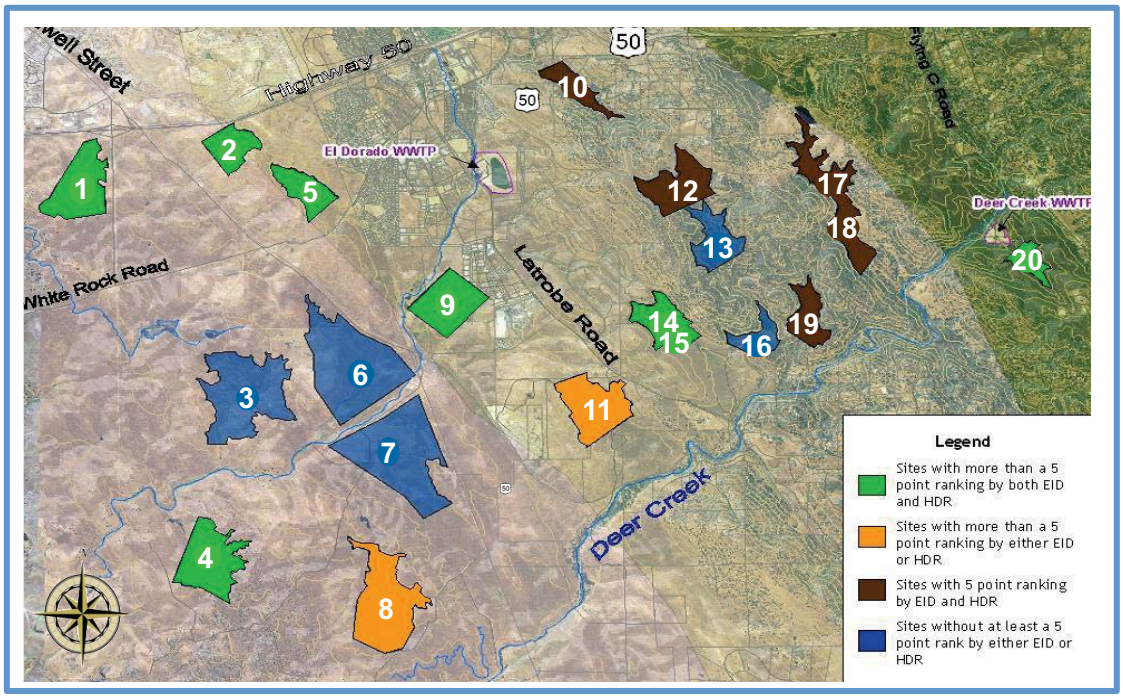
Of the twenty locations assessed in the Design Report, two locations were determined most suitable for additional analysis (see **Figure 3**). These were:

- El Dorado Hills Reservoir - Site 15 located south of the El Dorado Hills Wastewater Treatment Plant
- Deer Creek Reservoir – Site 20 located just south of the Deer Creek Wastewater Treatment Plant

These sites were thoroughly investigated to determine each location's ability to store 2,500 acre-feet of annual recycled water supply, allowing the supply to shift in time for use during peak summer months when demand otherwise exceeds recycled water production quantities. With the ability to store up to 2,500 acre-feet of recycled water produced during the off-season, EID can expand its water supplies. Currently, and as documented in the Central EDH WSA, EID must augment recycled water supplies with treated water supplies during the year due to the lack of storage. With storage, more recycled water can be used to meet demands, allowing other existing water supplies to be directed to other existing and planned future uses.

Section 4 of the Design Report provides detailed information regarding site location, geology, embankment design, pipeline routing, and other relevant information.

Figure 3 – Sites investigated in the EID Design Report
(source: EID's Basis of Design Report - EID Recycled Water Seasonal Storage Reservoir, May 2011, Figure 3-5, p. 22)



Water Conservation

With availability of 2,500 acre-feet from a recycled water storage reservoir to help meet the 3,400 acre-foot shortfall in dry years, the water conservation component of Option 2 would need to provide an additional 900 acre-feet. This supply may manifest either as additional reduction in EID customer demands, or as a reduction in distribution system losses.

Currently, EID implements a variety of water conservation practices consistent with the best management practices (BMPs) identified in the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding. These programs are part of EID's on-going operations, and include, but are not limited to: tiered pricing, water meters, leak audits, and public education. EID's Water Efficiency Programs offer numerous options directed towards conserving customer's water uses for commercial, residential, and landscaping purposes.

As demonstrated in Section 3.3 of the Central EDH WSA and summarized in the Central EDH WSA's Table 3-1, the existing EID customers are anticipated to reduce their demands through implementing conservation actions over the analysis period. Specifically, EID anticipates current customer demands will reduce by 2% by 2020 and an additional 1% by 2035. As shown in the Central EDH WSA Table 3-1, these savings are estimated to reduce current customer demands by 690 acre-feet annually.

Under this portion of Option 2, additional conservation actions will target generating an additional 900 acre-feet, slightly more than the conservative estimates of conservation identified in the Central EDH WSA.

Though there may begin to be limits for additional conservation opportunities from existing EID customers, EID also recognizes opportunities to conserve water through improvements to its existing water delivery infrastructure. As detailed in Section 3.4 of the Central EDH WSA, a "non-revenue" component of total water demands represents the system losses, meter inaccuracies, illegal connections, and other factors that help explain the differences between metered customer use and water entering EID's distribution system. For purposes of the Central EDH WSA, and as a conservative planning tool in other EID water planning efforts, this non-revenue value is assumed to hold constant at 13% of the overall customer demand. The 13% reflects over 4,500 acre-feet of water essentially unaccounted-for in EID's system under current delivery conditions. With increased customer demands, this value increases to over 7,500 by 2035. By fixing system leaks and addressing other elements of non-revenue demands, water can be recaptured and made available to meet customer demands.

As a routine part of its operations, EID works to identify sources of non-revenue demand, seeking to improve delivery system efficiencies as economically feasible. Though the specific requirements and resulting water savings from addressing overall distribution system losses and inefficiencies are an evolving process, EID has been successful in the past and will continue to do so into the future. As issues are identified, EID evaluates options, assesses costs, and details savings opportunities. As these plans are developed they are assigned a project number, priority level, and moved into EID's Capital Improvement Plan (CIP) as specific projects.

One example of a water conservation project EID has assessed and included as part of its CIP is the Main Ditch piping project from Forebay Reservoir to the Reservoir 1 Water Treatment Plant. The conservation savings from piping a 3-mile long earthen canal that carries as much as 15,080 acre-feet annually are estimated as high as 1,300 acre-feet per year. In addition to the water savings from this project, public health benefits will also accrue including lower sediment levels in the raw water reaching the treatment plant and greatly reduced risk of contamination. EID has included this project in its latest Board approved CIP and is currently working to secure funding.[3] For purposes of Option 2, this particular system loss reduction project is assumed to achieve the additional 900 acre-feet of conservation supply.

In 2004 EID participated in the testing of the new American Water Works Association water audit methodology (AWWA audit) to evaluate the losses from its delivery system. From the AWWA audit, EID recognized it had significantly reduced its water losses over

[3] EID 2014-2018 CIP, Project Number 11032

the previous decade, from 28% in 1991 to 13% in 2004. With a decade passing since the AWWA audit, there have been improvements in leak detection technologies as well as growth in the number and experience of contractors specializing in leak detection and repair. As EID continues to improve its distribution system to efficiently meet customer needs, some of the opportunities identified by the 2004 AWWA audit may now be cost effective to investigate, assess and implement.

Along with continued investigation, assessment and implementation of actions to reduce non-revenue demands, EID can expand current rebate programs and other customer-focused water conservation measures. An additional one percent reduction in the demands of current customers, beyond the savings already anticipated in the Central EDH WSA, could reduce demand by another 350 acre-feet annually.

As a conservative assumption, an additional one percent reduction in customer demands through conservation measures and a one percent reduction in the non-revenue demands could produce over 900 acre-feet of water annually. Greater reduction in either category and/or piping the Main Ditch would only increase the savings further.

Water Supply Certainty

Combined, the recycled water seasonal storage reservoir and additional conservation measures could generate at least 3,400 acre-feet needed in dry years. Because the seasonal storage facility would capture and regulate the consistent outflows of EID's wastewater treatment plants, the identified yield is considered to be highly reliable under all hydrologic conditions. Long-term reductions in customer demand and fixes to distribution system inefficiencies also provide a consistent savings regardless of hydrologic conditions. Thus, this Water Supply Option provides a high level of certainty of availability during dry years.

Option 3 – Participate in Regional Groundwater Banking and Exchange Program

Under Water Supply Option 3, EID would coordinate with other regional water purveyors to exchange wet and normal year EID surface water supplies for use of non-EID water supplies in critical dry years. Option 3 could be achieved in partnership with one or more of many water purveyors that share access to the American River. Any opportunity, however, is premised on an agreement among the parties and regulatory approvals to allow EID surface water supplies to be used or stored outside of EID's existing place of use during normal and wet conditions, and EID's use of a partner's American River-related water supplies during dry conditions.

Like the other two options, this Option 3 needs to assure a minimum of 3,400 acre-feet of water is available to EID during a single dry year.

As presented in the Central EDH WSA and summarized in **Table 1**, at build-out during normal and wet years, EID has a surplus of secured ("existing") water supplies totaling about 5,500 acre-feet annually. All or a portion of this supply is assumed available for delivery to another regional water purveyor to enable the conjunctive use exchange opportunities envisioned under this option. **Table 2** includes a sample 13-year condition illustrating a potential exchange of water among the parties.[4]

Several water purveyors with surface water rights and entitlements on the American River could participate with EID to develop this water supply option.

As envisioned, EID would exchange normal year water for use of a portion of the partner's surface supplies (e.g., if Sacramento County Water Agency was the partner, the supply exchanged to EID could be SCWA's dry year CVP contract water supply or other SCWA water rights). In wetter and normal water years, EID would deliver its 5,500 acre-feet surplus to its conjunctive use partner for use in the partner's service area (e.g. SCWA would deliver the surface water to its customers). In taking EID's surplus surface water, the partnering agency would forego groundwater use and thus "bank" groundwater supplies as stored water in the underground aquifer. During critical dry years, the partnering agency would rely upon this banked groundwater to meet local needs and allow EID to divert up to 3,400 acre-feet of its surface rights or entitlements at an existing EID facility in Folsom Reservoir or another existing EID diversion and treatment facility.

[4] The sample period reflects the CA Department of Water Resources' Sacramento Valley water year index for 2000 through 2012 from Bulletin 120.

Table 2 – Sample exchange of water among parties to facilitate dry-year water supplies for EID

Year	Sample Hydrology (2000-2012)	EID supply "banked" (af/yr)	Other water to EID (af/yr)	Balance
0	above normal	5,500	0	5,500
1	dry	0	3,400	2,100
2	dry	0	2,374	-274
3	above normal	5,500	0	5,226
4	below normal	0	3,400	1,826
5	above normal	5,500	0	7,326
6	wet	5,500	0	12,826
7	dry	0	3,400	9,426
8	critical	0	2,374	7,052
9	dry	0	2,374	4,678
10	below normal	0	2,374	2,304
11	wet	5500	0	7,804
12	below normal	0	3,400	4,404

Notes:
(1) Sample series of water year types is derived from the CA Department of Water Resources Bulletin 120 series for the Sacramento Valley.
(2) In a second dry year, the EID demand for supplemental water is reduced as shown in Table 1

Water Supply Certainty

This Water Supply Option could generate up to 3,400 acre feet of water for diversion by EID in dry years on a reasonably certain basis – given that any conjunctive use partnership would only be established with a purveyor(s) able to reliably provide adequate dry year surface supplies to EID.

Water Supply Option 3, which would exchange groundwater supplies and surface supplies in the Sacramento region, entails concerns related to the long-term reliability of groundwater supplies. In addition, there are also concerns related to the migration of existing groundwater contamination in eastern Sacramento County as a result of additional pumping under this water supply option. However, these and other water banking considerations are actively being investigated as part of regional conjunctive use opportunities.[5]

[5] For instance, the Sacramento Groundwater Authority has a defined water accounting framework to track groundwater resource that could be available for exchange via "banking" operations. The Sacramento Central Groundwater Authority is also actively investigating conjunctive use opportunities.

Appendix K-2

Water Supply Assessment Revalidation

Tully & Young
Comprehensive Water Planning

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MEMORANDUM

To: Rommel (Mel) Pabalinas, Planning Manager
Gina Hamilton, Senior Planner
El Dorado County Planning and Building Department

Cc: Shahira Ashkar, ICF International
Mike Brink, El Dorado Irrigation District

Date: October 07, 2021

From: Greg Young, PE

Subject: Revalidation of previously adopted Water Supply Assessments for the Village of Marble Valley, Lime Rock Valley, and Central El Dorado Hills Specific Plans

---

On August 26, 2013 El Dorado Irrigation District's (EID or District) Board of Directors approved and adopted Water Supply Assessments (WSA) for three development projects – Village of Marble Valley (VMV), Lime Rock Valley (LRV), and Central El Dorado Hills (CEDH) – hereafter the "Proposed Project(s)" in El Dorado County (County) as a part of each Proposed Project's Specific Plan.[1]

These WSAs assessed the availability and sufficiency of EID's water supplies to meet the Proposed Projects' estimated water demands based on the best available information at that time. The District found sufficient water to meet the demands of each Proposed Project, while also considering the demands of each other Proposed Project as well as all of its other service area demands for at least the next 20 years.

The purpose of this memorandum is to re-evaluate whether changes, if any, to (1) the Proposed Projects' land uses, or (2) updates to EID's water supply and demand analysis, would result in modified conclusions of sufficient water as determined in each WSA in 2013. A key document in this re-evaluation is EID's recently updated 2020 Urban Water Management Plan, which was adopted on June 28, 2021.[2]

---

[1] The adopted WSAs can be found on the County website here:
https://www.edcgov.us/Government/planning/specific%20plans/ProposedSpecificPlans/Pages/proposed_specific_plans.aspx
[2] The Final 2020 UWMP can be found on the District website here:
https://www.eid.org/home/showpublisheddocument/5666/637619651261230000

Projected Projects' Land Use Description Updates and Water Demand Forecasts

For the 2013 WSAs, specific land uses were provided for each Proposed Project and used to estimate the water demand of each Proposed Project at build-out. Per communications from El Dorado County through its consultant that is preparing updated CEQA documents for the County's consideration, land uses for VMV and LRV have not changed from representations provided in 2013.[3]

However, CEDH has proposed some minor adjustments. Per the County, the CEDH project has included a variation whereby it may include up to 1,000 residential units if some of the units are age-restricted, but only 737 residential units if no age-restricted units are included.[4] This proposed variation would change the high density land use from 10 to 14 units per acre for non-age-restricted to 22 units per acre for age-restricted, whereby the non-age restricted scenario would include 324 units, and the age-restricted 587 units. Under both scenarios, 37 residential units would have densities less than 1 unit per acre, 156 residential units would be at approximately 5 units per acre, and 220 units would be at approximately 10 units per acre. For comparison, the 2013 CEDH WSA analyzed 1,028 residential units where 65 units were between 0.5 and 1 acre per unit, 123 residential units would be at 5 to 8 units per acre, and 310 residential units would be at 9 to 12 units per acre, and the remaining 530 residential units would be at 15-24 unit per acre. This potential variation does not result in significant difference in forecast water demand for purposes of evaluating overall water demand.[5] And, since the total number of units is consistent with that evaluated for CEDH in the 2013 WSA, the land use assumed in the 2013 WSA is still a valid representation of the Proposed Project.

Overall, the land uses concurrently being considered are equivalent to the land uses evaluated for all three Proposed Projects for the 2013 WSAs, and the total number of proposed dwelling units would be the same as analyzed in the previous drafts of the EIR.

While the land uses are essentially equivalent, a forecast water demand made today using the same land uses may result in an actual lower total build-out demand for each Proposed Project than was calculated in the 2013 WSAs. This would be due to current assumptions about residential and non-residential water use that has been driven by continued statutory, regulatory and common-practice considerations. For instance, since 2013, both the statewide mandatory Green Building Standards Code and the statewide Model Water Efficient Landscape Ordinance

---

[3] Email communications from Shahira Ashkar, Managing Director, ICF to Greg Young of Tully & Young on September 15, 2021.

[4] El Dorado County Staff Report at November 14, 2019 Planning Commission Meeting: https://eldorado.legistar.com/View.ashx?M=F&ID=8776221&GUID=F959EE52-F195-4557-AB8B-333C11C66DA1

[5] While both of these designations are considered high-density and thus generally have lower occupancy rates, the 587 units of age-restricted versus 324 units not age-restricted would not result in a substantive quantity of additional water use. For instance, 1.8 people in age-restricted at 55 gallons per person per capita day (gpcd) would equate to 65 acre-feet per year for 587 units. For comparison, assuming 2.3 people in non-age-restricted at 55 gpcd would equate to 46 acre-feet per year for 324 units.

(MWELO) have been modified to require more efficient appliances and fixtures and placed further restrictions on residential and non-residential irrigated landscapes. These factors, as well as a continued conservation ethic among water using customers, has resulted in a lowering of EID's per-capita water demand factors compared to those used for the 2013 WSAs.

Therefore, the land uses for the Proposed Projects represented in the 2013 WSAs are consistent with the current land uses, and the water demand forecasts represented in the 2013 WSAs are likely conservatively high.

2020 Urban Water Management Plan Assumptions and Conclusions

EID recently updated its Urban Water Management Plan (UWMP) to comply with statutory requirements.[6] A primary driver of an UWMP is for an urban water supplier to assess its water service reliability for at least the next 20 years under water supply conditions assumed for hydrologic conditions in normal and single dry years as well as for droughts lasting five years. To make this assessment requires a detailed characterization of an urban suppliers water supply and customer water use conditions well into the future – including recognizing all potential population growth.

Land use and population growth projections in the EID service area were thoroughly analyzed in Chapter 2 of the 2020 UWMP to provide the foundation for estimating customer water demands through the UWMP's planning period of 2045. This demand forecast is the basis for determining water service reliability conclusions.

As detailed in Chapter 2 of the UWMP, expected housing growth was guided by a study commissioned by El Dorado County in 2020 to update housing and job projections to aid with various transportation studies and General Plan refinements. This effort developed growth projections using two categories[7]:

1. Facility Improvement Letters (FILs) – this designation reflects all development projects known to the District at a particular point in time that have formally submitted an initial request for service to EID. A full list of current FILs is available from the District.

2. Future Beyond FILs – this designation reflects additional development beyond the current FILs on existing parcels within Zone 1, 2 and 4 that are greater than 10 acres and are not otherwise designated for any other use.

---

[6] California Water Code Section 10610 et seq. require an urban water supplier such as EID to prepare and adopt and UWMP every 5 years. The current cycle required EID to adopt its UWMP and submit it to the California Department of Water Resource by July 1, 2021.

[7] Population and Land Use analysis in the EID service area begins on page 2-10 in the 2020 UWMP.

The analysis projected total Equivalent Dwelling Units (EDUs) expected within the County, where the EDU value represents the number of residential "dwelling units" that each project would reflect regardless of whether the project includes residential or non-residential land uses. This growth was used to determine estimated number of new connections. The connection forecast is used to estimate future water use, as detailed in Chapter 4 of the UWMP.[8]

The VMV, LRV, and CEDH projects were specifically incorporated into the 2020 UWMP using the same EDU representations in the 2013 WSAs.[9] The 2020 UWMP states:

> "*…it is acknowledged by EID that the future water needs of these developments, should they occur within the planning horizon, have been included in the representations of water service reliability detailed in Chapter 5*" of the UWMP.[10]

As required by the California Water Code, EID addressed the reliability of their water supplies to meet demands during average, single dry, and five consecutive dry year conditions, detailing the analysis and results in Chapter 5 of the 2020 UWMP. Importantly, EID concluded it has sufficient water assets to meet its short-term and long-term needs in average, single dry, and five consecutive dry year conditions.[11] As stated in the UWMP Water Supply Reliably Summary on page 5-5:

> *"The District's water supply portfolio is capable of meeting the water uses in its service area in normal, single dry, and five consecutive dry years from 2020 through 2045."*

Considering the Proposed Projects were explicitly included in the 2020 UWMP, and EID determined it has reliable and sufficient water supplies, the determination of sufficiency extends to the consideration of each Proposed Project. This extension is also supported by statute whereby as part of the requirements for a WSA, the California Water Codes states: "*If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*"[12]

In other words, the 2020 UWMP's recent determination provides the equivalent of the findings of the 2013 WSAs that evaluated sufficiency where the Proposed Projects were not previously included in EID's 2010 UWMP.

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[8] Customer water use forecast is on Section 4.4.3 and begins on page 4-15 in the 2020 UWMP.
[9] Table 2-5: Summary of Known Large Development Projects in the 2020 UWMP.
[10] UWMP at p. 2-14.
[11] EID Water system reliability is discussed in Chapter 5 of the 2020 UWMP. Tables 5-2 and 5-3 show supply, demand and surplus water data.
[12] California Water Code Section 10910(c)(2)

Conclusion

As demonstrated in this memorandum and supporting references, the Proposed Projects' land uses have not changed and therefore estimated water use demands would not exceed quantities forecast in the WSAs which were adopted by EID in August of 2013. The 2020 UWMP incorporated these projects specifically into its water supply reliability forecasting and came to the same conclusion as the 2013 WSAs that there is sufficient water service reliability to meet all demands at least 20 years into the future.

Moreover, projected demand could reasonably be determined to be less for the Proposed Projects as calculated in the 2013 WSAs since additional regulations would likely result in a lower demand estimate for the same projects due to more stringent MWELO and residential GPCD estimates.

In summary:

- The original WSAs found water availability and sufficiency for the Proposed Projects through 2035.
- The Proposed Projects are recognized in EID's 2020 UWMP as part of planned future customer demands.
- EID's 2020 UWMP concludes sufficient water supplies for all current and planned future customers through 2045 during normal, single-dry and droughts lasting 5 years.

Therefore, EID's conclusions of water availability and sufficiency to meet the Proposed Projects' estimated water demands as articulated in the 2013 WSAs are still valid, and the 2020 UWMP provides necessary concurrence of these prior conclusions.

Appendix L-1

Transportation Impact Analysis

Central El Dorado Hills Specific Plan Transportation Impact Analysis

March 2015

Prepared for:

County of El Dorado

Submitted by:

FEHR PEERS

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1.0 INTRODUCTION

1.1 REPORT OVERVIEW

This study presents the results of a transportation impact analysis completed for the Central El Dorado Hills Specific Plan (CEDHSP) (project) in El Dorado Hills, California, which is an unincorporated area of El Dorado County (County). The project includes two planning areas: the Serrano Westside planning area east of the intersection of El Dorado Hills Boulevard and Serrano Parkway, and the Pedregal planning area west of El Dorado Hills Boulevard between Wilson and Olson Way, adjacent to the Ridgeview subdivision. Given the close proximity of the planning areas, a consolidated traffic impact assessment was conducted for the entire project and the surrounding transportation network.

The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performend in accordance with the *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures*, and the scope of work developed in colloboration with County staff and Caltrans.

The remaining sections of this report document the proposed project, analysis methodolgies, impacts and mitigations.

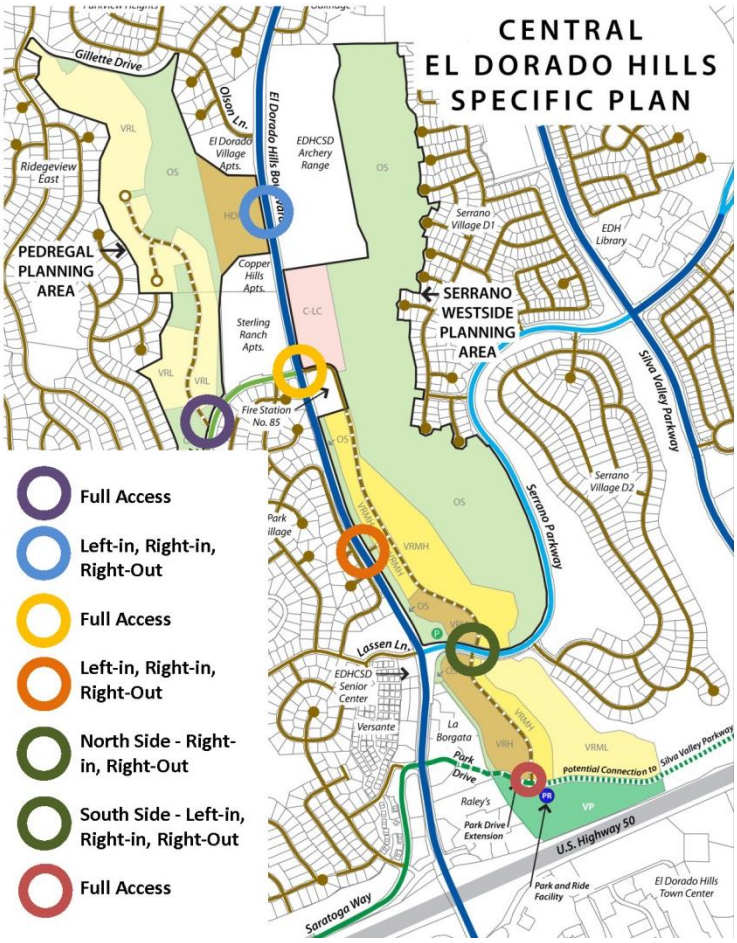
1.2 PROJECT DESCRIPTION

The proposed CEDHSP includes the development of up to 1,000 dwelling units, 11 acres of public facility/recreational use or 50,000 square feet of commercial use, 15 acres of public village park, and 169 acres of open space in the center of the El Dorado Hills Community. The proposed project also includes implementation of the CEDHSP and an amendment to the existing El Dorado Hills Specific Plan (EDHSP) approved in 1988 to transfer the density at Serrano Village D-1 (Lots C and D) to the proposed project. Figure 1, adapted from the project's *Notice of Preparation of a Draft Environmental Impact Report,* provides an overview of the proposed project and internal roadway network for the two planning areas that comprise the project.

Serrano Westside is immediately north of U.S. Highway 50 (US 50). Existing land uses adjacent to the Serrano Westside planning area include office and retail uses to the south and west (Raley's and La Borgata) and single-family residential uses at the Serrano Community to the east. The approximately 240-acre Serrano Westside planning area would be an extension of the existing Serrano development with

gated residential neighborhoods and would include 763 dwelling units, civic or commercial, and village park development.

The Pedregal planning area is less than 1 mile north of US 50 and less than 2 miles south of Folsom Lake. The Pedregal planning area is immediately adjacent to low-density residential uses (the existing Ridgeview neighborhood) to the west and three existing multi-family developments (the Copper Hill Apartments, El Dorado Village Apartments, and Sterling Ranch Apartments) along El Dorado Hills Boulevard to the east. The approximately 102-acre Pedregal planning area would include a residential neighborhood of approximately 37 single family (that may or may not be gated) and 200 multi-family dwelling units.



Proposed access for the Central El Dorado Hills Specific Plan is shown above. The single family portion of the Pedregal Planning Area will access Wilson Boulevard (no access to Gillette Drive is proposed) with access for the multi-family portion on El Dorado Hills Boulevard. The Serrano Westside Planning Area will access El Dorado Hills Boulevard, Serrano Parkway, and Park Drive.

1.3 NOTICE OF PREPARATION COMMENTS REVIEW

The project's Notice of Preparation (NOP), which is required by CEQA was issued on February 20, 2013. The NOP and subsequent public scoping meeting provided interested parties the opportunity to formally comment on the project. This transportation analysis is informed by comments received during the NOP comment period. The following list summarizes transportation-related comments received by affected agencies and the general public.

Agency Comments Received

- Caltrans request to review the transportation scope. Caltrans recommended specific procedures for the analysis of state facilities. *Note: Coordination with Caltrans was completed during the NOP phase and included a meeting between Caltrans and El Dorado County to review study area and analysis methods.*
- CalFire request to review dead end road length calculations. *Note: The project has been reviewed and meets the requested length parameter.*

Public Comments Received (By Topic)

As applicable, public comments were incorporated into the environmental analysis.

- Project Access
    - Realign Wilson Boulevard to include turn lanes and bike lanes. *Note: Proposed mitigation incorporates bike lane on Wilson Boulevard.*
    - Propose high density residential access from El Dorado Hills Boulevard instead of Olson Lane. *Note: Proposed access for Pedregal high-density residential land use is located on El Dorado Hills Boulevard.*
    - Concern over Serrano Parkway traffic with a specific recommendation to add a right turn lane from eastbound Serrano Parkway onto Vila Flor Place.
    - Address Gillette project access safety due to grade and proposed intersection location. *Note: Pedregal Plan Area has been revised. Gillette access is no longer proposed.*
    - Consider impact gated communities have on circulation. *Note: Pedregal Plan Area may or may not be gated.*
- Pedestrian, Bicycle, Parking
    - Accommodation of open space access and parking. *Note: Parking requirements will be based on County standards.*
    - Suggestion to provide a path between existing development and proposed shopping areas. *Note: Westside Plan Area includes access between the project and the Raley's Shopping Center.*
    - Include pedestrian facilities, sidewalk on Wilson and a bicycle path through the project. *Note: Proposed mitigation incorporates bike lane on Wilson Boulevard.*
    - Provide pedestrian and bicycle access to transit, especially in the dark. *Note: Analysis incorporates pedestrian and bicycle facilities, and transit service.*

- Traffic Operations
    - Impact on traffic flow and drop-off/pick-up at William Brooks Elementary.
    - Concern regarding traffic operations and safety at Olson Lane / El Dorado Hills Boulevard. *Note: Intersection included in analysis.*
    - Resolve present traffic issues at and near US 50/El Dorado Hills Boulevard interchange before considering more development. *Note: County is nearing completion of US 50/El Dorado Hills Boulevard interchange improvements.*
    - Complete US 50/Silva/White Rock interchange before more high density residential is allowed. *Note: County is beginning construction of US 50/Silva Valley Parkway interchange.*
    - Concern regarding congestion on the Green Valley corridor. *Note: Intersections on Green Valley Road included in analysis.*

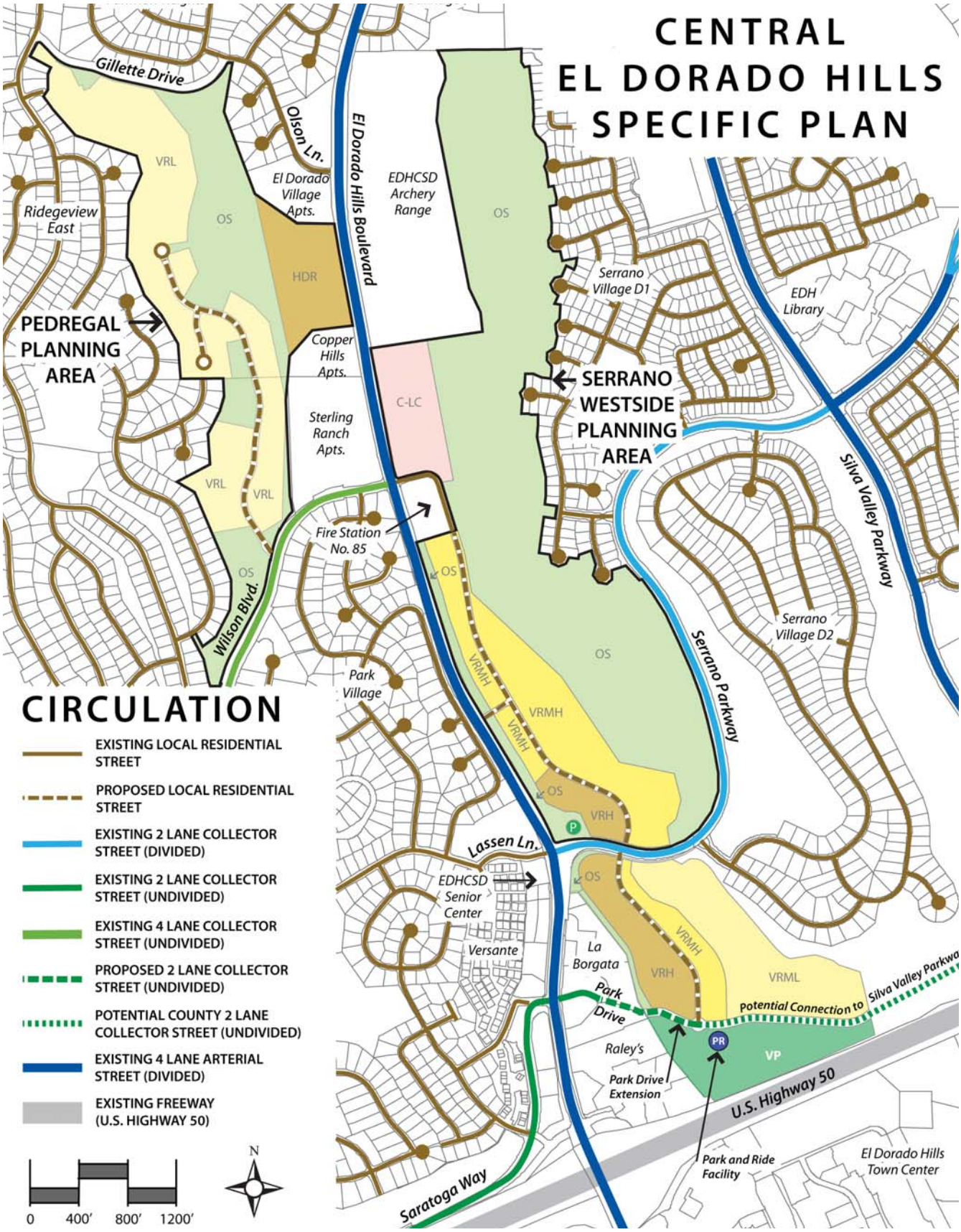


Figure 1.

Proposed Project

2.0 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the proposed project are summarized below. This information provides a context for the impact discussion related to the project's consistency with applicable regulatory conditions.

2.1 STATE

2.1.1 CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) is responsible for operating and maintaining the State highway system. In the project vicinity, US 50 falls under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission (CTC) for state funding programs. The State Transportation Improvement Program (STIP) is a multi-year capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

In June 2014, Caltrans approved a *Transportation Concept Report and Corridor System Management Plan (TCR/CSMP) for United States Route 50*. Caltrans prepares a TCR/CSMP, which is a long-range (20-year) planning document, for each state highway. The purpose of each TCR/CSMP is to identify existing route conditions and future needs and to communicate the vision for the development of each route during a 20-year planning horizon. Caltrans has established LOS E as the 'concept LOS' consistent with the El Dorado County General Plan LOS policy. . Since LOS E is identified as the concept LOS no further degradation of service from existing "E" is acceptable. The Concept LOS is a generalized LOS for large study segments used by Caltrans that reflect the minimum level of service or quality of operations acceptable for each route segment.

According to the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, December 2002), the existing LOS should be maintained if a freeway facility is currently operating at an unacceptable LOS (e.g., LOS F). A project impact is said to occur if the project degrades LOS from an acceptable to unacceptable level. A project impact may also occur when the addition of project trips exacerbates existing LOS F conditions and leads to a perceptible increase in density on freeway mainline segments or ramp junctions, or a perceptible increase in service volumes in a weaving area. In addition, a project impact is said to occur when the addition of project trips causes a queue on the off-ramp approach to a ramp terminal intersection to extend beyond its storage area and onto the freeway mainline.

2.2 LOCAL

2.2.1 SACRAMENTO AREA COUNCIL OF GOVERNMENTS

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento Region. Its members include the counties of Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba as well as 22 cities. SACOG provides transportation planning and funding for the region, and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

The *Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035* (SACOG 2012) is a federally mandated long-range fiscally constrained transportation plan for the six-county area. Most of this area is designated a federal non-attainment area for ozone, indicating that the transportation system is required to meet stringent air quality emissions budgets to reduce pollutant levels that contribute to ozone formation. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS.

The *2013/16 Metropolitan Transportation Improvement Program (MTIP)* is a list of transportation projects and programs to be funded and implemented over the next 3 years. SACOG submits this document to Caltrans and amends the program on a quarterly cycle. Only projects listed in the MTP/SCS may be included in the MTIP.

2.2.2 EL DORADO COUNTY TRANSPORTATION COMMISSION (EDCTC)

The EDCTC is the Regional Transportation Planning Agency (RTPA) for El Dorado County, except for that portion of the County within the Tahoe Basin, which is under the jurisdiction of the Tahoe Regional Planning Agency (TRPA).

One of the fundamental responsibilities which results from RTPA designation is the preparation of the County's Regional Transportation Plan. The *El Dorado County Regional Transportation Plan 2010 – 2030 (RTP)* is designed to be a blueprint for the systematic development of a balanced, comprehensive, multi-modal transportation system. The EDCTC submits the RTP to SACOG for inclusion in the MTP/SCS process.

The *El Dorado County Bicycle Transportation Plan - 2010 Update* provides a blueprint for the development of a bicycle transportation system on the western slope of El Dorado County. The plan updates the currently adopted El Dorado County Bicycle Master Plan, which was adopted in January 2005.

In May 2013, The EDCTC completed the *El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan* (Plan), which explores how the recent growth and projected development impact the need for transit services, and identifies the most appropriate type and level of service needed given the demand. The Plan represents a recommendation from the Western El Dorado County 2008 Short-Range Transit Plan to study and consider improved transit service in the El Dorado Hills area.

In August 2008, The EDCTC adopted the *Coordinated Public Transit – Human Services Transportation Plan,* which is intended to improve mobility of individuals who are disabled, elderly, or of low-income status. The plan focuses on identifying needs specific to those population groups and identifying strategies to meet their needs.

2.2.3 COUNTY OF EL DORADO

The County of El Dorado provides for the mobility of people and goods within El Dorado Hills, which is an unincorporated area of the County.

The Transportation and Circulation Element of the El Dorado County General Plan (amended January 2009) outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following goals and their associated policies are relevant to the project.

- GOAL TC-1: To plan for and provide a unified, coordinated, and cost-efficient countywide road and highway system that ensures the safe, orderly, and efficient movement of people and goods.
- GOAL TC-X: To coordinate planning and implementation of roadway improvements with new development to maintain adequate levels of service on County roads. (The LOS policy specific to this project is described in Section 4.2.)
- GOAL TC-2: To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment.
- GOAL TC-3: To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities.
- GOAL TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.
- GOAL TC-5: To provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.

The El Dorado County Community Development Agency's Transportation Impact Study Guidelines set forth the protocols and procedures for conducting transportation analysis in the County (El Dorado

County, 2014), including the identification of the study area. All of the study intersections for the proposed project are within the County's jurisdiction. This traffic analysis is consistent with the County-established methods at the commencement of the project.

2.2.4 EL DORADO COUNTY TRANSIT AUTHORITY

El Dorado County Transit Authority (EDCTA) operates El Dorado Transit, which provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route.

The El Dorado Park-and-Ride Facilities Master Plan, November 2007 calls for constructing nine new facilities over 20 years. The Plan calls for EDCTA to assume primary responsibility for existing Park-and-Ride facilities in the county and sets forth an annual program to fund the upkeep and operation. The Plan reiterates that demand exceeds supply at the Park-and-Ride lot, referred to as the El Dorado Hills Multi-modal Facility, located in the northeast corner of the White Rock Road/Latrobe Road intersection. In particular, Table 2 of the Plan suggests that future (year 2027) deficiency at this location is 172 additional spaces. The Plan identifies the construction of a 325-space multi-story parking garage with ground floor retail as priority project #12 in the Capital Improvement Program list. The proposed location is the existing Park-and-Ride lot.

3.0 METHOD OF ANALYSIS

3.1 ANALYSIS PROCEDURES

Intersections, roadways, and freeway facilities were selected for analysis based on coordination with the El Dorado County Community Development Agency, Long Range Planning staff and Caltrans, and based on the expected distribution of project trips and review of the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*.

Each study roadway facility was analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, for intersections and roadways LOS A represents conditions with little to no delay and congestion, and LOS F represents greater delay and more congestion. For basic freeways segments (i.e., like US 50 west of El Dorado Hills Boulevard), LOS A represents a vehicle density of up to 11 passenger cars per mile per lane and vehicle speeds (a secondary performance measure) at or above 65 miles per hour, and LOS F represents a vehicle density of greater than 45 passenger cars per mile per lane and vehicle speeds less than 52 miles per hour.

3.1.1 INTERSECTIONS

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the Highway Capacity Manual (HCM), Transportation Research Board, 2000 and 2010 (as confirmed with County staff). These methodologies were applied using Synchro or SimTraffic software packages (Version 7), developed by Trafficware. Table 1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the HCM.

The micro-simulation analysis software, SimTraffic, was used to analyze operations at the US 50/El Dorado Hills Boulevard interchange (Town Center Boulevard to Saratoga Way to accurately analyze the effect of closely-spaced intersections. Simulation was requested by El Dorado County staff and Caltrans. The SimTraffic micro-simulation analysis applied the following methodology:

- The simulation was conducted for the entire peak hour (i.e., 60 minutes) using four 15-minute intervals with the peak hour factor applied in the second interval
- The results were based on the average of ten model runs
- Each of the ten simulation runs applied a ten-minute seeding time

The existing conditions SimTraffic model was validated to field measured traffic volumes and observed maximum vehicle queue lengths.

The HCM methodology determines the level of service (LOS) at signalized intersections by comparing the average control delay (i.e. delay resulting from initial deceleration, queue move-up time, time actually stopped, and final acceleration) per vehicle at the intersection to the established thresholds. The LOS for traffic signal controlled and all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, the LOS is evaluated separately for each individual movement with delay reported for the critical (i.e., worst case) turning movement.

The following procedures and assumptions were applied for the analysis of existing and cumulative conditions:

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered according to the peak hour of each intersection, except for the US-50/El Dorado Hills Boulevard interchange and adjacent intersections. For the interchange and adjacent intersections, a consistent peak hour was used so that volumes would balance (a requirement for accurate simulation analysis). Due to volume balancing, some of the turning movement volumes used for analysis will not match existing turning movement traffic counts, since peak hour travel occurs at different times at several of the intersections. The volume balancing was small relative to the traffic through the interchange and within the daily variation of traffic flows. The traffic simulation was supported by extensive field observations of driver behavior, driver aggressiveness, and travel origin/destination flows at the interchange. The peak hour of the freeway is based on traffic counts.
- Headway factors were adjusted based on the observed driver behavior. Drivers were observed to be more aggressive and use smaller headway to travel through the intersections near the US 50/El Dorado Hills Boulevard interchange.
- The peak hour factor (PHF) was calculated based on traffic counts and applied by approach, except for the interchange and adjacent intersections, which applied the intersection PHF (a requirement for accurate simulation analysis).
- The counted pedestrian and bicycle volumes will be used with a minimum of two pedestrians per approach per peak hour.
- Heavy vehicle percentages were based on traffic counts and applied by movement.
- Signal phasing and timings were based on existing signal timing sheets provided by El Dorado County and field observations at the US 50/El Dorado Hills Boulevard interchange.
- Speeds for the model network were based on the posted speed limit.
- The PHF calculated for existing conditions was used for cumulative conditions, except for the interchange and adjacent intersections. Those intersections used a PHF of 0.95.
- The existing heavy vehicle percentages were maintained for cumulative conditions.
- The existing pedestrian and bicycle volumes were maintained for cumulative conditions.
- Traffic signals were optimized to serve future traffic volumes.

TABLE 1: INTERSECTION LEVEL OF SERVICE CRITERIA

Level-of-Service	Average Control Delay (seconds/vehicle)		Description
	Signalized	Stop Controlled	
A	< 10.0	< 10.0	Very low delay. At signalized intersections, most vehicles do not stop.
B	10.1 to 20.0	10.1 to 15.0	Generally good progression of vehicles. Slight delays.
C	>20.1 to 35.0	>15.1 to 25.0	Fair progression. At signalized intersections, increased number of stopped vehicles.
D	>35.1 to 55.0	>25.1 to 35.0	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.
E	>55.1 to 80.0	>35.1 to 50.0	Poor progression. High delays and frequent cycle failure.
F	>80.0	>50.0	Oversaturation. Forced flow. Extensive queuing.

Source: Highway Capacity Manual (Transportation Research Board, 2010)

3.1.2 ROADWAY SEGMENTS

Roadway segment LOS was determined by comparing traffic volumes for selected roadway segments with peak hour LOS capacity thresholds. These thresholds are shown in Table 2 and were calculated based on the methodology contained in the Highway Capacity Manual (Transportation Research Board, 2000) and applied for the analysis of the 2004 El Dorado County General Plan.

TABLE 2:
PEAK HOUR ROADWAY SEGMENT CAPACITIES BY FUNCTIONAL CLASSIFICATION AND LOS

Functional Classification	Lanes	Roadway Segment Capacity (Vehicles per Hour)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Arterial (Divided)	4	N/A	N/A	1,850	3,220	3,290
	5	N/A	N/A	2,350	4,060	4,110
	6	N/A	N/A	2,760	4,680	4,710
	7	N/A	N/A	3,215	5,410	5,420
Arterial (Undivided)	2	N/A	N/A	850	1,540	1,650
	4	N/A	N/A	1,760	3,070	3,130

Source:
Peak hour roadway segment capacities based on the HCM 2010 and developed by El Dorado County Community Development Agency, Long Range Planning. Five-lane capacity calculated by adding half of the difference between the two-lane and four-lane capacity to the four-lane capacity. Seven-lane capacity calculated by adding half of the difference between the four-lane and six-lane capacity to the four-lane capacity.

3.1.3 FREEWAY FACILITIES

The Highway Capacity Manual (Transportation Research Board), 2010, includes three different tiers of analysis for freeway facilities, which include planning, design, and operations analysis. The different tiers are intended to provide flexibility to the user in selecting the appropriate analysis level given available resources (e.g., time and availability of analysis inputs) and the desired breadth of analysis coverage (e.g., more locations with less detail vs. fewer locations with more detail). For example, a planning level analysis requires relatively generalized analysis inputs and is regularly used when the breadth of coverage is more important than analysis detail. For example, Caltrans uses planning level analysis for long-range planning efforts like the US 50 Corridor System Management Plan, which groups many freeway facilities into single analysis segments. The project level analysis in this report is based on operations analysis methods and analyzes each freeway facility separately, focusing on analysis detail instead of breadth of coverage. The operations analysis method is consistent with General Plan Policy TC-Xd and Caltrans traffic impact study guidelines.

Freeway operations were analyzed using the procedures and methodologies contained in the Highway Capacity Manual (Transportation Research Board, 2010)). Table 3 describes the HCM LOS criteria for freeway mainline, freeway ramp junctions, and freeway weaving segments. For weaving segments, Caltrans District 3 prefers analysis based on the Leisch Method, which is described in the *Highway Design Manual* (Caltrans, last updated July 1, 2008). For consistency with both the El Dorado County General Plan and Caltrans preference, analysis of freeway weaving segments was conducted using both the HCM and Leisch Methods.

TABLE 3:
FREEWAY FACILITY LEVEL OF SERVICE CRITERIA

Level of Service	Density (vehicles/mile/lane)		
	Mainline	Ramp Junction	Weaving
A	≤ 11	≤ 10	
B	11 – 18	10 – 20	
C	18 – 26	20 – 28	
D	26 – 35	28 – 35	
E	35 – 45	> 35	
F	> 45	Demand exceeds capacity	

Source: Transportation Research Board, 2010

3.2 THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. Informed by the 2014 California Environmental Quality Act (CEQA) Statues and Guidelines, specifically Appendix G, the following criteria have been established to determine whether or not the project would have a significant impact on transportation and circulation.

The intent of CEQA Section 15064 is for the responsible agency to establish the thresholds in the context of what their specific values are towards environmental resources or impacts. Therefore, the standards of significance in this analysis are based on the framework presented in CEQA Appendix G and the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, policies from the *2004 El Dorado County General Plan (amended January 2009)* the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines* (El Dorado County, 2014) were used. For the freeway system, Caltrans' standards were used. Implementation of the project would have a potentially significant impact on transportation and circulation if it causes any of the following outcomes:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness (MOEs) for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the

circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The following specific MOEs, which have been generated by the regulatory agencies, are applicable to this project.

- General Plan Circulation Policy TC-Xd provides Level of Service standards for County-maintained roads and state highways as follows[1]:
    - Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 as applicable shall not exceed the ratio specified in that table. *(Note: None of the study roadways are presented in Table TC-2)*
    - If a project causes the peak hour level of service or volume/capacity ratio on a county road or state highway that would otherwise meet the County standards (without the project) to the LOS threshold, then the impact shall be considered significant.
    - If any county road or state highway fails to meet the above listed county standards for peak hour level of service or volume/capacity ratios under existing conditions, and the project will "significantly worsen" conditions on the road or highway, then the impact shall be considered significant. The term "significantly worsen" is defined for the purpose of the paragraph according to General Plan Policy TC-Xe as follows:
        A. A two (2) percent increase in traffic during the AM peak hour, PM peak hour or daily, OR
        B. The addition of 100 or more daily trips, OR
        C. The addition of 10 or more trips during the AM peak hour or the PM peak hour.
- Caltrans considers the following to be significant impacts:
    - Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway (i.e., exceed the available storage capacity);
    - Project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service.
    - Any additional traffic generated by the project is added to a facility already operating at LOS F[2].

[1] El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
    - The County has published the following issues and General Plan goals as relevant to traffic impact study assessments. The project may trigger a potentially significant impact if it's in conflict with any of the following:
        - Access to Public Transit Services consistent with General Plan Circulation Element Goal TC-2: "To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment."
        - Transportation System Management consistent with General Plan Circulation Element Goal TC-3: "To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities."
        - Non-Motorized Transportation consistent with General Plan Circulation Element Goal TC-4: "To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes."
- Conflict with adopted policies, plans or programs regarding the delivery of goods and services.

[2] The US 50 Transportation Corridor Concept Report identifies LOS F as the "Concept LOS" for US 50 from the Sacramento/El Dorado County line to Cameron Park Drive.

4.0 EXISTING SETTING

4.1 STUDY AREA

Based on coordination with the El Dorado County Community Development Agency (Long Range Planning) staff and Caltrans, the expected distribution of project trips, and review of the *El Dorado County Department of Transportation's Traffic Impact Study Protocols and Procedures,* the following study intersections, roadway, and freeway facilities have been selected for analysis during both the AM and PM peak hours. Figure 2 identifies the study area.

The following lists both existing intersections and intersections proposed as part of the project. Intersections 25 and 26 are applicable only to the Cumulative Conditions analysis.

Existing Intersections:

1. Green Valley Road / Francisco Dr
2. Green Valley Road / El Dorado Hills Blvd
3. Green Valley Road/Silva Valley Pkwy
4. El Dorado Hills Blvd / Francisco Dr
5. Silva Valley Pkwy / Apian Way
6. El Dorado Hills Blvd / Harvard Way
7. Harvard Way / Silva Valley Pkwy
8. El Dorado Hills Boulevard/Olson Lane
9. El Dorado Hills Boulevard/Wilson Boulevard
10. El Dorado Hills Boulevard/Serrano Parkway
11. Serrano Parkway/Penela Way
12. Serrano Parkway/Silva Valley Parkway
13. El Dorado Hills Boulevard/Saratoga Way/Park Drive (Project Access)
14. El Dorado Hills Boulevard/Park Drive
15. El Dorado Hills Boulevard/US 50 Westbound Ramps
16. Latrobe Road/ US 50 Eastbound Ramps
17. Latrobe Road /Town Center Boulevard
18. Latrobe Road /White Rock Road
19. White Rock Road/Post Street
20. White Rock Rd./Valley View Parkway/Vine St.

Future Intersections:

21. El Dorado Hills Boulevard/Pedregal Multi-Family Access – Left-in and Right-in/Right-out
22. El Dorado Hills Boulevard/Project Access - Left-in and Right-in/Right-out
23. Serrano Parkway/Project Access
24. Wilson Boulevard/Project Access

25. Silva Valley Parkway/US 50 Westbound Ramps (Cumulative Conditions)
26. Silva Valley Parkway/US 50 Eastbound Ramps (Cumulative Conditions)

Roadways:

- El Dorado Hills Boulevard
- Latrobe Road
- White Rock Road
- Silva Valley Parkway
- Serrano Parkway
- Saratoga Way
- Wilson Way
- Olson/Gillette Drive
- Harvard Way

Freeway Facilities:

- US 50 Mainline (Eastbound and Westbound) – Sacramento County to Cameron Park Drive
- El Dorado Hills Boulevard Interchange
- Bass Lake Road Interchange
- Cameron Park Interchange
- Silva Valley Parkway Interchange (Future Conditions)

4.2 ROADWAY NETWORK

The characteristics of the roadway system in the vicinity of the project are described below. Where applicable, the roadway designation given in the *2004 El Dorado County General Plan (amended January 2009)* is provided.

US Route 50 (US 50) is an east-west freeway located south of the project site. Generally, US 50 serves the majority of El Dorado County's major population centers and provides regional connections to the west (i.e., Sacramento) and to the east (i.e., State of Nevada). Primary access to the project from US 50 is provided via the US 50/El Dorado Hills Boulevard/Latrobe Road interchange. Near the project, westbound US 50 has a high-occupancy vehicle (HOV) lane and two general purpose travel lanes and eastbound US 50 has an HOV lane and three general purpose travel lanes. The General Plan identifies US 50 as an eight

lane freeway under future conditions. US 50 serves about 80,000 vehicles per day east of Latrobe/El Dorado Hills Boulevard.

The US 50/El Dorado Hills Boulevard/Latrobe Road interchange is currently under construction to improve the westbound on- and off-ramps, add 1,000 feet of auxiliary lane to westbound US 50, and provide westbound ramp metering and a dedicated HOV on-ramp lane. Future improvements are planned for this interchange as described in Section 6.1, Table 14.

The new US 50/Silva Valley Parkway/White Rock Road interchange just east of the project area is under construction. The interchange will be constructed in two phases. Phase 1 (CIP Project No: 71328) will construct a new connection to US 50 with new signalized slip on- and off-ramps westbound and a slip off-ramp and loop on-ramp eastbound. The mainline will have an overcrossing for Silva Valley Parkway and will be improved to include eastbound and westbound auxiliary lanes between the US 50/El Dorado Hills Boulevard/Latrobe Road interchange and the new US 50/Silva Valley interchange. Completion of Phase 1 is scheduled for 2016. Phase 2 will construct a westbound loop on-ramp and eastbound slip on-ramp (CIP Project No: 71345). The westbound loop on-ramp will begin the addition of an auxiliary lane that will continue westbound through the El Dorado Hills Boulevard interchange and terminate at the planned US 50/Empire Ranch interchange (CIP Project No: 53120).

The planned reconstruction of the US 50/Bass Lake Road interchange (CIP Project No: 71330 and GP148), will add a westbound auxiliary lane between the Bass Lake Road and Silva Valley Parkway interchanges.

El Dorado Hills Boulevard is a north-south roadway that continues as Salmon Falls Road on the north and Latrobe Road on the south. The roadway is four lanes with a center median between Park Drive and Governor Drive. Between US 50 and Park Drive, the roadway section widens to three lanes northbound to accommodate vehicle demand near the US 50 interchange. The County's General Plan identifies El Dorado Hills Boulevard as a four lane divided road except near US 50 where the designation changes to a six lane divided road. Project access points are proposed on El Dorado Hills Boulevard. El Dorado Hills Boulevard serves about 22,000 vehicles per day north of Wilson Boulevard.

Gillette Drive is a two-lane local roadway that connects to El Dorado Hills Boulevard via Olson Lane. Gillette Drive serves less than 3,000 vehicles per day.

Green Valley Road is an east-west roadway that connects Placerville with western portions of El Dorado County and eastern Sacramento County, south of Folsom Lake. Through the project area, Green Valley Road provides one travel lane in each direction to just west of El Dorado Hills Boulevard. West of Francisco Drive, Green Valley is a four lane facility. The General Plan identifies Green Valley Road as a four

lane divided road between the El Dorado County / Sacramento County line and Deer Valley Road. Green Valley Road serves about 27,000 vehicles per day west of Francisco Drive.

Harvard Way is a relatively short (2,000-foot) east-west roadway that connects El Dorado Hills Boulevard on the west and Silva Valley Parkway on the east. It is an undivided four lane roadway that provides direct access to Oak Ridge High School. Rolling Hills Middle School is located directly opposite Harvard Way at the Silva Valley Parkway intersection. Harvard Way serves about 6,000 vehicles per day.

Latrobe Road is a north-south roadway and is the continuation of El Dorado Hills Boulevard south of US 50. Latrobe Road is six lanes near the US 50 interchange, narrows to four lanes south of White Rock Road and eventually narrows to two lanes as it continues south to connect with State Route 16 in Amador County. The General Plan identifies Latrobe Road as a six lane divided roadway near the US 50 interchange transitioning to a four lane divided road, then a two lane major road and eventually a two lane regional road serving the southwest portion of the County. Latrobe Road serves about 26,000 vehicles per day north of White Rock Road.

Olson Lane is a two lane local roadway serving as one of the primary access points to residential areas west of El Dorado Hills Boulevard. Olson Road terminates at Gillette Drive. Olson Lane serves about 3,000 vehicles per day west of El Dorado Hills Boulevard

Park Drive is a two lane local roadway serving the Raley's shopping center located in the northeast quadrant of the US 50/El Dorado Hills Boulevard interchange. Park Drive intersects El Dorado Hills Boulevard at two locations, opposite the new US 50 westbound loop off-ramp, and Saratoga Way. Park Drive is proposed as a project access for the portion of the Serrano West Side Planning Area south of Serrano Parkway. Park Drive serves about 6,000 vehicles per day east of El Dorado Hills Boulevard.

Saratoga Way is currently two lanes and extends west of El Dorado Hills Boulevard to Finders Way. Saratoga is planned as a four-lane divided arterial that will connect to Iron Point Road in the City of Folsom. Saratoga Way serves about 3,000 vehicles per day west of El Dorado Hills Boulevard.

Serrano Parkway primarily serves residential land uses east of El Dorado Hills Boulevard. The roadway provides one lane in each direction with a landscaped median between El Dorado Hills Boulevard and Silva Valley Parkway. The General Plan identifies this segment of Serrano Parkway as a major two lane road. Serrano Parkway is proposed as a project access for the Serrano Westside site. Serrano Parkway serves about 9,000 vehicles per day west of Silva Valley Parkway.

Silva Valley Parkway is a north-south roadway that generally runs parallel to El Dorado Hills Boulevard north of US 50. Silva Valley Parkway ranges from two lanes to four lanes with a center median within the

study area. The General Plan identifies Silva Valley Parkway as a four lane divided road. A new US 50 interchange at Silva Valley/White Rock Road is under construction and included in the Cumulative conditions transportation analysis. The interchange project provides a realigned Silva Valley Parkway that will connect to the existing four-lane Silva Valley Parkway to the north and the existing two-lane White Rock Road on the south. A new signalized intersection will be installed where the new Silva Valley Parkway will intersect old White Rock Road on the south. Silva Valley Parkway serves about 9,300 vehicles per day north of US 50.

White Rock Road is the continuation of Silva Valley Parkway south of US 50. White Rock Road is predominately a two or three lane roadway until west of Latrobe Road where the cross section widens to four lanes. White Rock Road was recently widened east of Latrobe Road to Monte Verde Drive to accommodate four lanes, sidewalks and Class II bicycle lanes. The General Plan identifies White Rock Road as a six lane divided road east of Latrobe Road and a four lane divided road west of Latrobe Road. The US 50/Silva Valley Parkway/White Rock Road interchange will modify the roadway alignment and introduce a new signalized intersection at the intersection of White Rock Road/Existing Silva Valley Parkway/New Silva Valley Parkway and is assumed under Cumulative conditions. White Rock Road serves about 10,000 vehicles per day west of Latrobe Road.

Wilson Boulevard primarily serves residential areas west of El Dorado Hills Boulevard. Wilson Boulevard is proposed as a project access for the Pedregal site. Wilson Boulevard continues for one mile west of El Dorado Hills Boulevard, with four lanes between El Dorado Hills Boulevard and Ridgeview Drive and two lanes west of Ridgeview Drive, where it dead ends. Wilson Boulevard terminates just east of El Dorado Hills Boulevard where a roadway extension is proposed as part of the project. This new connection would serve as a primary roadway within the Serrano Westside site with a direct connection to Serrano Parkway on the south. Wilson Boulevard serves about 5,000 vehicles per day west of El Dorado Hills Boulevard.

4.3 EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES

Intersection, roadway segment, and freeway counts were collected to determine the existing traffic operations of study facilities. Weather conditions were generally dry and local schools were in full session, during the traffic count data collection.

For study intersections, AM peak period (7 AM to 9 AM) and PM peak period (4 PM to 6 PM) intersection turning movement counts were collected in May 2012 and January 2013. For study roadways, 24-hour traffic counts were collected in May 2012. Construction was ongoing at the US 50/El Dorado Hills Boulevard interchange. Field observations conducted during the AM and PM peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues

southbound during the AM peak hour and northbound during the PM peak hour. However, all queued vehicles were served during the peak hour, so the traffic counts are representative of peak hour travel demand. Each intersection's peak hour within the peak period was used for the analysis. For the majority of study intersections, the counts indicate that the AM peak hour is between 7:15 and 8:15 and the PM peak hour is between 5:00 and 6:00. Figure 3 provides peak hour traffic volumes, lane configurations and traffic controls at each of the study intersections.

Roadway segment traffic counts were collected for 26 roadway segments on El Dorado Hills Boulevard, Latrobe Road, White Rock Road, Silva Valley Parkway, Serrano Parkway, Saratoga Way, Wilson Way, Olson Lane, Gillette Drive, and Harvard Way.

For US 50, directional traffic counts were collected during the AM peak period (6 AM to 9 AM) and PM peak period (3 PM to 6 PM) and included vehicle classification (i.e., automobiles and trucks) and vehicles using the high occupancy vehicle (HOV) lanes. The freeway traffic counts were conducted midweek (i.e., Tuesday, Wednesday, and Thursday) in August 2013. The August 2013 traffic counts were verified for reasonableness by comparing to traffic data from Caltrans' Performance Measurement System (PeMS) and the Transportation Systems Network (TSN) data. PeMS data is collected continuously from traffic counts detectors located in the travel lanes of freeway facilities (HOV, general purpose, and on- and off-ramps). The TSN data includes an estimate of peak hour traffic based on seven day traffic counts. Figure 4 provides peak hour traffic volumes and lane configurations on US 50. Based on the August 2013 counts, heavy vehicles (i.e., trucks) represented one- and two-percent of westbound traffic during the morning and evening peak hours, respectively. In the eastbound direction, heavy vehicles represented four- and one-percent of traffic during the morning and evening peak hours, respectively. These peak hour heavy vehicle percentages are lower than rates based on daily traffic volumes, since heavy vehicles avoid peak hour conditions.

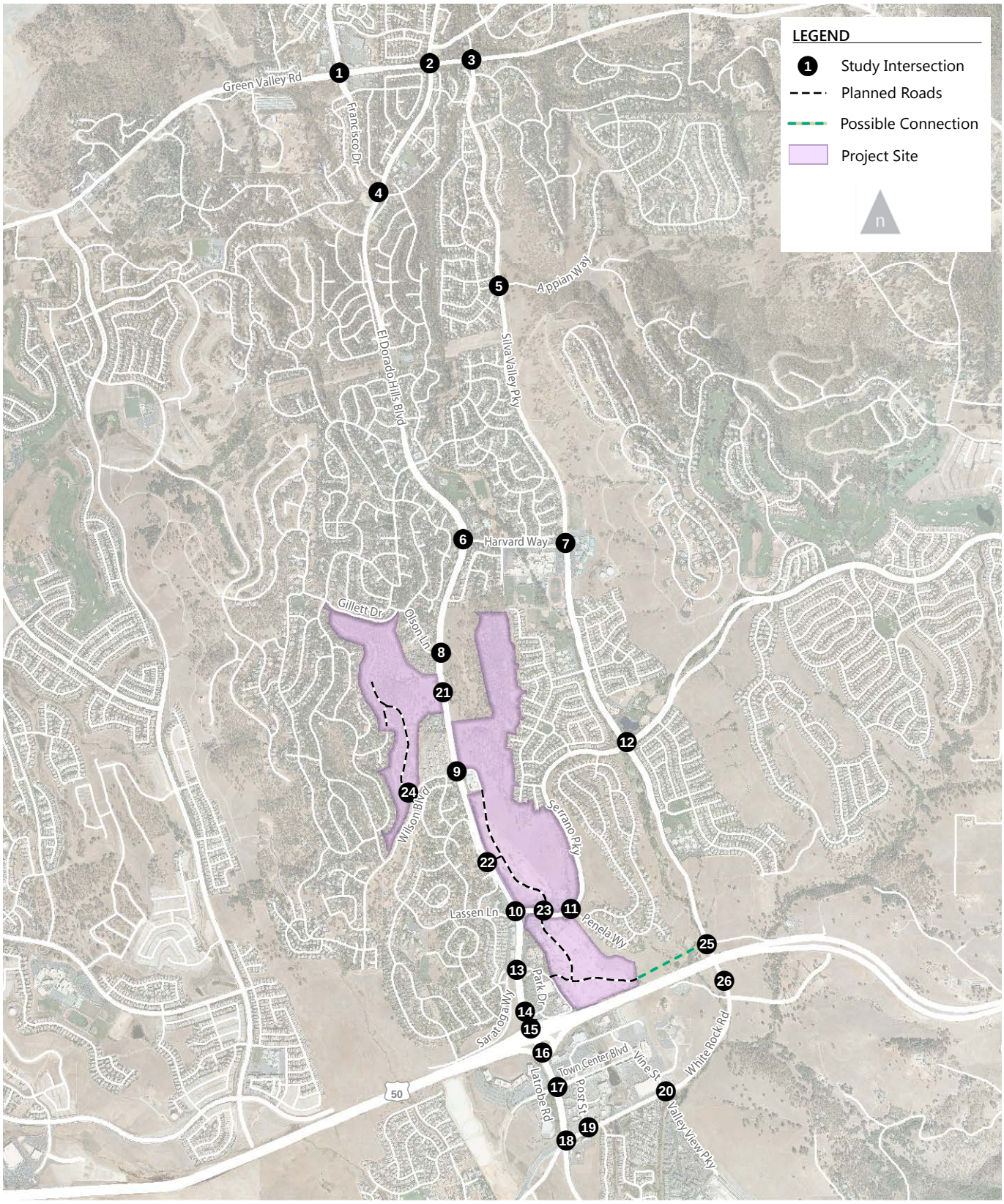


Figure 2.

Study Area

FEHR PEERS

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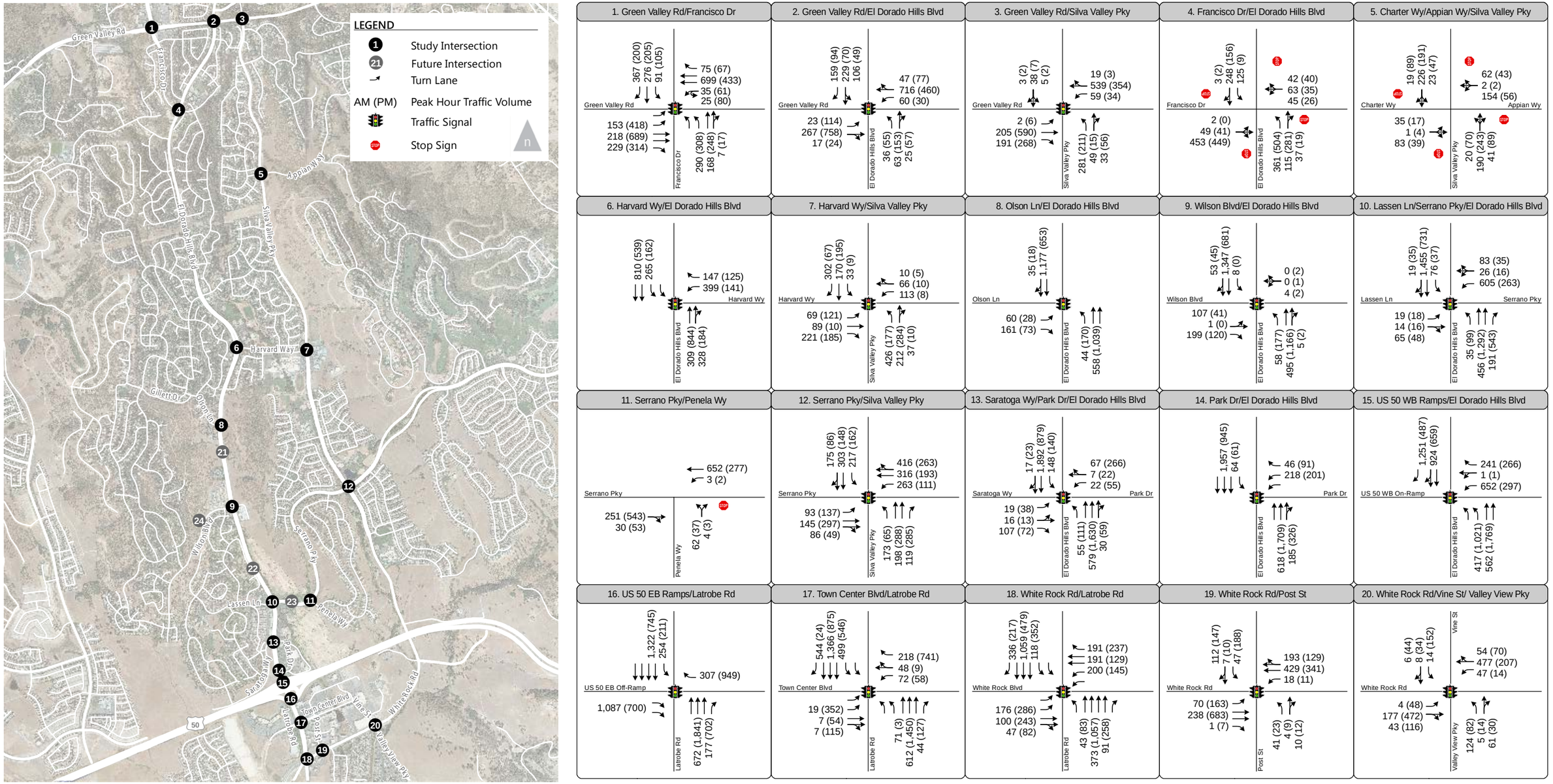

Figure 3.

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

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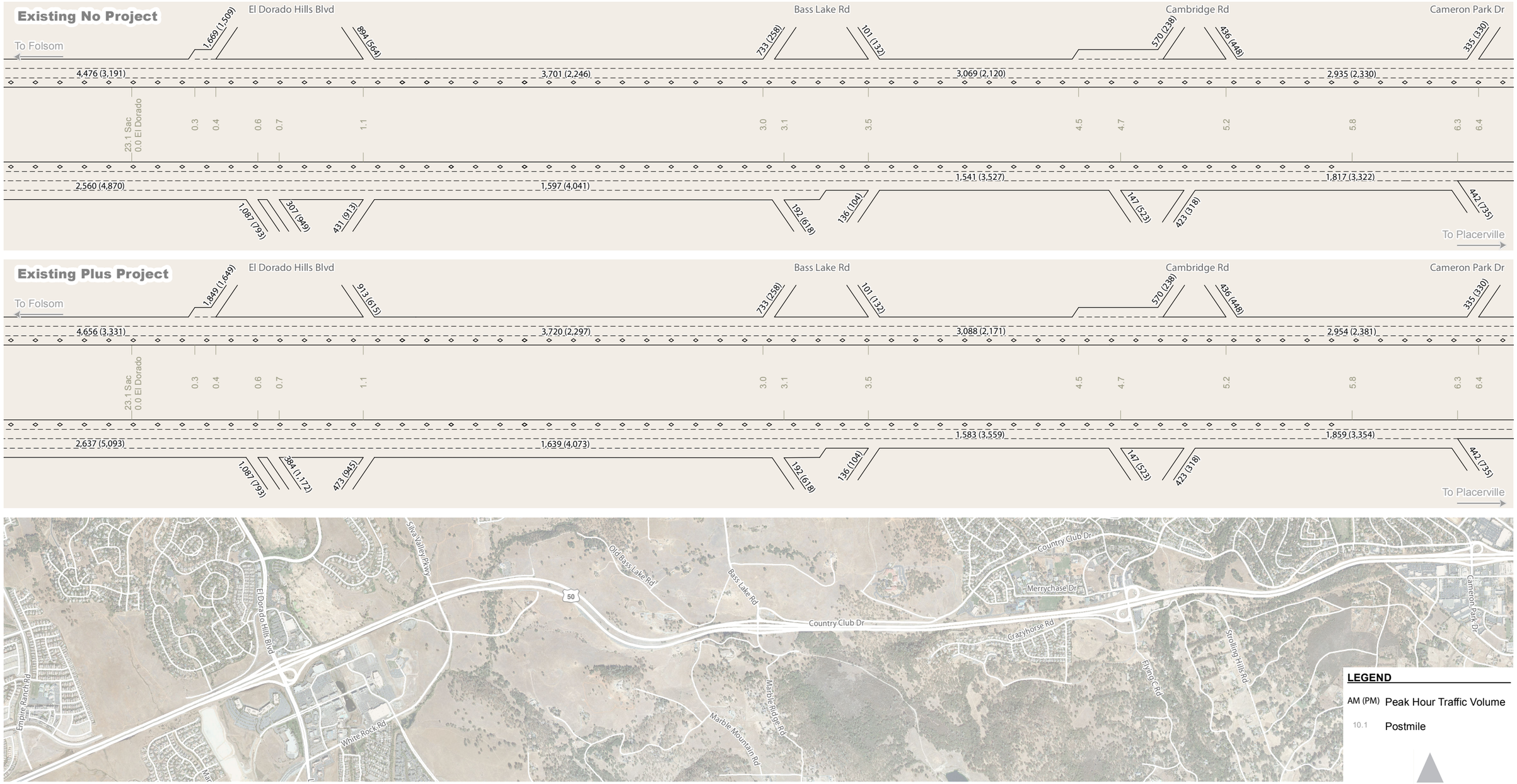

Figure 4.

US 50 Freeway Mainline and Ramp Peak Hour Traffic Volumes - Existing Conditions

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4.4 EXISTING CONDITIONS PEAK HOUR VEHICLE LEVEL OF SERVICE

4.4.1 INTERSECTIONS

Table 4 summarizes existing conditions AM and PM peak hour Level of Service (LOS) for the study intersections. The LOS of a facility is a qualitative measure used to describe operating conditions. LOS ranges from A (best), which represents short delays, to LOS F (worst), which represents long delays and a facility that is operating at or near its functional capacity.

As described in Section 4.2, an intersection that is operating at LOS E or better in a Community Region is considered to operate at an acceptable level. One study intersection, Francisco Drive / El Dorado Hills Boulevard, operates unacceptably (LOS F) during both the AM and PM peak hours. The intersection is currently all-way stop controlled. This intersection will be improved by the county to provide an eastbound to southbound free right-turn pocket. Construction is anticipated in early 2015. Future roadway improvements (i.e., roadway realignment, signalization, etc.) are proposed as described in Section 6.1, Table 14.

Construction was ongoing at the US 50/El Dorado Hills Boulevard interchange. Field observations conducted during the AM and PM peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues southbound during the AM peak hour and northbound during the PM peak hour. The vehicle queuing results in LOS D operations at the Serrano Parkway/Lassen Lane and Saratoga Way intersections during the AM peak hour and at the Town Center Boulevard intersection during the PM peak hour and is a result of poor lane utilization caused by the interchange construction.

Detailed LOS analysis sheets are contained in Appendix A. See section 3.1 and Table 1 for a definition of LOS as it relates to intersection delay.

TABLE 4: PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS (INTERSECTION)

Intersection	Traffic Control	LOS / Delay (seconds)	
		AM Peak Hour	PM Peak Hour
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46
2. Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Signal	E / 67	D / 46
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20
4. Francisco Dr / El Dorado Hills Blvd	AWSC	**F / 88**	**F / 69**
5. Silva Valley Pkwy / Apian Wy	AWSC	C / 23	B / 15
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22
8. El Dorado Hills Blvd/Olson Ln	Signal	B / 12	A / 9
9. El Dorado Hills Blvd/Wilson Blvd	Signal	B / 20	B / 16
10. El Dorado Hills Blvd/Serrano Pkwy/Lassen Ln	Signal	D / 49	C / 21
11. Serrano Pkwy/Penela Wy	SSSC	D / 32	C / 23
12. Serrano Pkwy/Silva Valley Pkwy	Signal	D / 40	C / 30
13. El Dorado Hills Blvd/Park Dr/Saratoga Wy	Signal	D / 36	C / 25
14. El Dorado Hills Blvd/Saratoga Wy	Signal	E / 56	B / 15
15. El Dorado Hills Blvd/US 50 WB Ramps	Signal	D / 43	C / 29
16. Latrobe Rd/US 50 EB Ramps	Signal	B / 15	B / 14
17. Latrobe Rd/Town Center Blvd	Signal	C / 29	E / 75
18. Latrobe Rd/White Rock Rd	Signal	C / 35	D / 44
19. White Rock Rd/Post St	Signal	C / 24	C / 31
20. White Rock Rd/Valley View Dr/Vine St	Signal	C / 21	C / 27

Notes: SSSC = side-street stop-control, AWSC = all-way stop control
The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown.
Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM* (TRB, 2000). Intersections 1-12, and 18-20 are analyzed in Synchro 7. Intersections 13-17 are analyzed in SimTraffic. Source: Fehr & Peers, 2014

4.4.2 ROADWAY SEGMENTS

Table 5 summarizes existing conditions AM and PM peak hour LOS for the study roadways. All study area roadway segments operate at acceptable levels (better than LOS F), with most operating at LOS C or better.

Detailed LOS analysis sheets are contained in Appendix A. See section 3.1 and Table 2 for a definition of LOS as it relates to roadway segments.

TABLE 5: PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	430 / 0.26 / C[1]	389 / 0.24 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,259 / 0.76 / D	1,435 / 0.87 / D
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,010 / 0.61 / D	1,935 / 0.59 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,108 / 0.64 / D	2,148 / 0.65 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	2,807 / 0.70 / D	2,976 / 0.74 / D
	Saratoga Way to US 50	6 lane divided arterial	2,685 / 0.57 / C[1]	2,806 / 0.60 / D
Latrobe Rd	US 50 to Town Center Blvd	6 lane divided arterial	3,339 / 0.71 / D	4,081 / 0.87 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	2,253 / 0.48 / C[1]	2,628 / 0.56 / C[1]
	White Rock Rd to Golden Foothill Pkwy	4 lane divided arterial	1,813 / 0.55 / C[1]	2,104 / 0.64 / D
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	2 lane arterial	1,225 / 0.74 / D	1,246 / 0.76 / D
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	256 / 0.16 / C[1]	295 / 0.18 / C[1]
White Rock Rd	Scott Rd to Four Seasons Dr	2 lane arterial	603 / 0.37 / C[1]	863 / 0.52 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	893 / 0.27 / C[1]	1,040 / 0.32 / C[1]
	Latrobe Rd to Vine St	2 lane arterial	831 / 0.5 / C[1]	969 / 0.59 / D
	Vine St to US 50	2 lane arterial	830 / 0.5 / C[1]	945 / 0.57 / D
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	651 / 0.39 / C[1]	591 / 0.36 / C[1]
	Glenwood Wy to Appian Wy	2 lane arterial	555 / 0.34 / C[1]	630 / 0.38 / C[1]
	Appian Wy to Harvard Wy	2 lane arterial	796 / 0.48 / C[1]	681 / 0.41 / C[1]

TABLE 5: PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	1,402 / 0.43 / C[1]	1,084 / 0.33 / C[1]
	Serrano Pkwy to US 50	2 lane arterial	1,142 / 0.69 / D	946 / 0.57 / D
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	995 / 0.6 / D	910 / 0.55 / D
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,476 / 0.45 / C[1]	1,311 / 0.4 / C[1]
	Villagio Dr to Bass Lake Rd	2 lane arterial	453 / 0.27 / C[1]	417 / 0.25 / C[1]
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	222 / 0.13 / C[1]	279 / 0.17 / C[1]
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	418 / 0.13 / C[1]	384 / 0.12 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	300 / 0.18 / C[1]	289 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,139 / 0.36 / C[1]	612 / 0.20 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the peak hour level of service thresholds contained in Table 5.4-1 of the *El Dorado County General Plan DEIR* (EDAW, 2003)
[1] LOS at this location is C or better
Source: Fehr & Peers, 2014

4.4.3 FREEWAY FACILITIES

Freeway facilities in the County are under the jurisdiction of the California Department of Transportation (Caltrans). In recent years, US 50 and interchanges within or proximate to the study area have undergone or are undergoing various improvements to increase capacity and improve traffic operations. These improvements include: extension of High Occupancy Vehicle (HOV) lanes east to Cameron Park Drive and modifications to the US 50/El Dorado Hills Boulevard/Latrobe Road interchange westbound ramps (currently under construction). As described in Section 2.2, the US 50/Silva Valley Parkway/White Rock Road interchange is under construction.

Table 6 summarizes existing peak hour freeway operations. All of the study facilities currently operate acceptably. A secondary performance measure, average speed, was used to verify the results shown in Table 6 that are based on the primary performance measure of density. Average midweek (i.e., Tuesday, Wednesday, and Thursday non-holiday) speed data was collected from the Caltrans Performance Measurement System (PeMS) for the period from October 2013 through September 2014. The speed data was collected for general purpose lanes (i.e., not the HOV lane) on eastbound and westbound US 50 near the El Dorado/Sacramento county line. As a secondary performance measure, the PeMS speed data is consistent with and confirms the LOS results shows in Table 6 for the segments of US 50 at the county line. The PeMS data identifies average speeds of 60 and 59 miles per hour on eastbound and westbound US 50, respectively, during peak hours. Detailed LOS analysis sheets are contained in Appendix A. See section 3.1 and Table 3 for a definition of LOS as it relates to freeway facilities.

TABLE 6: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS	
			AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	31 / D
	El Dorado Hills Blvd off-ramp	Diverge	14 / B	27 / C
	Latrobe Rd on-ramp	Merge	14 / B	26 / C
	El Dorado Hills Blvd on-ramp to Bass Lake Rd off-ramp	Basic	10 / A	20 / C
	Bass Lake Rd off-ramp	Diverge	14 / B	25 / C
	Bass Lake Rd on-ramp	Merge	16 / B	28 / C
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Basic	13 / B	25 / C
	Cambridge Rd off-ramp	Diverge	18 / B	31 / D
	Cambridge Rd on-ramp	Merge	18 / B	26 / C
US 50 WB	Cambridge Rd off-ramp	Diverge	27 / C	22 / C
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Merge	19 / B	12 / B
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic	23 / C	16 / B
	Bass Lake Rd off-ramp	Diverge	28 / D	21 / C
	Bass Lake Rd on-ramp	Merge	31 / D	20 / C
	Bass Lake Rd on-ramp to El Dorado Hills Blvd off-ramp	Basic	29 / D	17 / B
	El Dorado Hills Blvd off-ramp	Diverge	33 / D	22 / C
	El Dorado Hills Blvd on-ramp	Merge	34 / D	24 / C

Notes: 1 Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.

Source: Fehr & Peers, 2014

4.5 PEDESTRIAN CIRCULATION

Attached or landscape-separated detached sidewalks are provided intermittently throughout the project study area. Given the primarily rural residential nature of El Dorado Hills, it is not necessarily the desire to provide sidewalks in all areas. However, some of the following major roadway facilities lack sidewalks and result in pedestrian network gaps:

- The majority of the west side of El Dorado Hills Boulevard lacks sidewalk
- Both sides of Latrobe Road lack sidewalk except for detached sidewalk on the east side between US 50 and Town Center Drive
- Both sides of White Rock Road lack sidewalk except for west of Post Street (both sides) and on the north side adjacent to development just west of Vine Street
- The east side of Silva Valley Parkway north of Harvard and both sides of the street north of US 50 to Oak Meadow Elementary School
- The north side of Serrano Parkway has a sidewalk/path that begins at El Dorado Hills and continues east.
- Wilson Boulevard lacks pedestrian facilities between Ridgeview Drive (and approximately 500 feet west of El Dorado Hills Boulevard)
- Olson Lane / Gillette Drive do not have sidewalks
- Green Valley mostly lacks sidewalk except for the south side between Miller Road on the west and east of Francisco Drive

Most study intersections provide signal-controlled pedestrian crossings with marked crosswalks. As described in Section 2.6 below, Class I bicycle paths double as pedestrian facilities. In particular, the New York Creek Nature Trail, adjacent to El Dorado Hills Boulevard, provides connectivity between the Pedregal and Serrano Westside planning areas.

4.6 BICYCLE CIRCULATION

Existing bicycle facilities within the study area are displayed in Figure 5. Bicycle facilities are classified into three categories.

- Class I Bicycle Path– Off-street bike paths within exclusive right-of-way; usually shared with pedestrians
- Class II Bicycle Lane – Striped on-road bike lanes adjacent to the outside travel lane on preferred corridors for biking
- Class III Bicycle Route– Shared on-road facility, usually delineated by signage and pavement markings

According to the *El Dorado Bicycle Transportation Plan, 2010 Update (El Dorado County Transportation Commission)*, mapping information provided by the County, and field observations, the following major bikeway facilities are present within the study area:

- Class II bicycle lanes on Serrano Parkway, Saratoga Way, White Rock Road, Latrobe Road and Green Valley Road (west of Francisco Drive) and portions of Silva Valley Parkway and El Dorado Hills Boulevard
- Class I bicycle path, New York Creek Nature Trail, which is adjacent to El Dorado Hills Boulevard on the east side between Serrano Parkway to St Andrews Drive
- Class I bicycle path adjacent to El Dorado Hills Boulevard on the west side north of Telegraph Hill Road to Green Valley Road
- Class I bicycle path, Bull Frog Gully trail, on the north/west side of Serrano Parkway opposite Penela Way

Figure 5 also identifies planned bikeways presented in the *El Dorado Bicycle Transportation Plan, 2010 Update and the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035.*

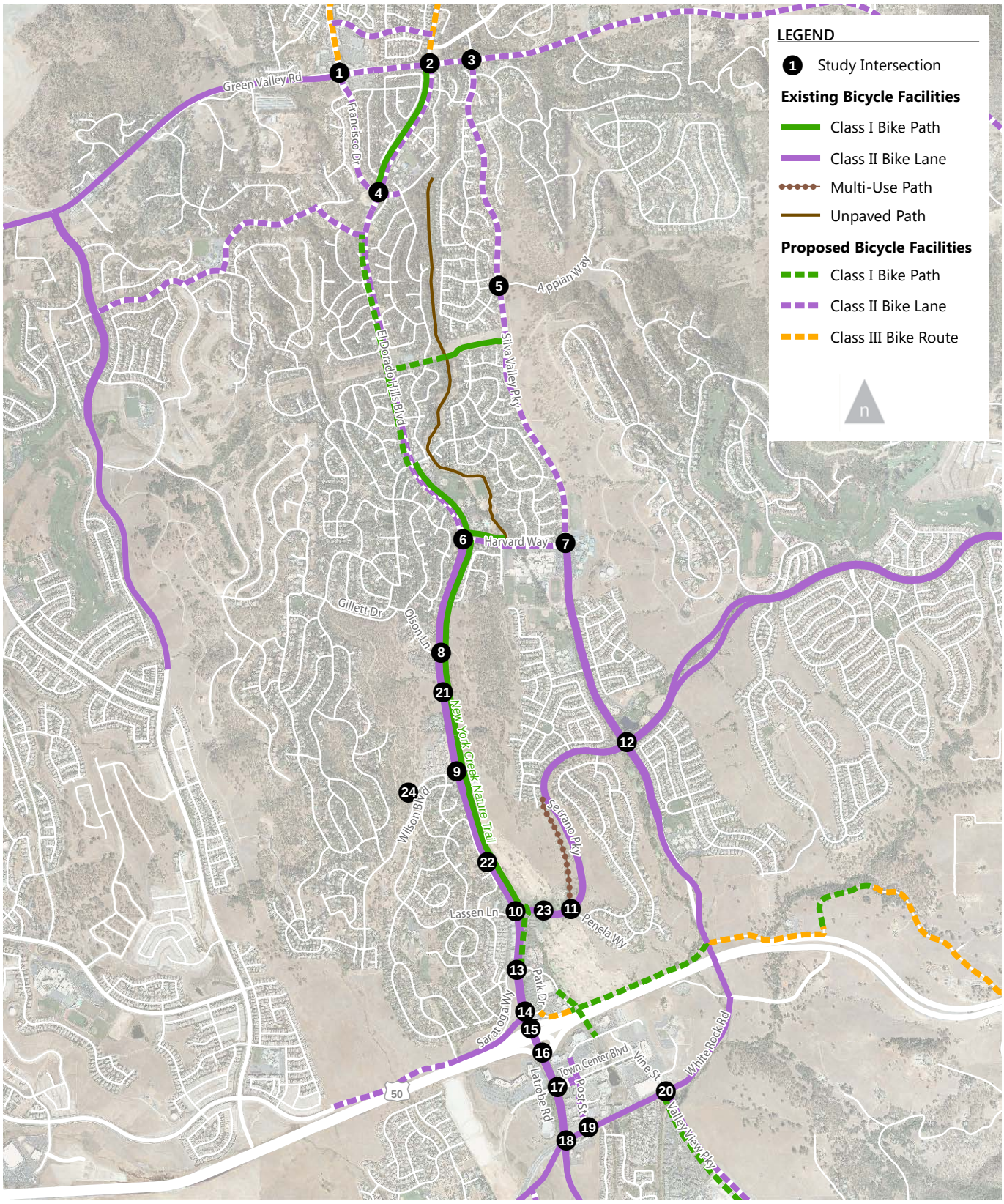

Figure 5.

Bicycle Facilities

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4.7 TRANSIT

El Dorado County Transit Authority (El Dorado Transit) provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route. Both the Commuter Service and the Iron Point Connector Route serve only the El Dorado Hills Park-and-Ride Lot and do not circulate within the community.

In May 2013, The EDCTC completed the *El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan* (Plan), which explores how the recent growth and projected development impact the need for transit services, and identifies the most appropriate type and level of service needed given the demand. All three services are addressed in the Plan and are described briefly below.

- **Dial-A-Ride** service is a demand response service designed for seniors and disabled passengers, with limited access available for the general public. The service is available on a first-come, first-serve basis Monday through Friday between the hours of 7:30 AM and 5:00 PM, and between 8:00 AM and 5:00 PM on Saturdays and Sundays. El Dorado Hills is one of twelve geographic zone service areas.
- **Commuter Service** is offered Monday through Friday between El Dorado County and downtown Sacramento. Morning departures from El Dorado County locations are scheduled from 5:10 AM to 8:00 AM, and afternoon eastbound departures from Sacramento occur from 2:40 PM to 6:00 PM. A reverse commuting service is offered. The El Dorado Hills Park-and-Ride located in Town Center at the White Rock Road/Post Street intersection is the nearest stop location for the project. According to the Plan, nearly half of commute passengers boarded at the El Dorado Hills Park-and-Ride in the morning, which makes this location the highest boarding stop offered as part of the Commuter Service.
- **Iron Point Connector (IPC) Route** provides direct service from El Dorado County to Folsom with connections to Sacramento Regional Transit light rail on weekdays. This route runs twice in the morning and twice in the afternoon from the Central Transit Center to the Iron Point Light Rail Station in Folsom. The El Dorado Hills Park-and-Ride located in Town Center at the White Rock Road/Post Street intersection is the nearest stop location for the project.

The El Dorado Hills Park-and-Ride Lot provides 120 parking spaces. The Plan reports that parking demand exceeds supply. Specifically, Table 19 of the Plan reports 96% parking utilization in 2004 and 108% parking utilization in 2005 based on Sacramento Area Council of Governments and Caltrans data. The Plan also describes other transit providers that serve western El Dorado County, including the Senior Shuttle Program, which has recently initiated service in El Dorado Hills.

In addition, the Serrano El Dorado Owners' Association provides rideshare services for its residents.

5.0 EXISTING PLUS PROJECT CONDITIONS

5.1 TRIP GENERATION

Based on information contained in the Notice of Preparation and subsequent correspondence with County staff and the applicant, Fehr & Peers prepared trip generation estimates for the project based on methodologies and trip rates presented in Trip Generation, 9th Edition (Institute of Transportation Engineers), with adjustments to account for internal vehicle trips and walking trips given the proximity and access that portions of the project will have to nearby retail and commercial services located in the Raley's and La Borgata shopping centers and along El Dorado Hills Boulevard.

This traffic study determined that the combined effects of the Project's land use, location, and development scale would contribute to a reduction in off-site average weekday vehicle "trips" (e.g., one vehicle trip is when a person drives from their home to shopping or their job. Their return drive home is another trip). This reduction is due largely to the Project's proximity to commercial and retail services and connections between the project and these services. That is, most of the reduction in total off-site vehicle trips generated by the Project is attributable to those trips beginning on the Project site, traveling to adjacent services, and ending on the Project site without using off-site roadways or by walking.

Traditionally, traffic engineers and transportation planners have estimated internalization of project trips using one of two methods. First, they would estimate it based on their professional judgment. Alternatively, professionals relied on the Institute of Transportation Engineers' (ITE) internalization methodology presented in the ITE Trip Generation Handbook. Although this has been applied in thousands of studies in California, the methodology was limited as it was based on only six surveys in Florida. Additionally, the ITE internalization methodology only accounts for the land use types on the mixed-use site. Given the limited input information (land use amount and type) and the limited range of data (six surveys), the accuracy of the internalization estimates has recently been found to generally under-estimate internalization of trips from mixed-use projects.

Recognizing the limitations of the simplified methodology applied in the ITE handbook, the United States Environmental Protection Agency commissioned a study to develop a more substantial, statistically superior methodology. This methodology, identified as MXD (or mixed-use development trip generation), begins with ITE rates and developed trip internalization estimates based on a series of factors tied to numerous site attributes. It should also be noted that the MXD model has been developed in cooperation with the US Environmental Protection Agency (EPA) and ITE and that ITE is currently reviewing the model

for potential inclusion in their updated recommended practice for evaluating MXD projects. The MXD methodology is described in greater detail below.

MXD Trip Internalization Methodology

The internal capture percentage reported is not an "assumed" number, but rather is a number that was derived using a best practices trip generation model designed specifically for mixed-use development (MXD) projects and estimates trip generation and internal capture by adjusting trip generation rates to account for the influence of built environment variables. A variety of research studies have demonstrated that these variables influence vehicle trip generation.

The MXD model used was developed based on household travel survey data obtained from 239 existing mixed-use developments in six metropolitan regions throughout the U.S., including developments in Sacramento. The internal capture percentage calculated for the project is reflective of the land uses that would be developed as part of the Project and land use near the project, which would reduce the need to travel beyond the Project site or surrounding area. A set of 16 independent mixed use sites that were not included in the initial model were tested to help validate the model. Among the validation sites, use of the MXD model produced superior statistical performance when comparing the model results to observed data. Given the statistical robustness of the MXD model, it was deemed the most appropriate approach for estimating internalization of project trips.

MXD Model Inputs and Trip Generation Estimates

To determine the amount of trips that would be internal to the Project site, an MXD trip generation estimate was prepared. The MXD analysis first begins with gross trip rates identified in the Institute of Transportation Engineers' Trip Generation (9th Edition, 2012). It then incorporates the MXD methodology for "matching" trips to estimate the amount of internalization within the project site. Tables 7, 8 and 9 summarize project land use, assumed trip rates, calculated trip generation totals, and MXD adjustments for both Serrano Westside and Pedregal.

The entire project is projected to generate 8,757 daily vehicle trips, 694 AM peak hour vehicle trips and 979 PM peak hour vehicle trips. The daily total includes a modest reduction of 192 vehicle trips for internalization, which are vehicle trips made that remain within the project site or travel to nearby service adjacent to the project site without using external roadways. An additional reduction of 150 vehicle trips was made in acknowledgement of feasible walking trips in lieu of vehicle trips for the Serrano Westside site that is within a reasonable walking distance of nearby commercial and shopping land uses.

TABLE 7: TRIP GENERATION – SERRANO WESTSIDE

Land Use	Quantity	ITE Code	Trip Rate			Trips						
			Daily	AM	PM	Daily	AM			PM		
							In	Out	Total	In	Out	Total
Multifamily Housing (Dwelling Units)	330	220	6.65	0.51	0.62	2,195	34	134	168	133	72	205
Single Family Detached Housing (Dwelling Units)	433	210	9.52	0.75	1.00	4,122	81	244	325	273	160	433
Civic - Limited Commercial (1,000 Square Feet)	50	710	11.03	1.56	1.49	552	69	9	78	13	62	75
Village Park (Acres)	15	[1]	36.55	1.08	9.07	548	9	7	16	94	42	136
Gross Trips						7,416	193	394	587	513	335	848
Internal Capture						192	6	6	12	8	8	16
Walking Trips						150	3	8	11	9	6	15
Net Trips Made by Motor Vehicle						7,075	184	380	564	496	322	818

[1]Trip generation for the village park land use is based on field measured trip generation at the Promontory (Alexandra Drive) and El Dorado Hills Community Pare (El Dorado Hills Boulevard at Harvard Way). Observed activities included little league baseball, la Crosse, and softball.
Source: Fehr & Peers, 2014

TABLE 8: TRIP GENERATION – PEDREGAL

Land Use	Quantity	ITE Code	Trip Rate			Trips						
			Daily	AM	PM	Daily	AM			PM		
							In	Out	Total	In	Out	Total
Multifamily Housing (Dwelling Units)	200	220	6.65	0.51	0.62	1,330	20	82	102	81	43	124
Single Family Detached Housing (Dwelling Units)	37	210	9.52	0.75	1.00	352	7	21	28	23	14	37
Net Trips Made by Motor Vehicle						1,682	27	103	130	104	57	161

Source: Fehr & Peers, 2014

TABLE 9: TRIP GENERATION – CENTRAL EL DORADO HILLS (SERRANO WESTSIDE + PEDREGAL)

Land Use	Quantity	ITE Code	Trip Rate			Trips						
			Daily	AM	PM	Daily	AM			PM		
							In	Out	Total	In	Out	Total
Multifamily Housing (Dwelling Units)	530	220	6.65	0.51	0.62	3,525	54	216	270	214	115	329
Single Family Detached Housing (Dwelling Units)	470	210	9.52	0.75	1.00	4,474	88	265	353	296	174	470
Civic - Limited Commercial (1,000 Square Feet)	50	710	11.03	1.56	1.49	552	69	9	78	13	62	75
Village Park (Acres)	15	-[1]	36.55	1.08	9.07	548	9	7	16	94	42	136
Gross Trips						9,099	220	497	717	617	392	1,009
Internal Capture						192	6	6	12	8	8	16
Walking Trips						150	3	8	11	9	6	15
Net Trips Made by Motor Vehicle						8,757	211	483	694	600	379	979

[1]Trip generation for the village park land use is based on field measured trip generation at the Promontory (Alexandra Drive) and El Dorado Hills Community Pare (El Dorado Hills Boulevard at Harvard Way. Observed activities included little league baseball, la Crosse, and softball.
Source: Fehr & Peers, 2014

5.2 TRIP DISTRIBUTION AND ASSIGNMENT

The expected distribution of project trips is shown on Figure 6. The distribution was developed using the following sources and analytical techniques:

- Existing travel patterns based on the existing traffic counts
- Traffic assignment using the validated base year El Dorado County travel demand forecasting model
- Project access and internal circulation

As shown on Figure 6, the largest share of project trips (37 percent) will use US 50 to/from the west in the morning and evening with nine percent traveling on US 50 to/from the east. Travel to/from the north on El Dorado Hills Boulevard and to/from the south on Latrobe Road is fairly balanced at 25 percent and 24 percent, respectively. Figure 7 shows only project trips based on the trip distribution shown on Figure 6. The resulting AM and PM peak hour traffic volumes under existing plus project conditions are presented on Figure 8.

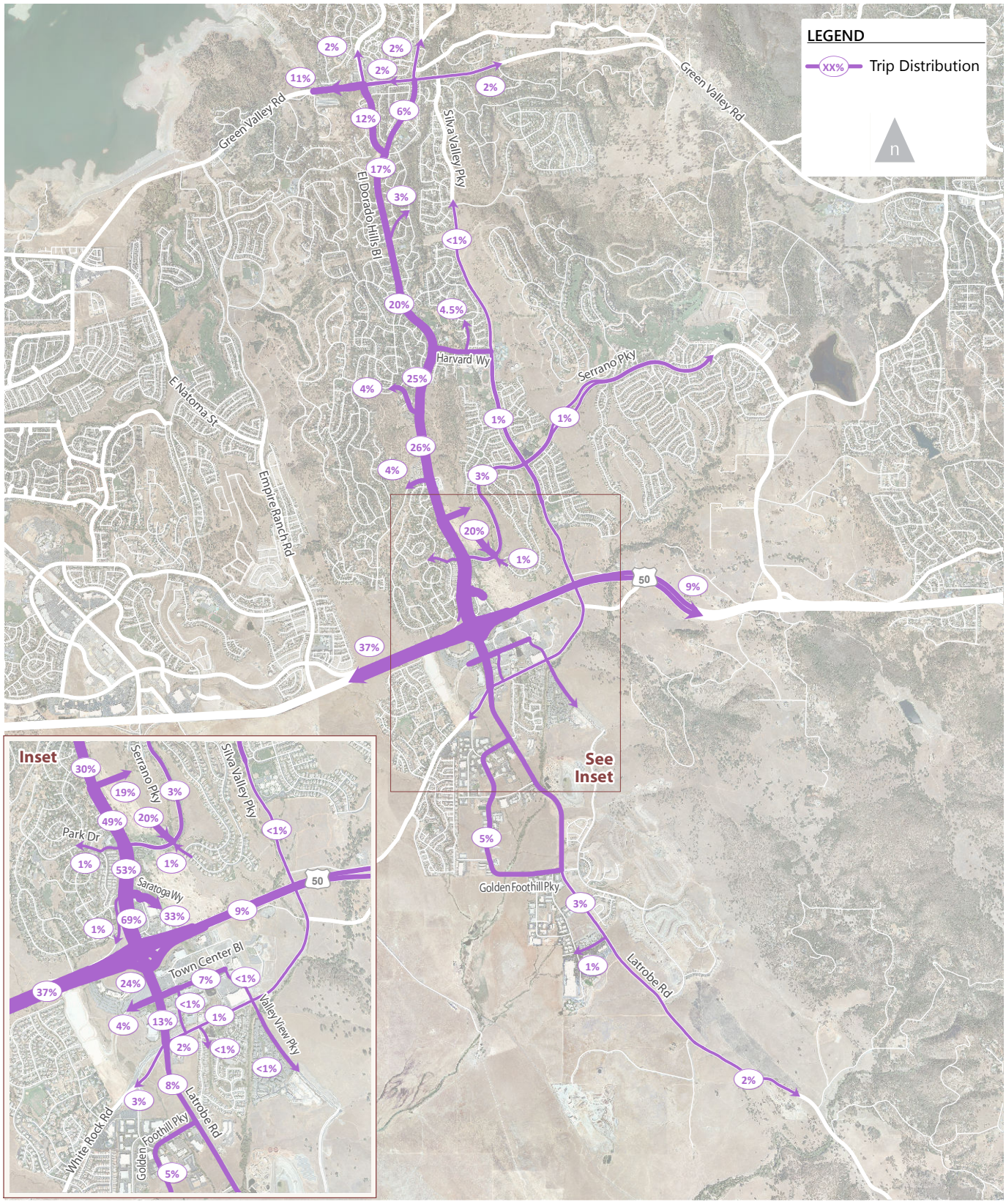

Figure 6.

Trip Distribution - Existing Conditions

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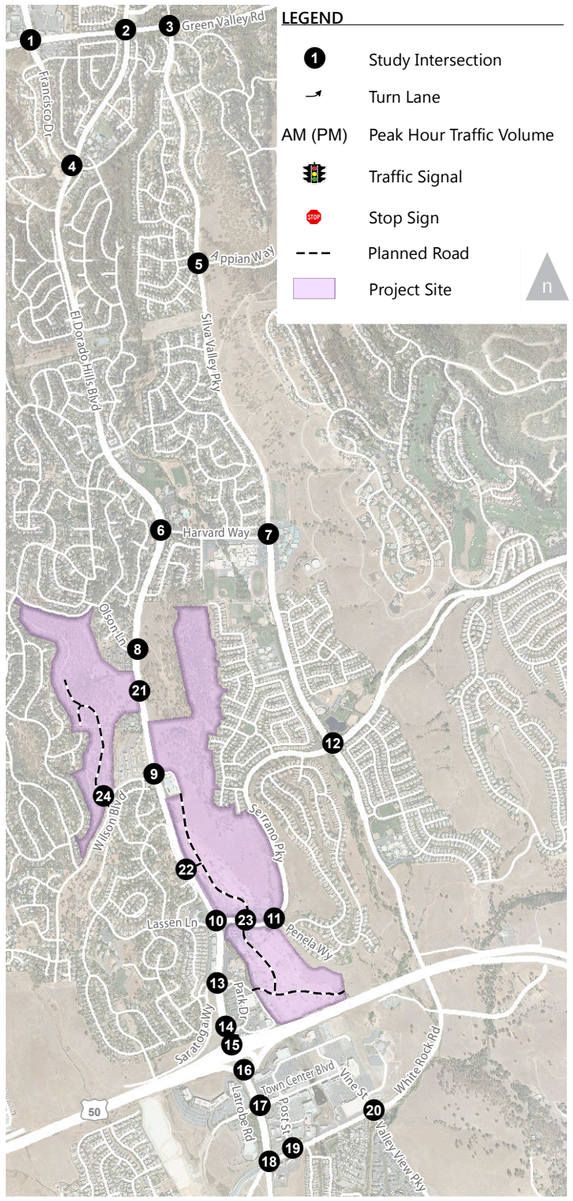

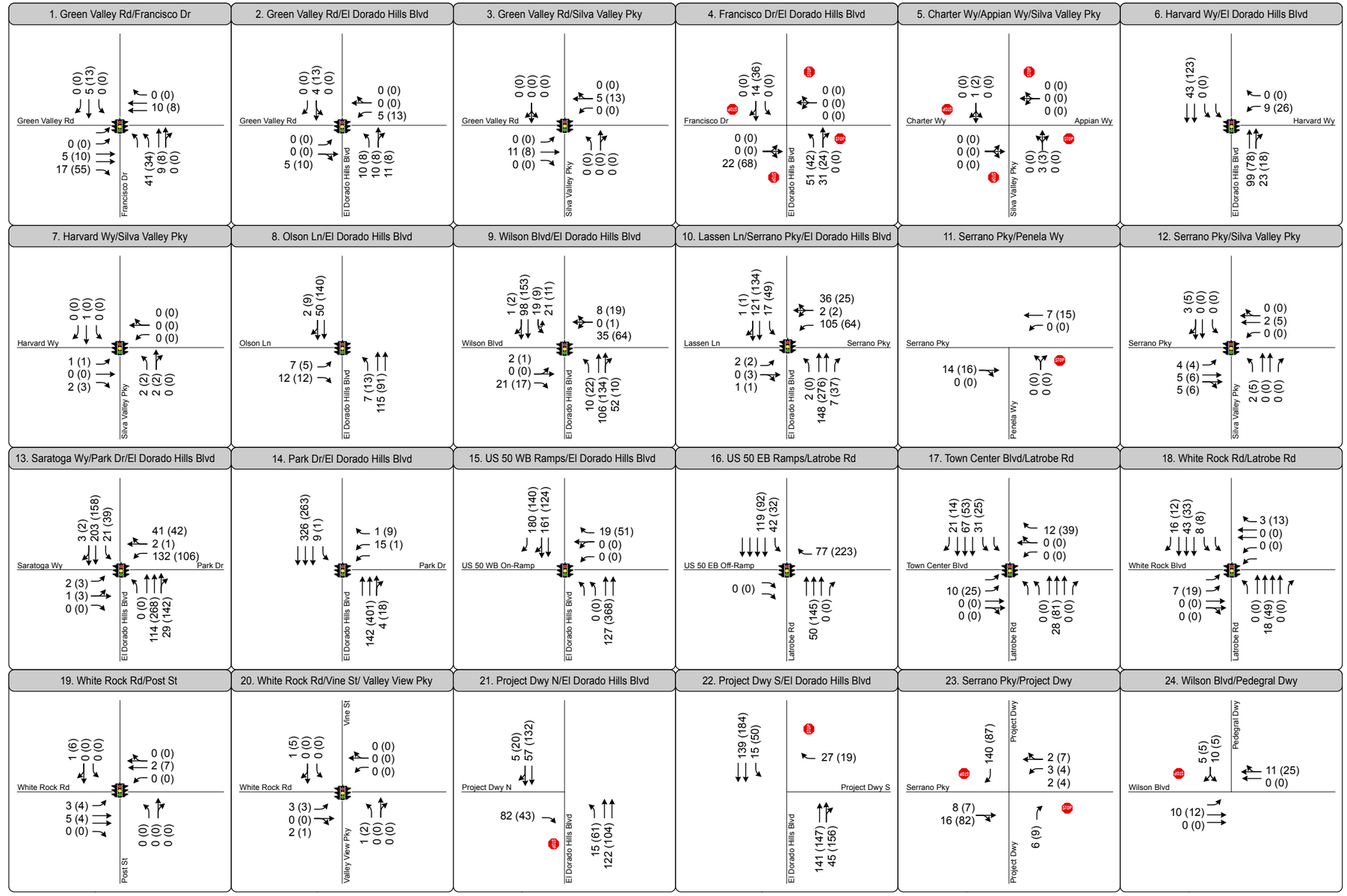

Figure 7.

Project Only Trip Assignment - Existing Conditions

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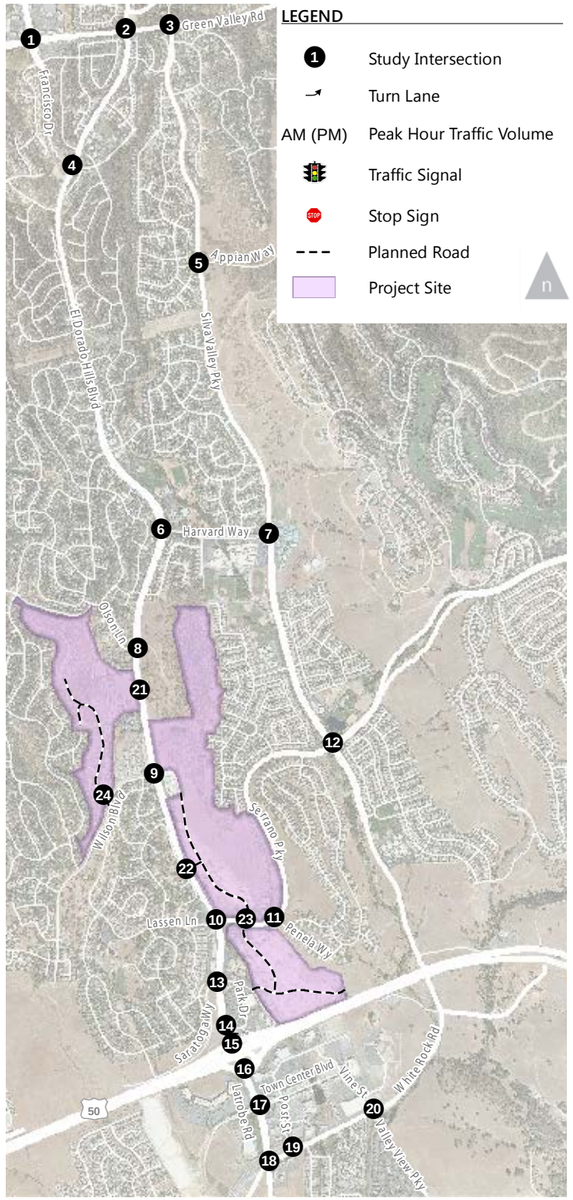

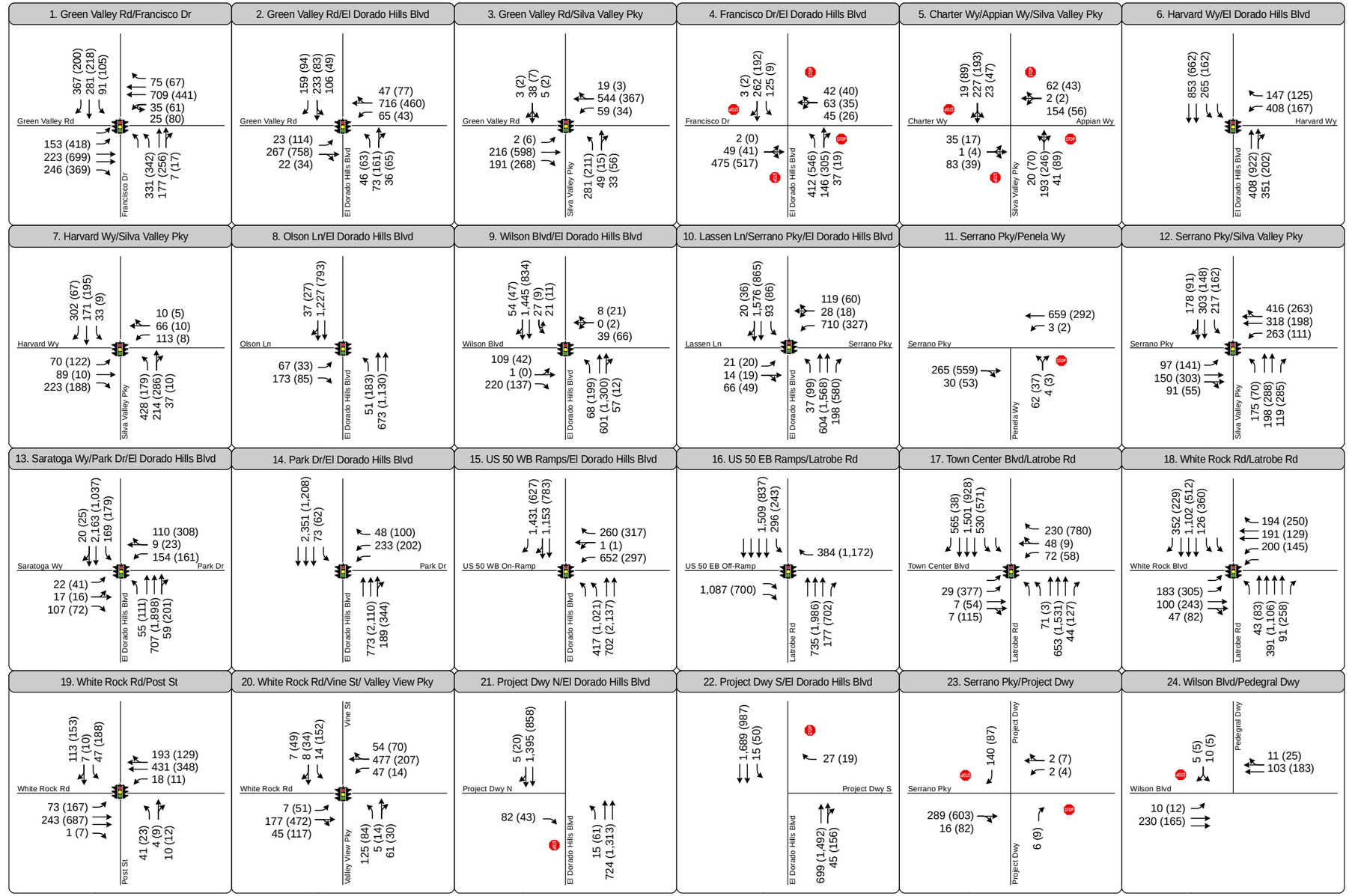

Figure 8.

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

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5.3 PEAK HOUR VEHICLE LEVEL OF SERVICE

5.3.1 INTERSECTIONS

Analysis results, which are presented in Table 10, indicate that most study intersections will operate acceptably, except for the all-way stop controlled Francisco Drive / El Dorado Hills Boulevard intersection, which will operate at LOS F during the AM and PM peak hours. Traffic generated by the project result in potential impacts at the following locations:

- Francisco Drive / El Dorado Hills Boulevard (intersection 4) – This location operates at LOS F without the project. The project adds more than 20 seconds of delay to overall intersection operations. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours.
- Latrobe Road / Town Center Boulevard (intersection 17) – This location operates acceptably LOS E without the project. The project results in unacceptable LOS F conditions during the PM peak hour.

5.3.2 ROADWAY SEGMENTS

Analysis results, which are presented in Table 11, indicate that all study roadway segments will operate acceptably. Traffic generated by the project is not anticipated to result in roadway segment impacts according to established significance criteria. A comparison of the results in Table 11 to the results in Table 10 shows that the number of through travel lanes on the study area roadways is adequate, but that improvements are needed at intersections, which are the locations where drivers experience delay traveling through the study area.

TABLE 10: INTERSECTION LOS AND DELAY – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Existing Conditions (LOS / Delay)		Existing Plus Project (LOS / Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46	D / 41	D / 46
2. Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Signal	E / 67	D / 46	E / 73	D / 54
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20	C / 32	B / 20
4. Francisco Dr / El Dorado Hills Blvd	AWSC	**F / 88**	**F / 69**	***F / 108***	***F / 98***
5. Silva Valley Pkwy / Apian Wy	AWSC	C / 23	B / 15	C / 23	B / 15
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17	C / 33	B / 18
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22	D / 39	C / 22
8. El Dorado Hills Blvd/Olson Ln	Signal	B / 12	A / 9	B / 12	B / 10
9. El Dorado Hills Blvd/Wilson Blvd	Signal	B / 20	B / 16	C / 30	C / 30
10. El Dorado Hills Blvd/Serrano Pkwy/Lassen Ln	Signal	D / 49	C / 21	E / 70	C / 35
11. Serrano Pkwy/Penela Wy	SSSC	D / 32	C / 23	D / 34	C / 24
12. Serrano Pkwy/Silva Valley Pkwy	Signal	D / 40	C / 30	D / 41	C / 30
13. El Dorado Hills Blvd/Park Dr/Saratoga Wy	Signal	D / 36	C / 24	E / 62	D / 44
14. El Dorado Hills Blvd/Saratoga Wy	Signal	E / 56	B / 15	E / 58	C / 29
15. El Dorado Hills Blvd/US 50 WB Ramps	Signal	D / 43	C / 29	C / 32	D / 36
16. Latrobe Rd/US 50 EB Ramps	Signal	B / 15	B / 14	B / 15	D / 42
17. Latrobe Rd/Town Center Blvd	Signal	C / 29	E / 75	C / 30	***F / 128***

TABLE 10: INTERSECTION LOS AND DELAY – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Existing Conditions (LOS / Delay)		Existing Plus Project (LOS / Delay)	
		AM	PM	AM	PM
18. Latrobe Rd/White Rock Rd	Signal	C / 35	D / 44	C / 35	D / 44
19. White Rock Rd/Post St	Signal	C / 24	C / 31	C / 24	C / 31
20. White Rock Rd/Valley View Dr/Vine St	Signal	C / 21	C / 27	C / 21	C / 27
21. El Dorado Hills Blvd / Project Dwy North	SSSC	-	-	B / 10	A / 10
22. El Dorado Hills Blvd / Project Dwy South	SSSC	-	-	A / 9	B / 14
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 20	B / 13
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	A / 10	A / 10

Note: SSSC = side-street stop-control, AWSC = all-way stop control

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM* (TRB, 2000). Intersections 1-12, and 18-25 are analyzed in Synchro 7. Intersections 13-17 are analyzed in SimTraffic.

Source: Fehr & Peers, 2014

TABLE 11: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	430 / 0.26 / C[1]	389 / 0.24 / C[1]	458 / 0.28 / C[1]	428 / 0.26 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,259 / 0.76 / D	1,435 / 0.87 / D	1,391 / 0.84 / D	1,621 / 0.98 / E
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,010 / 0.61 / D	1,935 / 0.59 / D	2,177 / 0.66 / D	2,170 / 0.66 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,108 / 0.64 / D	2,148 / 0.65 / D	2629 / 0.8 / D	2,882 / 0.88 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	2,807 / 0.70 / D	2,976 / 0.74 / D	3,265 / 0.82 / E	3,622 / 0.91 / D
	Saratoga Way to US 50	6 lane divided arterial	2,685 / 0.57 / C[1]	2,806 / 0.60 / D	3,143 / 0.67 / E	3,452 / 0.73 / D
Latrobe Rd	US 50 to Town Center Blvd	6 lane divided arterial	3,339 / 0.71 / D	4,081 / 0.87 / D	3,499 / 0.74 / D	4,306 / 0.91 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	2,253 / 0.48 / C[1]	2,628 / 0.56 / C[1]	2,343 / 0.5 / C[1]	2,755 / 0.58 / C[1]
	White Rock Rd to Golden Foothill Pkwy	4 lane divided arterial	1,813 / 0.55 / C[1]	2,104 / 0.64 / D	1,869 / 0.57 / D	2,182 / 0.66 / D
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	2 lane arterial	1,225 / 0.74 / D	1,246 / 0.76 / D	1,239 / 0.75 / D	1,266 / 0.77 / D

TABLE 11: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	256 / 0.16 / C[1]	295 / 0.18 / C[1]	263 / 0.16 / C[1]	305 / 0.18 / C[1]
White Rock Rd	Scott Rd to Four Seasons Dr	2 lane arterial	603 / 0.37 / C[1]	863 / 0.52 / D	624 / 0.38 / C[1]	892 / 0.54 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	893 / 0.27 / C[1]	1,040 / 0.32 / C[1]	914 / 0.28 / C[1]	1,069 / 0.32 / C[1]
	Latrobe Rd to Vine St	2 lane arterial	831 / 0.5 / C[1]	969 / 0.59 / D	838 / 0.51 / C[1]	979 / 0.59 / D
	Vine St to US 50	2 lane arterial	830 / 0.50 / C[1]	945 / 0.57 / D	830 / 0.5 / C[1]	945 / 0.57 / D
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	651 / 0.39 / C[1]	591 / 0.36 / C[1]	654 / 0.4 / C[1]	596 / 0.36 / C[1]
	Glenwood Wy to Appian Wy	2 lane arterial	555 / 0.34 / C[1]	630 / 0.38 / C[1]	558 / 0.34 / C[1]	635 / 0.38 / C[1]
	Appian Wy to Harvard Wy	2 lane arterial	796 / 0.48 / C[1]	681 / 0.41 / C[1]	799 / 0.48 / C[1]	686 / 0.42 / C[1]
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	1,402 / 0.43 / C[1]	1,084 / 0.33 / C[1]	1,409 / 0.43 / C[1]	1,094 / 0.33 / C[1]
	Serrano Pkwy to US 50	2 lane arterial	1,142 / 0.69 / D	946 / 0.57 / D	1,149 / 0.7 / D	956 / 0.58 / D
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	995 / 0.6 / D	910 / 0.55 / D	1,016 / 0.62 / D	939 / 0.57 / D

TABLE 11: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,476 / 0.45 / C[1]	1,311 / 0.4 / C[1]	1,483 / 0.45 / C[1]	1,321 / 0.4 / C[1]
	Villagio Dr to Bass Lake Rd	2 lane arterial	453 / 0.27 / C[1]	417 / 0.25 / C[1]	455 / 0.28 / C[1]	420 / 0.25 / C[1]
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	222 / 0.13 / C[1]	279 / 0.17 / C[1]	229 / 0.14 / C[1]	289 / 0.18 / C[1]
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	418 / 0.13 / C[1]	384 / 0.12 / C[1]	425 / 0.14 / C[1]	394 / 0.13 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	300 / 0.18 / C[1]	289 / 0.18 / C[1]	307 / 0.19 / C[1]	299 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,139 / 0.36 / C[1]	612 / 0.20 / C[1]	1,170 / 0.37 / C[1]	656 / 0.21 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the HCM 2010 peak hour level of service thresholds
1 LOS at this location is C or better
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.
Source: Fehr & Peers, 2014

5.3.3 FREEWAY FACILITIES

Analysis results, which are presented in Table 12, indicate that all but one study freeway facilities segments will operate acceptably. Traffic generated by the project will result in LOS F conditions at the US 50 westbound on-ramp from El Dorado Hills Boulevard.

TABLE 12: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing + Project Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	31 / D	23 / C	34 / D
	El Dorado Hills Blvd off-ramp	Diverge	14 / B	27 / C	14 / B	28 / C
	Latrobe Rd on-ramp	Merge	14 / B	26 / C	15 / B	26 / C
	El Dorado Hills Blvd on-ramp to Bass lake Rd off-ramp	Basic	10 / A	20 / C	11 / A	20 / C
	Bass Lake Rd off-ramp	Diverge	14 / B	25 / C	15 / B	26 / C
	Bass Lake Rd on-ramp	Merge	16 / B	28 / C	16 / B	28 / C
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Basic	13 / B	25 / C	14 / B	26 / C
	Cambridge Rd off-ramp	Diverge	18 / B	31 / D	18 / B	31 / D
	Cambridge Rd on-ramp	Merge	18 / B	26 / C	19 / B	27 / C
US 50 WB	Cambridge Rd off-ramp	Diverge	27 / C	22 / C	27 / C	23 / C
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Merge	19 / B	12 / B	19 / B	13 / B
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic	23 / C	16 / B	23 / C	16 / B
	Bass Lake Rd off-ramp	Diverge	28 / D	21 / C	28 / D	21 / C
	Bass Lake Rd on-ramp	Merge	31 / D	20 / C	31 / D	21 / C

TABLE 12: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing + Project Density[1] / LOS	
			AM	PM	AM	PM
	Bass Lake Rd on-ramp to El Dorado Hills Blvd off-ramp	Basic	29 / D	17 / B	29 / D	17 / B
	El Dorado Hills Blvd off-ramp	Diverge	33 / D	22 / C	33 / D	22 / C
	El Dorado Hills Blvd on-ramp	Merge	34 / D	24 / C	***- / F***	25 / C

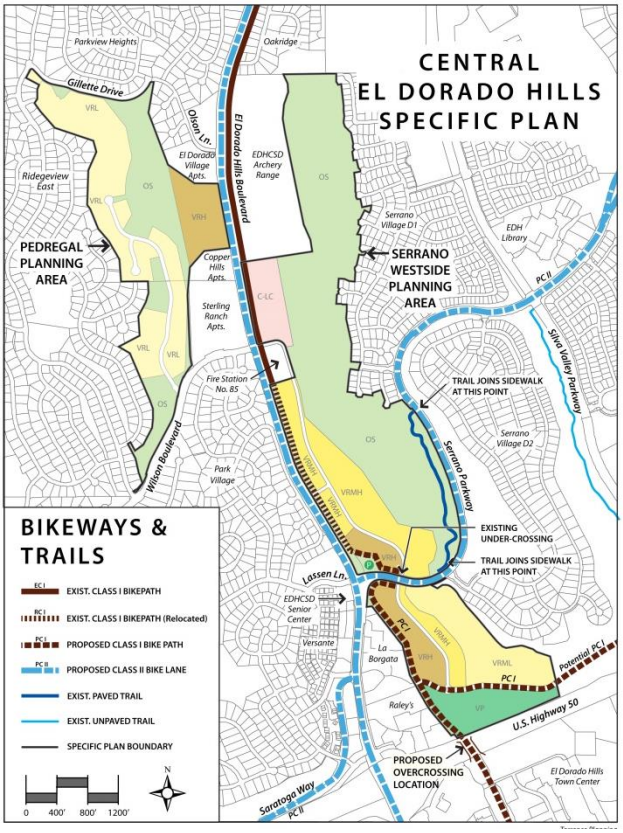
Notes: [1] Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Source: Fehr & Peers, 2014

5.4 PEDESTRIAN AND BICYCLE CIRCULATION

The project proposes the following bicycle and pedestrian facilities, which are shown to the right that will integrate with existing and planned facilities in the study area:



- Relocate the existing Class I (off street) bike path east separated from El Dorado Hills Boulevard to the existing drainage channel, extending from just south of the fire station to US 50 at the Village Park
- Connect the bike path to the exiting undercrossing of Serrano Parkway
- Relocate the planned bicycle/ pedestrian crossing of US 50 to connect the off-street bike path at the planned Village Park to El Dorado Hills Town Center (overcrossing to be constructed by the County)
- Connection between the project site and the Raley's and La Borgata shopping centers
- Connect to a potential Class I bike path between project boundary and Silva Valley Parkway that would complete a connection to the planned Country Club Drive extension

5.5 TRANSIT

The Specific Plan provides for a Park and Ride location in the Serrano Westside portion of the Plan Area, as a joint-use facility between El Dorado Transit and the El Dorado Hills CSD. As many as 50 parking stalls within the Village Park land use designation may be reserved for Park-n-Ride use during weekday business hours when park activities are minimal. The details of the Park-n-Ride facility will be determined at the time the Village Park is developed. In addition, opportunities exist to accommodate bus stop (turnout and shelter) on the east side of El Dorado Hills Boulevard next to the Serrano Westside Planning Area, provided the existing Class I bike path is relocated to the east side of the drainage channel. An addition bus stop (turnout and shelter) may be accommodated on the future extension of Park Drive near

the Village Park. Based on ridership data presented in the El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Transit Operations Plan, Final Report, 41,760 annual commute trips are made by El Dorado Hills residents using El Dorado Transit Commuter Service. Residents of El Dorado Hills account for about 72 percent of boardings at the El Dorado Hills Park-n-Ride lot, which includes riders that park in the lot and riders that use other means to access the service (i.e., walk, bike, and drop-off).

Based on this information, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (2010 Census) in El Dorado Hills. Therefore, the project's 1,000 dwelling units could result in demand of about 2,600 annual commute trips (assuming a household population of 2.6 persons), or about 10 commute trips per weekday.

6.0 CUMULATIVE CONDITIONS

6.1 TRAVEL DEMAND FORECASTS

For this project, the El Dorado County model was utilized to develop forecasts in the study area. However, as is standard practice with large area travel demand models, a thorough model review was completed and the model was refined to ensure that it produced reasonable results in the study area.

The following refinements were implemented in the study area:

- Added roadway network detail
- Updated land use to reflect 2012 conditions
- Refined the traffic analysis zones (TAZs) in order to get more refined loading of trips in the study area
- Updated network attributes in the study area to reflect existing conditions (e.g. verified roadway network speeds, number of lanes on the roadway, and roadway capacities to reflect existing conditions)
- Updated the future year roadway network in the study area to only reflect the SACOG Metropolitan Transportation Plan (MTP) constrained roadway network, which is consistent with the County's Capital Improvement Program (2013 CIP)
- Updated the future land use information to reflect approved and reasonably foreseeable projects in the study area
- Added peak hour assignment functionality

Specific information related to the model's performance is described below:

6.1.1 BASE YEAR MODEL VALIDATION

Before any model can be applied for use in a major specific plan application, it must first satisfy specific validation criteria identified by Caltrans, the Federal Highways Administration (FHWA), and the California Transportation Commission (CTC). These criteria were developed to ensure that a model is developed such that it can accurately forecast existing conditions based on land use and roadway network information, which improves the model's ability to accurately forecast future conditions. The state-of-the-practice for developing defensible forecasts for changes in the roadway network and/or changes in proposed land use is to use a valid base year model.

The first step of any model validation is to ensure that the model generally produces similar results to existing counts. Please note that, since the model is being used to generate AM peak hour and PM peak hour forecasts, the model must be valid at our study facilities for both time periods.

Key metrics for model validation guidelines are described below:

- The volume-to-count ratio is computed by dividing the volume assigned by the model and the actual traffic count for individual roadways (or intersections). The volume-to-count ratio should be less than 10%.
- The deviation is the difference between the model volume and the actual count divided by the actual count. Caltrans provides guidance on the maximum allowable deviation by facility type (e.g. lower-volume roadways can have a higher deviation than higher-volume roadways). 75% of the study facilities should be within the maximum allowable deviation.
- The correlation coefficient estimates the correlation between the actual traffic counts and the estimated traffic volumes from the model. The correlation coefficient should be greater than 0.88.
- The percent Root Mean Square Error (RMSE) is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model. The RMSE should be less than 40%.

The model validation statistics are summarized in Table 13. As shown in Table 13, the model meets or exceeds the identified model validation statistics in the study area. As such, the model is deemed appropriate for use in this assessment.

TABLE 13: TRAVEL DEMAND FORECASTING MODEL SUB AREA VALIDATION

Metric	Model Validation	Maximum Allowable Deviation
AM Peak Hour – 114 Count Locations		
Model/Count Ratio	1.04	Between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	85%	> 75%
Percent Root Mean Square Error	24%	< 40%
Correlation Coefficient	0.98	> 0.88
PM Peak Hour – 114 Count Locations		
Model/Count Ratio	1.06	between 0.90 and 1.10
Percent Within Caltrans Maximum Deviation	86%	> 75%
Percent Root Mean Square Error	21%	< 40%
Correlation Coefficient	0.98	> 0.88

Source: Fehr & Peers, 2014

6.1.2. FUTURE (YEAR 2035) MODELING ASSUMPTIONS

All modifications incorporated into the validated Base Year model were incorporated into the future year (2035) travel demand forecasting model. Additionally, as previously mentioned, the model was also updated to include only roadway improvements consistent with the SACOG's MTP and the County's 2013 CIP.

Table 14 describes capacity-enhancing improvements to roadway facilities in the project study area that are planned to occur prior to year 2035 and are included in the cumulative analysis. This information is primarily based on El Dorado County's 2013 CIP (Section 8.1 – West Slope Road/Bridge Individual Project Summaries) and SACOG's MTP/SCS (Appendix A1: MTP/SCS Project List). All relevant projects with the El Dorado County Department of Transportation as the lead agency are identified in Table 14. The validated El Dorado County model was used to develop AM and PM peak hour forecasts for the following scenarios:

- Cumulative No Project – Corresponds to a 2035 No Project Cumulative horizon that accounts for planned (and funded) roadway improvements, land use growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects in the study area, including the following:

    - Bass Lake Hills Specific Plan
    - Cameron Estates
    - Carson Creek Specific Plan
    - Dixon Ranch
    - Lime Rock Valley Specific Plan
    - Marble Valley Specific Plan
    - Promontory
    - Rancho Dorado
    - Ridgeview
    - San Stino Residential Project
    - Serrano
    - Tilden Park
    - Valley View Specific Plan

    Please note that this scenario assumes the allowable development levels based on General Plan designation in the Pedregal Planning Area (144 multi-family dwelling units and 37 single family dwelling units) and development of Serrano Village D-1, Lots C and D (i.e., 135 single family dwelling units).

- Cumulative Plus Proposed Project – Includes similar assumptions to the Cumulative No Project scenario, but incorporates buildout of the Proposed Project and associated roadway network. As outlined in the NOP, the project includes a density transfer from Serrano Village D-1, Lots C and D

to the Serrano Westside Planning Area. Consequently, Lots C and D of Serrano Village D-1 would not be constructed.

Consistent with state-of-the-practice travel demand forecasting practice, model error was corrected using the methodologies identified in the National Cooperative Highway Research Program Report 255 (Transportation Research Board, 1982) using the "difference method" (e.g. add model predicted growth to existing volumes) for roadway segments and intersections.

Figures 9 and 10 present AM and PM peak hour traffic volume forecasts for cumulative conditions without and with the proposed project, respectively.

TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
Bass Lake Road Frontage Improvements	Perform roadway operational improvements on Bass Lake Road constructed by Silver Springs development.	By 2020
Bass Lake Road Improvements - Phase 1A	Widen and reconstruct Bass Lake Road from US 50 to Hollow Oak Road to 2-lane divided road with 4-foot shoulders and bicycle/pedestrian paths. Includes an 8-foot median, sidewalk, and bike lane from Hollow Oak Road to US 50; median improvements only from Hollow Oak Road to Serrano Parkway; improvements of park-and-ride lot with frontage road improvement to Old Bass Lake Road and Tierra de Dios. (See ELD19225/CIP#GP166 for Phase 1B). CIP#66109	By 2035
Bass Lake Road Widening	Widen Bass Lake Road from US 50 to Silver Springs Pkwy to accommodate 4 lanes of traffic (divided), curb, gutter, and sidewalk. (See ELD19224 for Phase 1A)	By 2035
Country Club Drive – Silva Valley Parkway to "Old Lincoln Highway"	Construct new 2-lane road north of existing Tong Rd from Silva Valley Pkwy to the "Old Lincoln Hwy". This project is the first half of the ultimate project to connect Silva Valley Pkwy to Bass Lake Rd and provide parallel capacity to US 50. CIP#71335	By 2020
Country Club Drive Extension – Bass Lake Road to Silver Dove Road	Construct 2-lane extension of Country Club Drive from Bass Lake Road to Silver Dove Road. Roadway includes 6-foot paved shoulders and new intersection at Bass Lake Road. (Curb, gutter, and sidewalk may be included.) CIP#GP124	By 2035
Country Club Drive Extension - Silver Dove to west end Bass Lake Hills	Construct new 2-lane extension of Country Club Drive from Silver Dove Road to the west end of Bass Lake Hills Specific Plan boundary for future connection to Silva Valley Parkway. Project includes 6-foot paved shoulders. (Curb, gutter, and sidewalk may be included). CIP#GP125	By 2035

TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
El Dorado Hills Boulevard / Francisco Drive – Realignment	Realign existing El Dorado Hills Boulevard / Francisco Drive / Brittany Way intersection and approach roadways to result in a new 4-way intersection with extensions and signal installation. Northern portion of El Dorado Hills Boulevard (at this intersection) will become new minor traffic way, and current Francisco Drive between El Dorado Hills Boulevard and Green Valley Road will become new major traffic way. CIP#72332	By 2035
El Dorado Hills Boulevard Widening - Lassen Lane to Park Drive	Widen El Dorado Hills Boulevard from Lassen Lane to Park Drive from 4 to 5 lanes (divided) by adding a third southbound lane. Project includes curb, gutter, and sidewalk. CIP#GP183	By 2035
Green Valley Rd Widening - Francisco to Salmon Falls	Widen Green Valley Rd from Francisco Dr to Salmon Falls Rd to 4-lanes divided with curb, gutter, and sidewalk. CIP#GP178	By 2035
Green Valley Road	Widen: 4-lanes from Salmon Falls Rd. east to Deer Valley Rd.	By 2035
Green Valley Road Widening - County Line to Francisco Drive	Construct a second eastbound through lane from the commercial area near Sophia Parkway intersection to Francisco Drive with traffic signal installation at the Green Valley Road/Browns Ravine/Miller Road intersection. Also add a second westbound lane from Francisco Drive to the commercial area near the Sophia Parkway intersection.	Completed
Latrobe Road Widening – Golden Foothill to Investment	Widen Latrobe Rd from Golden Foothill Pkwy (south end) to Investment Blvd from 2-lanes undivided to 4-lanes divided with curb, gutter, and Class II bike lanes; modify signal at Investment Blvd. CIP#72350	By 2035
Latrobe Road	Widen: 6 lanes (divided with 4-foot shoulders) from White Rock Rd. to Carson Creek (Suncast Ln.).	By 2035
Latrobe Rd / White Rock Rd Connector (New Road)	New connector road from the El Dorado Hills Business Park to White Rock Rd west of Four Seasons/Stonebriar intersection; Phase 1 to perform route alignment study and prepare PSR; Phase 2 will include environmental, design and construction; may require coordination with Sacramento County, City of Folsom, Southeast Connector JPA and area developers. CIP#66116	By 2035
Saratoga Wy Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd. CIP71324 (Phase 2 CIP#GP147 - See ELD19234 in MTP.)	By 2035

TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
Saratoga Wy. (Phase 2)	Widen: 4 lanes from the Sacramento/El Dorado County line to El Dorado Hills Blvd. Includes: full curb, gutter, and sidewalk. (See ELD16010 for Phase 1)	By 2035
Silva Valley Pkwy Widening from Entrada	Widen Silva Valley Pkwy (2 to 4 lanes) from Entrada Dr to 1000 feet south of Oak Meadow Elem School; includes sidewalk, bike lanes and left-turn storage for school entrance.CIP#72370	By 2020
Silva Valley Pkwy / Golden Eagle Ln - Signalization	Signalize intersection at Silva Valley Pkwy and Golden Eagle Ln (Silva Valley Elementary School). CIP#GP182	By 2035
Silver Springs Parkway to Bass Lake Road	It is anticipated that Silver Springs Parkway will be built as a two-lane standard divided roadway with shoulders. It is planned to realign Bass Lake Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. There is a portion of the new alignment that falls to the south of the Silver Springs development that must also be built to connect the new road to the existing Bass Lake Road to the south.	By 2020
Silver Springs Parkway to Green Valley Road	Construct new Silver Springs Parkway through the Silver Springs Development from Bass Lake Road to Green Valley Road and install signal at Silver Springs Parkway and Green Valley Road intersection. Connect to realigned Bass Lake Road north of Bass Lake.	By 2020
Sophia Parkway	Widen: 4 lanes (divided) from Alexandria Rd. to Empire Rancho Rd. at the County Line.	By 2035
US 50 / Bass Lake Road (Phase 2)	Add Auxiliary Lane: WB on US 50 between Bass Lake Rd. and Cambridge Rd. interchanges. Includes: additional ramp, road widening (Phase 2) (See ELD19182 for Phase 1).	By 2035
US 50 / Cambridge Road (Phase 2)	Add Auxiliary Lane: on US 50 EB between Cambridge Rd. and Cameron Park Dr. interchanges and WB between Cameron Park Dr. and Bass Lake Rd. interchanges. Includes bridge widening to add two lanes and ramp widening (Phase 2) (See Eld19181 for Phase 1).	By 2035
US 50 Aux Lane WB - El Dorado Hills to Empire Ranch	Widen US 50 and add auxiliary lane to westbound US 50 connecting the El Dorado Hills Blvd/Latrobe Rd Interchange to the future Empire Ranch Rd Interchange located in the City of Folsom; (City of Folsom will construct the EB aux lane.) Timing of construction to be concurrent with or after the El Dorado Hills Blvd Interchange (ELD15630/CIP71323) or Empire Ranch Interchange. CEQA/NEPA cleared through the Empire Ranch Interchange environmental document. CIP#53115	By 2035

TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
US 50 50 Auxiliary Lane Eastbound – Cambridge to Ponderosa	Construct eastbound auxiliary lane on US 50 between Cambridge Rd and Ponderosa Rd interchanges. CIP GP150	By 2035
US 50 Bus / Carpool Lanes	Bus/Carpool Lanes – Phase 3: Us 50-Ponderosa Road to Greenstone Road.	By 2035
US 50 HOV Lanes – Phase 1	Phase 1 (El Dorado Hills to Bass Lake Grade) - Add HOV lanes in median of US 50 between El Dorado Hills Blvd/Latrobe Rd and Bass Lake Rd interchanges (PM 0.5 to PM 4.2 eastbound and PM 0.9 to PM 2.9 westbound); includes extension of EB truck climbing lane from Latrobe Rd to base of Bass Lake Grade, median widenings of Clarksville Rd and Bass Lake Rd undercrossings, and replacement of EDH Blvd undercrossings including EB off-ramp. (See ELD19287 for Phase 2A, ELD19290 for Phase 2B and ELD19289 for future unfunded Phase 3 in the MTP). Emission Benefits in kg/day: ROG 27, NOx: 28, PM10 15, CO 303. CIP#53110	Completed
US 50 HOV Lanes – Phase 2A	Phase 2A (Bass Lake Rd to Cameron Park Dr) - Add HOV lanes in median of US 50 between Bass Lake Rd and Cameron Park Dr Interchanges. PA&ED completed by Caltrans. Caltrans advancing project design through Cooperative Agreement with the County. Intergovernmental Agreement between County and Shingle Springs Band of Miwok Indians for funding (coded as Local Agency Funds). (Emission Benefits in kg/day: 19 ROG, 20 NOx, 12 PM10.) (See ELD19211/CIP53113 for Phase 1, ELD19290/CIP53122 for Phase 2B and ELD19289/CIP#53116 for future unfunded Phase 3 in the MTP). CIP#53113	Completed
US 50 HOV Lanes – Phase 2B	Phase 2B (Cameron Park Dr to Ponderosa Rd.) - Add HOV lanes in median of US 50 between Cameron Park Dr. and Ponderosa Rd. interchanges. PA&ED completed by Caltrans. Caltrans advancing project design through Cooperative Agreement with the County. Intergovernmental Agreement between County and Shingle Springs Band of Miwok Indians for funding (coded as Local Agency Funds). (See ELD19211/CIP53113 for Phase 1, ELD19290/CIP53122 for Phase 2B and ELD19289/CIP53116 for future unfunded Phase 3 in the MTP). CIP53113	By 2035
US 50 Mainline Widening at El Dorado Hills	Construct new westbound aux lane within median of US 50 between Silva Valley Pkwy and Empire Ranch Rd future new interchanges; requires coordination with Silva Valley I/C (ELD15610/CIP#71328), El Dorado Hills I/C (ELD15630/CIP71323) and Empire Ranch I/C (City of Folsom project). CIP#53120	By 2035

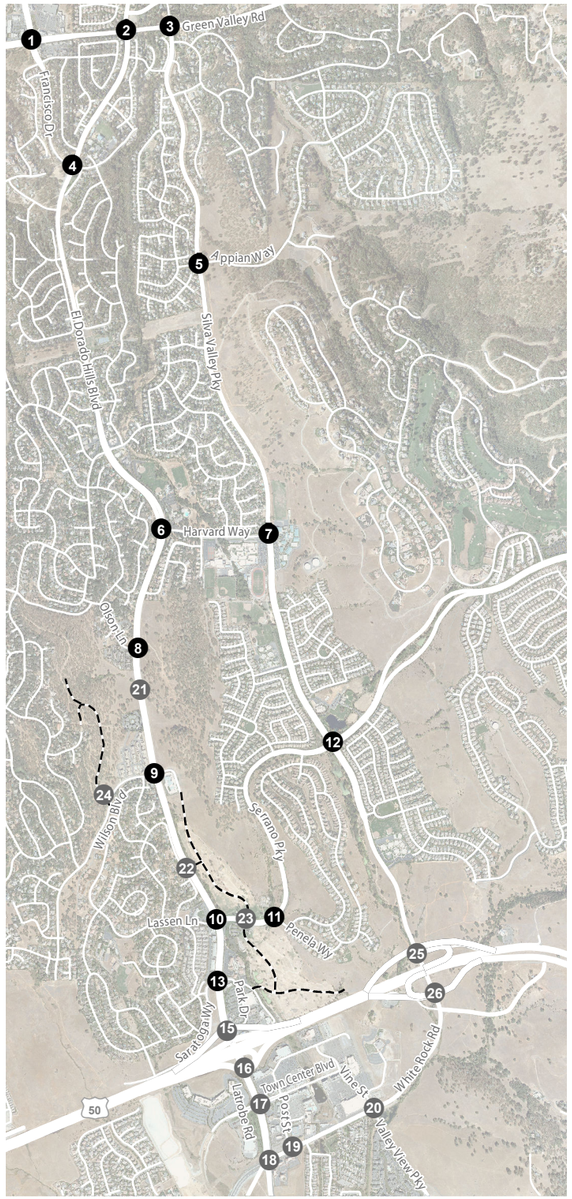
TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
US 50 / Bass Lake Rd Interchange - Phase 1	Interchange Improvements: this phase includes detailed study to determine complete improvements needed; Phase 1 may include ramp widening, road widening, signals, and WB auxiliary lane between Bass Lake and Silva Valley interchanges; Phase 1 assumes bridge replacement. (See ELD19217 for Phase 2). CIP#71330	By 2035
US 50 / Cambridge Rd. Interchange – Phase 1	Interchange Improvements: this phase includes widening existing EB and WB on-/off-ramps; addition of new WB on-ramp; reconstruction of local intersections; and installation of traffic signals at EB and WB ramp terminal intersections; preliminary engineering for Phase 2 to be performed under Phase 1. (See ELD19218 for Phase 2) CIP#71332	By 2035
US 50 / Cameron Park Dr. Interchange Improvements	Interchange Improvements: this project includes detailed study to identify capacity improvement alternatives and selection of preferred alternative; assumes reconstruction of US 50 bridges to widen Cameron Park Dr. to 8 lanes under the overcrossing; road and ramp widening. CIP72361	By 2035
US 50 / El Dorado Hills Blvd Interchange Eastbound Ramps	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2020
US 50 / El Dorado Rd Interchange - Phase 1	Interchange Improvements: includes signalization and widening of existing ramps. (See ELD19272 for Phase 2). CIP#71347	By 2035
US 50 / El Dorado Rd Interchange - Phase 2	Interchange Improvements: this phase involves construction of left and right turn lanes and additional through traffic lanes in all approaches to the interchange. (See ELD19178/CIP#71347 for Phase 1). CIP#71376	By 2035
US 50 / El Dorado Hills Blvd Interchange – Final Phase	Interchange Improvements: this final phase constructs new WB off-ramp undercrossing, improves WB on-/off-ramps and widens El Dorado Hills Blvd. (Coordinates with ELD19215/CIP#53120, ELD19273/CIP#53115, ELD19173/CIP71340, and ELD19345). CIP#71323	Ongoing
US 50 / El Dorado Hills Blvd Pedestrian Overcrossing	Construct ped/bike overcrossing over US 50 just east of El Dorado Hills Blvd. Interchange; includes a Class 3 mixed use path; construction and ROW acquisition for 10-ft wide sidewalk and adjacent retaining walls, barriers, railings, and landscape replacement included with CIP71323 (see ELD15630). CIP71340.	By 2035

TABLE 14: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
US 50 / Silva Valley Pkwy Interchange - Phase 1	New Interchange: Phase 1 includes US 50 on-/off-ramps, overcrossing, and US 50 aux lanes. (See ELD19291/CIP#71345 for Phase 2). CIP#71328	Ongoing
US 50 / Silva Valley Pkwy Interchange - Phase 2 (Connector Segment)	Final phase of new interchange: construction of eastbound diagonal and westbound loop on-ramps to US 50. (See ELD15610/CIP#71328 for Phases 1). CIP#71345	By 2035
White Rock Rd Widening - Manchester to County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr west to Sacramento County Line. CIP#GP137	By 2035
White Rock Rd Widening – Monte Verde to US 50 / Silva Valley (Connector Segment)	Widen White Rock Rd from 2-lanes undivided to 4 lanes divided, from Monte Verde Dr east to new future US 50/Silva Valley Pkwy Interchange (ELD15610/CIP71328); includes curb, gutter, sidewalk, and Class II bike lanes. ROW costs include acquisition for ultimate 6-lane facility (see CIP#GP152/ELD19235 in MTP). CIP#72374	By 2035
White Rock Rd Widening – Latrobe to Monte Verde (Connector Segment)	Widen White Rock Rd (2 lanes undivided to 4 lanes divided) from Post St to the culvert east of Monte Verde Dr; install new traffic signal at White Rock Rd/Windfield Wy; includes curb, gutter, sidewalk, and Class II bike lanes. CIP#72372	By 2020
White Rock Rd (Connector Segment)	Widen: 6 lanes (divided) from Latrobe Rd. to U.S. 50 / Silva Valley Pkwy. Interchange.	By 2035
White Rock Rd / Post St - Signalization (Connector Segment)	Signalize intersection at White Rock Rd and Post St in El Dorado Hills. CIP#73310	Completed

Source: El Dorado County's CIP (Section 8.1 – West Slope Road/Bridge Individual Project Summaries) and SACOG's MTP/SCS (Appendix A1: MTP/SCS Project List).



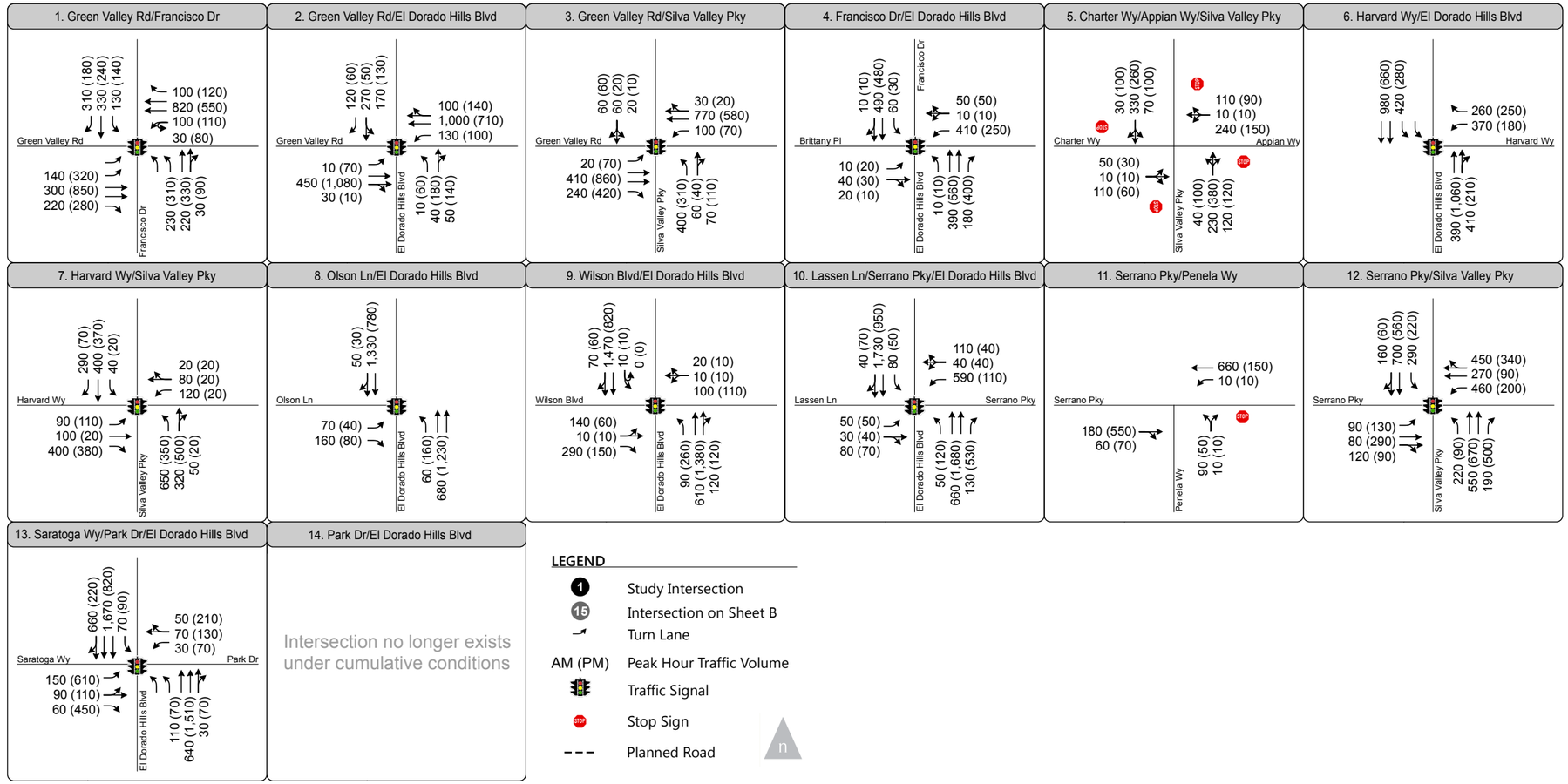


Figure 9A.

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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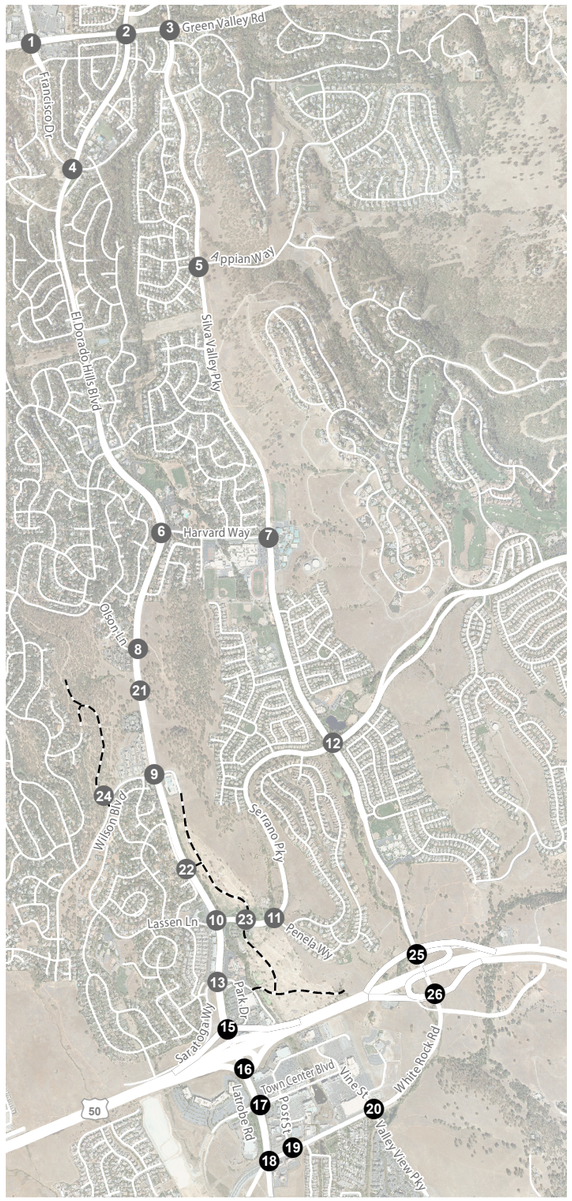

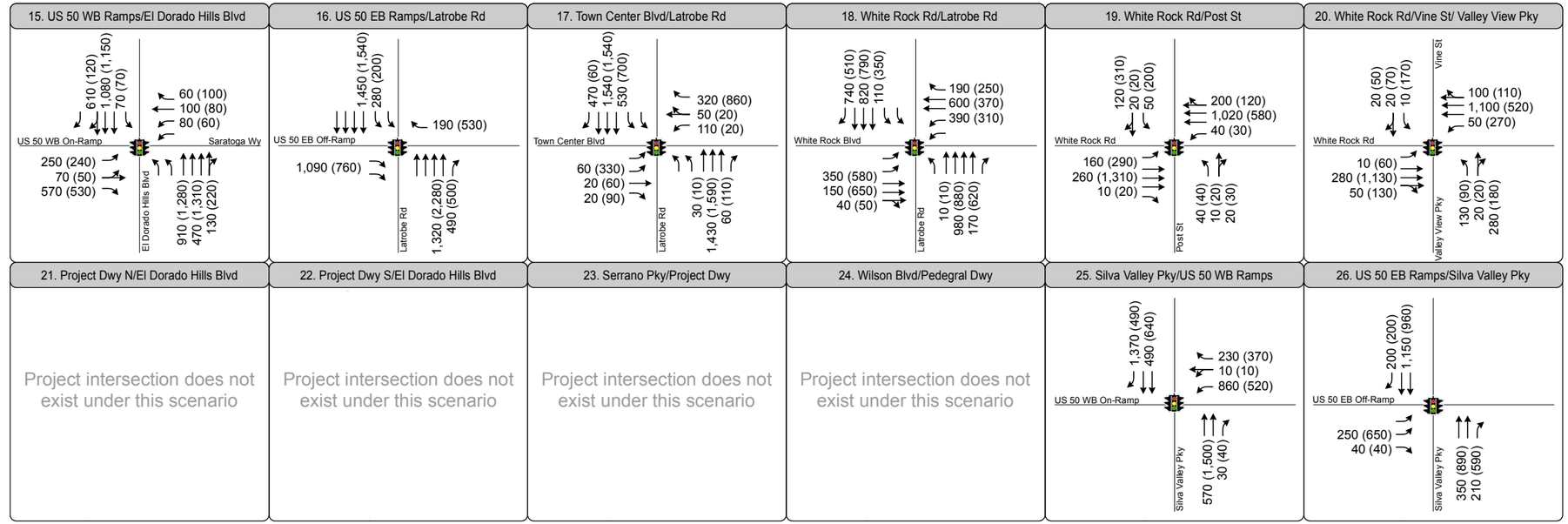

LEGEND

- 15 Study Intersection
- 1 Intersection on Sheet A or Future Intersection
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road

Figure 9B.

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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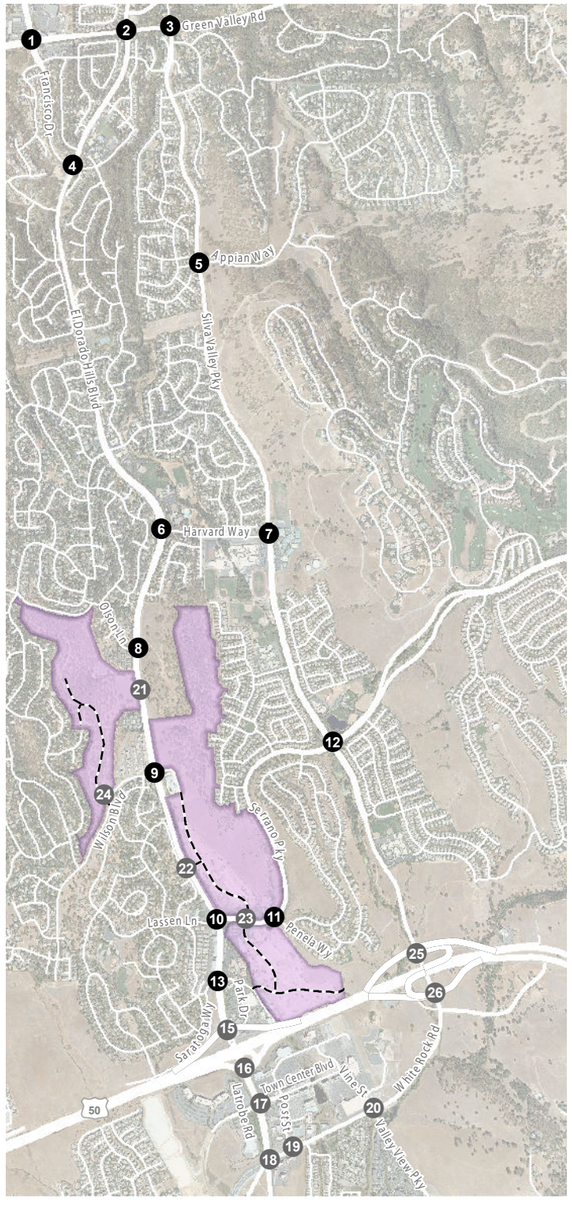

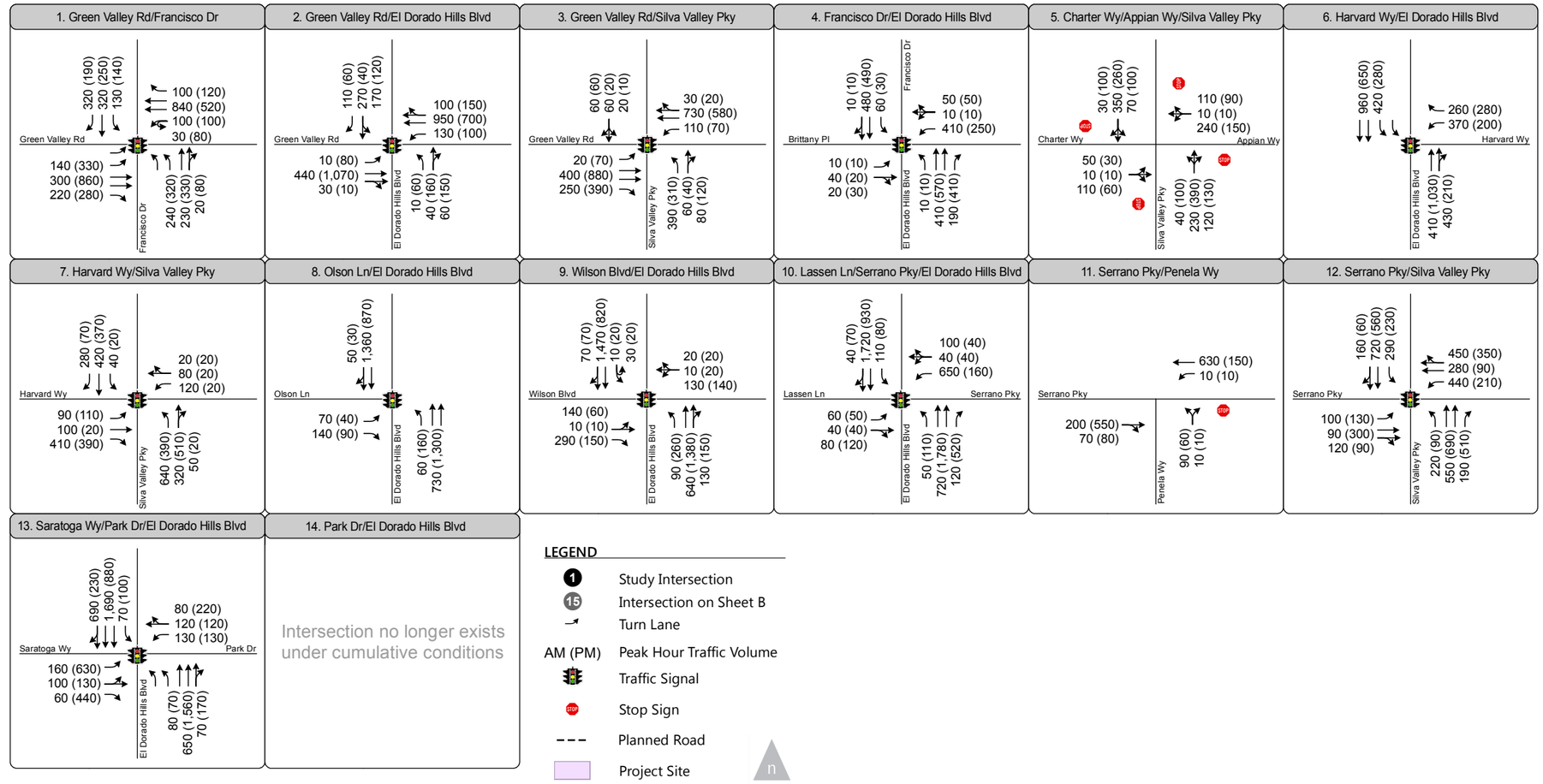

Figure 10A.

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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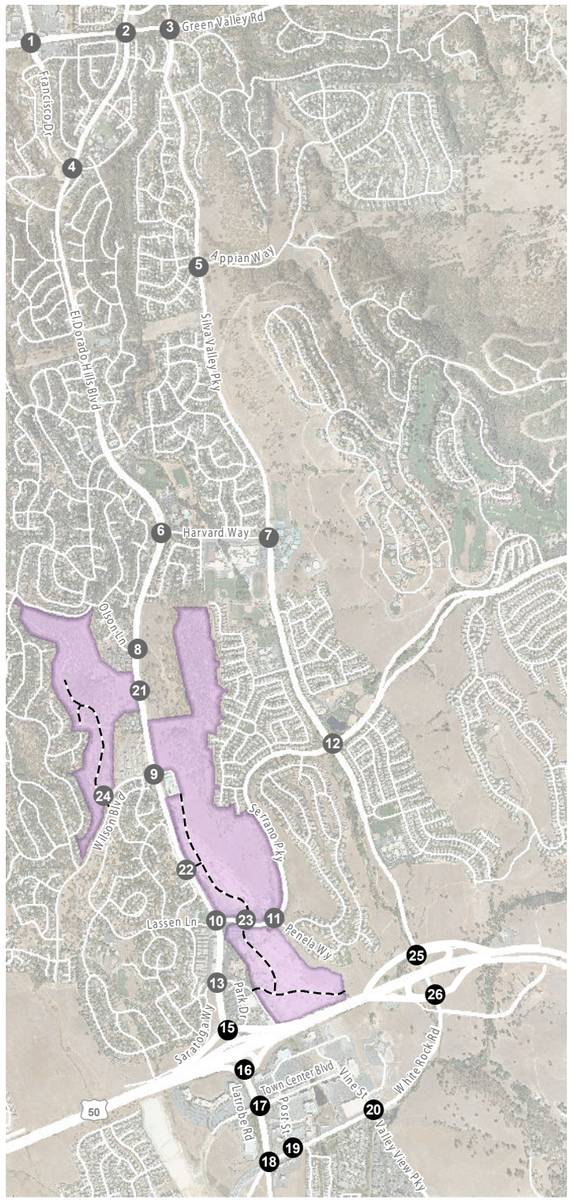

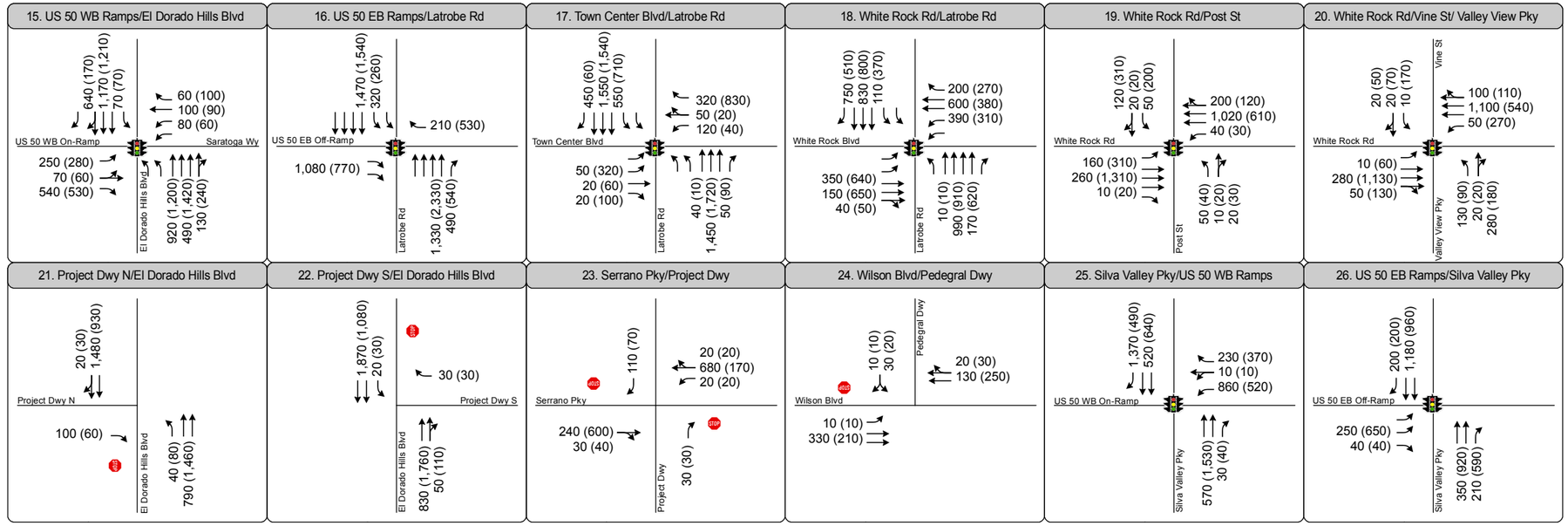

LEGEND

- 15 Study Intersection
- 1 Intersection on Sheet A or Future Intersection
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 10B.

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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6.2 PEAK HOUR VEHICLE LEVEL OF SERVICE

6.2.1 INTERSECTIONS

Analysis results, which are presented in Table 15, indicate that most study intersections will operate acceptably under cumulative conditions, except for the following:

- Silva Valley Parkway / Appian Way (Intersection 5) – This intersection will operate unacceptably at LOS F without the project during both the AM and PM peak hours. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours.
- Silva Valley Parkway / Harvard Way (Intersection 7) – This intersection will operate unacceptably at LOS F without the project during the AM peak hour. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM peak hour.
- El Dorado Hills Boulevard / Park Drive / Saratoga Way (Intersection 13) – This intersection will operate unacceptably at LOS F without the project during the PM peak hour. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the PM peak hours.
- Latrobe Road / Town Center Boulevard (Intersection 17) – This intersection will operate unacceptably at LOS F without the project during the AM and PM peak hours. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours.

TABLE 15: INTERSECTION LOS AND DELAY – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Control	Cumulative Conditions (LOS / Delay)		Cumulative Plus Project (LOS / Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 41	D / 47	D / 41	D / 46
2. Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Signal	D / 46	D / 47	D / 45	D / 44
3. Green Valley Rd / Silva Valley Pkwy	Signal	D / 39	C / 27	D / 37	C / 27
4. Francisco Dr / El Dorado Hills Blvd	Signal	C / 27	B / 19	C / 27	B / 19
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / >180**	**F / 105**	***F / >180***	***F / 113***
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 31	C / 22	C / 32	C / 23
7. Silva Valley Pkwy / Harvard Wy	Signal	**F / 93**	C / 33	***F / 97***	C / 35
8. El Dorado Hills Blvd/Olson Ln	Signal	B / 13	A / 10	B / 13	A / 10
9. El Dorado Hills Blvd/Wilson Blvd	Signal	D / 52	D / 39	E / 63	E / 62
10. El Dorado Hills Blvd/Serrano Pkwy/Lassen Ln	Signal	E / 58	C / 24	E / 64	C / 31
11. Serrano Pkwy/Penela Wy	SSSC	E / 38	C / 21	E / 37	C / 22
12. Serrano Pkwy/Silva Valley Pkwy	Signal	E / 72	E / 56	E / 73	E / 60
13. El Dorado Hills Blvd/Park Dr/Saratoga Wy	Signal	C / 34	**F / 112**	D / 45	***F / 115***
14. El Dorado Hills Blvd/Saratoga Wy	Signal	Does Not Exist			
15. El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Wy	Signal	D / 46	D / 43	D / 47	D / 43
16. Latrobe Rd/US 50 EB Ramps	Signal	C / 24	C / 34	C / 22	C / 33
17. Latrobe Rd/Town Center Blvd	Signal	E / 76	**F / 173**	***F / 86***	***F / 166***

TABLE 15: INTERSECTION LOS AND DELAY – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Control	Cumulative Conditions (LOS / Delay)		Cumulative Plus Project (LOS / Delay)	
		AM	PM	AM	PM
18. Latrobe Rd/White Rock Rd	Signal	D / 42	E / 69	D / 42	E / 78
19. White Rock Rd/Post St	Signal	C / 29	C / 34	C / 30	C / 34
20. White Rock Rd/Valley View Dr/Vine St	Signal	B / 19	D / 37	B / 19	D / 37
21. El Dorado Hills Blvd / Project Dwy North	SSSC	-	-	B / 11	A / 9
22. El Dorado Hills Blvd / Project Dwy South	SSSC	-	-	A / 9	B / 13
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C) / 17	B / 14
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	B / 11	B / 11
25. Silva Valley Pkwy/US 50 WB Ramps	Signal	D / 48	C / 21	D / 52	C / 21
26. Silva Valley Pkwy/US 50 EB Ramps	Signal	A / 9	B / 10	A / 9	A / 10

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

Bold and underlined text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM* (TRB, 2000). Intersections 1-12, and 18-24 are analyzed in Synchro 7. Intersections 13-17 and 25-26 are analyzed in SimTraffic.

Source: Fehr & Peers, 2014

6.2.2 ROADWAY SEGMENTS

Analysis results, which are presented in Table 16, indicate that all but one study roadway segments will operate acceptably under cumulative conditions, due primarily to the capacity increasing roadway project included in the County's 2013 CIP, which are documented in Table 14. The two-lane segment of El Dorado Hills Boulevard would operate at LOS F during the PM peak hour under cumulative conditions without the proposed project. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the PM peak hour.

TABLE 16: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Cumulative Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	440 / 0.27 / C[1]	440 / 0.27 / C[1]	440 / 0.27 / C[1]	420 / 0.25 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,450 / 0.88 / D	**1,680 / 1.02 / F**	1,450 / 0.88 / D	***1,670 / 1.01 / F***
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,270 / 0.69 / D	2,300 / 0.70 / D	2,280 / 0.69 / D	2,280 / 0.69 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,640 / 0.80 / D	2,800 / 0.85 / D	2,720 / 0.83 / D	2,850 / 0.87 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	3,210 / 0.78 / D	3,400 / 0.83 / D	3,330 / 0.81 / D	3,580 / 0.87 / D
	Saratoga Way to US 50	7 lane divided arterial	2,700 / 0.50 / C[1]	2,930 / 0.54 / C[1]	2,700 / 0.50 / C[1]	3,200 / 0.59 / C[1]
Latrobe Rd	US 50 to Town Center Blvd	7 lane arterial	4,290 / 0.79 / D	5,040 / 0.93 / D	4,330 / 0.80 / D	5,150 / 0.95 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	3,130 / 0.66 / D	3,310 / 0.70 / D	3,180 / 0.68 / D	3,480 / 0.74 / D
	White Rock Rd to Golden Foothill Pkwy	6 lane divided arterial	2,300 / 0.49 / C[1]	2,680 / 0.57 / C[1]	2,310 / 0.49 / C[1]	2,660 / 0.56 / C[1]
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	4 lane arterial undivided	1,600 / 0.51 / C[1]	1,590 / 0.51 / C[1]	1,600 / 0.51 / C[1]	1,590 / 0.51 / C[1]
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	590 / 0.36 / C[1]	600 / 0.36 / C[1]	590 / 0.36 / C[1]	600 / 0.36 / C[1]

TABLE 16: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Cumulative Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
White Rock Rd	Scott Rd to Four Seasons Dr	4 lane divided arterial	1,530 / 0.47 / C[1]	2,030 / 0.62 / D	1,550 / 0.47 / C[1]	2,180 / 0.66 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	1,610 / 0.49 / C[1]	2,000 / 0.61 / D	1,630 / 0.5 / C[1]	2,130 / 0.65 / D
	Latrobe Rd to Vine St	6 lane divided arterial	1,430 / 0.30 / C[1]	1,840 / 0.39 / C[1]	1,430 / 0.3 / C[1]	1,830 / 0.39 / C[1]
	Vine St to US 50	6 lane divided arterial	1,760 / 0.37 / C[1]	2,350 / 0.50 / C[1]	1,750 / 0.37 / C[1]	2,340 / 0.5 / C[1]
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	920 / 0.56 / D	930 / 0.56 / D	920 / 0.56 / D	910 / 0.55 / D
	Glenwood Wy to Appian Wy	2 lane arterial	770 / 0.47 / C[1]	930 / 0.56 / D	770 / 0.47 / C[1]	900 / 0.55 / D
	Appian Wy to Harvard Wy	2 lane arterial	1,100 / 0.67 / D	1,030 / 0.62 / D	1,110 / 0.67 / D	1,030 / 0.62 / D
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	2,150 / 0.65 / D	1,880 / 0.57 / D	2,170 / 0.66 / D	1,920 / 0.58 / D
	Serrano Pkwy to US 50	4 lane divided arterial	2,500 / 0.76 / D	2,500 / 0.76 / D	2,500 / 0.76 / D	2,520 / 0.77 / D
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	1,010 / 0.61 / D	920 / 0.56 / D	1,010 / 0.61 / D	920 / 0.56 / D
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,680 / 0.51 / C[1]	1,590 / 0.48 / C[1]	1,670 / 0.51 / C[1]	1,630 / 0.5 / C[1]
	Villagio Dr to Bass Lake Rd	2 lane arterial	880 / 0.53 / D	960 / 0.58 / D	870 / 0.53 / D	980 / 0.59 / D
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	1,100 / 0.67 / D	1,530 / 0.93 / D	1,150 / 0.70 / D	1,560 / 0.95 / E

TABLE 16: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

Roadway	Segment	Facility Type	Cumulative Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative + Project Volume / Volume – Capacity (V/C) Ratio / LOS	
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	550 / 0.18 / C[1]	510 / 0.16 / C[1]	550 / 0.18 / C[1]	520 / 0.17 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	310 / 0.19 / C[1]	300 / 0.18 / C[1]	310 / 0.19 / C[1]	300 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,410 / 0.45 / C[1]	880 / 0.28 / C[1]	1,430 / 0.46 / C[1]	930 / 0.3 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the HCM 2010 peak hour level of service thresholds
[1] LOS at this location is C or better
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.
Source: Fehr & Peers, 2014

6.2.3 FREEWAY FACILITIES

Analysis results, which are presented in Table 16, indicate that all study freeway facilities will operate acceptably at LOS E or better under cumulative conditions without the proposed project. The capacity increasing projects from the County's 2013 CIP, which are documented in Table 14, include many projects that will add capacity of US 50, increase east/west parallel capacity, and add new interchange connections to US 50 that will provide alternatives to the existing US 50/El Dorado Hills Boulevard interchange. The following lists some of the more significant transportation improvements in the US 50 corridor:

Interchange Projects

- US 50/El Dorado Hills Boulevard Interchange Improvements (final improvement phases)
- US 50/Silva Valley Parkway Interchange (new connection to US 50)
- US 50/Empire Ranch Road Interchange (new connection to US 50)
- US 50/Bass Lake Road Interchange Upgrade
- US 50/Cambridge Road Interchange Upgrade

Mainline Projects

- Westbound US 50 interchange-to-interchange auxiliary lane (Bass Lake Road to Silva Valley Parkway)
- Westbound US 50 auxiliary lane (Silva Valley Parkway to Empire Ranch Road)
- Westbound US 50 interchange-to-interchange auxiliary lane (Silva Valley Parkway to El Dorado Hills Boulevard)
- Eastbound US 50 interchange-to-interchange auxiliary lane (El Dorado Hills Boulevard to Silva Valley Parkway)
- Westbound US 50 interchange-to-interchange auxiliary lane (Cambridge Drive to Bass Lake Road)
- Eastbound US 50 interchange-to-interchange auxiliary lane (Bass Lake Road to Cambridge Drive)

Arterial Roadway Projects

- Country Club Drive Extension from Bass Lake Road to Silva Valley Parkway
- Saratoga Way Extension from El Dorado Hills Boulevard to Iron Point Road
- Extension of Empire Ranch Road from US 50 to White Rock Road
- Latrobe Road Connector (new roadway between Latrobe Road and White Rock Road)

Figure 11 compares existing conditions on US 50 to US 50 with the interchange and mainline projects listed above. Figure 12 shows peak hour US 50 mainline and ramp volumes under cumulative conditions.

The westbound weaving sections between El Dorado Hills Boulevard and Empire Ranch Road will operate at LOS F during the AM peak hour with the proposed project, based on the HCM weave analysis method. About 11 percent of project trips will have an origin/destination in Rancho Cordova or other areas to the west.

However, analysis of the weaving section based on the Leisch Method (preferred by Caltrans District 3) indicates that these weave sections would operate at LOS D during the same period.

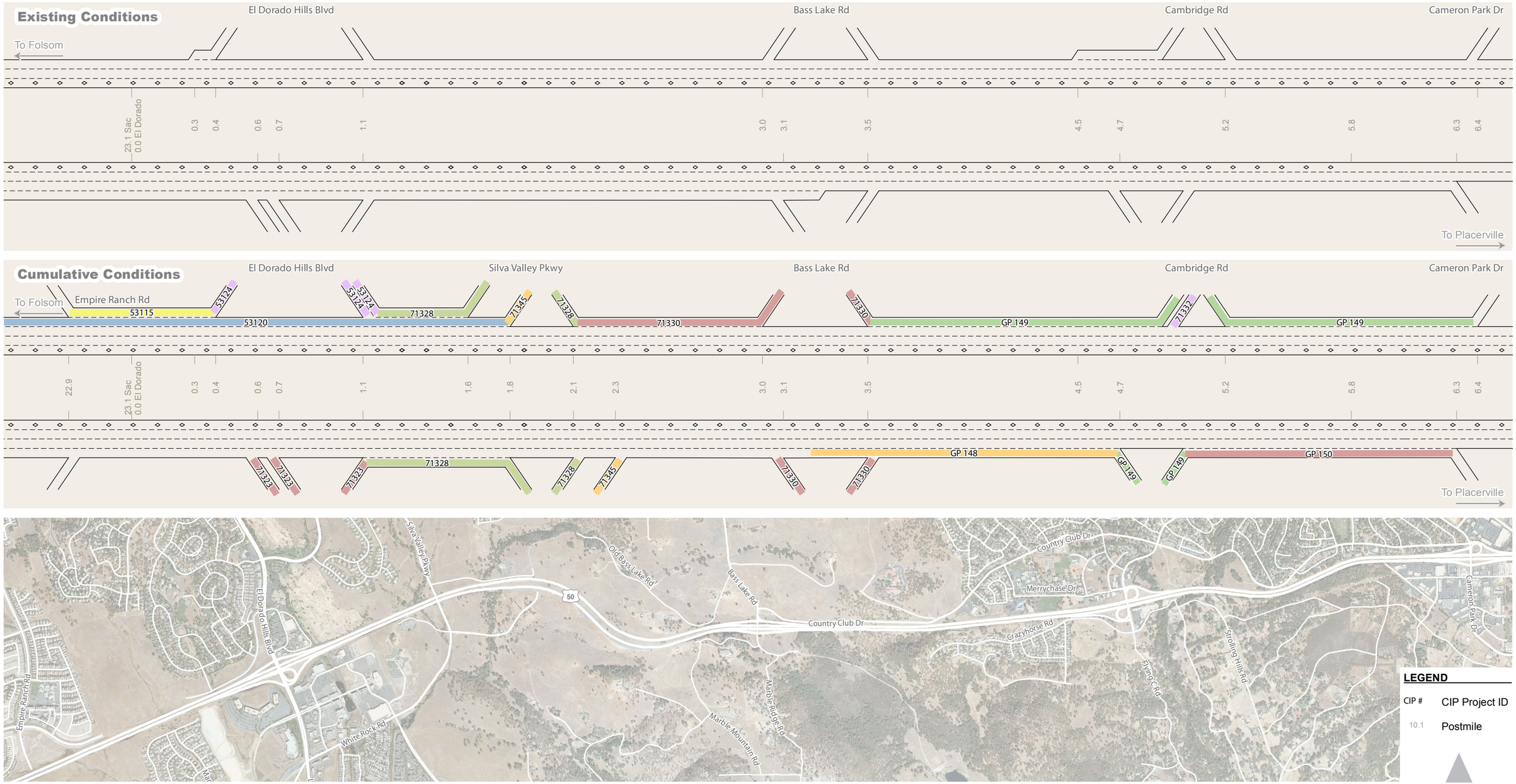

Figure 11.

Programmed Freeway Improvements

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Figure 12.

US 50 Freeway Mainline and Ramp Peak Hour Traffic Volumes - Cumulative Conditions

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TABLE 17: PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS (FREEWAY)

Freeway	Segment	Facility Type	Cumulative Density[1] / LOS		Cumulative + Project Density[1] / LOS		Notes
			AM	PM	AM	PM	
US 50 EB	Latrobe Rd off-ramp	Diverge	28 / C	35 / D	28 / C	34 / D	
	El Dorado Hills Blvd off-ramp	Diverge	20 / C	31 / D	21 / C	31 / D	
	El Dorado Hills Blvd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)	22 / C	38 / E	23 / C	38 / E	
		Weave (Leisch)	- / B	- / D	- / B	- / D	
	Silva Valley Pkwy loop on-ramp	Merge	18 / B	25 / C	18 / B	26 / C	
	Silva Valley Pkwy slip on-ramp	Merge	17 / B	25 / C	17 / B	26 / C	
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	20 / C	29 / D	21 / C	30 / D	
	Bass Lake Rd off-ramp	Diverge	25 / C	34 / D	25 / C	34 / D	
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Weave (HCM)	30 / D		31 / D		
		Weave (Leisch)	Outside the realm of weaving				
		Basic	B / 16	21 / C	B / 16	23 / C	2

TABLE 17: PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS (FREEWAY)

Freeway	Segment	Facility Type	Cumulative Density[1] / LOS		Cumulative + Project Density[1] / LOS		Notes
			AM	PM	AM	PM	
	Cambridge Rd on-ramp to Cameron Park Dr off-ramp	Basic	21 / C	25 / C	21 / C	25 / C	2
	Cameron Park Dr on-ramp to Cambridge Rd off-ramp	Weave (HCM)	42 / E		42 / E		
		Basic	21 / C	24 / C	21 / C	25 / C	2
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic	19 / C	20 / C	19 / C	20 / C	2
	Bass Lake Rd on-ramp to Silva Valley Pkwy off-ramp	Basic	25 / C	23 / C	26 / C	23 / C	2
US 50 WB	Silva Valley Pkwy Loop on-ramp	Merge	15 / B	14 / B	15 / B	14 / B	
	Silva Valley Slip on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	39 / E	27 / C	39 / E	27 / C	
		Weave (Leisch)	- / C		- / C		
		Basic		15 / B		16 / B	2
	El Dorado Hills on-ramp to Empire Ranch off-ramp	Weave (HCM)	44 / E	35 / D	***- / F***	34 / D	

TABLE 17: PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS (FREEWAY)

Freeway	Segment	Facility Type	Cumulative Density[1] / LOS		Cumulative + Project Density[1] / LOS		Notes
			AM	PM	AM	PM	
		Weave (Leisch)	- / D	- / C	- / D	- / C	

Notes: 1 Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations or weave segments. Weave segment's operations are based on the HCM 2010 and Leisch Method. If the weave segment is outside the realm of weaving, it is analyzed as a basic segment.
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.
2 Facility analyzed as basic segment due to a combination of weaving volume and segment length, which places the segment outside of the realm of weaving analysis.
Source: Fehr & Peers, 2014

6.3 PEDESTRIAN AND BICYCLE CIRCULATION

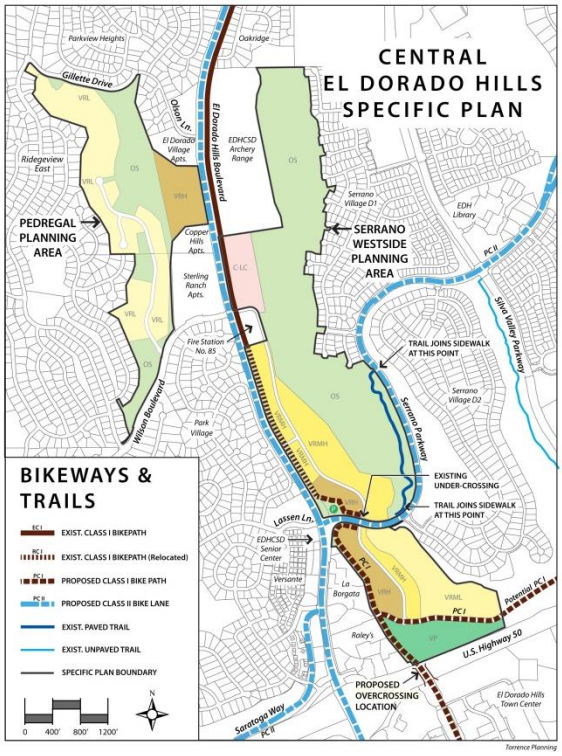
Bicycle network improvements are planned within the study area. Figure 5 identifies planned bikeways presented in the *El Dorado Bicycle Transportation Plan, 2010 Update* and the *Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035*. The following are planned improvement projects:

- El Dorado Hills Class I bike path - SMUD Corridor: Design and construct a Class I bike path between El Dorado Hills Boulevard and Silva Valley Parkway within the powerline easement operated by the Sacramento Municipal Utility District (SMUD). A portion of this project has been constructed between Silva Valley and New York Creek,
- Latrobe Road Class II bike lanes from Investment Boulevard to Deer Creek/SPTC
- Old Bass Lake Road – El Dorado Hills Boulevard to Bass Lake Road Connection, Phase 1: Use existing roadway as Class I path from Tong Road to Old Bass Lake Road
- Saratoga Way Extension Class II bike lanes included in extension of Saratoga Way from Finders Way to County Line. (Alternatively construct a Class I bike path prior to construction of extension of Saratoga Way to Iron Point Road) An informal trail exists connecting these roadways,
- Bass Lake Road Class II bike lanes from Green Valley Road to US 50
- Bike path parallel to US 50 on the north side – El Dorado Hills Boulevard to Bass Lake Road Connection, Phase 2: Connect Silva Valley Road to El Dorado Hills Village Center Shopping Center. As outlined below, the project will implement a portion of this bike path.
- El Dorado Hills Boulevard bike lanes, Phase 1: Saratoga Way to Governor Drive/St. Andrews
- El Dorado Hills Boulevard bike path, Phase 2: Utilizing an existing golf cart undercrossing of Serrano Parkway, extend the bike path from the current terminus at Serrano Parkway to Raley's Center. As outlined below, the proposed project will implement this improvement.
- El Dorado Hills Boulevard to Bass Lake Connection, Phase 1; Class III bike route on Tong Road, Class III bike route on Old Bass Lake Road.
- Green Valley Road Class II bike lanes from Francisco Drive to Pleasant Grove Middle School
- Harvard Way bike path from Clermont Road to El Dorado Hills Boulevard
- Silva Valley Parkway bike lanes from the new connection with White Rock Road to Green Valley Road
- SPTC/El Dorado Trail Class I bike path from Latrobe Road to County Line

- Class I bike path and US 50 Undercrossing or overcrossing between the El Dorado Hills Town Center and El Dorado Hills Village Center (not fully funded or listed in MTP/SCS). As outlined below, the proposed project proposes to locate the overcrossing of US 50 adjacent to the Village Park with, connecting the planned bike path north of US 50 to the El Dorado Hills Town Center.
- Class I bike path within the SMUD power line easement between El Dorado Hills Boulevard and Sophia Parkway (not fully funded or listed in the MTP/SCS)

The project proposes the following bicycle and pedestrian facilities, which are shown below that will integrate with existing and planned facilities in the study area:

- Relocate the existing Class I (off street) bike path east separated from El Dorado Hills Boulevard to the existing drainage channel, extending from just south of the fire station to US 50 at the Village Park
- Connect the bike path to the exiting undercrossing of Serrano Parkway
- Relocate the planned bicycle/pedestrian crossing of US 50 to connect the off-street bike path at the planned Village Park to El Dorado Hills Town Center (overcrossing to be constructed by the County)
- Connection between the project site and the Raley's and La Borgata shopping centers
- Connect to a potential Class I bike path between project boundary and Silva Valley Parkway that would complete a connection to the planned Country Club Drive extension



Trails and Bikeways, Torrence Planning

6.4 TRANSIT

The Specific Plan provides for a Park and Ride location in the Serrano Westside portion of the Plan Area, as a joint-use facility between El Dorado Transit and the El Dorado Hills CSD. As many as 50 parking stalls within the Village Park land use designation may be reserved for Park-n-Ride use during weekday business hours when park activities are minimal. The details of the Park-n-Ride facility will be determined at the time the Village Park is developed.. In addition, opportunities exist to accommodate bust stop (turnout and shelter) on the east side of El Dorado Hills Boulevard next to the Serrano Westside Planning Area, provided the existing Class I bike path is relocated to the east side of the drainage channel. An addition bus stop (turnout and shelter) may be accommodated on the future extension of Park Drive near the Village Park. Based on ridership data presented in the El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Transit Operations Plan, Final Report, 41,760 annual commute trips are made by El Dorado Hills residents using El Dorado Transit Commuter Service. Residents of El Dorado Hills account for about 72 percent of boardings at the El Dorado Hills Park-n-Ride lot, which includes riders that park in the lot and riders that use other means to access the service (i.e., walk, bike, and drop-off).

Based on this information, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (2010 Census) in El Dorado Hills. Therefore, the project's 1,000 dwelling units could result in demand of about 2,600 annual commute trips (assuming a household population of 2.6 persons), or about 10 commute trips per weekday.

7.0 IMPACT STATEMENTS AND MITIGATION MEASURES

Project impacts were determined by comparing conditions with the project to conditions without the project in accordance with the established significance criteria presented in Section 4.2.

7.1 EXISTING PLUS PROJECT

Analysis results, which are presented in Table 18, indicate that the addition of the project would exacerbate unacceptable operations at one intersection and result in unacceptable operation at another study intersection. The following discusses these impacts and associated mitigation:

7.1.1 INTERSECTIONS

Impacts

Impact 1 - Francisco Drive/El Dorado Hills Boulevard (intersection 4) – This location operates at LOS F without the project. The project adds more than 20 seconds of delay to overall intersection operations. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours. **This is a significant impact**.

Impact 2 - Latrobe Road/Town Center Boulevard (intersection 17) – This location operates acceptably LOS E (close to the LOS F threshold) without the project. The project results in unacceptable LOS F conditions during the PM peak hour. **This is a significant impact**.

Mitigation

Mitigation 1 - Francisco Drive/El Dorado Hills Boulevard (Intersection 4) – Implementation of the following improvements to the Francisco Drive/El Dorado Hills Boulevard intersection would result in acceptable LOS C operation during the AM and PM peak hours:

- Add a dedicated eastbound right-turn lane to provide a shared through/left-turn lane and a separate right-turn lanes
- Add a second southbound through lane on El Dorado Hills Boulevard between Francisco Drive and Brittany Place
- Lengthen the northbound left-turn pocket

El Dorado County is in the process of designing this improvement with construction in 2015. Implementation of this improvement would result in acceptable LOS C operation during the AM and PM peak hours. With this improvement, this impact would be **less than significant**.

If this improvement is not constructed prior to development in the project site, then the applicant would be responsible for implementing the improvement and would be subject to fee credit or reimbursement through the County's traffic impact mitigation fee program. If constructed prior to development in the project site, payment of traffic impact mitigation fees would satisfy the project's fair share obligation towards this improvement.

Mitigation 2 - Latrobe Road/Town Center Boulevard (Intersection 17) – Implementation of the US 50/El Dorado Hills Boulevard interchange improvements and construction of the new US 50/Silva Valley Parkway interchange, which are currently under construction and will be completed prior to development in the project area, will result in acceptable LOS E or better operations at the Latrobe Road/Town Center Boulevard intersection during the AM and PM peak hours. Unacceptable operations at this intersection are due primarily to poor lane utilization on northbound Latrobe Road during construction. With this improvement, this impact would be **less than significant**.

This improvement will be completed prior to development in the project site. Therefore, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards this improvement.

TABLE 18: INTERSECTION LOS AND DELAY – EXISTING PLUS PROJECT MITIGATIONS

Intersection	Control	Existing Conditions		Existing + Project Conditions		Existing + Project Mitigations	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
4. Francisco Dr / El Dorado Hills Blvd	AWSC	**F / 88**	**F / 69**	***F / 108***	***F / 98***	C / 21	C / 25
17. Latrobe Rd/Town Center Blvd	Signal	C / 29	E / 75	C / 30	***F / 128***	C / 26	D / 49
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	A / 10	A / 10	A / 10	A / 10

Note: AWSC = all-way stop control

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection.

Intersection 17 is analyzed in SimTraffic.

Source: Fehr & Peers, 2014

7.1.2 FREEWAY FACILITIES

The addition of project traffic will result in one impact to US 50 operations under existing conditions. The analysis results are presented in Table 19.

Impacts

Impact 3 - US 50/Westbound El Dorado Hills Boulevard On-Ramp – The addition of project traffic will result in LOS F conditions at the US 50 westbound on-ramp from El Dorado Hills Boulevard. **This is a significant impact.**

Mitigation

Mitigation 3 - US 50/Westbound El Dorado Hills Boulevard On-Ramp – Implementation of the US 50/El Dorado Hills Boulevard interchange improvements and the new US 50/Silva Valley Parkway interchange, which are currently under construction and will be

completed prior to development in the project area, will result in acceptable LOS E or better operations at westbound on-ramp merge area. The US 50/El Dorado Hills Boulevard interchange improvements will add ramp metering to the westbound on-ramp, which will control flow onto US 50, and the new US 50/Silva Valley Parkway interchange will reduce traffic volumes at the interchange, including the westbound on-ramp. With these improvements, this impact would be **less than significant**.

This improvement will be completed prior to development in the project site.

Therefore, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards this improvement.

TABLE 19: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS MITIGATION

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing + Project Density[1] / LOS		Existing + Project Mitigation Density[1] / LOS	
			AM	PM	AM	PM	AM	PM
US 50 WB	El Dorado Hills Blvd on-ramp	Merge	34 / D	24 / C	- / F	25 / C	35 / D	25 / C

Notes: [1] Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Source: Fehr & Peers, 2014

7.2 CUMULATIVE PLUS PROJECT

Analysis results, which are presented in Table 20, indicate that the addition of the project would exacerbate unacceptable operations at four study intersections. The following discusses these impacts and associated mitigation:

7.2.1 INTERSECTIONS

Impacts

Impact 4 - Silva Valley Parkway/Appian Way (Intersection 5) – This intersection will operate unacceptably at LOS F without the project during both the AM and PM peak hours. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours. **This is a significant impact.**

Impact 5 - Silva Valley Parkway/Harvard Way (Intersection 7) – This intersection will operate unacceptably at LOS F without the project during the AM peak hour. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM peak hour. **This is a significant impact.**

Impact 6 - El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 13) – This intersection will operate unacceptably at LOS F without the project during the PM peak hour. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the PM peak hours. **This is a significant impact.**

Impact 7 - Latrobe Road/Town Center Boulevard (Intersection 17) – This intersection will operate unacceptably at LOS F without the project during the AM and PM peak hours. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours. **This is a significant impact.**

Mitigation

Mitigation 4 - Silva Valley Parkway/Appian Way (Intersection 5) – Implementation of the following improvements to the Silva Valley Parkway/Appian Way intersection would result in acceptable LOS D and C operations during the AM and PM peak hours, respectively:

- Install traffic signal control with protected left-turn phasing north and southbound and split phasing east and westbound
- Provide one left-turn lane and a shared through/right-turn lane on the northbound and southbound approaches
- Provide a shared through/left-turn lane and a separate right-turn lane on the westbound approach

With this improvement, this impact would be **less than significant**.

Unacceptable operations at this intersection are due to a combination of increased traffic from planned development and due to changes in travel patterns associated

with the planned US 50/Silva Valley Parkway interchange. This improvement is not in the County's 2013 CIP. Since the intersection would operate unacceptably at LOS F under cumulative conditions without the project, the project is responsible for a portion of the improvement to restore operations to an acceptable level of service, relative to the traffic that the project will contribute to the intersection under cumulative conditions. The County's traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the 2013 CIP. The 2013 CIP is evaluated annually in response to planned growth. However, this improvement is not in the 2013 CIP.

The Cumulative analysis includes planned and funded roadway improvements, growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, but with other unapproved projects. The project proponent shall work with the County, during the development agreement phase, or development of the public financing plan or like process, to evaluate and determine the appropriate mitigation measures. Appropriate mitigation measures can include construction of project, fair share payments, etc.

Mitigation 5 - Silva Valley Parkway/Harvard Way (Intersection 7) – Implementation of the following improvements to the Silva Valley Parkway/Harvard Way intersection would result in acceptable LOS D and C operations during the AM and PM peak hours, respectively:

- Restripe the southbound approach to the intersection to provide one left-turn lane, two through lanes, and a separate right-turn lane
- Optimize traffic signal timings to accommodate the revised intersection lane configurations

With this improvement, this impact would be **less than significant**.

Mitigation 6 - However, this improvement is not in the 2013 CIP. The Cumulative analysis includes planned and funded roadway improvements, growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, but with other unapproved projects. The project proponent shall work with the County, during the development agreement phase, or development of the public financing plan or like process, to evaluate and determine the appropriate mitigation measures. Appropriate mitigation measures can include construction of project, fair share payments, etc.El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 13) – Implementation of the following improvements to the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection would result in acceptable LOS D operations during the PM peak hour:

- Modify the northbound approach to provide one left-turn lane, three through lanes, and a separate right-turn lane
- Modify the eastbound approach to provide two left-turn lanes, one through lane, and a separate right-turn lane
- Modify the westbound approach to provide one left-turn lane, one through lane, and a separate right-turn lane
- Provide protected left-turn phasing east and westbound
- Optimize traffic signal timings to accommodate the revised intersection lane configurations
- Restrict access at the Saratoga Way/Mammouth Way intersection to right-in/right-out
- Install a traffic signal at the Saratoga Way/Arrowhead Drive intersection

With this improvement, this impact would be **less than significant**.

The County's 2013 CIP includes widening of El Dorado Hills Boulevard as part of the ultimate improvements to the US 50 interchange, which are under construction and as a separate project between Saratoga Way/Park Drive and Serrano Parkway/Lassen Lane that will add a third southbound through lane, which is in the 2013 10-year CIP. In addition, the Saratoga Way extension (as a four-lane roadway) to Iron Point Road in the City of Folsom will improve the eastbound approach to this intersection.

Improvements to the west leg of the intersection (i.e., Saratoga Way) are needed to accommodate traffic volume increases associated primarily with the extension of Saratoga Way to Iron Point Road and not directly a result of the proposed project. The Saratoga Way Extension project will increase southbound-to-westbound traffic demand in the AM peak hour and traffic demand for the reverse movement (eastbound-to-northbound) in the PM peak hour. Consequently, most of improvements to Saratoga Way (i.e., the west leg) will not be necessary until the Saratoga Way Extension is constructed, except restriping to accommodate protected east/west left-turn phasing. However, improvements to Park Drive (i.e., east leg of the intersection) are needed to accommodate traffic from the proposed project.

Payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards this improvement to the west side of the intersection related to the Saratoga Way Extension.

Mitigation 7 - Latrobe Road/Town Center Boulevard (Intersection 17) – Implementation of the following improvements to the Latrobe Road/Town Center Boulevard intersection

would result in acceptable LOS D and E operations during the AM and PM peak hours, respectively:

- Modify the northbound approach to provide two left-turn lanes, three through lanes, and a shared through/ right-turn lane
- Modify the westbound approach to provide a shared through/left-turn lane, and two right-turn lanes
- Provide right-turn overlap phasing for the westbound approach
- Provide split phasing east and westbound
- Optimize traffic signal timings to accommodate the revised intersection lane configurations

With this improvement, this impact would be **less than significant**.

The County's 2013 CIP includes widening of El Dorado Hills Boulevard as part of the ultimate improvements to the US 50 interchange. These planned improvements will accommodate the intersection lane configurations outlined above. Payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards improvements at this intersection.

TABLE 20: INTERSECTION LOS AND DELAY – CUMULATIVE PLUS PROJECT CONDITIONS MITIGATIONS

Intersection	Control	Cumulative Conditions		Cumulative + Project Conditions		Cumulative + Project Mitigations	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / >180**	**F / 105**	***F / >180***	***F / 113***	D / 40	C / 26
7. Silva Valley Pwky / Harvard Wy	Signal	**F / 93**	C / 33	***F / 97***	C / 35	D / 55	C / 31
13. El Dorado Hills Blvd/Park Dr/Saratoga Wy	Signal	C / 24	**F / 112**	D / 45	***F / 115***	D / 35	D / 42
17. Latrobe Rd/Town Center Blvd	Signal	**E / 76**	**F / 173**	***F / 86***	***F / 166***	D / 47	E / 75
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	B / 11	B / 11	B / 11	B / 11

Note: AWSC = all-way stop control, SSSC = side-street stop control

Bold text indicates LOS worse than established threshold. ***Italic and underlined*** text identifies a potential impact.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown. Intersections 5, 7, and 24 are analyzed in Synchro. Intersection 13 and 17 are analyzed in SimTraffic.

Source: Fehr & Peers, 2014

7.2.2 ROADWAYS

Analysis results, which are presented in Table 21, indicate that the addition of the project would exacerbate unacceptable operations on one study roadway segment. The following discusses this impact and associated mitigation:

Impact 8 - El Dorado Hills Boulevard (Francisco Drive to Governor Drive) – This roadway segment would operate unacceptably at LOS F without the project during the AM peak hour. According to established significance criteria, the project is projected to "significantly worsen" conditions, since it would add more than 10 trips to the roadway segment during the PM peak hours. **This is a significant impact.**

Mitigation 8 - El Dorado Hills Boulevard (Francisco Drive to Governor Drive) – Implementation of the following improvements to this segment of El Dorado Hills Boulevard would result in acceptable LOS C operations during the AM and PM peak hours:

- Widen the segment of El Dorado Hills Boulevard from a two-lane arterial to a four-lane (undivided or divided) arterial.

With this improvement, this impact would be **less than significant**.

Unacceptable operations on this roadway segment are due to increased traffic from planned development. This improvement is not in the County's 2013 CIP. Since the roadway segment would operate unacceptably at LOS F under cumulative conditions without the project, the project is responsible for a portion of the improvement to restore operations to an acceptable level of service, relative to the traffic that the project will contribute to the roadway under cumulative conditions.

The County's traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the 2013 CIP. The CIP is evaluated annually in response to planned growth. However, this improvement is not in the 2013 CIP. The Cumulative analysis includes planned and funded roadway improvements, growth consistent with the 2004 General Plan, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, but with other unapproved projects. The project proponent shall work with the County, during the development agreement phase, or development of the public financing plan or like process, to evaluate and determine the appropriate mitigation measures. Appropriate mitigation measures can include construction of project, fair share payments, etc.

TABLE 21: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS MITIGATIONS

Roadway	Segment	Facility Type	Cumulative Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative + Project Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative + Project Mitigation Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Francisco Dr to Governor Dr	2 lane arterial	1,450 / 0.88 / D	**1,680 / 1.02 / F**	1,450 / 0.88 / D	***1,670 / 1.01 / F***		
		4 lane arterial (Undivided)					1,450 / 0.46 / C	1,670 / 0.53 / C
		2 lane arterial (Divided)					1,450 / 0.44 / C	1,670 / 0.51 / C

Notes: Volume-to-Capacity ratio and LOS is based on the HCM 2010 peak hour level of service thresholds
[1] LOS at this location is C or better
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.
Source: Fehr & Peers, 2014

7.2.3 FREEWAY FACILITIES

Analysis results, which are presented in Table 22, indicate that the addition of the project would result in unacceptable operations on one study freeway facility. The following discusses this impact and associated mitigation:

Impact 9 - US 50 Westbound Weave Section (El Dorado Hills Boulevard to Empire Ranch Road) – The addition of project traffic will result in LOS F conditions at the US 50 westbound weave section between El Dorado Hills Boulevard and Empire Ranch Road. **This is a significant impact.**

Mitigation 9 - US 50 Westbound Weave Section (El Dorado Hills Boulevard to Empire Ranch Road) – Implement the Latrobe Road Connection (CIP Project Number 66166) as a four-lane roadway. With this improvement, this impact would be **less than significant**.

The Latrobe Road connection is in the County's 2013 CIP; however, specific design characteristics are not known at this time, so for the purposes of the transportation analysis, the Latrobe Road Connection was conservatively assumed as a two-lane

connection.. The connection will improve accessibility for planned development south of US 50 and provide an alternative to the US 50/El Dorado Hills Boulevard Interchange and US 50 between El Dorado Hills Boulevard and Empire Ranch Road. For

Since the Latrobe Road Connection is in the County's 2013 CIP, payment of traffic impact mitigation fees will satisfy the project's fair share obligation towards improvements at this intersection.

TABLE 22: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS MITIGATION

Freeway	Segment	Facility Type	Cumulative Density[1] / LOS		Cumulative + Project Density[1] / LOS		Cumulative + Project Mitigation Density[1] / LOS	
			AM	PM	AM	PM	AM	PM
US 50 WB	El Dorado Hills Blvd to Empire Ranch Rd	Weave	44 / E	34 / D	***- / F***	34 / D	43 / E	33 / D

Notes: 1 Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Source: Fehr & Peers, 2014

7.2.4 PEDESTRIAN AND BICYCLE FACILITIES

Impact 10 - Implementation of the proposed project will increase demand for pedestrian and bicycle facilities. As outlined in Section 6.3, the project proposes pedestrian and bicycle facilities that will connect and integrate with existing and planned facilities adjacent to the project. In addition, elements of the proposed project will complete planned pedestrian and bicycle facilities. Therefore, the proposed project will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. **This is a less than significant impact.**

Mitigation 10 - No mitigation required

7.2.5 TRANSIT

Impact 11 - Implementation of the proposed project will increase demand transit. As outlined in Section 6.4, the project could result in demand of about 2,600 transit commute trips annually, which would be an average of about 10 commute trips per weekday. This increase represents about a two percent increase in El Dorado Transit Commuter Service, which is generally in line with historic population growth rates in El Dorado County. Consequently, the growth in these trips would not likely exceed the ability to serve this ridership growth through existing funding sources for transit that are tied to population growth. However, most of the boardings for the El Dorado Transit Commuter Service at the El Dorado Hills park-n-ride lot are from El Dorado Hills residents. Consequently this increase in commuter trips will increase demand for the El Dorado Hills park-n-ride lot, which operates at capacity. **This is a significant impact.**

Mitigation 11 - Implement one of the following measures:

Provide morning and evening peak period shuttle service (or comparable service) between the proposed project and the El Dorado Hills park-n-ride. This service could be implemented through a transportation demand management association (or similar organization) or be implemented directly with El Dorado Transit.

OR

Dedicate parking at the Village Park during business hours (i.e., when demand for park activities is low) to serve as an overflow park-n-ride facility.

Implementation of either of these measures would reduce this impact to a **less than significant level**.

7.2.6 EMERGENCY ACCESS

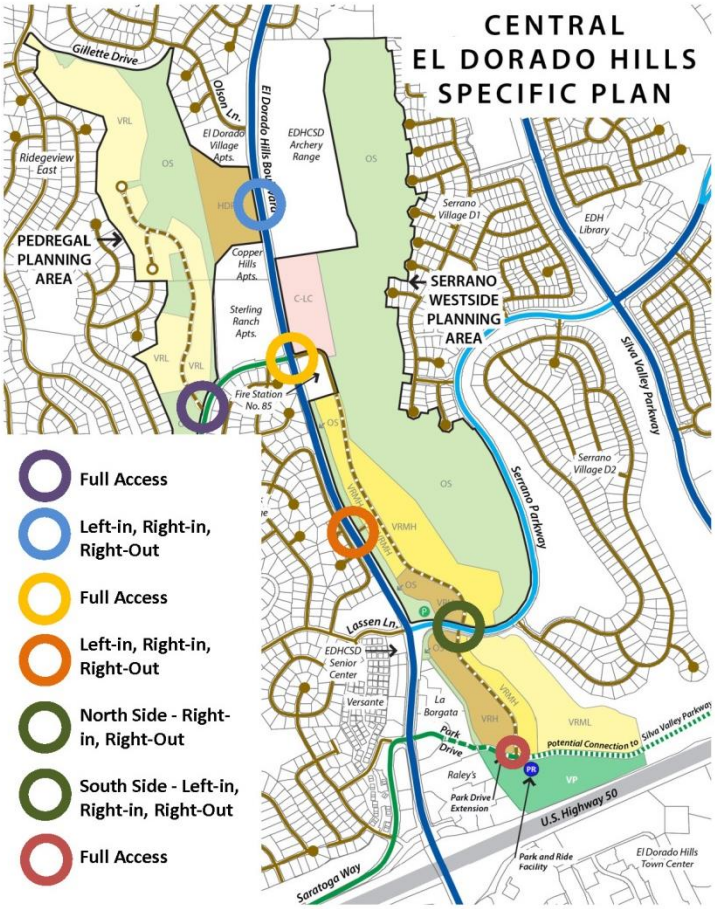
Mitigation 12 - The portion of the Serrano Westside Planning Area north of Serrano Parkway and east of El Dorado Hills Boulevard will connect to the east leg of Wilson Boulevard for access at the El Dorado Hills Boulevard/Wilson Boulevard intersection, which is also used by the El Dorado Hills Fire Department. The project will add traffic to and increase delay at this intersection. However, the intersection will operate acceptably. The intersection is equipped with emergency vehicle signal preemption, which is designed to give priority to emergency vehicles during emergencies. This is a **less than significant impact**.

Mitigation 12 - No mitigation required

8.0 OTHER CONSIDERATIONS

8.1 SITE ACCESS

Proposed access for the Central El Dorado Hills Specific Plan is shown. The single family portion of the Pedregal Planning Area will access Wilson Boulevard (no access to Gillette Drive is proposed), with access for the multi-family portion on El Dorado Hills Boulevard. The Serrano Westside Planning Area will access El Dorado Hills Boulevard, Serrano Parkway, and Park Drive.



The Pedregal Planning Area access driveway on Wilson Boulevard will operate acceptably at LOS B (cumulative conditions) with side-street stop control. However, Wilson Boulevard is a four-lane undivided roadway with a downhill grade in the eastbound direction. Due to high eastbound vehicle speeds, eastbound left-turn ingress and southbound left-turn egress movements will be difficult.

It is recommended that Wilson Boulevard be restriped as a two-lane roadway with a center median with Class I on-street bicycle lanes. Vehicle demand under existing or cumulative conditions does not warrant four travel lanes. In addition, sidewalks should be added on the north side with Wilson Boulevard between the project access and the existing sidewalk.

Park Drive and Wilson Boulevard Connections

The topography of El Dorado County limits east/west roadway connections. In El Dorado Hills, there are only three local-serving east/west connections between El Dorado Hills Boulevard and Silva Valley

Parkway north of US 50 (i.e., Green Valley Road, Harvard Way, and Serrano Parkway), a distance of about four miles. In addition, only Green Valley Road, US 50, White Rock Road, and Serrano Parkway provide significant east/west regional-level connections. Consequently, more demand is placed on north/south roadways like El Dorado Hills Boulevard and Silva Valley Parkway. There are several east/west regional-level connections in the County's 2013 CIP, including the extension of Saratoga Way between El Dorado Hills Boulevard and Iron Point Road and Country Club Drive between Bass Lake Road and Silva Valley Parkway. These connections will provide an alternative to existing east/west connections and reduce travel demand on El Dorado Hills Boulevard and Silva Valley Parkway near US 50. However, there is a gap in the parallel arterials (north of US 50) that could be closed through the Serrano Westside Planning Area by extending Park Drive from the eastern boundary of the planning area to Silva Valley Parkway. This extension is not needed to provide acceptable LOS E or better operations, but would provide additional redundancy in the circulation network. Similarly, the extension of Wilson Boulevard between its current terminus and the planned Saratoga Way extension would provide similar circulation benefits.

Table 23 compares peak hour roadway segment operation with the two connections. In Table 23, roadway segments that show a decrease in peak hour traffic volume are shaded green and cells that show an increase are shaded blue.

As shown, the Park Drive extension would serve about 500 and 400 vehicles in the AM and PM peaks, respectively. The connection would reduce volumes on segments of El Dorado Hills Boulevard, Silva Valley Parkway (PM peak hour), and Serrano Parkway. AM peak hour traffic volumes would increase on Saratoga Way and Silva Valley Parkway (between US 50 and the Park Drive extension.

As shown, the Wilson Boulevard extension would serve about 700 and 900 vehicles in the AM and PM peaks, respectively. The connection would reduce volumes on segments of El Dorado Hills Boulevard, Silva Valley Parkway (PM peak hour), Serrano Parkway, and Saratoga Way. This connection will have the highest reductions on El Dorado Hills Boulevard near US 50 with a decrease of about 600 vehicles in the AM and PM peak hour north of Saratoga Way. Volume will increase by about 200 and 300 vehicles in the AM and PM peak hours, respectively, on El Dorado Hills Boulevard north of Wilson Boulevard.

These connections will also benefit bicycle and pedestrian circulation by providing shorter, lower volume, east/west connections.

TABLE 23: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS WITH PARK DRIVE AND WILSON BOULEVARD EXTENSIONS

Roadway	Segment	Facility Type	Volume / Volume-to-Capacity Ratio / LOS					
			Plus Project		With Park Drive Extension		With Park Drive and Wilson Boulevard Extensions	
			AM	PM	AM	PM	AM	PM
El Dorado Hills Blvd	Harvard Wy to Wilson Blvd	4 lane divided arterial	2,400/0.64/D	2,400/0.64/D	2,400/0.64/D	2,400/0.64/D	2,600/0.70/D	2,700/0.72/D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,800/0.75/D	3,000/0.80/D	2,800/0.75/D	3,000/0.80/D	2,400/0.64/D	2,500/0.67/D
	Serrano Pkwy to Saratoga Way/Park Drive	5 lane arterial	2,900/0.62/D	3,300/0.71/D	2,800/0.60/D	3,200/0.69/D	2,300/0.49/C	2,700/0.58/D
	Saratoga Way/Park Drive to US 50	6 lane arterial	2,900/0.52/D	3,300/0.59/D	2,800/0.50/D	3,200/0.57/D	2,700/0.48/C	3,000/0.54/D
Silva Valley	Harvard Wy to Serrano Pkwy	4 lane divided arterial	2,200/0.59/D	1,900/0.51/C	2,200/0.59/D	1,900/0.51/C	2,100/0.56/D	1,800/0.48/C

TABLE 23: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS WITH PARK DRIVE AND WILSON BOULEVARD EXTENSIONS

Roadway	Segment	Facility Type	Volume / Volume-to-Capacity Ratio / LOS					
			Plus Project		With Park Drive Extension		With Park Drive and Wilson Boulevard Extensions	
			AM	PM	AM	PM	AM	PM
Pkwy	Serrano Pkwy to US 50	4 lane divided arterial	2,600/0.70/D	2,700/0.72/D	2,700/0.72/D	2,500/0.67/D	2,700/0.72/D	2,500/0.67/D
Serrano Pkwy	El Dorado Hills Blvd to Silva Valley Pkwy	2 lane arterial	1,000/0.53/D	900/0.48/C	900/0.48/C	900/0.48/C	900/0.48/C	800/0.43/C
Saratoga Wy	El Dorado Hills Blvd to Arrowhead Dr	2 lane arterial	1,200/0.64/D	1,600/0.86/D	1,400/0.75/D	1,600/0.86/D	1,000/0.53/D	1,200/0.64/D
Wilson Boulevard	El Dorado Hills Blvd to Ridgeview Dr	4 lane undivided arterial	500/0.17/C	500/0.17/C	500/0.17/C	500/0.17/C	1,000/0.35/C	1,100/0.35/C
	Extension – Montridge Wy to Saratoga Wy	2 lane arterial			-	-	700/0.37/C	900/0.48/C

TABLE 23: ROADWAY SEGMENT PEAK HOUR LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS WITH PARK DRIVE AND WILSON BOULEVARD EXTENSIONS

Roadway	Segment	Facility Type	Volume / Volume-to-Capacity Ratio / LOS					
			Plus Project		With Park Drive Extension		With Park Drive and Wilson Boulevard Extensions	
			AM	PM	AM	PM	AM	PM
Park Drive	East of EDH Blvd	2 lane arterial	600/0.32/C	900/0.48/C	900/0.48/C	1,000/0.53/D	900/0.48/C	1,000/0.53/D
	Extension – West of Silva Valley Pkwy	2 lane arterial			500/0.27/C	400/0.21/C	500/0.27/C	400/0.21/C

Notes: Volume-to-Capacity ratio and LOS is based on the peak hour level of service thresholds contained in Table 5.4-1 of the *El Dorado County General Plan DEIR* (EDAW, 2003)

Source: Fehr & Peers, 2014

8.2 PEAK HOUR TRAFFIC SIGNAL WARRANT EVALUATION

An evaluation of the need for traffic signal installation was conducted using the peak hour traffic signal warrant methodologies from the California Manual on Uniform Traffic Control Devices, January 2012. The peak hour traffic signal warrant was evaluated for the following existing and proposed stop-controlled intersections:

- El Dorado Hills/Francisco Drive
- Silva Valley Parkway/Appian Way
- Wilson Boulevard/Pedregal Driveway (Full Movement Project Access)

Tables 24 and 25 display the results of the peak hour volume warrant for existing and cumulative conditions, respectively. Under existing conditions, the Francisco Drive/El Dorado Hills Boulevard intersection would satisfy the peak hour warrant based on AM and PM peak hour traffic volumes without or with the project. Under cumulative conditions, peak hour traffic volumes at the Silva Valley/Appian Way intersection would satisfy the peak hour traffic signal warrant.

TABLE 24: PEAK HOUR SIGNAL WARRANT EVALUATION – EXISTING PLUS PROJECT CONDITIONS

Unsignalized Intersections	Peak Hour Signal Warrant Met [1]			
	Existing Conditions		Existing + Project Conditions	
	AM	PM	AM	PM
4. Francisco Dr / El Dorado Hills Blvd	Yes	Yes	Yes	Yes
5. Silva Valley Pkwy / Appian Wy	No	No	No	No
24. Wilson Blvd / Pedregal Drwy	Does Not Exist		No	No

Note: [1] Based on the Peak Hour Volume warrant (for urban areas) contained in the *California Manual on Uniform Traffic Control Devices* (CA MUTCD), Caltrans, 2012.

Source: Fehr & Peers, 2014

TABLE 25: PEAK HOUR SIGNAL WARRANT EVALUATION – CUMULATIVE CONDITIONS

Unsignalized Intersections	Peak Hour Signal Warrant Met [1]			
	Cumulative Conditions		Cumulative + Project Conditions	
	AM	PM	AM	PM
4. Francisco Dr / El Dorado Hills Blvd	Signalized Intersection under Cumulative Conditions			
5. Silva Valley Pkwy / Appian Wy	Yes	Yes	Yes	Yes
24. Wilson Blvd / Pedregal Drwy	Does Not Exist		No	No

Note: [1] Based on the Peak Hour Volume warrant (for urban areas) contained in the *California Manual on Uniform Traffic Control Devices* (CA MUTCD), Caltrans, 2012.

Source: Fehr & Peers, 2014

This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices (California MUTCD 2012 Edition. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. El Dorado County should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

8.3 INTERSECTION VEHICLE QUEUING EVALUATION

Tables 26 and 27 summarize estimated vehicle queues for the off ramps at the US 50/El Dorado Hills Boulevard interchange and at the two stop-controlled project access intersections on El Dorado Hills Boulevard under cumulative conditions, respectively. As shown, available and proposed storage will accommodate estimated vehicle queues. For the US 50/El Dorado Hills Boulevard interchange, these results indicate that traffic operations on El Dorado Hills Boulevard will not cause vehicles to back onto US 50 and impact freeway operations.

TABLE 26: 95th PERCENTILE FREEWAY OFF-RAMP VEHICLE QUEUES – CUMULATIVE CONDITIONS

Freeway	Available Storage	95th Percentile Queue			
		Cumulative Conditions		Cumulative + Project Conditions	
		AM	PM	AM	PM
US 50 EB off-ramp at Latrobe Road	1,680 ft	750	850	475	1,100
US 50 EB off-ramp at El Dorado Hills Boulevard	1,230 ft	–	–	–	–
US 50 WB off-ramp at El Dorado Hills Boulevard	1,300 ft	1,000	875	1,050	1,125
US 50 EB off-ramp at Silva Valley Parkway	1,470 ft	125	225	125	200
US 50 WB off-ramp at Silva Valley Parkway	1,350 ft	875	400	975	400

Note: [1] 95th percentile vehicle queue based on output from SimTraffic model. Values rounded to the nearest 25 feet. Greater queue (for either left or right movement) is reported.

Bold and underlined text indicates queue that exceeds available.

" – " No queuing reported for free movements.

Source: Fehr & Peers, 2014

TABLE 27: EL DORADO HILLS BLVD PROJECT DRIVEWAY'S 95th PERCENTILE QUEUE

Intersection	Movement	Available Storage	95th Percentile Queue (feet)			
			Existing Plus Project		Cumulative Plus Project	
			AM	PM	AM	PM
21. El Dorado Hills Blvd / Project Dwy North	NBL	100 ft	25	50	50	50
22. El Dorado Hills Blvd / Project Dwy South	SBL	100 ft	25	75	25	50

Note: [1] 95th percentile vehicle queue based on output from SimTraffic model. Values rounded to the nearest 25 feet.

Source: Fehr & Peers, 2014

Appendix L Errata

Appendix L-2

Existing Conditions Technical Calculations

APPENDIX A:

Existing Conditions Technical Calculations

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-001 Francisco-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- Unshifted

	Francisco Drive Southbound				Green Valley Road Westbound					Francisco Drive Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	4	28	30	62	5	109	2	4	120	25	8	0	33	6	29	25	60	275
06:45	5	41	49	95	9	106	10	4	129	40	18	1	59	12	31	41	84	367
Total	9	69	79	157	14	215	12	8	249	65	26	1	92	18	60	66	144	642
07:00	24	97	52	173	10	149	21	10	190	57	27	2	86	28	40	41	109	558
07:15	16	68	79	163	5	183	36	8	232	51	71	0	122	49	48	54	151	668
07:30	35	66	115	216	9	183	22	3	217	96	40	2	138	36	52	59	147	718
07:45	24	81	109	214	6	188	6	8	208	76	28	3	107	33	51	62	146	675
Total	99	312	355	766	30	703	85	29	847	280	166	7	453	146	191	216	553	2619
08:00	16	61	64	141	15	145	11	6	177	67	29	2	98	35	67	54	156	572
08:15	13	62	54	129	17	151	25	13	206	65	34	1	100	35	70	59	164	599
08:30	27	63	102	192	11	172	28	7	218	72	48	0	120	32	63	45	140	670
08:45	17	51	60	128	4	167	20	9	200	56	42	0	98	45	60	42	147	573
Total	73	237	280	590	47	635	84	35	801	260	153	3	416	147	260	200	607	2414
09:00	17	34	67	118	6	107	15	6	134	52	21	1	74	30	54	39	123	449
09:15	10	34	51	95	9	110	14	10	143	46	28	0	74	24	34	26	84	396
Total	27	68	118	213	15	217	29	16	277	98	49	1	148	54	88	65	207	845
15:30	27	38	60	125	19	86	16	15	136	50	56	3	109	77	137	61	275	645
15:45	21	47	54	122	20	101	19	14	154	69	42	3	114	84	147	77	308	698
Total	48	85	114	247	39	187	35	29	290	119	98	6	223	161	284	138	583	1343
16:00	20	37	39	96	17	102	15	17	151	50	59	2	111	85	165	72	322	680
16:15	28	42	36	106	20	91	11	23	145	59	72	0	131	82	141	68	291	673
16:30	35	40	49	124	15	79	18	14	126	79	68	5	152	104	172	79	355	757
16:45	31	53	56	140	17	112	22	16	167	99	58	4	161	96	173	73	342	810
Total	114	172	180	466	69	384	66	70	589	287	257	11	555	367	651	292	1310	2920
17:00	28	38	68	134	13	92	9	23	137	59	53	6	118	98	175	69	342	731
17:15	23	47	36	106	16	122	22	21	181	96	72	3	171	96	152	71	319	777

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Groups Printed- Unshifted

	Francisco Drive Southbound				Green Valley Road Westbound					Francisco Drive Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	23	54	51	128	10	117	11	16	154	88	66	4	158	107	198	78	383	823
17:45	31	66	45	142	22	102	25	20	169	65	57	4	126	117	164	96	377	814
Total	105	205	200	510	61	433	67	80	641	308	248	17	573	418	689	314	1421	3145
18:00	39	42	40	121	12	69	26	15	122	45	49	3	97	110	203	72	385	725
18:15	27	38	27	92	15	56	17	9	97	44	68	4	116	95	150	56	301	606
Grand Total	541	1228	1393	3162	302	2899	421	291	3913	1506	1114	53	2673	1516	2576	1419	5511	15259
Apprch %	17.1	38.8	44.1		7.7	74.1	10.8	7.4		56.3	41.7	2		27.5	46.7	25.7		
Total %	3.5	8	9.1	20.7	2	19	2.8	1.9	25.6	9.9	7.3	0.3	17.5	9.9	16.9	9.3	36.1	

	Francisco Drive Southbound				Green Valley Road Westbound					Francisco Drive Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:15																		
07:15	16	68	79	163	5	183	**36**	**8**	**232**	51	**71**	0	122	**49**	48	54	151	668
07:30	**35**	66	**115**	**216**	9	183	22	3	217	**96**	40	2	**138**	36	52	59	147	**718**
07:45	24	**81**	109	214	6	**188**	6	8	208	76	28	**3**	107	33	51	**62**	146	675
08:00	16	61	64	141	**15**	145	11	6	177	67	29	2	98	35	**67**	54	**156**	572
Total Volume	91	276	367	734	35	699	75	25	834	290	168	7	465	153	218	229	600	2633
% App. Total	12.4	37.6	50		4.2	83.8	9	3		62.4	36.1	1.5		25.5	36.3	38.2		
PHF	.650	.852	.798	.850	.583	.930	.521	.781	.899	.755	.592	.583	.842	.781	.813	.923	.962	.917

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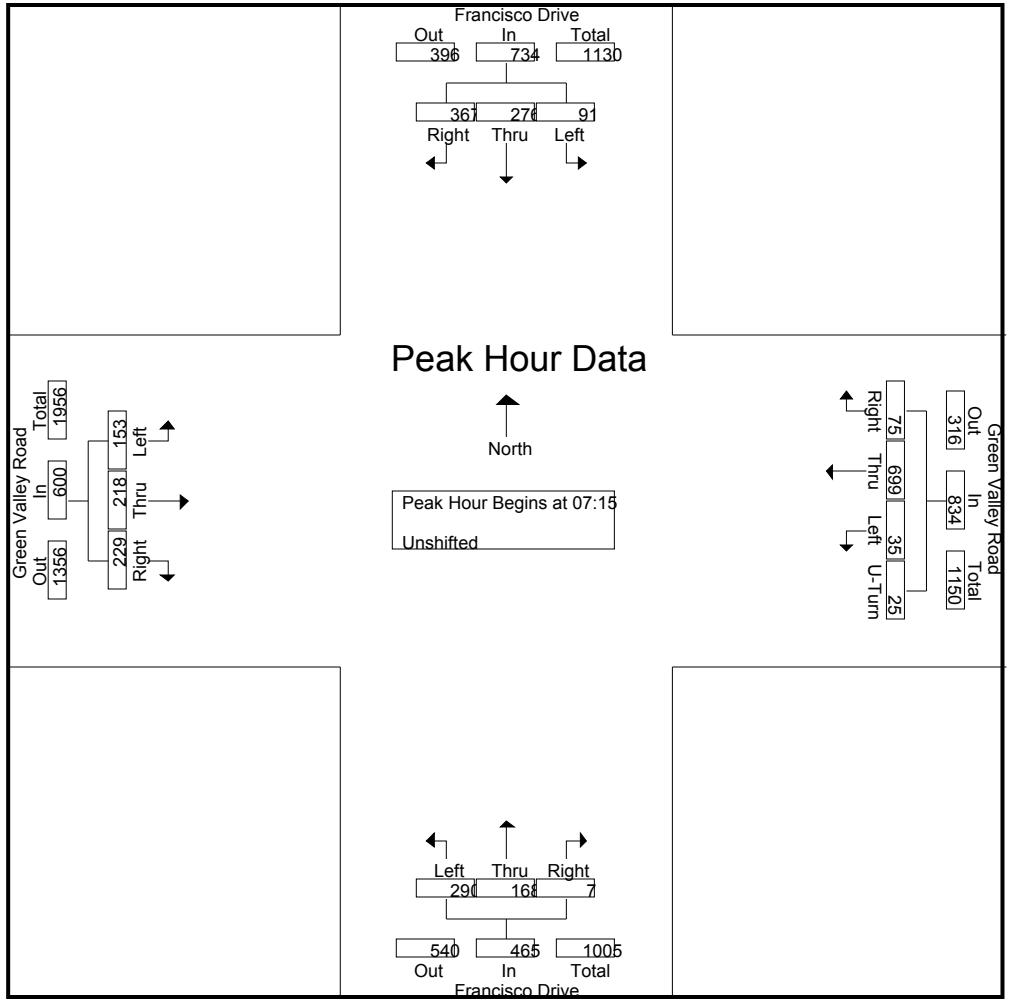

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Site Code : 00000000
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	Francisco Drive Southbound				Green Valley Road Westbound					Francisco Drive Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 17:00																		
17:00	28	38	**68**	134	13	92	9	**23**	137	59	53	**6**	118	98	175	69	342	731
17:15	23	47	36	106	16	**122**	22	21	**181**	**96**	**72**	3	**171**	96	152	71	319	777
17:30	23	54	51	128	10	117	11	16	154	88	66	4	158	107	**198**	78	**383**	**823**
17:45	**31**	**66**	45	**142**	**22**	102	**25**	20	169	65	57	4	126	**117**	164	**96**	377	814
Total Volume	105	205	200	510	61	433	67	80	641	308	248	17	573	418	689	314	1421	3145
% App. Total	20.6	40.2	39.2		9.5	67.6	10.5	12.5		53.8	43.3	3		29.4	48.5	22.1		
PHF	.847	.777	.735	.898	.693	.887	.670	.870	.885	.802	.861	.708	.838	.893	.870	.818	.928	.955

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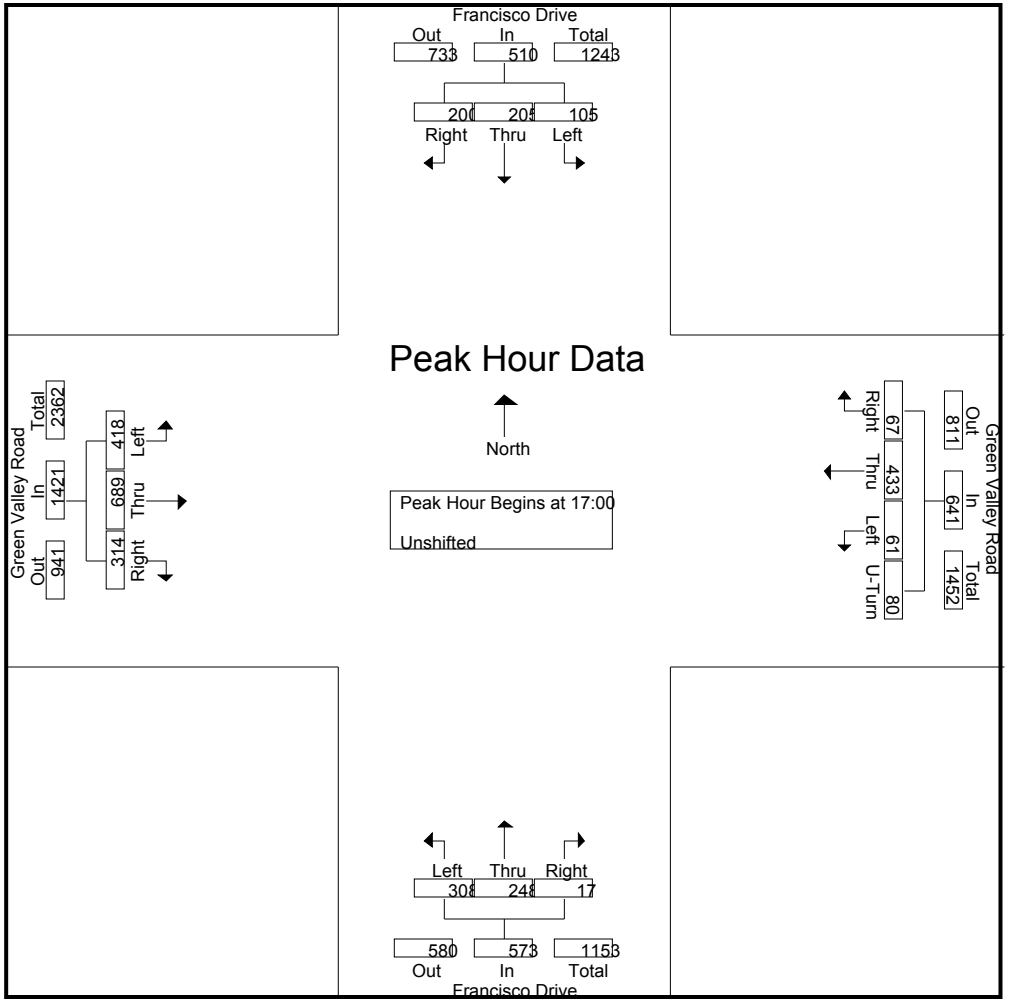

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El Dorado County

File Name : 13-7063-002 El Dorado Hills-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
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Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Green Valley Road Westbound				El Dorado Hills Blvd Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	3	31	20	54	10	106	1	117	4	5	1	10	3	35	0	38	219
06:45	10	48	24	82	9	123	4	136	2	5	3	10	1	36	2	39	267
Total	13	79	44	136	19	229	5	253	6	10	4	20	4	71	2	77	486
07:00	34	82	39	155	10	142	11	163	5	4	5	14	5	62	7	74	406
07:15	18	37	43	98	16	193	19	228	11	27	9	47	7	59	2	68	441
07:30	26	50	40	116	16	197	11	224	10	11	4	25	4	81	6	91	456
07:45	28	60	37	125	18	176	6	200	10	21	7	38	7	65	2	74	437
Total	106	229	159	494	60	708	47	815	36	63	25	124	23	267	17	307	1740
08:00	18	40	29	87	11	165	5	181	8	13	5	26	10	76	4	90	384
08:15	26	42	26	94	16	166	13	195	11	22	4	37	16	76	5	97	423
08:30	24	49	40	113	45	152	13	210	8	16	18	42	13	74	6	93	458
08:45	15	31	32	78	14	147	6	167	24	17	28	69	3	78	1	82	396
Total	83	162	127	372	86	630	37	753	51	68	55	174	42	304	16	362	1661
09:00	6	28	23	57	9	126	4	139	2	6	9	17	10	60	4	74	287
09:15	4	22	22	48	10	125	7	142	8	10	12	30	10	41	0	51	271
Total	10	50	45	105	19	251	11	281	10	16	21	47	20	101	4	125	558
15:30	18	23	25	66	9	100	15	124	11	28	12	51	20	145	11	176	417
15:45	18	25	14	57	9	117	12	138	14	43	11	68	21	155	7	183	446
Total	36	48	39	123	18	217	27	262	25	71	23	119	41	300	18	359	863
16:00	8	21	19	48	10	106	16	132	18	35	17	70	24	165	7	196	446
16:15	14	17	19	50	4	105	13	122	14	30	13	57	31	170	3	204	433
16:30	9	25	15	49	12	110	18	140	23	29	9	61	41	178	3	222	472
16:45	17	25	25	67	10	104	10	124	14	34	20	68	28	178	0	206	465
Total	48	88	78	214	36	425	57	518	69	128	59	256	124	691	13	828	1816
17:00	13	16	20	49	6	98	20	124	11	35	14	60	36	195	6	237	470
17:15	13	16	21	50	13	130	26	169	21	42	16	79	19	179	3	201	499

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-002 El Dorado Hills-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
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Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Green Valley Road Westbound				El Dorado Hills Blvd Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	12	14	34	60	7	103	17	127	17	40	14	71	27	184	6	217	475
17:45	11	24	19	54	4	129	14	147	6	36	13	55	32	200	9	241	497
Total	49	70	94	213	30	460	77	567	55	153	57	265	114	758	24	896	1941
18:00	14	15	6	35	13	85	12	110	9	38	15	62	27	203	5	235	442
18:15	13	9	18	40	10	62	8	80	9	37	9	55	28	149	4	181	356
Grand Total	372	750	610	1732	291	3067	281	3639	270	584	268	1122	423	2844	103	3370	9863
Apprch %	21.5	43.3	35.2		8	84.3	7.7		24.1	52	23.9		12.6	84.4	3.1		
Total %	3.8	7.6	6.2	17.6	3	31.1	2.8	36.9	2.7	5.9	2.7	11.4	4.3	28.8	1	34.2	

	El Dorado Hills Blvd Southbound				Green Valley Road Westbound				El Dorado Hills Blvd Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	**34**	**82**	39	**155**	10	142	11	163	5	4	5	14	5	62	**7**	74	406
07:15	18	37	**43**	98	16	193	**19**	**228**	**11**	**27**	**9**	**47**	**7**	59	2	68	441
07:30	26	50	40	116	16	**197**	11	224	10	11	4	25	4	**81**	6	**91**	**456**
07:45	28	60	37	125	**18**	176	6	200	10	21	7	38	7	65	2	74	437
Total Volume	106	229	159	494	60	708	47	815	36	63	25	124	23	267	17	307	1740
% App. Total	21.5	46.4	32.2		7.4	86.9	5.8		29	50.8	20.2		7.5	87	5.5		
PHF	.779	.698	.924	.797	.833	.898	.618	.894	.818	.583	.694	.660	.821	.824	.607	.843	.954

All Traffic Data

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El Dorado County

File Name : 13-7063-002 El Dorado Hills-Green Valley
Site Code : 00000000
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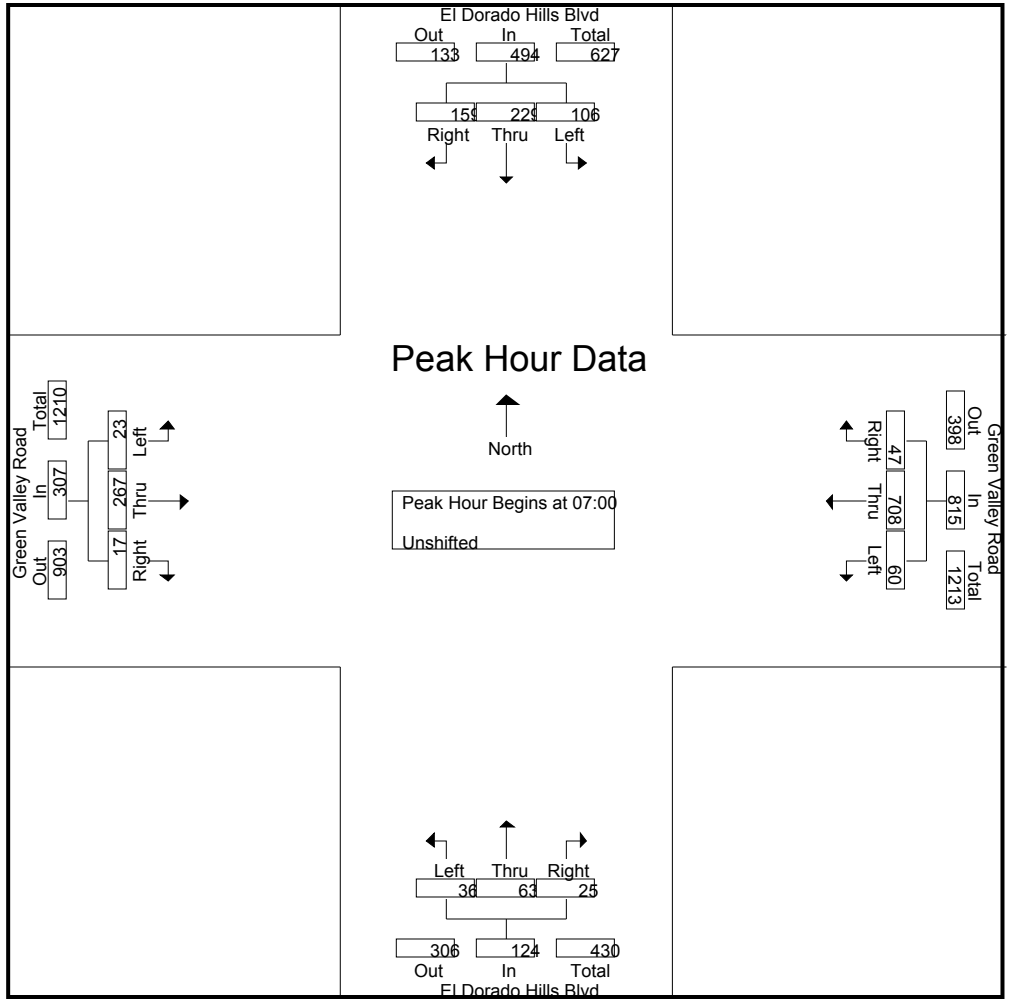

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-002 El Dorado Hills-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
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	El Dorado Hills Blvd Southbound				Green Valley Road Westbound				El Dorado Hills Blvd Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**13**	16	20	49	6	98	20	124	11	35	14	60	**36**	195	6	237	470
17:15	13	16	21	50	**13**	**130**	**26**	**169**	**21**	**42**	**16**	**79**	19	179	3	201	**499**
17:30	12	14	**34**	**60**	7	103	17	127	17	40	14	71	27	184	6	217	475
17:45	11	**24**	19	54	4	129	14	147	6	36	13	55	32	**200**	**9**	**241**	497
Total Volume	49	70	94	213	30	460	77	567	55	153	57	265	114	758	24	896	1941
% App. Total	23	32.9	44.1		5.3	81.1	13.6		20.8	57.7	21.5		12.7	84.6	2.7		
PHF	.942	.729	.691	.888	.577	.885	.740	.839	.655	.911	.891	.839	.792	.948	.667	.929	.972

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-002 El Dorado Hills-Green Valley
Site Code : 00000000
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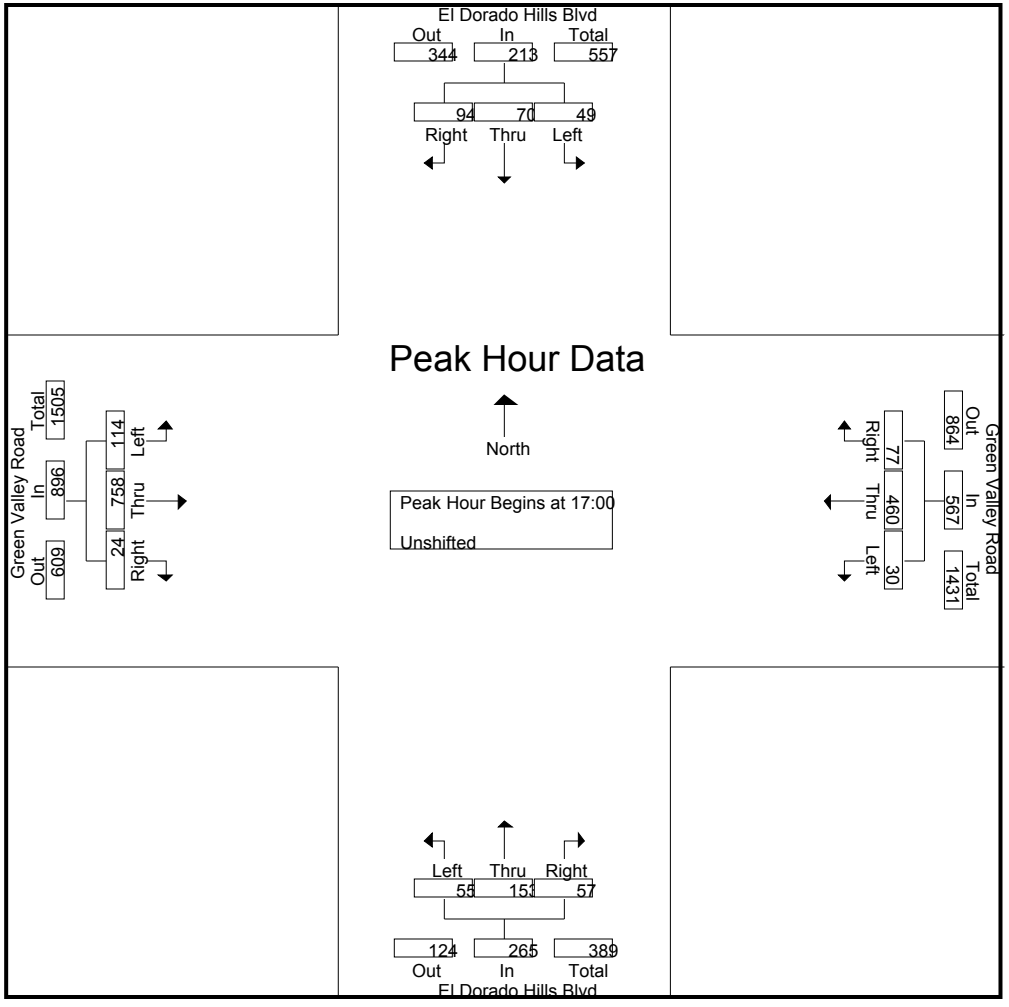

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-003 Silva Valley-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- Unshifted

	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	0	3	0	3	11	87	0	98	28	0	3	31	0	24	14	38	170
06:45	0	1	0	1	30	94	0	124	43	1	7	51	0	18	30	48	224
Total	0	4	0	4	41	181	0	222	71	1	10	82	0	42	44	86	394
07:00	0	14	1	15	17	116	1	134	59	1	5	65	0	36	63	99	313
07:15	1	7	2	10	16	142	11	169	84	30	14	128	2	46	39	87	394
07:30	1	9	0	10	9	140	7	156	76	15	6	97	0	55	52	107	370
07:45	3	8	0	11	17	141	0	158	62	3	8	73	0	67	37	104	346
Total	5	38	3	46	59	539	19	617	281	49	33	363	2	204	191	397	1423
08:00	0	6	1	7	13	117	0	130	64	1	7	72	0	60	36	96	305
08:15	1	2	2	5	12	129	1	142	60	5	7	72	0	62	42	104	323
08:30	2	4	1	7	8	145	2	155	75	2	3	80	0	75	45	120	362
08:45	0	1	0	1	14	118	0	132	38	1	2	41	1	78	42	121	295
Total	3	13	4	20	47	509	3	559	237	9	19	265	1	275	165	441	1285
09:00	0	2	0	2	9	102	0	111	35	0	4	39	1	49	26	76	228
09:15	1	2	0	3	5	102	1	108	42	0	6	48	0	25	27	52	211
Total	1	4	0	5	14	204	1	219	77	0	10	87	1	74	53	128	439
15:30	0	1	0	1	4	68	0	72	57	4	14	75	3	140	47	190	338
15:45	1	3	0	4	4	73	0	77	63	2	9	74	1	132	49	182	337
Total	1	4	0	5	8	141	0	149	120	6	23	149	4	272	96	372	675
16:00	1	1	0	2	7	85	1	93	47	2	19	68	2	131	54	187	350
16:15	0	2	0	2	3	63	1	67	58	4	8	70	0	148	52	200	339
16:30	0	1	0	1	14	80	1	95	61	5	11	77	2	138	55	195	368
16:45	0	1	0	1	11	77	0	88	51	5	12	68	1	162	57	220	377
Total	1	5	0	6	35	305	3	343	217	16	50	283	5	579	218	802	1434
17:00	1	2	1	4	7	81	2	90	51	4	14	69	0	156	64	220	383
17:15	0	1	0	1	8	97	0	105	60	3	15	78	0	138	63	201	385

All Traffic Data

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El Dorado County

File Name : 13-7063-003 Silva Valley-Green Valley
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Groups Printed- Unshifted

	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	0	2	1	3	8	80	0	88	48	5	13	66	3	144	67	214	371
17:45	1	2	0	3	11	91	1	103	52	3	14	69	3	147	74	224	399
Total	2	7	2	11	34	349	3	386	211	15	56	282	6	585	268	859	1538
18:00	0	2	0	2	9	76	0	85	33	4	9	46	0	170	74	244	377
18:15	0	2	1	3	6	52	0	58	29	1	12	42	5	113	52	170	273
Grand Total	13	79	10	102	253	2356	29	2638	1276	101	222	1599	24	2314	1161	3499	7838
Apprch %	12.7	77.5	9.8		9.6	89.3	1.1		79.8	6.3	13.9		0.7	66.1	33.2		
Total %	0.2	1	0.1	1.3	3.2	30.1	0.4	33.7	16.3	1.3	2.8	20.4	0.3	29.5	14.8	44.6	

	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	**14**	1	**15**	**17**	116	1	134	59	1	5	65	0	36	**63**	99	313
07:15	1	7	**2**	10	16	**142**	**11**	**169**	**84**	**30**	**14**	**128**	**2**	46	39	87	**394**
07:30	1	9	0	10	9	140	7	156	76	15	6	97	0	55	52	**107**	370
07:45	**3**	8	0	11	17	141	0	158	62	3	8	73	0	**67**	37	104	346
Total Volume	5	38	3	46	59	539	19	617	281	49	33	363	2	204	191	397	1423
% App. Total	10.9	82.6	6.5		9.6	87.4	3.1		77.4	13.5	9.1		0.5	51.4	48.1		
PHF	.417	.679	.375	.767	.868	.949	.432	.913	.836	.408	.589	.709	.250	.761	.758	.928	.903

All Traffic Data

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El Dorado County

File Name : 13-7063-003 Silva Valley-Green Valley
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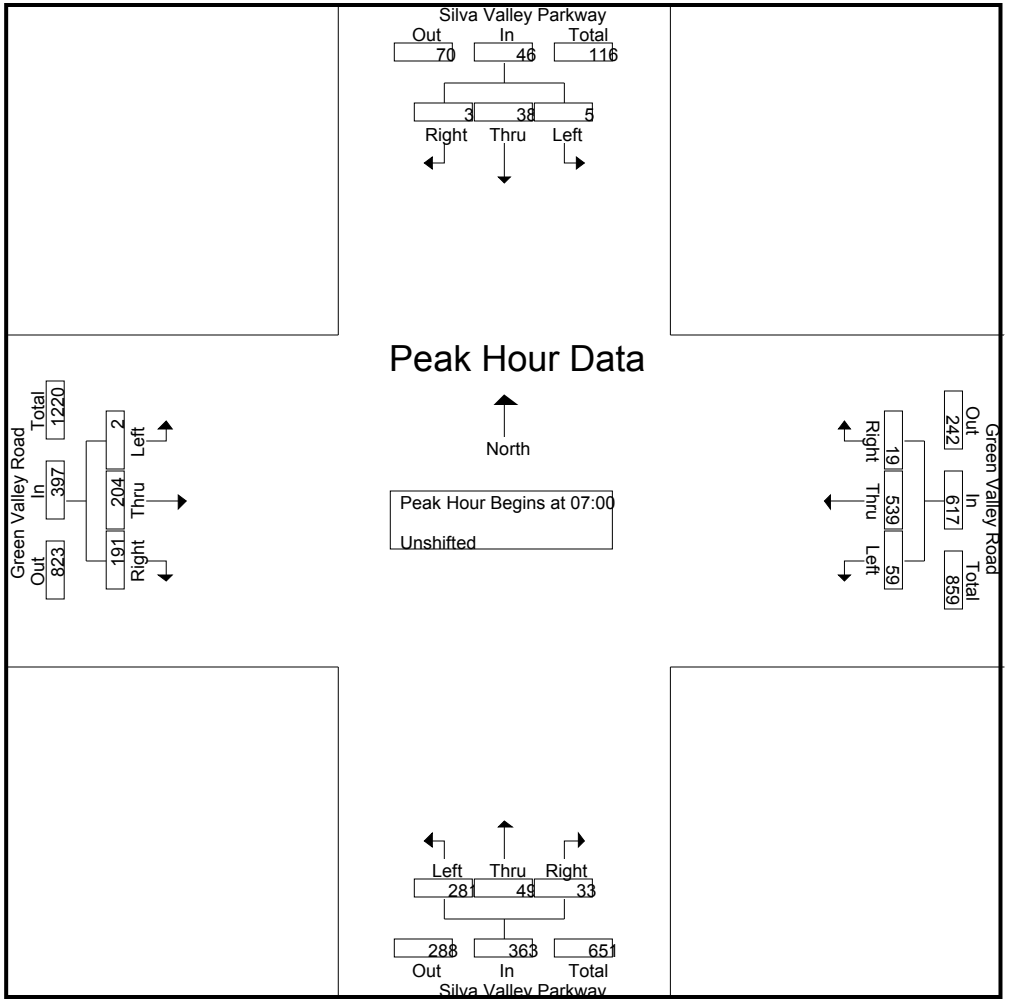

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-003 Silva Valley-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
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	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**1**	**2**	**1**	**4**	7	81	**2**	90	51	4	14	69	0	**156**	64	220	383
17:15	0	1	0	1	8	**97**	0	**105**	**60**	3	**15**	**78**	0	138	63	201	385
17:30	0	2	1	3	8	80	0	88	48	**5**	13	66	**3**	144	67	214	371
17:45	1	2	0	3	**11**	91	1	103	52	3	14	69	3	147	**74**	**224**	**399**
Total Volume	2	7	2	11	34	349	3	386	211	15	56	282	6	585	268	859	1538
% App. Total	18.2	63.6	18.2		8.8	90.4	0.8		74.8	5.3	19.9		0.7	68.1	31.2		
PHF	.500	.875	.500	.688	.773	.899	.375	.919	.879	.750	.933	.904	.500	.938	.905	.959	.964

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El Dorado County

File Name : 13-7063-003 Silva Valley-Green Valley
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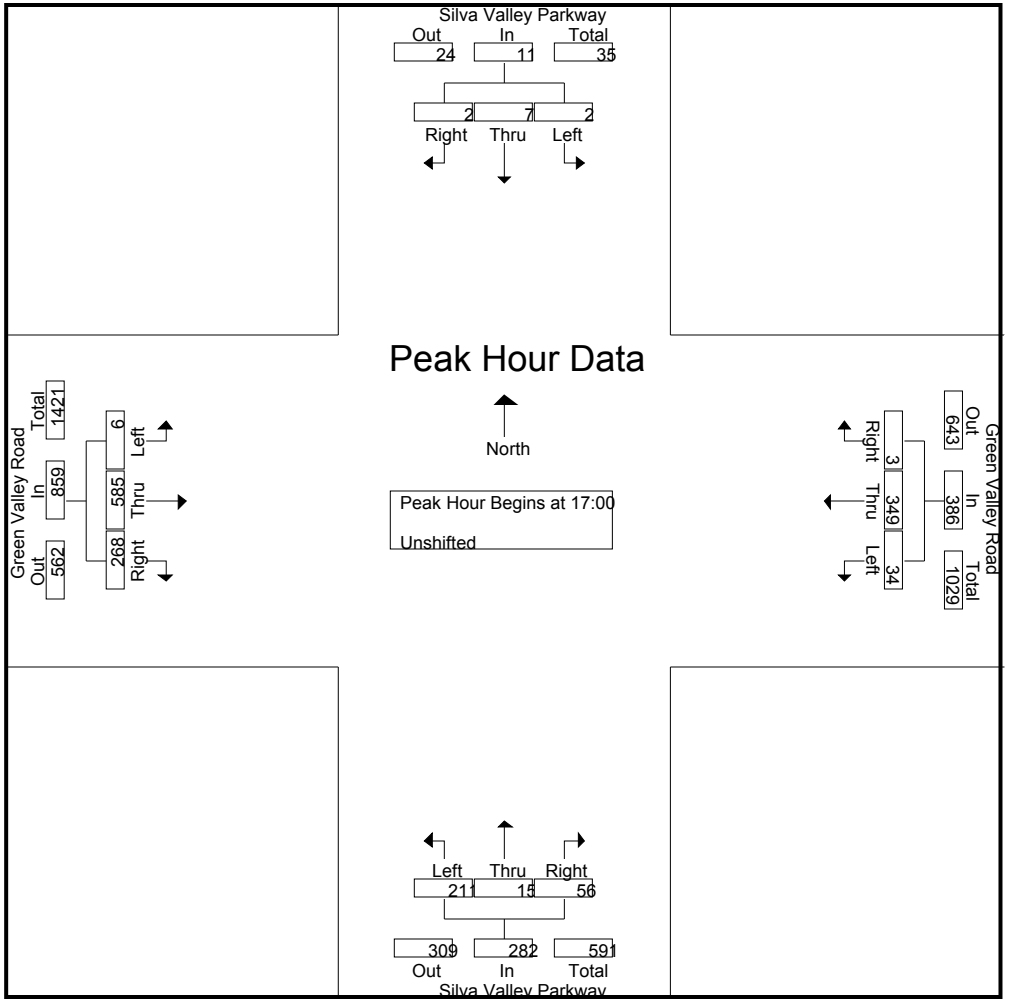

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Francisco Drive Westbound				El Dorado Hills Blvd Northbound				Francisco Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	1	47	0	48	4	3	1	8	28	8	2	38	0	0	54	54	148
06:45	4	66	0	70	1	3	2	6	51	8	1	60	0	1	83	84	220
Total	5	113	0	118	5	6	3	14	79	16	3	98	0	1	137	138	368
07:00	2	107	0	109	8	16	2	26	71	14	2	87	1	6	118	125	347
07:15	5	74	1	80	4	17	4	25	106	37	3	146	1	5	138	144	395
07:30	13	69	1	83	10	11	5	26	111	20	1	132	3	9	105	117	358
07:45	7	79	1	87	5	11	8	24	92	31	2	125	0	13	133	146	382
Total	27	329	3	359	27	55	19	101	380	102	8	490	5	33	494	532	1482
08:00	18	60	1	79	5	13	2	20	87	28	4	119	1	8	110	119	337
08:15	26	57	1	84	10	13	11	34	94	32	13	139	1	10	129	140	397
08:30	74	52	0	126	25	26	21	72	88	24	18	130	0	18	81	99	427
08:45	9	60	1	70	27	29	23	79	59	32	5	96	1	11	106	118	363
Total	127	229	3	359	67	81	57	205	328	116	40	484	3	47	426	476	1524
09:00	4	39	0	43	4	6	2	12	63	18	0	81	0	2	78	80	216
09:15	2	38	1	41	3	4	1	8	68	24	2	94	0	0	65	65	208
Total	6	77	1	84	7	10	3	20	131	42	2	175	0	2	143	145	424
15:30	4	40	0	44	3	11	3	17	86	45	5	136	1	11	99	111	308
15:45	6	41	0	47	3	10	7	20	92	70	7	169	0	9	118	127	363
Total	10	81	0	91	6	21	10	37	178	115	12	305	1	20	217	238	671
16:00	7	36	0	43	2	8	5	15	110	70	6	186	0	16	106	122	366
16:15	5	28	1	34	0	15	10	25	109	64	9	182	0	16	99	115	356
16:30	3	47	0	50	15	10	17	42	125	61	7	193	0	12	108	120	405
16:45	3	35	1	39	3	13	12	28	130	67	4	201	0	13	125	138	406
Total	18	146	2	166	20	46	44	110	474	262	26	762	0	57	438	495	1533
17:00	1	33	1	35	4	6	8	18	117	73	7	197	0	9	105	114	364
17:15	2	41	0	43	4	6	3	13	132	80	1	213	0	7	111	118	387

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El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
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	El Dorado Hills Blvd Southbound				Francisco Drive Westbound				El Dorado Hills Blvd Northbound				Francisco Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	3	26	0	29	5	7	9	21	132	65	7	204	2	11	123	136	390
17:45	2	41	0	43	5	7	4	16	107	55	5	167	1	16	129	146	372
Total	8	141	1	150	18	26	24	68	488	273	20	781	3	43	468	514	1513
18:00	5	28	1	34	1	3	3	7	96	64	4	164	0	10	133	143	348
18:15	1	20	0	21	1	4	5	10	95	54	1	150	0	11	84	95	276
Grand Total	207	1164	11	1382	152	252	168	572	2249	1044	116	3409	12	224	2540	2776	8139
Apprch %	15	84.2	0.8		26.6	44.1	29.4		66	30.6	3.4		0.4	8.1	91.5		
Total %	2.5	14.3	0.1	17	1.9	3.1	2.1	7	27.6	12.8	1.4	41.9	0.1	2.8	31.2	34.1	

	El Dorado Hills Blvd Southbound				Francisco Drive Westbound				El Dorado Hills Blvd Northbound				Francisco Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	7	**79**	**1**	87	5	11	8	24	92	31	2	125	0	13	**133**	**146**	382
08:00	18	60	1	79	5	13	2	20	87	28	4	119	**1**	8	110	119	337
08:15	26	57	1	84	10	13	11	34	**94**	**32**	13	**139**	1	10	129	140	397
08:30	**74**	52	0	**126**	**25**	**26**	**21**	**72**	88	24	**18**	130	0	**18**	81	99	**427**
Total Volume	125	248	3	376	45	63	42	150	361	115	37	513	2	49	453	504	1543
% App. Total	33.2	66	0.8		30	42	28		70.4	22.4	7.2		0.4	9.7	89.9		
PHF	.422	.785	.750	.746	.450	.606	.500	.521	.960	.898	.514	.923	.500	.681	.852	.863	.903

All Traffic Data

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El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
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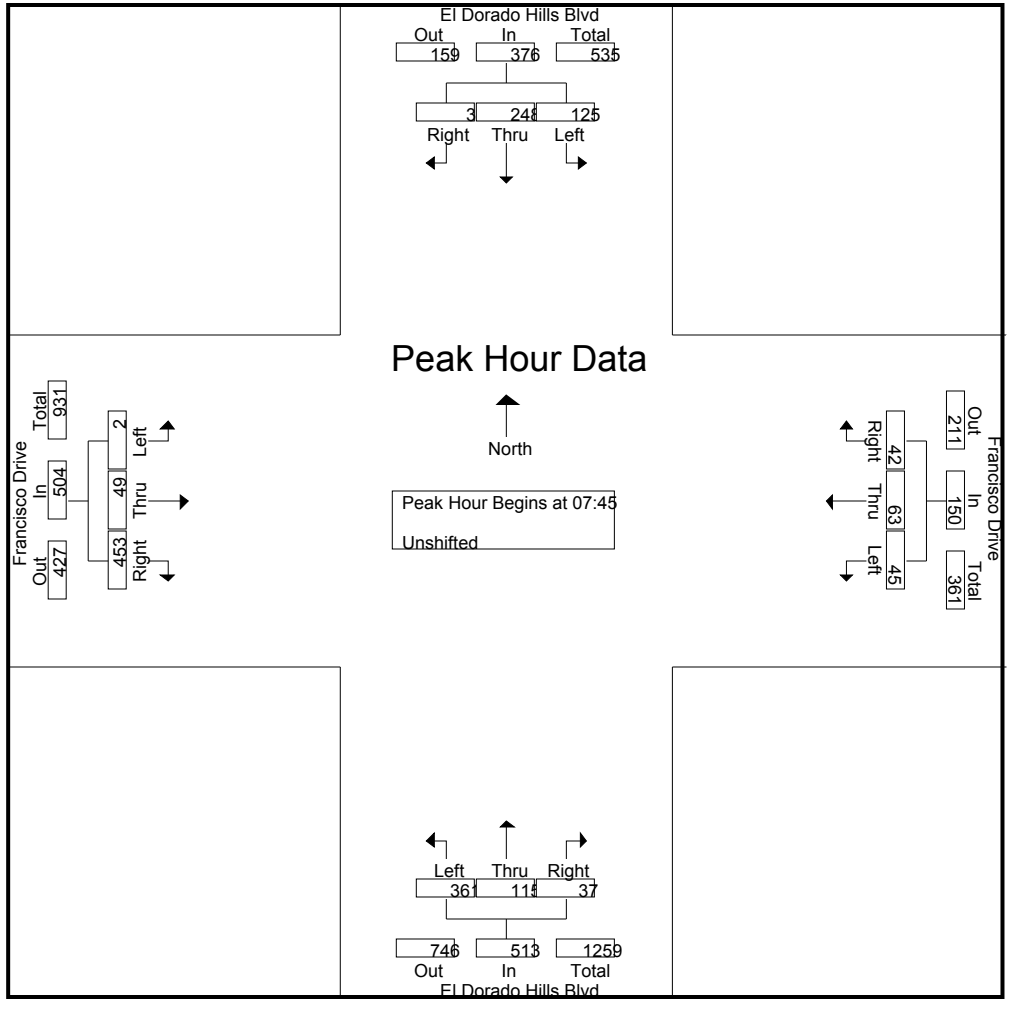

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
Start Date : 1/29/2013
Page No : 4

	El Dorado Hills Blvd Southbound				Francisco Drive Westbound				El Dorado Hills Blvd Northbound				Francisco Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	**3**	**47**	0	**50**	**15**	10	**17**	**42**	125	61	**7**	193	0	12	108	120	405
16:45	3	35	**1**	39	3	**13**	12	28	130	67	4	201	0	**13**	**125**	**138**	**406**
17:00	1	33	1	35	4	6	8	18	117	73	7	197	0	9	105	114	364
17:15	2	41	0	43	4	6	3	13	**132**	**80**	1	**213**	0	7	111	118	387
Total Volume	9	156	2	167	26	35	40	101	504	281	19	804	0	41	449	490	1562
% App. Total	5.4	93.4	1.2		25.7	34.7	39.6		62.7	35	2.4		0	8.4	91.6		
PHF	.750	.830	.500	.835	.433	.673	.588	.601	.955	.878	.679	.944	.000	.788	.898	.888	.962

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
Start Date : 1/29/2013
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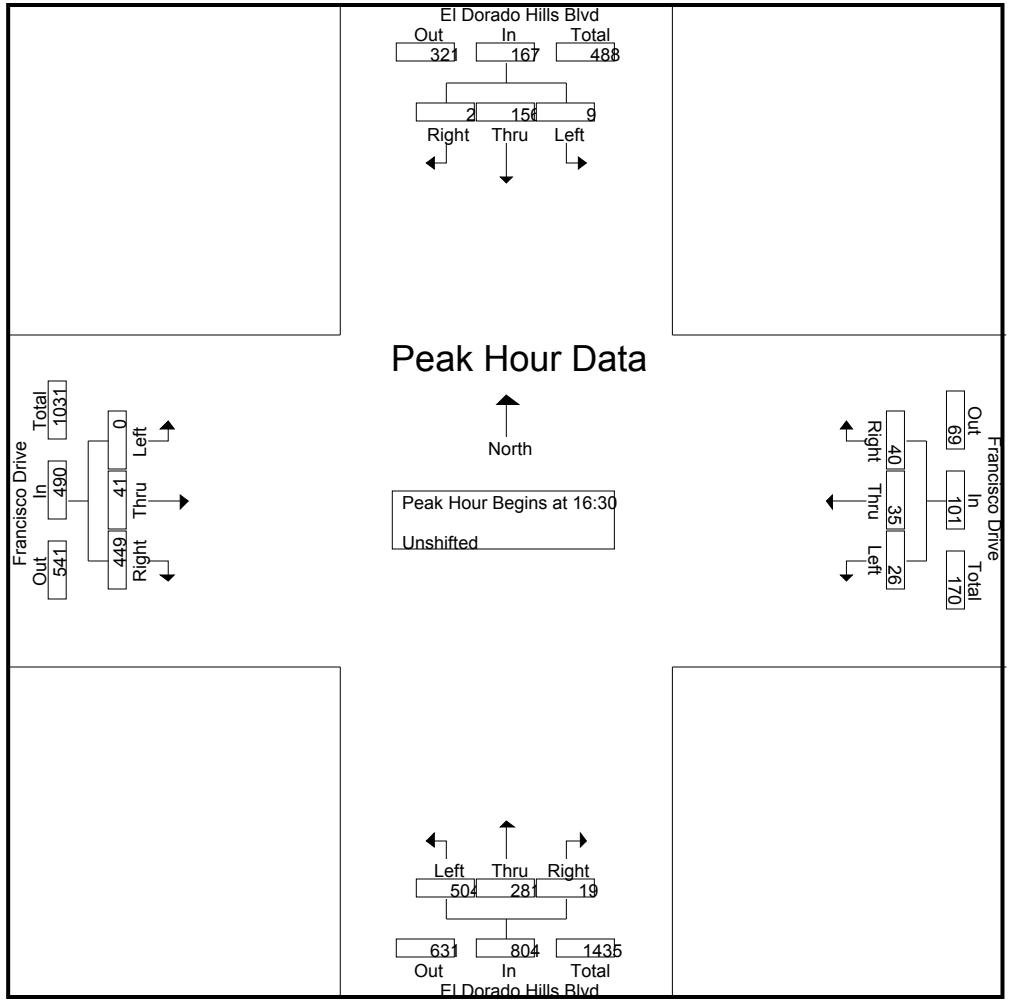

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-019 Silva Valley-Apian
Site Code : 00000000
Start Date : 1/30/2013
Page No : 1

Groups Printed- Unshifted

	Silva Valley Pkwy Southbound				Apian Way Westbound				Silva Valley Pkwy Northbound				Apian Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	1	16	0	17	8	0	10	18	3	12	1	16	1	0	11	12	63
06:45	5	53	3	61	20	0	11	31	2	21	2	25	5	0	27	32	149
Total	6	69	3	78	28	0	21	49	5	33	3	41	6	0	38	44	212
07:00	3	92	2	97	65	1	12	78	3	35	6	44	7	0	37	44	263
07:15	2	54	4	60	37	0	28	65	11	73	15	99	13	1	17	31	255
07:30	9	41	10	60	34	1	10	45	2	41	8	51	11	0	14	25	181
07:45	9	39	3	51	18	0	12	30	4	41	12	57	4	0	15	19	157
Total	23	226	19	268	154	2	62	218	20	190	41	251	35	1	83	119	856
08:00	12	39	2	53	32	0	10	42	4	34	18	56	5	1	19	25	176
08:15	6	45	3	54	33	0	18	51	3	67	19	89	10	0	21	31	225
08:30	12	29	7	48	18	1	21	40	4	27	11	42	17	0	13	30	160
08:45	12	37	4	53	15	0	9	24	3	21	5	29	6	0	12	18	124
Total	42	150	16	208	98	1	58	157	14	149	53	216	38	1	65	104	685
09:00	4	19	0	23	8	0	10	18	5	20	5	30	4	0	11	15	86
09:15	5	21	5	31	9	0	10	19	4	21	3	28	7	0	11	18	96
Total	9	40	5	54	17	0	20	37	9	41	8	58	11	0	22	33	182
15:30	8	36	4	48	9	0	12	21	8	43	18	69	6	0	10	16	154
15:45	11	45	6	62	15	0	13	28	17	50	18	85	2	0	9	11	186
Total	19	81	10	110	24	0	25	49	25	93	36	154	8	0	19	27	340
16:00	12	30	6	48	11	0	12	23	11	42	13	66	2	1	11	14	151
16:15	14	38	5	57	16	0	9	25	7	45	6	58	6	0	6	12	152
16:30	10	58	11	79	18	1	10	29	14	63	24	101	4	2	13	19	228
16:45	11	41	4	56	14	0	10	24	23	73	23	119	2	0	12	14	213
Total	47	167	26	240	59	1	41	101	55	223	66	344	14	3	42	59	744
17:00	13	44	5	62	9	0	12	21	18	55	19	92	9	2	3	14	189
17:15	13	48	9	70	15	1	11	27	15	52	23	90	2	0	11	13	200

All Traffic Data

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El Dorado County

File Name : 13-7063-019 Silva Valley-Apian
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Groups Printed- Unshifted

	Silva Valley Pkwy Southbound				Apian Way Westbound				Silva Valley Pkwy Northbound				Apian Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	13	43	6	62	13	0	5	18	19	55	19	93	4	0	12	16	189
17:45	12	40	7	59	10	2	8	20	20	44	21	85	4	0	14	18	182
Total	51	175	27	253	47	3	36	86	72	206	82	360	19	2	40	61	760
18:00	13	41	8	62	5	0	6	11	23	44	19	86	5	0	7	12	171
18:15	9	37	14	60	13	1	7	21	23	32	17	72	1	1	5	7	160
Grand Total	219	986	128	1333	445	8	276	729	246	1011	325	1582	137	8	321	466	4110
Apprch %	16.4	74	9.6		61	1.1	37.9		15.5	63.9	20.5		29.4	1.7	68.9		
Total %	5.3	24	3.1	32.4	10.8	0.2	6.7	17.7	6	24.6	7.9	38.5	3.3	0.2	7.8	11.3	

	Silva Valley Pkwy Southbound				Apian Way Westbound				Silva Valley Pkwy Northbound				Apian Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	3	**92**	2	**97**	**65**	**1**	12	**78**	3	35	6	44	7	0	**37**	**44**	**263**
07:15	2	54	4	60	37	0	**28**	65	**11**	**73**	**15**	**99**	**13**	**1**	17	31	255
07:30	**9**	41	**10**	60	34	1	10	45	2	41	8	51	11	0	14	25	181
07:45	9	39	3	51	18	0	12	30	4	41	12	57	4	0	15	19	157
Total Volume	23	226	19	268	154	2	62	218	20	190	41	251	35	1	83	119	856
% App. Total	8.6	84.3	7.1		70.6	0.9	28.4		8	75.7	16.3		29.4	0.8	69.7		
PHF	.639	.614	.475	.691	.592	.500	.554	.699	.455	.651	.683	.634	.673	.250	.561	.676	.814

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El Dorado County

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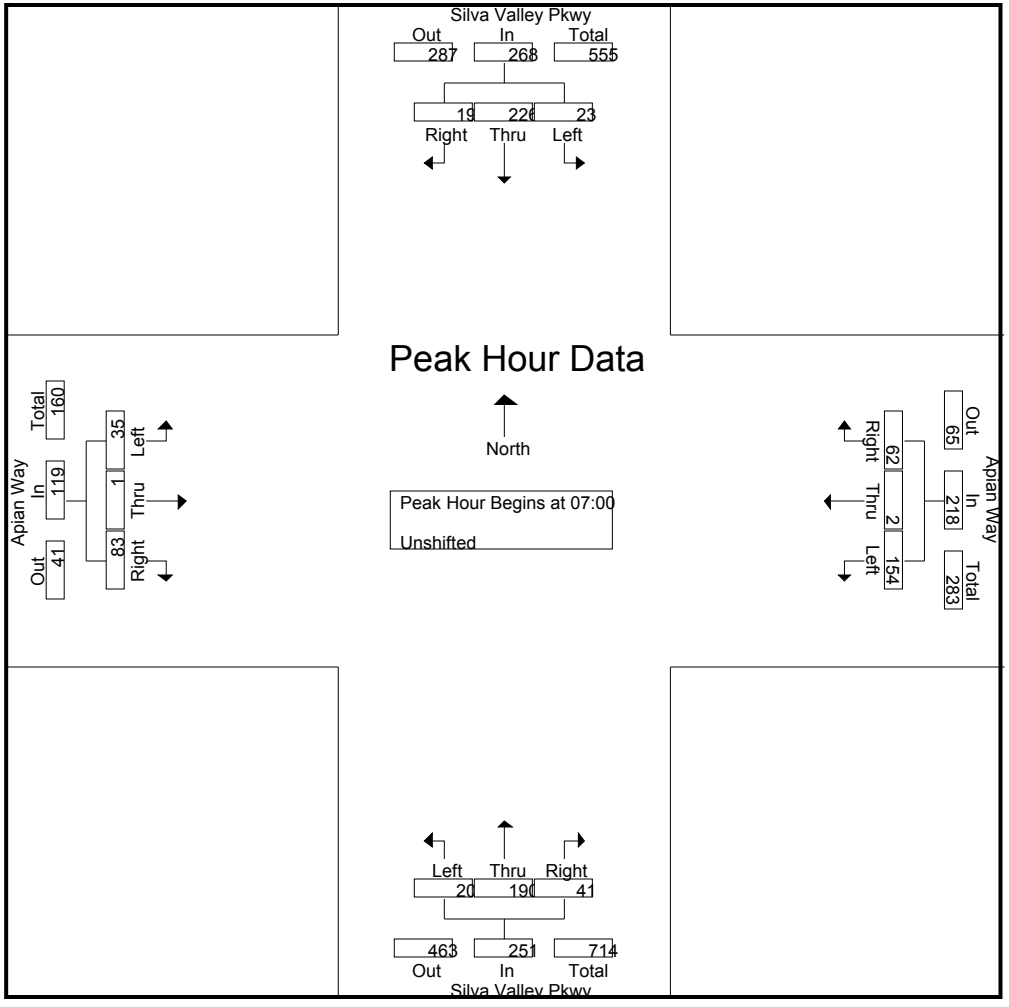

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El Dorado County

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	Silva Valley Pkwy Southbound				Apian Way Westbound				Silva Valley Pkwy Northbound				Apian Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	10	**58**	**11**	**79**	**18**	**1**	10	**29**	14	63	**24**	101	4	**2**	**13**	**19**	**228**
16:45	11	41	4	56	14	0	10	24	**23**	**73**	23	**119**	2	0	12	14	213
17:00	**13**	44	5	62	9	0	**12**	21	18	55	19	92	**9**	2	3	14	189
17:15	13	48	9	70	15	1	11	27	15	52	23	90	2	0	11	13	200
Total Volume	47	191	29	267	56	2	43	101	70	243	89	402	17	4	39	60	830
% App. Total	17.6	71.5	10.9		55.4	2	42.6		17.4	60.4	22.1		28.3	6.7	65		
PHF	.904	.823	.659	.845	.778	.500	.896	.871	.761	.832	.927	.845	.472	.500	.750	.789	.910

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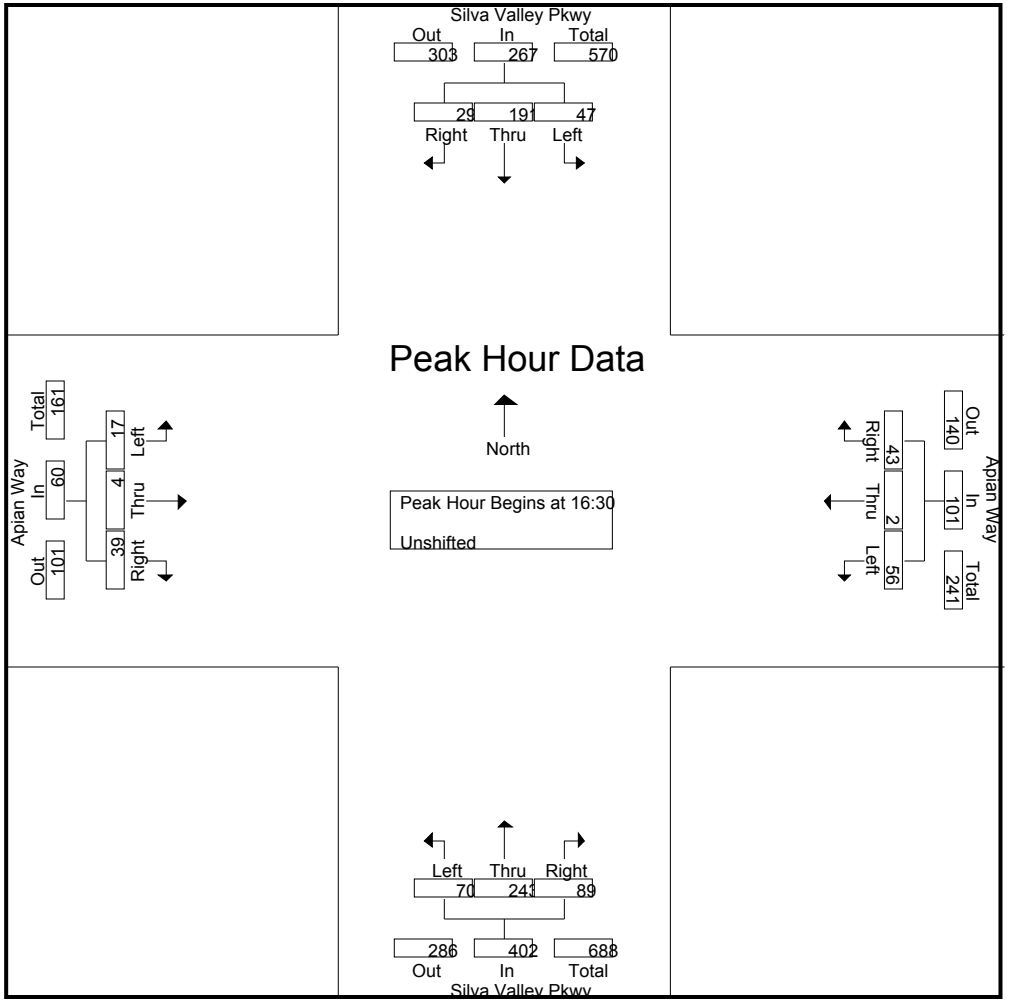

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El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
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Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	6	123	0	129	23	0	5	28	0	29	4	33	0	0	0	0	190
06:45	35	162	0	197	28	0	7	35	0	49	30	79	0	0	0	0	311
Total	41	285	0	326	51	0	12	63	0	78	34	112	0	0	0	0	501
07:00	124	161	0	285	63	0	31	94	0	50	106	156	0	0	0	0	535
07:15	71	226	0	297	120	0	69	189	0	66	103	169	0	0	0	0	655
07:30	32	182	0	214	118	0	26	144	0	101	90	191	0	0	0	0	549
07:45	38	241	0	279	98	0	21	119	0	92	29	121	0	0	0	0	519
Total	265	810	0	1075	399	0	147	546	0	309	328	637	0	0	0	0	2258
08:00	34	171	0	205	51	0	34	85	0	96	28	124	0	0	0	0	414
08:15	68	166	0	234	63	0	52	115	0	86	67	153	0	0	0	0	502
08:30	17	183	0	200	44	0	41	85	0	116	16	132	0	0	0	0	417
08:45	30	225	0	255	30	0	15	45	0	79	12	91	0	0	0	0	391
Total	149	745	0	894	188	0	142	330	0	377	123	500	0	0	0	0	1724
09:00	10	136	0	146	31	0	10	41	0	78	8	86	0	0	0	0	273
09:15	4	135	0	139	15	0	4	19	0	94	9	103	0	0	0	0	261
Total	14	271	0	285	46	0	14	60	0	172	17	189	0	0	0	0	534
15:30	33	103	0	136	36	0	33	69	0	196	35	231	0	0	0	0	436
15:45	28	129	0	157	29	0	27	56	0	172	28	200	0	0	0	0	413
Total	61	232	0	293	65	0	60	125	0	368	63	431	0	0	0	0	849
16:00	25	131	0	156	27	0	34	61	0	176	44	220	0	0	0	0	437
16:15	40	117	0	157	31	0	33	64	0	214	27	241	0	0	0	0	462
16:30	38	112	0	150	17	0	29	46	0	209	32	241	0	0	0	0	437
16:45	43	137	0	180	32	0	43	75	0	198	45	243	0	0	0	0	498
Total	146	497	0	643	107	0	139	246	0	797	148	945	0	0	0	0	1834
17:00	35	127	0	162	38	0	29	67	0	225	49	274	0	0	0	0	503
17:15	37	128	0	165	34	0	25	59	0	208	43	251	0	0	0	0	475

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El Dorado County

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	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	31	141	0	172	27	0	34	61	0	213	53	266	0	0	0	0	499
17:45	59	143	0	202	42	0	37	79	0	198	39	237	0	0	0	0	518
Total	162	539	0	701	141	0	125	266	0	844	184	1028	0	0	0	0	1995
18:00	42	102	0	144	34	0	16	50	0	175	43	218	0	0	0	0	412
18:15	31	103	0	134	22	0	28	50	0	155	35	190	0	0	0	0	374
Grand Total	911	3584	0	4495	1053	0	683	1736	0	3275	975	4250	0	0	0	0	10481
Apprch %	20.3	79.7	0		60.7	0	39.3		0	77.1	22.9		0	0	0		
Total %	8.7	34.2	0	42.9	10	0	6.5	16.6	0	31.2	9.3	40.5	0	0	0	0	

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	**124**	161	0	285	63	0	31	94	0	50	**106**	156	0	0	0	0	535
07:15	71	226	0	**297**	**120**	0	**69**	**189**	0	66	103	169	0	0	0	0	**655**
07:30	32	182	0	214	118	0	26	144	0	**101**	90	**191**	0	0	0	0	549
07:45	38	**241**	0	279	98	0	21	119	0	92	29	121	0	0	0	0	519
Total Volume	265	810	0	1075	399	0	147	546	0	309	328	637	0	0	0	0	2258
% App. Total	24.7	75.3	0		73.1	0	26.9		0	48.5	51.5		0	0	0		
PHF	.534	.840	.000	.905	.831	.000	.533	.722	.000	.765	.774	.834	.000	.000	.000	.000	.862

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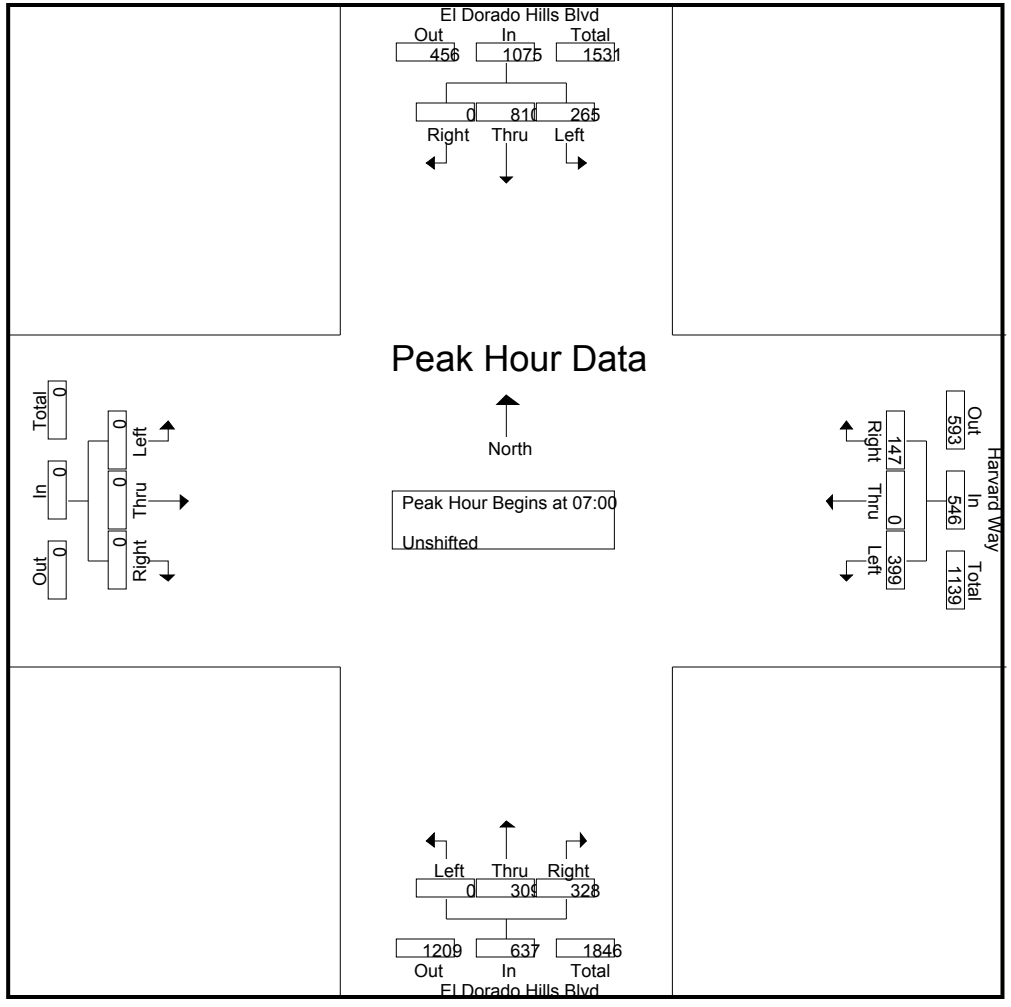

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El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
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	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	35	127	0	162	38	0	29	67	0	**225**	49	**274**	0	0	0	0	503
17:15	37	128	0	165	34	0	25	59	0	208	43	251	0	0	0	0	475
17:30	31	141	0	172	27	0	34	61	0	213	**53**	266	0	0	0	0	499
17:45	**59**	**143**	0	**202**	**42**	0	**37**	**79**	0	198	39	237	0	0	0	0	**518**
Total Volume	162	539	0	701	141	0	125	266	0	844	184	1028	0	0	0	0	1995
% App. Total	23.1	76.9	0		53	0	47		0	82.1	17.9		0	0	0		
PHF	.686	.942	.000	.868	.839	.000	.845	.842	.000	.938	.868	.938	.000	.000	.000	.000	.963

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El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
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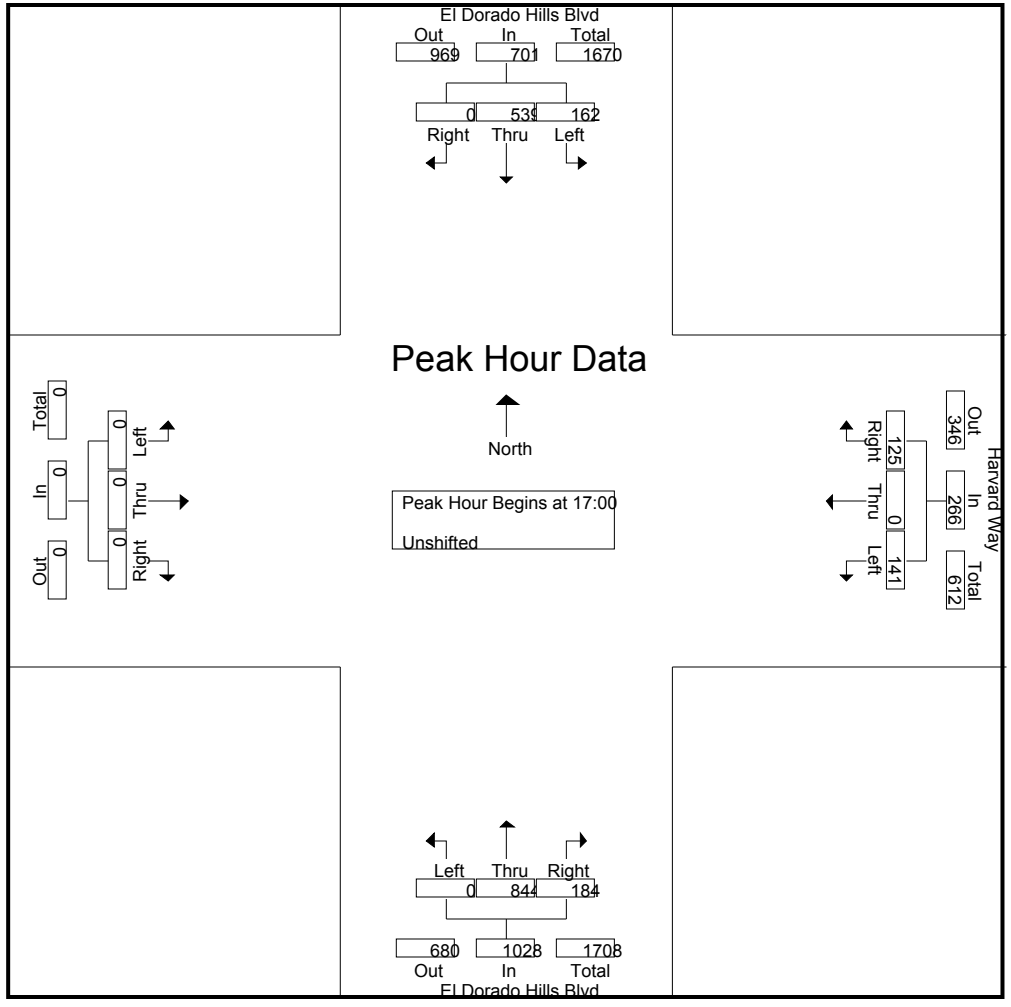

All Traffic Data

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El Dorado County

File Name : 13-7063-018 Silva Valley-Harvard
Site Code : 00000000
Start Date : 1/30/2013
Page No : 1

Groups Printed- Unshifted

	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	0	25	13	38	0	0	0	0	3	14	0	0	17	2	1	4	7	62
06:45	1	33	54	88	0	1	0	1	36	22	2	0	60	4	3	11	18	167
Total	1	58	67	126	0	1	0	1	39	36	2	0	77	6	4	15	25	229
07:00	6	31	119	156	8	4	2	14	97	37	7	16	157	12	7	32	51	378
07:15	13	33	88	134	32	27	2	61	81	51	16	37	185	44	40	81	165	545
07:30	12	65	65	142	41	16	4	61	55	56	11	66	188	7	34	63	104	495
07:45	2	41	30	73	32	19	2	53	57	68	3	17	145	6	8	45	59	330
Total	33	170	302	505	113	66	10	189	290	212	37	136	675	69	89	221	379	1748
08:00	0	38	38	76	2	2	1	5	46	43	0	6	95	12	0	41	53	229
08:15	0	32	70	102	2	1	0	3	82	55	0	15	152	44	0	76	120	377
08:30	1	36	17	54	1	0	1	2	44	22	0	0	66	12	2	25	39	161
08:45	1	51	16	68	2	2	0	4	6	20	0	1	27	6	1	37	44	143
Total	2	157	141	300	7	5	2	14	178	140	0	22	340	74	3	179	256	910
09:00	1	23	11	35	0	1	1	2	7	24	0	0	31	8	3	10	21	89
09:15	1	34	5	40	1	0	1	2	12	19	0	0	31	5	2	13	20	93
Total	2	57	16	75	1	1	2	4	19	43	0	0	62	13	5	23	41	182
15:30	7	42	9	58	8	5	5	18	31	65	3	1	100	9	6	27	42	218
15:45	3	61	13	77	8	3	2	13	36	59	4	1	100	17	2	35	54	244
Total	10	103	22	135	16	8	7	31	67	124	7	2	200	26	8	62	96	462
16:00	2	29	16	47	4	5	1	10	26	50	1	1	78	12	1	39	52	187
16:15	0	54	11	65	3	0	0	3	19	48	2	0	69	10	1	37	48	185
16:30	1	52	19	72	1	2	1	4	28	65	0	1	94	29	2	56	87	257
16:45	0	54	17	71	3	3	4	10	59	75	0	4	138	38	1	52	91	310
Total	3	189	63	255	11	10	6	27	132	238	3	6	379	89	5	184	278	939
17:00	2	40	10	52	1	5	0	6	40	79	1	1	121	30	2	38	70	249
17:15	3	51	19	73	3	2	1	6	27	53	6	0	86	32	5	39	76	241

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Groups Printed- Unshifted

	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	4	50	21	75	1	0	0	1	46	77	3	0	126	21	2	56	79	281
17:45	0	49	22	71	6	7	7	20	44	56	0	0	100	25	1	42	68	259
Total	9	190	72	271	11	14	8	33	157	265	10	1	433	108	10	175	293	1030
18:00	1	40	10	51	0	0	0	0	31	67	0	1	99	25	2	32	59	209
18:15	4	37	10	51	0	0	0	0	31	48	1	0	80	20	2	23	45	176
Grand Total	65	1001	703	1769	159	105	35	299	944	1173	60	168	2345	430	128	914	1472	5885
Apprch %	3.7	56.6	39.7		53.2	35.1	11.7		40.3	50	2.6	7.2		29.2	8.7	62.1		
Total %	1.1	17	11.9	30.1	2.7	1.8	0.6	5.1	16	19.9	1	2.9	39.8	7.3	2.2	15.5	25	

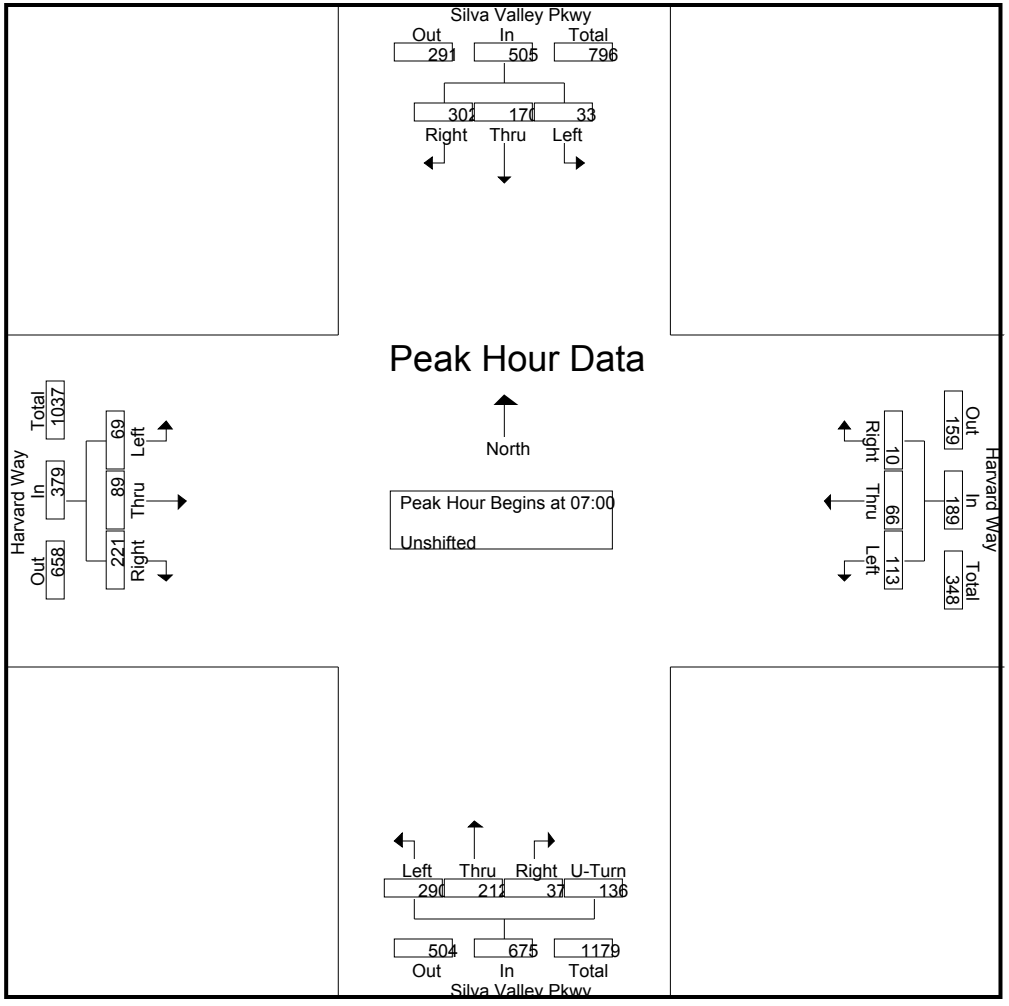
	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00																		
07:00	6	31	**119**	**156**	8	4	2	14	**97**	37	7	16	157	12	7	32	51	378
07:15	**13**	33	88	134	32	**27**	2	**61**	81	51	**16**	37	185	**44**	**40**	**81**	**165**	**545**
07:30	12	**65**	65	142	**41**	16	**4**	61	55	56	11	**66**	**188**	7	34	63	104	495
07:45	2	41	30	73	32	19	2	53	57	**68**	3	17	145	6	8	45	59	330
Total Volume	33	170	302	505	113	66	10	189	290	212	37	136	675	69	89	221	379	1748
% App. Total	6.5	33.7	59.8		59.8	34.9	5.3		43	31.4	5.5	20.1		18.2	23.5	58.3		
PHF	.635	.654	.634	.809	.689	.611	.625	.775	.747	.779	.578	.515	.898	.392	.556	.682	.574	.802

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-018 Silva Valley-Harvard
Site Code : 00000000
Start Date : 1/30/2013
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-018 Silva Valley-Harvard
Site Code : 00000000
Start Date : 1/30/2013
Page No : 4

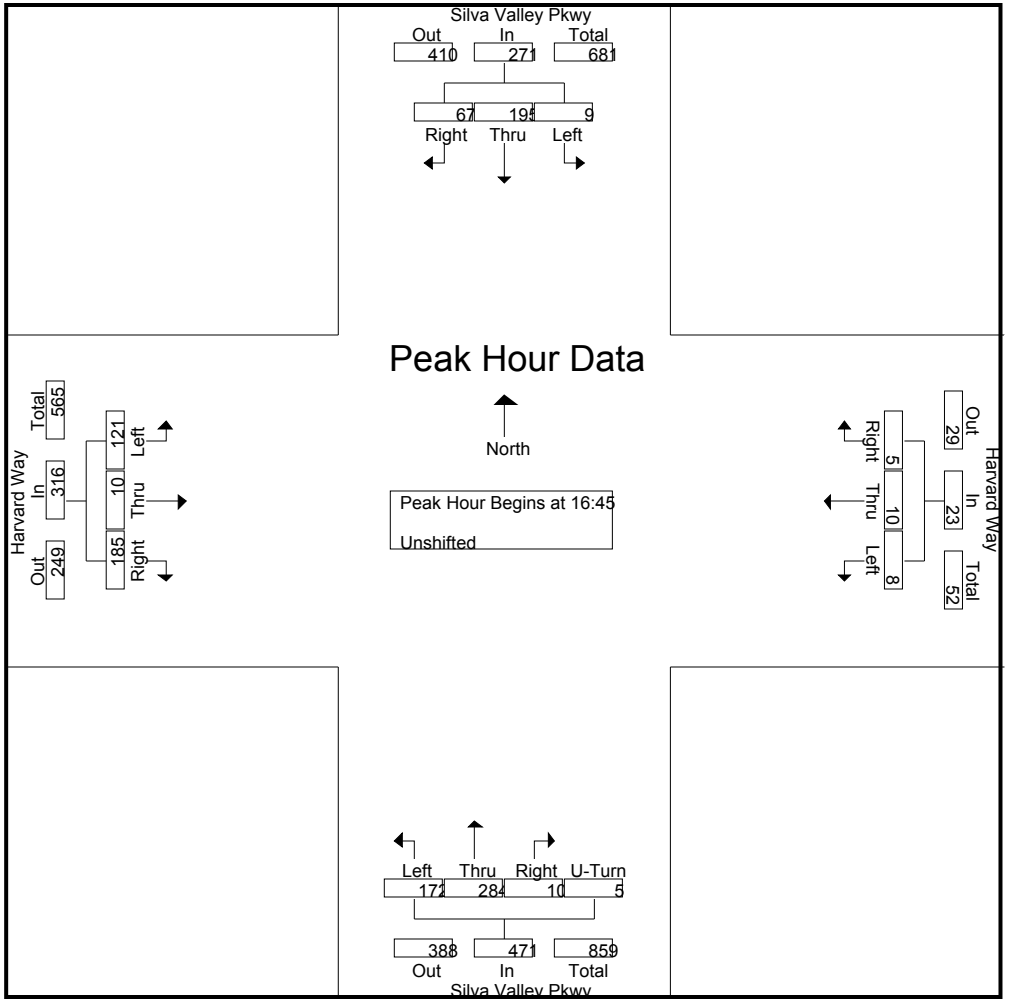
	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 16:45																		
16:45	0	**54**	17	71	**3**	3	**4**	**10**	**59**	75	0	**4**	**138**	**38**	1	52	**91**	**310**
17:00	2	40	10	52	1	**5**	0	6	40	**79**	1	1	121	30	2	38	70	249
17:15	3	51	19	73	3	2	1	6	27	53	**6**	0	86	32	**5**	39	76	241
17:30	**4**	50	**21**	**75**	1	0	0	1	46	77	3	0	126	21	2	**56**	79	281
Total Volume	9	195	67	271	8	10	5	23	172	284	10	5	471	121	10	185	316	1081
% App. Total	3.3	72	24.7		34.8	43.5	21.7		36.5	60.3	2.1	1.1		38.3	3.2	58.5		
PHF	.563	.903	.798	.903	.667	.500	.313	.575	.729	.899	.417	.313	.853	.796	.500	.826	.868	.872

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-018 Silva Valley-Harvard
Site Code : 00000000
Start Date : 1/30/2013
Page No : 5



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Westbound				El Dorado Hills Blvd Northbound					Olson Lane Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	225	7	0	232	0	0	0	0	7	141	0	0	148	36	0	29	0	65	0	445	445
07:15	0	264	10	0	274	0	0	0	0	4	149	0	0	153	22	0	52	0	74	0	501	501
07:30	0	333	10	0	343	0	0	0	0	5	139	0	0	144	19	0	49	0	68	0	555	555
07:45	0	335	9	0	344	0	0	0	0	18	131	0	1	149	7	0	32	0	39	1	532	533
Total	0	1157	36	0	1193	0	0	0	0	34	560	0	1	594	84	0	162	0	246	1	2033	2034
08:00	0	245	6	0	251	0	0	0	0	17	139	0	3	156	12	0	28	0	40	3	447	450
08:15	0	238	15	0	253	0	0	0	0	16	144	0	1	160	9	0	31	0	40	1	453	454
08:30	0	193	15	0	208	0	0	0	0	20	113	0	4	133	10	0	37	0	47	4	388	392
08:45	0	209	6	0	215	0	0	0	0	14	133	0	2	147	5	0	33	0	38	2	400	402
Total	0	885	42	0	927	0	0	0	0	67	529	0	10	596	36	0	129	0	165	10	1688	1698
16:00	0	125	2	0	127	0	0	0	0	30	176	0	0	206	5	0	19	0	24	0	357	357
16:15	0	162	8	0	170	0	0	0	0	29	240	0	0	269	6	0	20	0	26	0	465	465
16:30	0	161	5	0	166	0	0	0	0	44	238	0	1	282	5	0	14	0	19	1	467	468
16:45	0	157	4	0	161	0	0	0	0	47	237	0	1	284	8	0	17	0	25	1	470	471
Total	0	605	19	0	624	0	0	0	0	150	891	0	2	1041	24	0	70	0	94	2	1759	1761
17:00	0	153	4	0	157	0	0	0	0	39	257	0	0	296	8	0	21	0	29	0	482	482
17:15	0	175	5	0	180	0	0	0	0	40	282	0	0	322	7	0	21	0	28	0	530	530
17:30	0	131	8	0	139	0	0	0	0	36	267	0	0	303	8	0	17	0	25	0	467	467
17:45	0	170	7	0	177	0	0	0	0	36	211	0	1	247	6	0	23	0	29	1	453	454
Total	0	629	24	0	653	0	0	0	0	151	1017	0	1	1168	29	0	82	0	111	1	1932	1933
Grand Total	0	3276	121	0	3397	0	0	0	0	402	2997	0	14	3399	173	0	443	0	616	14	7412	7426
Apprch %	0	96.4	3.6			0	0	0		11.8	88.2	0			28.1	0	71.9					
Total %	0	44.2	1.6		45.8	0	0	0	0	5.4	40.4	0		45.9	2.3	0	6		8.3	0.2	99.8	

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 2

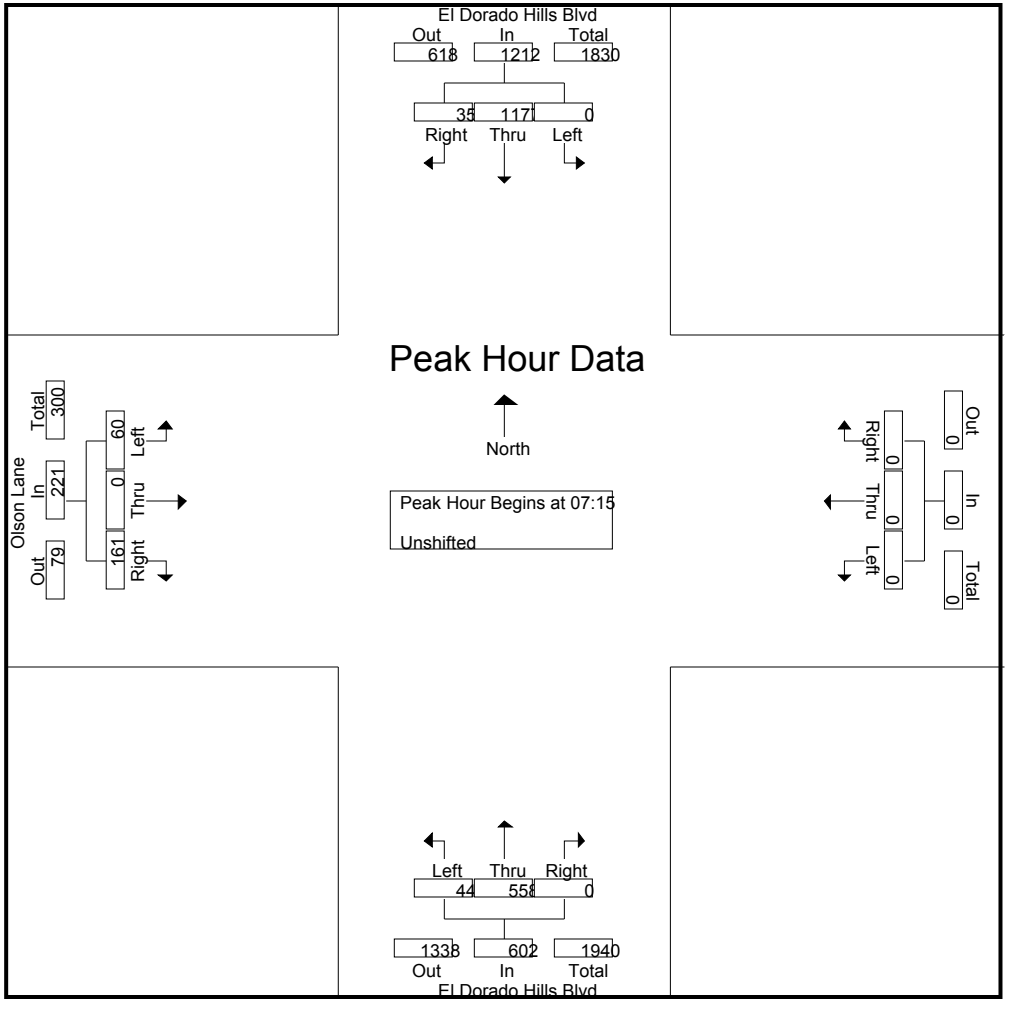
	El Dorado Hills Blvd Southbound				Westbound				El Dorado Hills Blvd Northbound				Olson Lane Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	264	**10**	274	0	0	0	0	4	**149**	0	153	**22**	0	**52**	**74**	501
07:30	0	333	10	343	0	0	0	0	5	139	0	144	19	0	49	68	**555**
07:45	0	**335**	9	**344**	0	0	0	0	**18**	131	0	149	7	0	32	39	532
08:00	0	245	6	251	0	0	0	0	17	139	0	**156**	12	0	28	40	447
Total Volume	0	1177	35	1212	0	0	0	0	44	558	0	602	60	0	161	221	2035
% App. Total	0	97.1	2.9		0	0	0		7.3	92.7	0		27.1	0	72.9		
PHF	.000	.878	.875	.881	.000	.000	.000	.000	.611	.936	.000	.965	.682	.000	.774	.747	.917

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 4

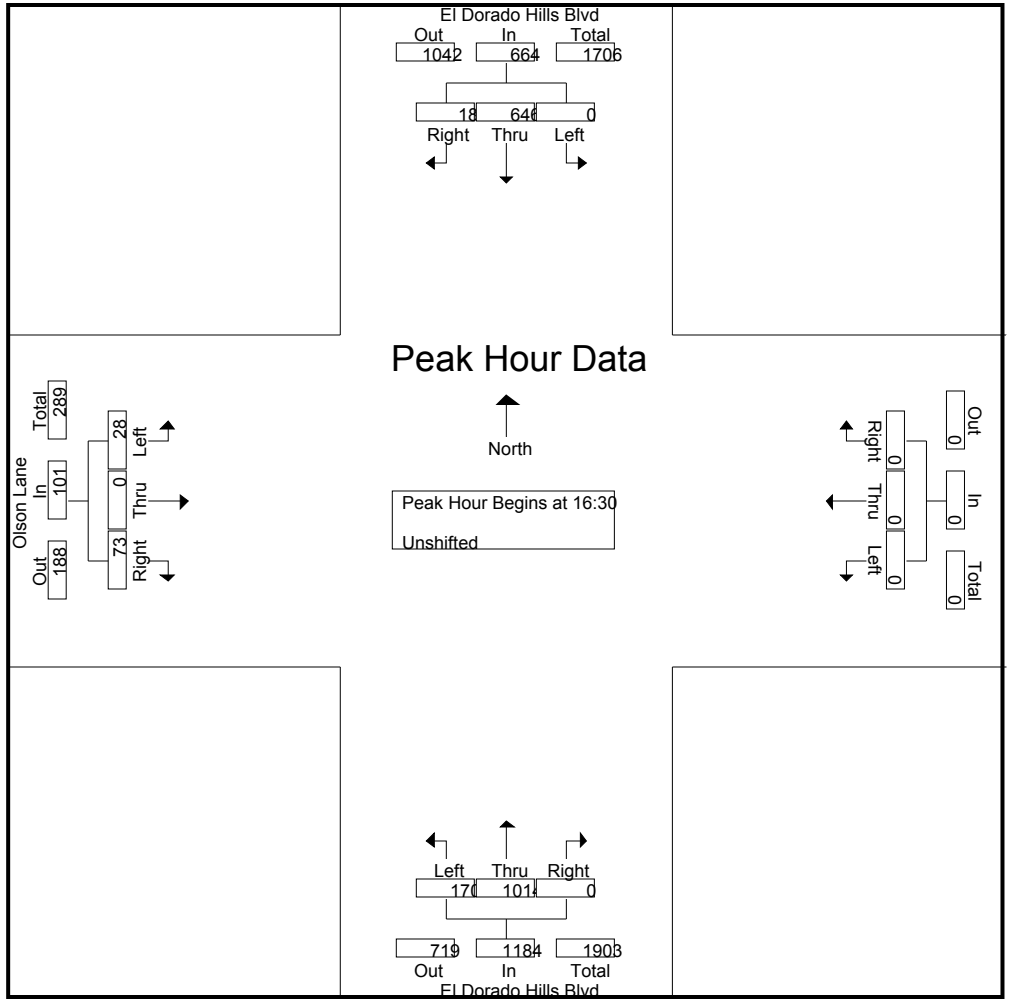
	El Dorado Hills Blvd Southbound				Westbound				El Dorado Hills Blvd Northbound				Olson Lane Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	161	**5**	166	0	0	0	0	44	238	0	282	5	0	14	19	467
16:45	0	157	4	161	0	0	0	0	**47**	237	0	284	**8**	0	17	25	470
17:00	0	153	4	157	0	0	0	0	39	257	0	296	8	0	**21**	**29**	482
17:15	0	**175**	5	**180**	0	0	0	0	40	**282**	0	**322**	7	0	21	28	**530**
Total Volume	0	646	18	664	0	0	0	0	170	1014	0	1184	28	0	73	101	1949
% App. Total	0	97.3	2.7		0	0	0		14.4	85.6	0		27.7	0	72.3		
PHF	.000	.923	.900	.922	.000	.000	.000	.000	.904	.899	.000	.919	.875	.000	.869	.871	.919

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

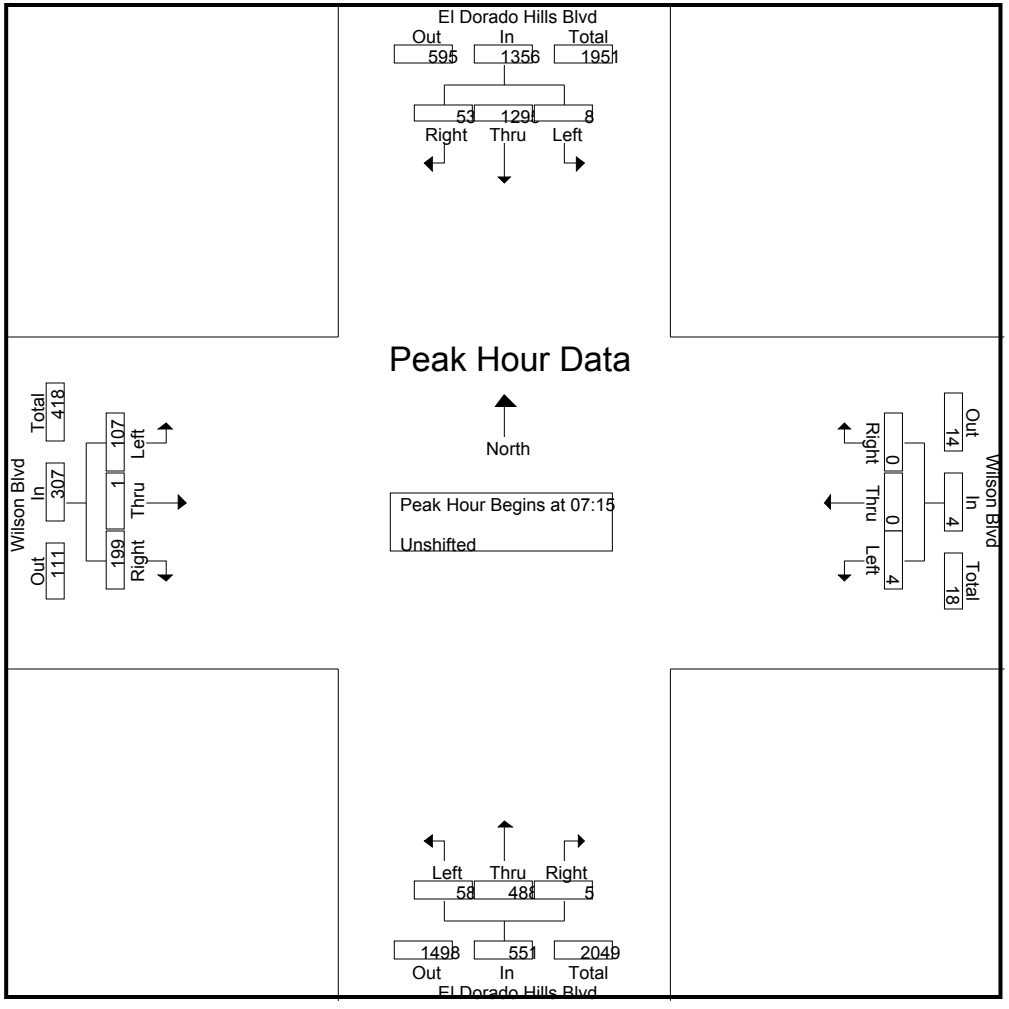
File Name : 12-7225-002 El Dorado Hills-Wilson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Wilson Blvd Westbound					El Dorado Hills Blvd Northbound					Wilson Blvd Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	2	245	6	4	253	0	0	0	1	0	10	108	0	0	118	39	0	46	0	85	5	456	461
07:15	2	311	12	3	325	0	0	0	0	0	8	103	2	0	113	49	0	39	0	88	3	526	529
07:30	1	359	15	1	375	1	0	0	1	1	9	113	3	0	125	28	0	70	0	98	2	599	601
07:45	1	354	19	2	374	3	0	0	0	3	21	135	0	0	156	14	1	52	0	67	2	600	602
Total	6	1269	52	10	1327	4	0	0	2	4	48	459	5	0	512	130	1	207	0	338	12	2181	2193
08:00	4	271	7	2	282	0	0	0	2	0	20	137	0	0	157	16	0	38	0	54	4	493	497
08:15	1	254	7	2	262	3	1	1	1	5	9	143	1	0	153	16	0	28	0	44	3	464	467
08:30	0	214	18	0	232	1	0	1	0	2	9	122	1	0	132	14	0	37	0	51	0	417	417
08:45	0	231	13	1	244	0	0	0	1	0	15	122	0	0	137	22	0	30	0	52	2	433	435
Total	5	970	45	5	1020	4	1	2	4	7	53	524	2	0	579	68	0	133	0	201	9	1807	1816
16:00	0	131	13	0	144	0	0	0	0	0	31	187	0	0	218	7	0	19	0	26	0	388	388
16:15	1	158	14	1	173	0	0	0	0	0	48	258	0	0	306	18	0	30	0	48	1	527	528
16:30	0	173	14	0	187	0	1	0	0	1	28	258	1	0	287	13	0	28	0	41	0	516	516
16:45	0	159	10	0	169	1	0	0	0	1	44	287	0	0	331	8	0	35	0	43	0	544	544
Total	1	621	51	1	673	1	1	0	0	2	151	990	1	0	1142	46	0	112	0	158	1	1975	1976
17:00	0	155	12	0	167	1	0	2	0	3	43	263	0	0	306	7	0	27	0	34	0	510	510
17:15	0	169	9	0	178	0	0	0	0	0	62	305	1	0	368	13	0	30	0	43	0	589	589
17:30	0	146	13	0	159	1	0	0	0	1	46	282	1	0	329	10	0	14	0	24	0	513	513
17:45	1	170	11	0	182	0	0	1	0	1	59	261	7	0	327	6	1	25	0	32	0	542	542
Total	1	640	45	0	686	2	0	3	0	5	210	1111	9	0	1330	36	1	96	0	133	0	2154	2154
Grand Total	13	3500	193	16	3706	11	2	5	6	18	462	3084	17	0	3563	280	2	548	0	830	22	8117	8139
Apprch %	0.4	94.4	5.2			61.1	11.1	27.8			13	86.6	0.5			33.7	0.2	66					
Total %	0.2	43.1	2.4		45.7	0.1	0	0.1		0.2	5.7	38	0.2		43.9	3.4	0	6.8		10.2	0.3	99.7	

	El Dorado Hills Blvd Southbound				Wilson Blvd Westbound				El Dorado Hills Blvd Northbound				Wilson Blvd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	2	311	12	325	0	0	0	0	8	103	2	113	**49**	0	39	88	526
07:30	1	**359**	15	**375**	1	0	0	1	9	113	**3**	125	28	0	**70**	**98**	599
07:45	1	354	**19**	374	**3**	0	0	**3**	**21**	135	0	156	14	**1**	52	67	**600**
08:00	**4**	271	7	282	0	0	0	0	20	**137**	0	**157**	16	0	38	54	493
Total Volume	8	1295	53	1356	4	0	0	4	58	488	5	551	107	1	199	307	2218

% App. Total	0.6	95.5	3.9		100	0	0		10.5	88.6	0.9		34.9	0.3	64.8		
PHF	.500	.902	.697	.904	.333	.000	.000	.333	.690	.891	.417	.877	.546	.250	.711	.783	.924



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

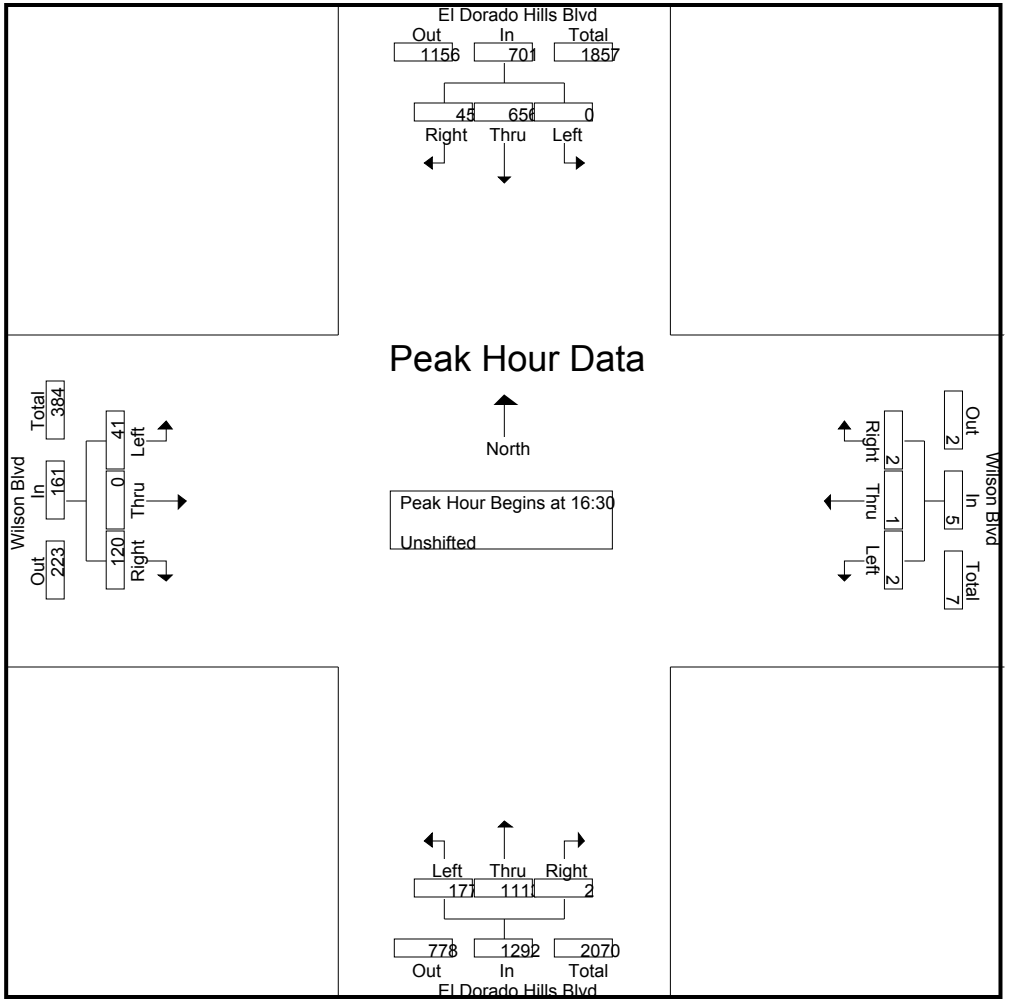
16:30	0	**173**	**14**	**187**	0	**1**	0	1	28	258	**1**	287	**13**	0	28	41	516
16:45	0	159	10	169	**1**	0	0	1	44	287	0	331	8	0	**35**	**43**	544
17:00	0	155	12	167	1	0	**2**	**3**	43	263	0	306	7	0	27	34	510
17:15	0	169	9	178	0	0	0	0	**62**	**305**	1	**368**	13	0	30	43	**589**
Total Volume	0	656	45	701	2	1	2	5	177	1113	2	1292	41	0	120	161	2159
% App. Total	0	93.6	6.4		40	20	40		13.7	86.1	0.2		25.5	0	74.5		
PHF	.000	.948	.804	.937	.500	.250	.250	.417	.714	.912	.500	.878	.788	.000	.857	.936	.916

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-002 El Dorado Hills-Wilson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

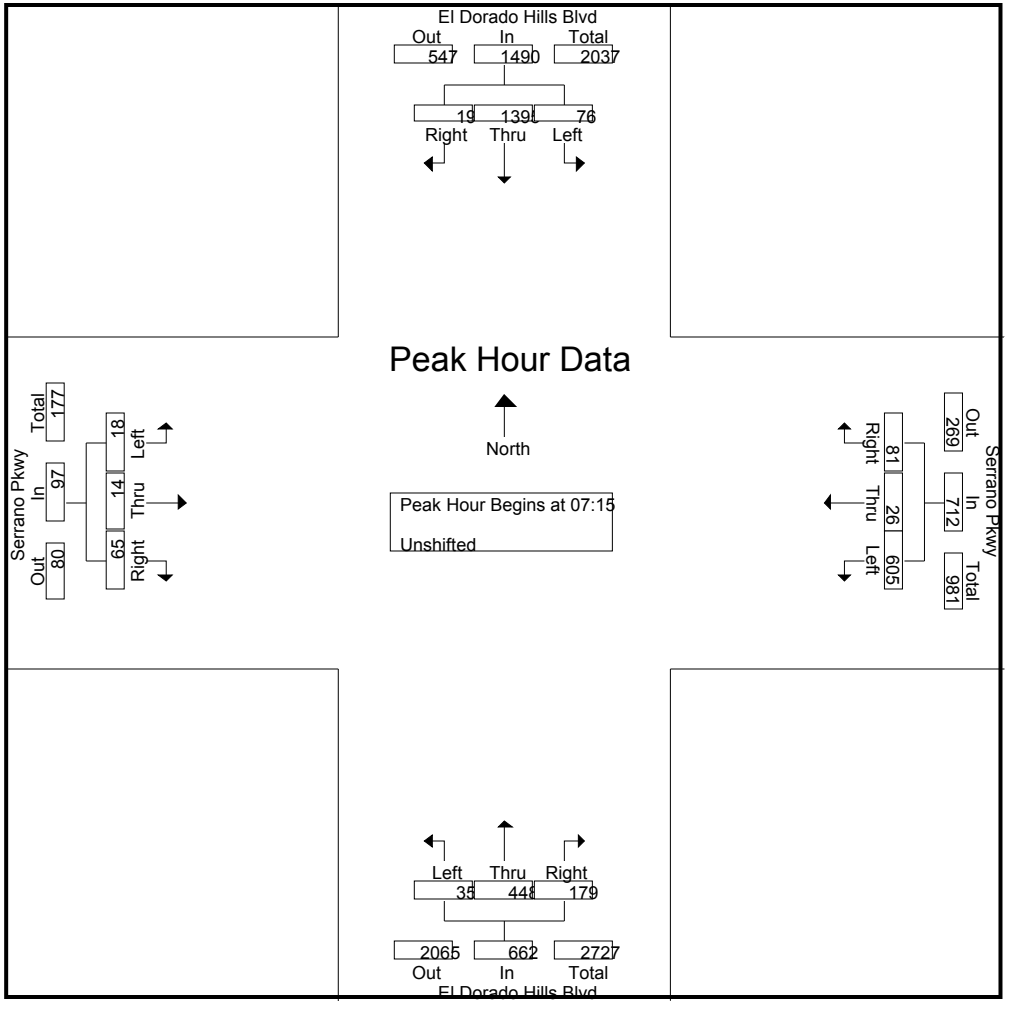
File Name : 12-7225-003 El Dorado Hills-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Serrano Pkwy Westbound					El Dorado Hills Blvd Northbound					Serrano Pkwy Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	2	282	3	0	287	118	1	10	0	129	2	91	42	0	135	13	5	17	0	35	0	586	586
07:15	14	335	2	0	351	141	2	16	0	159	2	98	33	0	133	2	3	21	0	26	0	669	669
07:30	32	362	5	0	399	146	3	15	1	164	6	98	45	0	149	5	7	12	0	24	1	736	737
07:45	23	405	7	1	435	188	9	28	0	225	10	135	43	0	188	4	2	8	0	14	1	862	863
Total	71	1384	17	1	1472	593	15	69	1	677	20	422	163	0	605	24	17	58	0	99	2	2853	2855
08:00	7	293	5	0	305	130	12	22	0	164	17	117	58	0	192	7	2	24	0	33	0	694	694
08:15	3	264	7	0	274	116	8	16	0	140	10	134	25	0	169	8	1	15	0	24	0	607	607
08:30	5	243	9	0	257	121	6	9	0	136	18	116	38	0	172	5	2	18	0	25	0	590	590
08:45	3	248	20	0	271	88	8	8	1	104	41	130	37	0	208	16	2	36	0	54	1	637	638
Total	18	1048	41	0	1107	455	34	55	1	544	86	497	158	0	741	36	7	93	0	136	1	2528	2529
16:00	6	139	6	0	151	73	3	2	0	78	24	240	100	0	364	7	1	15	0	23	0	616	616
16:15	5	167	14	0	186	67	6	6	0	79	18	286	99	0	403	5	4	8	0	17	0	685	685
16:30	11	171	10	0	192	75	4	2	0	81	22	271	105	0	398	11	7	16	0	34	0	705	705
16:45	8	180	9	0	197	60	7	12	0	79	22	296	112	0	430	11	2	14	1	27	1	733	734
Total	30	657	39	0	726	275	20	22	0	317	86	1093	416	0	1595	34	14	53	1	101	1	2739	2740
17:00	6	177	1	0	184	53	2	7	0	62	26	319	125	1	470	5	8	10	0	23	1	739	740
17:15	13	171	9	1	193	76	4	10	0	90	25	338	135	0	498	3	7	17	0	27	1	808	809
17:30	11	137	14	0	162	68	5	3	0	76	28	314	156	5	498	4	0	12	5	16	10	752	762
17:45	7	182	11	0	200	66	1	15	0	82	20	310	127	0	457	6	1	9	0	16	0	755	755
Total	37	667	35	1	739	263	12	35	0	310	99	1281	543	6	1923	18	16	48	5	82	12	3054	3066
Grand Total	156	3756	132	2	4044	1586	81	181	2	1848	291	3293	1280	6	4864	112	54	252	6	418	16	11174	11190
Apprch %	3.9	92.9	3.3			85.8	4.4	9.8			6	67.7	26.3			26.8	12.9	60.3					
Total %	1.4	33.6	1.2		36.2	14.2	0.7	1.6		16.5	2.6	29.5	11.5		43.5	1	0.5	2.3		3.7	0.1	99.9	

	El Dorado Hills Blvd Southbound				Serrano Pkwy Westbound				El Dorado Hills Blvd Northbound				Serrano Pkwy Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	14	335	2	351	141	2	16	159	2	98	33	133	2	3	21	26	669
07:30	**32**	362	5	399	146	3	15	164	6	98	45	149	5	**7**	12	24	736
07:45	23	**405**	**7**	**435**	**188**	9	**28**	**225**	10	**135**	43	188	4	2	8	14	**862**
08:00	7	293	5	305	130	**12**	22	164	**17**	117	**58**	**192**	**7**	2	**24**	**33**	694
Total Volume	76	1395	19	1490	605	26	81	712	35	448	179	662	18	14	65	97	2961

% App. Total	5.1	93.6	1.3		85	3.7	11.4		5.3	67.7	27		18.6	14.4	67		
PHF	.594	.861	.679	.856	.805	.542	.723	.791	.515	.830	.772	.862	.643	.500	.677	.735	.859



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

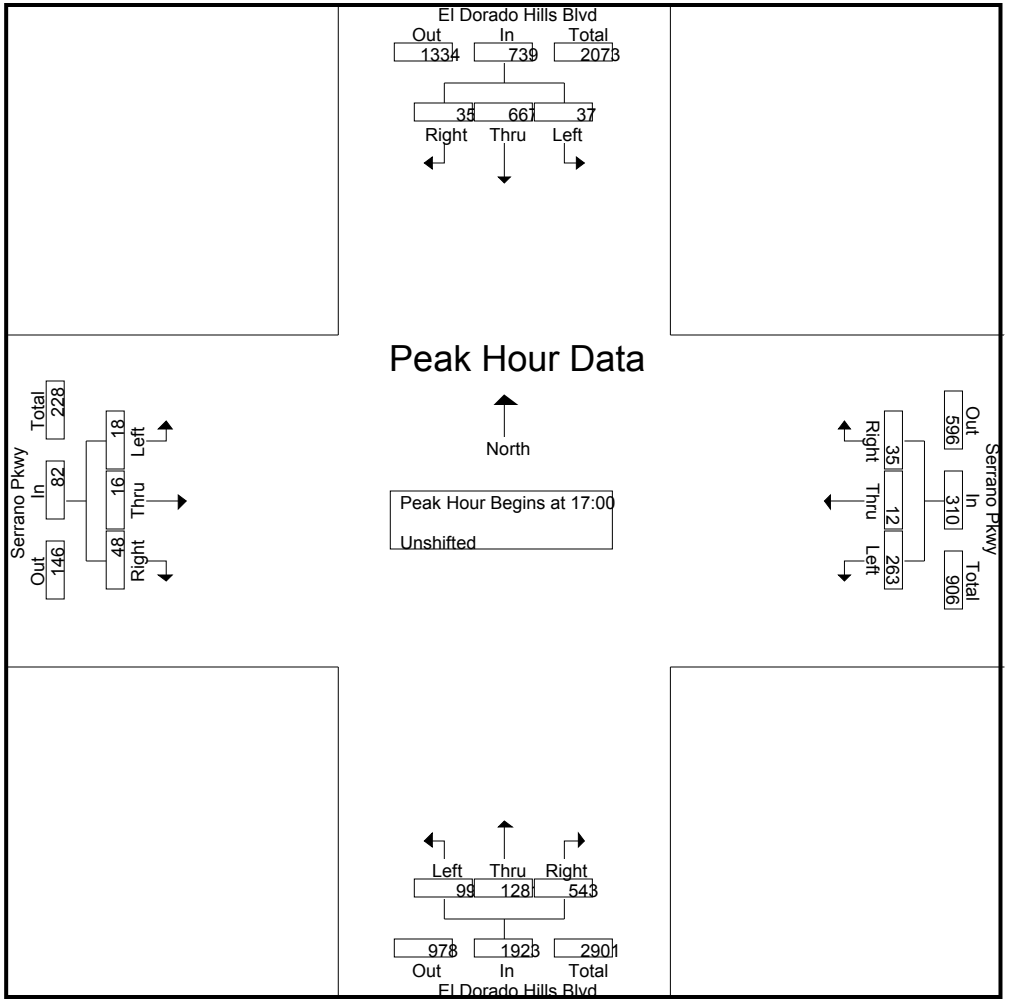
17:00	6	177	1	184	53	2	7	62	26	319	125	470	5	**8**	10	23	739
17:15	**13**	171	9	193	**76**	4	10	**90**	25	**338**	135	**498**	3	7	**17**	**27**	**808**
17:30	11	137	**14**	162	68	**5**	3	76	**28**	314	**156**	498	4	0	12	16	752
17:45	7	**182**	11	**200**	66	1	**15**	82	20	310	127	457	**6**	1	9	16	755
Total Volume	37	667	35	739	263	12	35	310	99	1281	543	1923	18	16	48	82	3054
% App. Total	5	90.3	4.7		84.8	3.9	11.3		5.1	66.6	28.2		22	19.5	58.5		
PHF	.712	.916	.625	.924	.865	.600	.583	.861	.884	.947	.870	.965	.750	.500	.706	.759	.945

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-003 El Dorado Hills-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

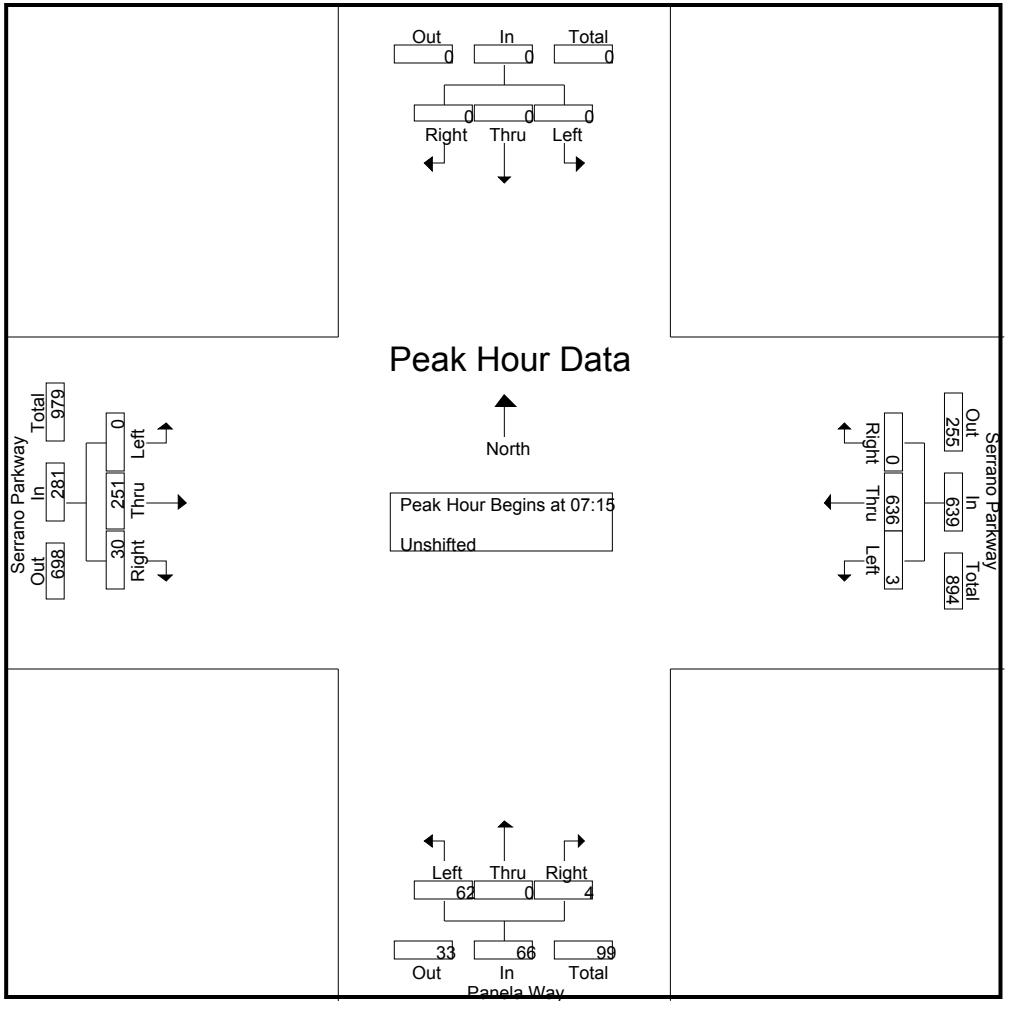
File Name : 12-7225-012 Panela-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Southbound					Serrano Parkway Westbound					Panela Way Northbound					Serrano Parkway Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	0	129	0	0	129	15	0	0	0	15	0	47	3	0	50	0	194	194
07:15	0	0	0	0	0	0	137	0	0	137	18	0	1	0	19	0	49	8	0	57	0	213	213
07:30	0	0	0	0	0	2	148	0	0	150	19	0	2	0	21	0	79	7	1	86	1	257	258
07:45	0	0	0	0	0	1	208	0	0	209	11	0	1	0	12	0	67	6	0	73	0	294	294
Total	0	0	0	0	0	3	622	0	0	625	63	0	4	0	67	0	242	24	1	266	1	958	959
08:00	0	0	0	0	0	0	143	0	0	143	14	0	0	0	14	0	56	9	0	65	0	222	222
08:15	0	0	0	0	0	2	121	0	0	123	15	0	0	0	15	0	29	3	0	32	0	170	170
08:30	0	0	0	0	0	0	131	0	0	131	8	0	0	0	8	0	44	3	0	47	0	186	186
08:45	0	0	0	0	0	1	104	0	0	105	9	0	2	0	11	0	40	4	0	44	0	160	160
Total	0	0	0	0	0	3	499	0	0	502	46	0	2	0	48	0	169	19	0	188	0	738	738
16:00	0	0	0	0	0	2	69	0	0	71	10	0	1	0	11	0	99	10	0	109	0	191	191
16:15	0	0	0	0	0	0	74	0	0	74	4	0	0	0	4	0	100	9	0	109	0	187	187
16:30	0	0	0	0	0	0	78	0	0	78	4	0	2	0	6	0	108	15	0	123	0	207	207
16:45	0	0	0	0	0	0	67	0	0	67	7	0	0	0	7	0	99	14	0	113	0	187	187
Total	0	0	0	0	0	2	288	0	0	290	25	0	3	0	28	0	406	48	0	454	0	772	772
17:00	0	0	0	0	0	0	59	0	0	59	8	0	1	0	9	0	132	12	1	144	1	212	213
17:15	0	0	0	0	0	0	78	0	0	78	8	0	1	2	9	0	143	11	0	154	2	241	243
17:30	0	0	0	0	0	1	61	0	0	62	13	0	1	0	14	0	137	16	0	153	0	229	229
17:45	0	0	0	0	0	1	79	0	0	80	8	0	0	0	8	0	131	14	0	145	0	233	233
Total	0	0	0	0	0	2	277	0	0	279	37	0	3	2	40	0	543	53	1	596	3	915	918
Grand Total	0	0	0	0	0	10	1686	0	0	1696	171	0	12	2	183	0	1360	144	2	1504	4	3383	3387
Apprch %	0	0	0			0.6	99.4	0			93.4	0	6.6			0	90.4	9.6					
Total %	0	0	0		0	0.3	49.8	0		50.1	5.1	0	0.4		5.4	0	40.2	4.3		44.5	0.1	99.9	

	Southbound				Serrano Parkway Westbound				Panela Way Northbound				Serrano Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	0	137	0	137	18	0	1	19	0	49	8	57	213
07:30	0	0	0	0	**2**	148	0	150	**19**	0	**2**	**21**	0	**79**	7	**86**	257
07:45	0	0	0	0	1	**208**	0	**209**	11	0	1	12	0	67	6	73	**294**
08:00	0	0	0	0	0	143	0	143	14	0	0	14	0	56	**9**	65	222
Total Volume	0	0	0	0	3	636	0	639	62	0	4	66	0	251	30	281	986

% App. Total	0	0	0		0.5	99.5	0		93.9	0	6.1		0	89.3	10.7		
PHF	.000	.000	.000	.000	.375	.764	.000	.764	.816	.000	.500	.786	.000	.794	.833	.817	.838



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

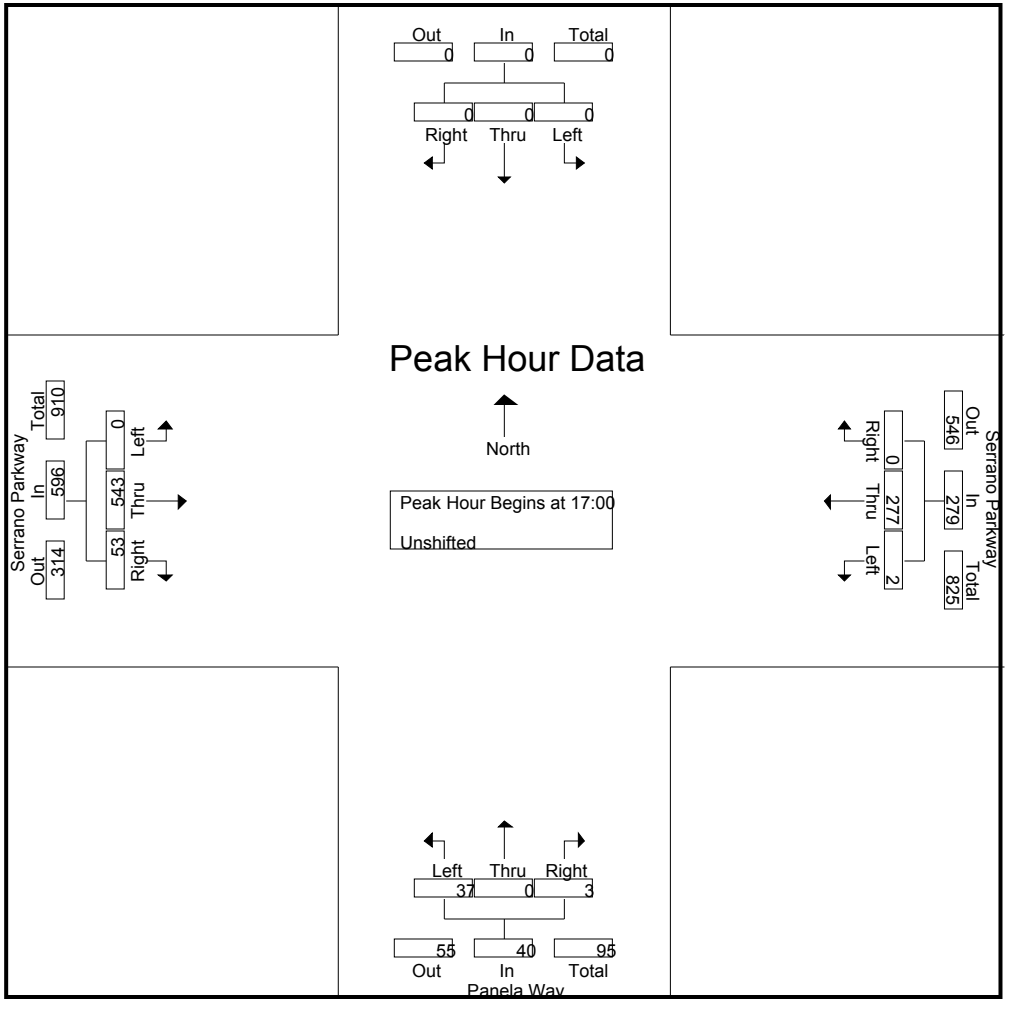
17:00	0	0	0	0	0	59	0	59	8	0	**1**	9	0	132	12	144	212
17:15	0	0	0	0	0	78	0	78	8	0	1	9	0	**143**	11	**154**	**241**
17:30	0	0	0	0	**1**	61	0	62	**13**	0	1	**14**	0	137	**16**	153	229
17:45	0	0	0	0	1	**79**	0	**80**	8	0	0	8	0	131	14	145	233
Total Volume	0	0	0	0	2	277	0	279	37	0	3	40	0	543	53	596	915
% App. Total	0	0	0		0.7	99.3	0		92.5	0	7.5		0	91.1	8.9		
PHF	.000	.000	.000	.000	.500	.877	.000	.872	.712	.000	.750	.714	.000	.949	.828	.968	.949

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-012 Panela-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

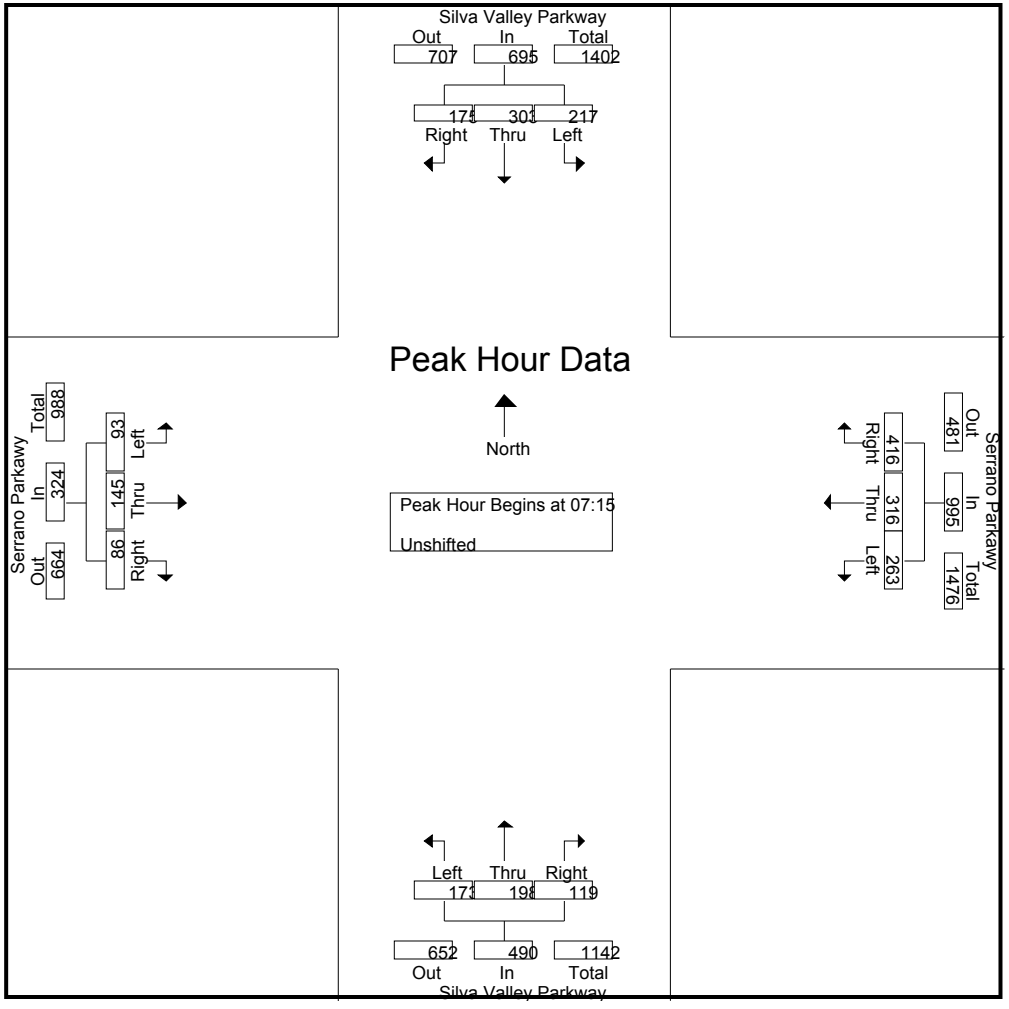
File Name : 12-7225-013 Silva Valley-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Silva Valley Parkway Southbound					Serrano Parkawy Westbound					Silva Valley Parkway Northbound					Serrano Parkawy Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	15	34	26	2	75	27	78	104	2	209	12	45	14	1	71	20	23	6	0	49	5	404	409
07:15	50	71	42	2	163	44	75	155	1	274	9	65	19	2	93	27	33	8	0	68	5	598	603
07:30	44	105	48	0	197	78	73	139	2	290	47	58	25	0	130	39	21	24	1	84	3	701	704
07:45	84	69	55	2	208	87	94	65	6	246	101	50	49	0	200	12	48	45	0	105	8	759	767
Total	193	279	171	6	643	236	320	463	11	1019	169	218	107	3	494	98	125	83	1	306	21	2462	2483
08:00	39	58	30	1	127	54	74	57	1	185	16	25	26	1	67	15	43	9	3	67	6	446	452
08:15	31	55	24	1	110	40	78	88	2	206	16	38	15	0	69	13	19	5	2	37	5	422	427
08:30	36	41	25	0	102	32	78	44	0	154	10	15	19	0	44	5	32	7	0	44	0	344	344
08:45	19	30	10	0	59	44	66	44	0	154	16	25	20	0	61	12	27	8	3	47	3	321	324
Total	125	184	89	2	398	170	296	233	3	699	58	103	80	1	241	45	121	29	8	195	14	1533	1547
16:00	31	28	15	0	74	29	35	36	2	100	9	63	74	0	146	22	59	12	1	93	3	413	416
16:15	30	25	13	0	68	40	45	41	0	126	20	53	48	0	121	18	62	12	1	92	1	407	408
16:30	46	38	23	0	107	26	50	32	1	108	16	39	68	1	123	22	70	13	2	105	4	443	447
16:45	42	25	15	0	82	29	50	32	0	111	17	59	54	0	130	29	56	6	1	91	1	414	415
Total	149	116	66	0	331	124	180	141	3	445	62	214	244	1	520	91	247	43	5	381	9	1677	1686
17:00	38	30	15	0	83	20	48	44	3	112	19	73	74	2	166	33	87	13	1	133	6	494	500
17:15	41	41	24	0	106	36	56	79	1	171	18	90	76	1	184	38	69	10	1	117	3	578	581
17:30	29	27	23	0	79	23	44	75	3	142	20	65	72	2	157	35	68	13	0	116	5	494	499
17:45	54	50	24	0	128	32	45	65	0	142	8	60	63	0	131	31	73	13	0	117	0	518	518
Total	162	148	86	0	396	111	193	263	7	567	65	288	285	5	638	137	297	49	2	483	14	2084	2098
Grand Total	629	727	412	8	1768	641	989	1100	24	2730	354	823	716	10	1893	371	790	204	16	1365	58	7756	7814
Apprch %	35.6	41.1	23.3			23.5	36.2	40.3			18.7	43.5	37.8			27.2	57.9	14.9					
Total %	8.1	9.4	5.3		22.8	8.3	12.8	14.2		35.2	4.6	10.6	9.2		24.4	4.8	10.2	2.6		17.6	0.7	99.3	

	Silva Valley Parkway Southbound				Serrano Parkawy Westbound				Silva Valley Parkway Northbound				Serrano Parkawy Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	50	71	42	163	44	75	**155**	274	9	**65**	19	93	27	33	8	68	598
07:30	44	**105**	48	197	78	73	139	**290**	47	58	25	130	**39**	21	24	84	701
07:45	**84**	69	**55**	**208**	**87**	**94**	65	246	**101**	50	**49**	**200**	12	**48**	**45**	**105**	**759**
08:00	39	58	30	127	54	74	57	185	16	25	26	67	15	43	9	67	446
Total Volume	217	303	175	695	263	316	416	995	173	198	119	490	93	145	86	324	2504

% App. Total	31.2	43.6	25.2		26.4	31.8	41.8		35.3	40.4	24.3		28.7	44.8	26.5		
PHF	.646	.721	.795	.835	.756	.840	.671	.858	.428	.762	.607	.613	.596	.755	.478	.771	.825



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

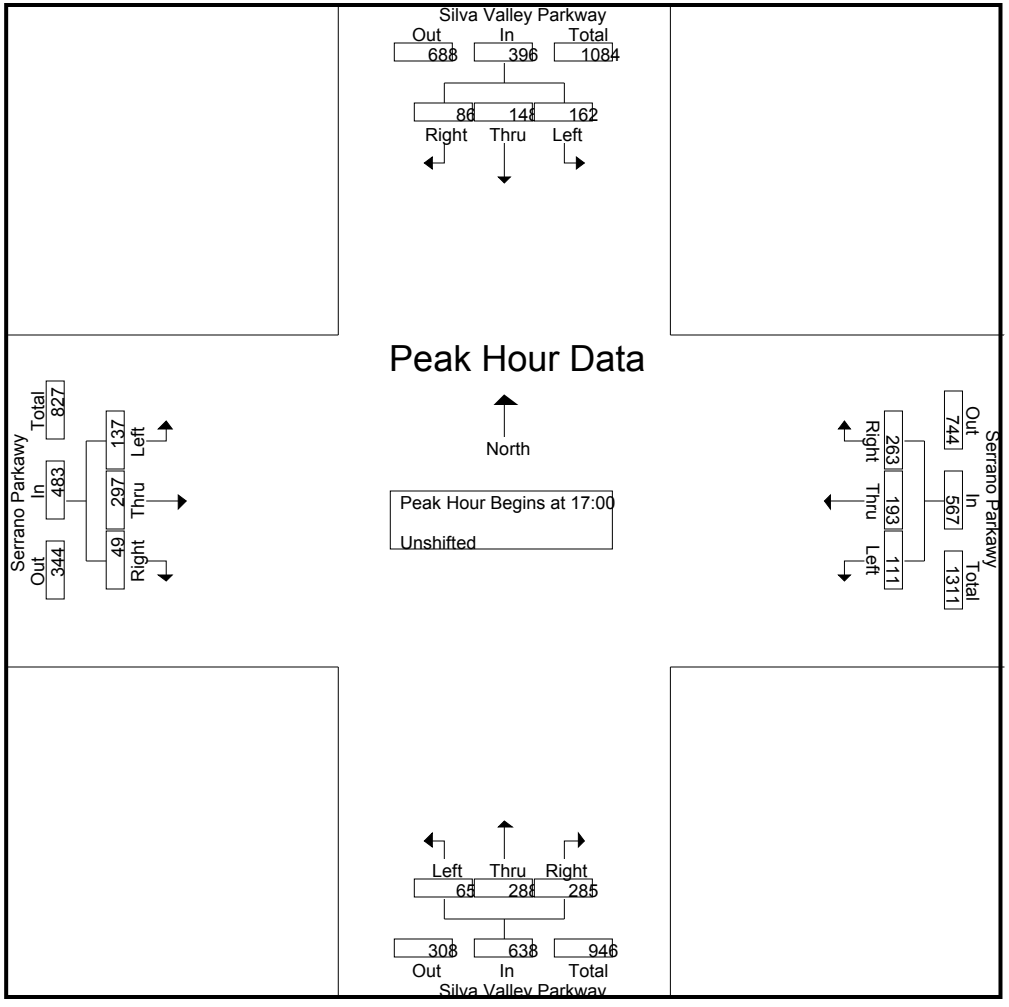
17:00	38	30	15	83	20	48	44	112	19	73	74	166	33	**87**	**13**	**133**	494
17:15	41	41	**24**	106	**36**	**56**	**79**	**171**	18	**90**	**76**	**184**	**38**	69	10	117	**578**
17:30	29	27	23	79	23	44	75	142	**20**	65	72	157	35	68	13	116	494
17:45	**54**	**50**	24	**128**	32	45	65	142	8	60	63	131	31	73	13	117	518
Total Volume	162	148	86	396	111	193	263	567	65	288	285	638	137	297	49	483	2084
% App. Total	40.9	37.4	21.7		19.6	34	46.4		10.2	45.1	44.7		28.4	61.5	10.1		
PHF	.750	.740	.896	.773	.771	.862	.832	.829	.813	.800	.938	.867	.901	.853	.942	.908	.901

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-013 Silva Valley-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Park Dr Westbound					El Dorado Hills Blvd Northbound					Eastbound						
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	11	356	0	0	367	40	0	7	0	47	0	124	35	0	159	0	0	0	0	0	573	573
07:15	17	459	0	0	476	50	0	12	0	62	0	122	47	0	169	0	0	0	0	0	707	707
07:30	15	484	0	0	499	55	0	9	0	64	0	139	40	0	179	0	0	0	0	0	742	742
07:45	21	532	0	0	553	62	0	16	0	78	0	182	53	0	235	0	0	0	0	0	866	866
Total	64	1831	0	0	1895	207	0	44	0	251	0	567	175	0	742	0	0	0	0	0	2888	2888
08:00	11	467	0	0	478	51	0	9	0	60	0	176	45	0	221	0	0	0	0	0	759	759
08:15	13	372	0	0	385	39	0	16	0	55	0	163	48	0	211	0	0	0	0	0	651	651
08:30	12	382	0	0	394	35	0	13	0	48	0	168	40	0	208	0	0	0	0	0	650	650
08:45	13	370	0	0	383	44	0	5	0	49	0	204	39	0	243	0	0	0	0	0	675	675
Total	49	1591	0	0	1640	169	0	43	0	212	0	711	172	0	883	0	0	0	0	0	2735	2735
16:00	9	208	0	0	217	55	0	27	0	82	0	320	91	0	411	0	0	0	0	0	710	710
16:15	10	202	0	0	212	57	0	20	0	77	0	311	73	0	384	0	0	0	0	0	673	673
16:30	14	235	0	0	249	45	0	20	0	65	0	359	72	0	431	0	0	0	0	0	745	745
16:45	15	209	0	0	224	41	0	24	2	65	0	342	75	0	417	0	0	0	0	2	706	708
Total	48	854	0	0	902	198	0	91	2	289	0	1332	311	0	1643	0	0	0	0	2	2834	2836
17:00	18	245	0	3	263	60	0	22	0	82	0	441	94	0	535	0	0	0	0	3	880	883
17:15	18	232	0	0	250	55	0	28	0	83	0	438	79	0	517	0	0	0	0	0	850	850
17:30	16	215	0	0	231	41	0	20	0	61	0	423	86	0	509	0	0	0	0	0	801	801
17:45	9	236	0	0	245	45	0	21	0	66	0	388	67	0	455	0	0	0	0	0	766	766
Total	61	928	0	3	989	201	0	91	0	292	0	1690	326	0	2016	0	0	0	0	3	3297	3300
Grand Total	222	5204	0	3	5426	775	0	269	2	1044	0	4300	984	0	5284	0	0	0	0	5	11754	11759
Apprch %	4.1	95.9	0			74.2	0	25.8			0	81.4	18.6			0	0	0				
Total %	1.9	44.3	0		46.2	6.6	0	2.3		8.9	0	36.6	8.4		45	0	0	0	0	0	100	

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 2

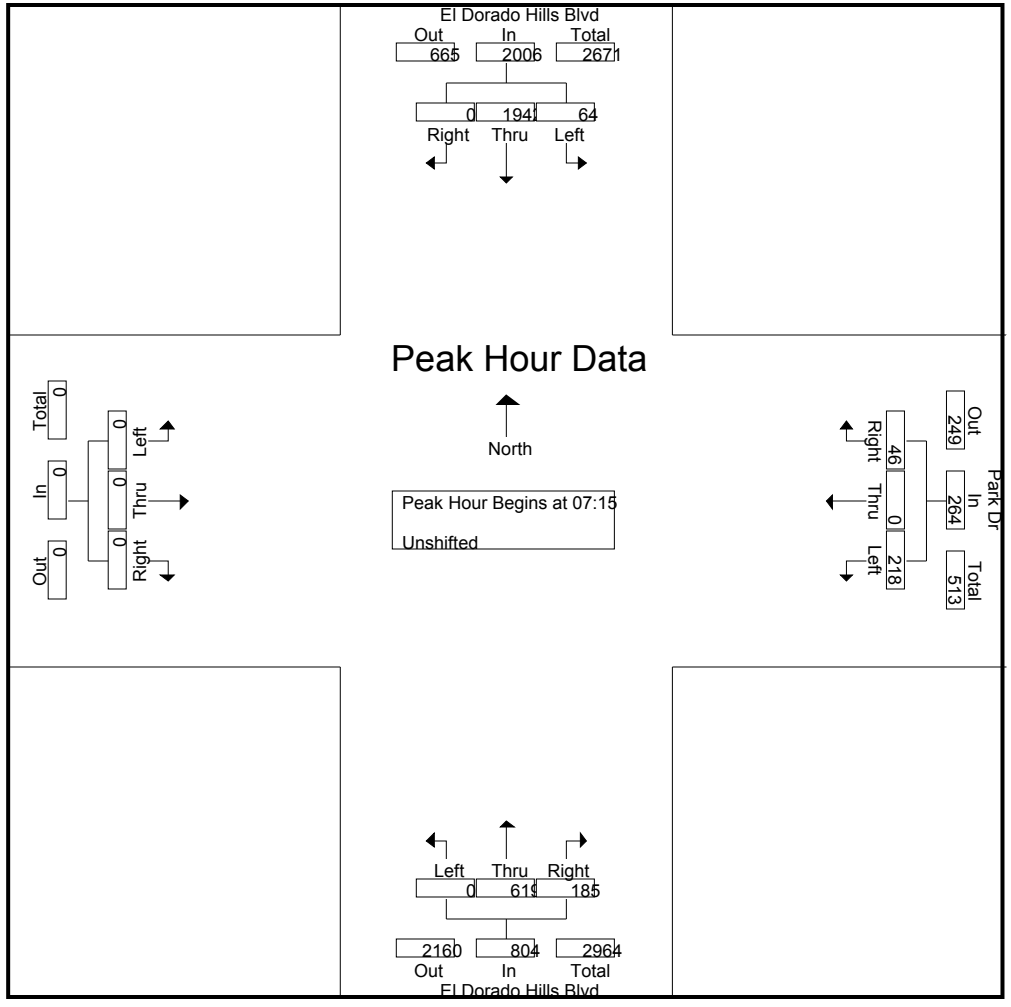
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	17	459	0	476	50	0	12	62	0	122	47	169	0	0	0	0	707
07:30	15	484	0	499	55	0	9	64	0	139	40	179	0	0	0	0	742
07:45	**21**	**532**	0	**553**	**62**	0	**16**	**78**	0	**182**	**53**	**235**	0	0	0	0	**866**
08:00	11	467	0	478	51	0	9	60	0	176	45	221	0	0	0	0	759
Total Volume	64	1942	0	2006	218	0	46	264	0	619	185	804	0	0	0	0	3074
% App. Total	3.2	96.8	0		82.6	0	17.4		0	77	23		0	0	0		
PHF	.762	.913	.000	.907	.879	.000	.719	.846	.000	.850	.873	.855	.000	.000	.000	.000	.887

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 4

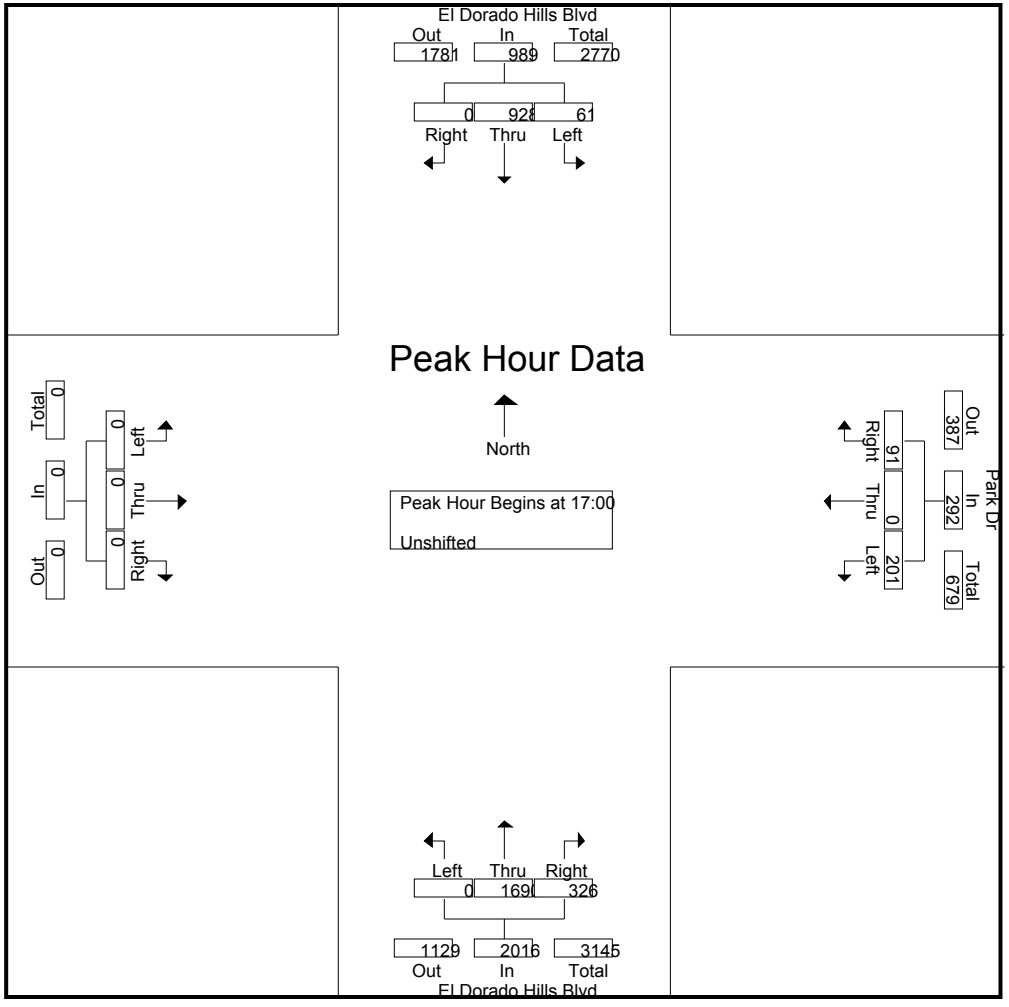
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**18**	**245**	0	**263**	**60**	0	22	82	0	**441**	**94**	**535**	0	0	0	0	**880**
17:15	18	232	0	250	55	0	**28**	**83**	0	438	79	517	0	0	0	0	850
17:30	16	215	0	231	41	0	20	61	0	423	86	509	0	0	0	0	801
17:45	9	236	0	245	45	0	21	66	0	388	67	455	0	0	0	0	766
Total Volume	61	928	0	989	201	0	91	292	0	1690	326	2016	0	0	0	0	3297
% App. Total	6.2	93.8	0		68.8	0	31.2		0	83.8	16.2		0	0	0		
PHF	.847	.947	.000	.940	.838	.000	.813	.880	.000	.958	.867	.942	.000	.000	.000	.000	.937

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-005 El Dorado Hills-Park
Site Code : 00000000
Start Date : 5/22/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

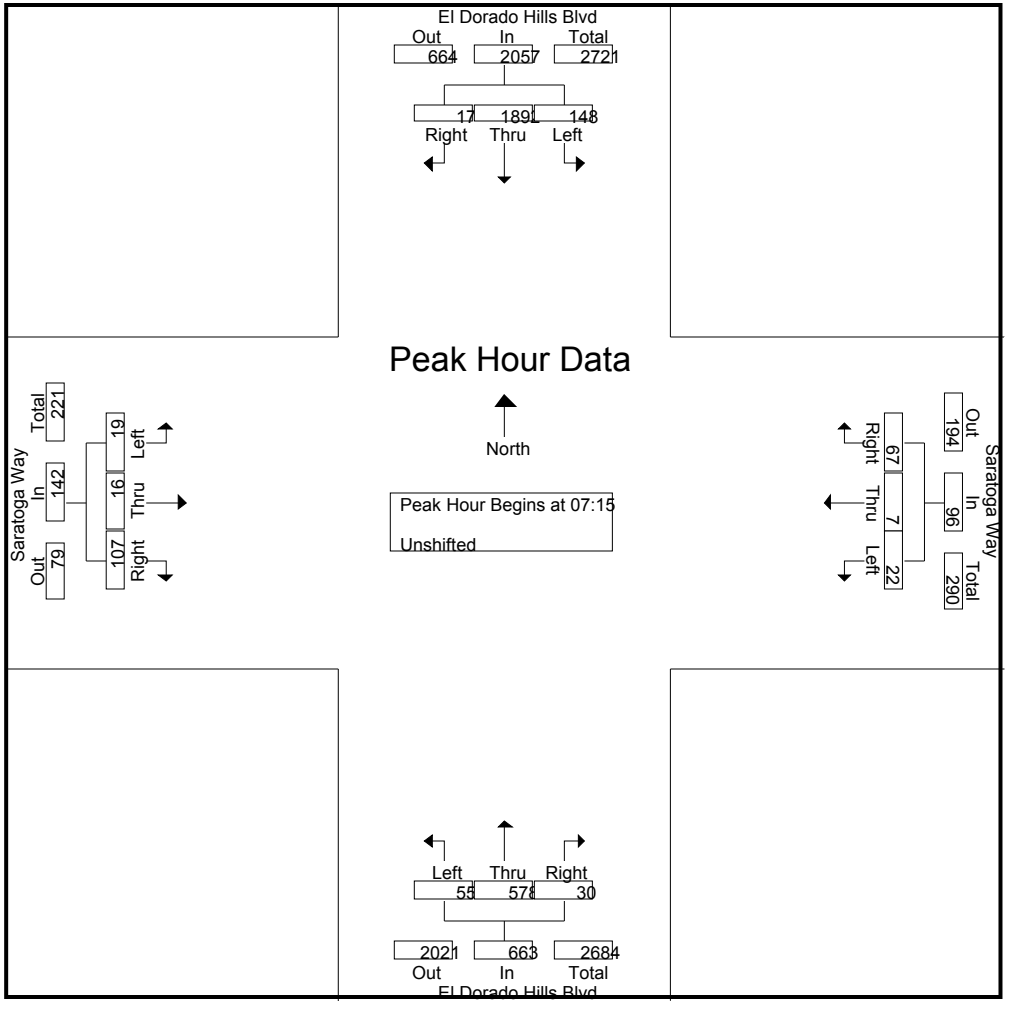
File Name : 12-7225-004 El Dorado Hills-Saratoga
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Saratoga Way Westbound					El Dorado Hills Blvd Northbound					Saratoga Way Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	32	372	6	0	410	4	1	10	0	15	8	124	2	0	134	7	2	21	0	30	0	589	589
07:15	34	458	4	0	496	5	1	11	0	17	11	108	5	0	124	9	4	14	0	27	0	664	664
07:30	35	474	4	1	513	7	0	14	0	21	11	132	7	0	150	3	7	36	0	46	1	730	731
07:45	47	541	3	0	591	3	2	15	0	20	16	172	10	0	198	5	2	23	0	30	0	839	839
Total	148	1845	17	1	2010	19	4	50	0	73	46	536	24	0	606	24	15	94	0	133	1	2822	2823
08:00	32	419	6	0	457	7	4	27	0	38	17	166	8	0	191	2	3	34	0	39	0	725	725
08:15	38	365	1	1	404	4	1	10	0	15	16	162	13	0	191	5	1	24	0	30	1	640	641
08:30	29	348	5	0	382	4	5	17	0	26	11	150	13	0	174	5	3	33	0	41	0	623	623
08:45	35	325	4	2	364	3	3	18	1	24	30	166	16	0	212	4	5	44	0	53	3	653	656
Total	134	1457	16	3	1607	18	13	72	1	103	74	644	50	0	768	16	12	135	0	163	4	2641	2645
16:00	36	197	3	0	236	14	2	50	0	66	14	308	14	0	336	4	6	10	0	20	0	658	658
16:15	31	177	8	0	216	7	4	72	0	83	20	308	16	0	344	10	5	20	0	35	0	678	678
16:30	45	230	5	0	280	11	7	58	0	76	19	336	10	0	365	5	6	19	0	30	0	751	751
16:45	36	216	5	2	257	7	3	66	2	76	22	333	24	0	379	10	4	15	0	29	4	741	745
Total	148	820	21	2	989	39	16	246	2	301	75	1285	64	0	1424	29	21	64	0	114	4	2828	2832
17:00	33	211	6	0	250	20	6	67	0	93	24	433	17	0	474	11	3	17	0	31	0	848	848
17:15	41	212	7	1	260	14	4	60	0	78	37	409	11	0	457	8	5	19	0	32	1	827	828
17:30	41	199	6	1	246	11	7	71	1	89	27	410	15	0	452	8	3	25	0	36	2	823	825
17:45	25	201	4	0	230	10	5	68	0	83	23	378	16	0	417	11	2	11	0	24	0	754	754
Total	140	823	23	2	986	55	22	266	1	343	111	1630	59	0	1800	38	13	72	0	123	3	3252	3255
Grand Total	570	4945	77	8	5592	131	55	634	4	820	306	4095	197	0	4598	107	61	365	0	533	12	11543	11555
Apprch %	10.2	88.4	1.4			16	6.7	77.3			6.7	89.1	4.3			20.1	11.4	68.5					
Total %	4.9	42.8	0.7		48.4	1.1	0.5	5.5		7.1	2.7	35.5	1.7		39.8	0.9	0.5	3.2		4.6	0.1	99.9	

	El Dorado Hills Blvd Southbound				Saratoga Way Westbound				El Dorado Hills Blvd Northbound				Saratoga Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	34	458	4	496	5	1	11	17	11	108	5	124	**9**	4	14	27	664
07:30	35	474	4	513	**7**	0	14	21	11	132	7	150	3	**7**	**36**	**46**	730
07:45	**47**	**541**	3	**591**	3	2	15	20	16	**172**	**10**	**198**	5	2	23	30	**839**
08:00	32	419	**6**	457	7	**4**	**27**	**38**	**17**	166	8	191	2	3	34	39	725
Total Volume	148	1892	17	2057	22	7	67	96	55	578	30	663	19	16	107	142	2958

% App. Total	7.2	92	0.8		22.9	7.3	69.8		8.3	87.2	4.5		13.4	11.3	75.4		
PHF	.787	.874	.708	.870	.786	.438	.620	.632	.809	.840	.750	.837	.528	.571	.743	.772	.881



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

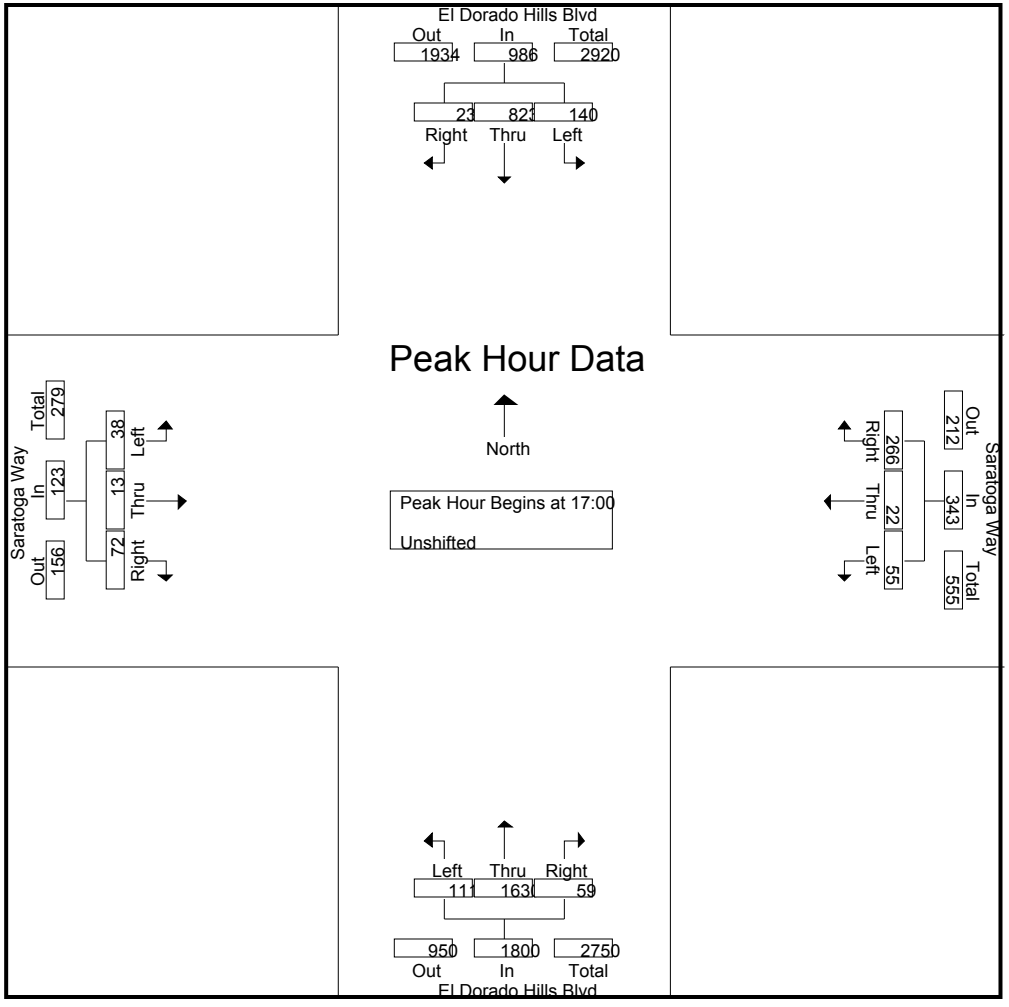
17:00	33	211	6	250	**20**	6	67	**93**	24	**433**	**17**	**474**	**11**	3	17	31	**848**
17:15	**41**	**212**	**7**	**260**	14	4	60	78	**37**	409	11	457	8	**5**	19	32	827
17:30	41	199	6	246	11	**7**	**71**	89	27	410	15	452	8	3	**25**	**36**	823
17:45	25	201	4	230	10	5	68	83	23	378	16	417	11	2	11	24	754
Total Volume	140	823	23	986	55	22	266	343	111	1630	59	1800	38	13	72	123	3252
% App. Total	14.2	83.5	2.3		16	6.4	77.6		6.2	90.6	3.3		30.9	10.6	58.5		
PHF	.854	.971	.821	.948	.688	.786	.937	.922	.750	.941	.868	.949	.864	.650	.720	.854	.959

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-004 El Dorado Hills-Saratoga
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

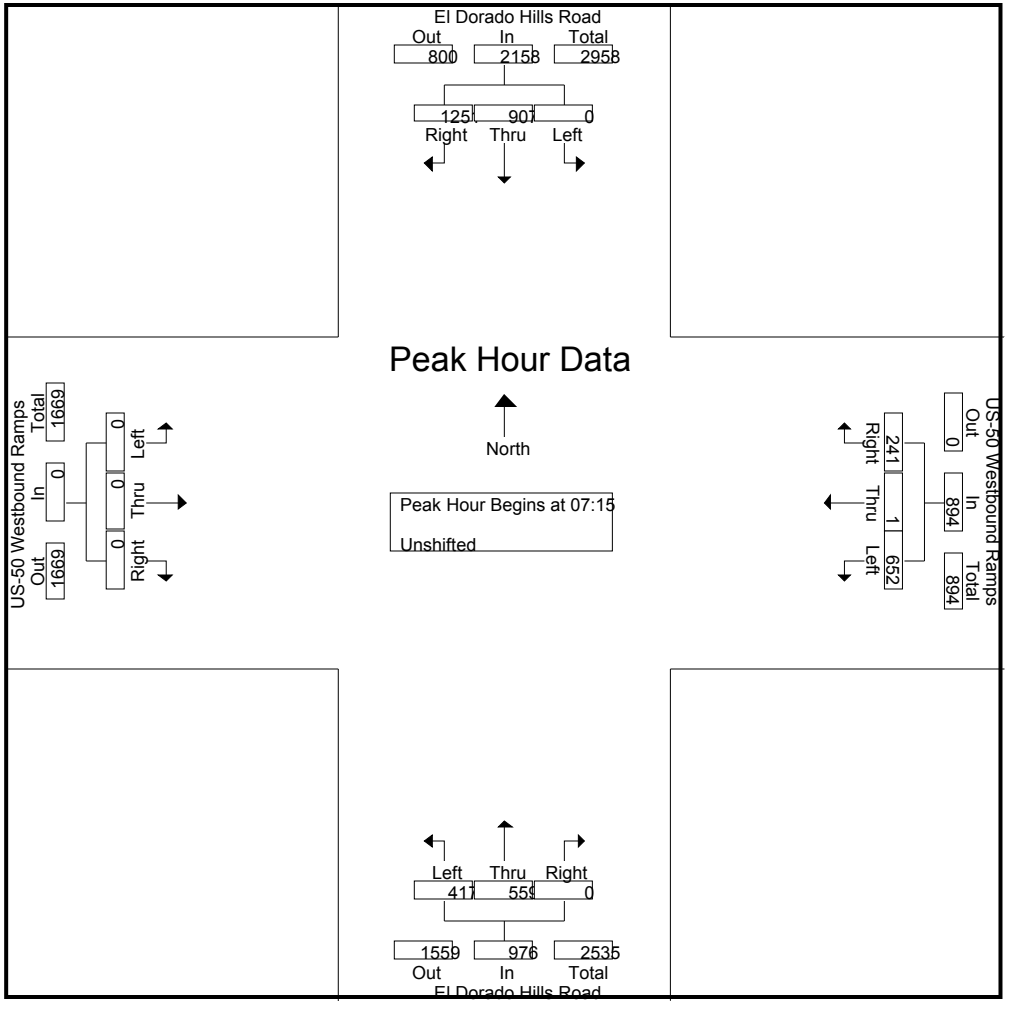
File Name : 12-7225-006 El Dorado Hills-US50 WB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Road Southbound					US-50 Westbound Ramps Westbound					El Dorado Hills Road Northbound					US-50 Westbound Ramps Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	114	286	0	400	117	0	43	0	160	85	122	0	0	207	0	0	0	0	0	0	767	767
07:15	0	192	328	0	520	137	0	57	0	194	90	108	0	0	198	0	0	0	0	0	0	912	912
07:30	0	197	331	0	528	145	0	51	0	196	101	124	0	0	225	0	0	0	0	0	0	949	949
07:45	0	295	320	0	615	207	1	70	1	278	100	173	0	0	273	0	0	0	0	0	1	1166	1167
Total	0	798	1265	0	2063	606	1	221	1	828	376	527	0	0	903	0	0	0	0	0	1	3794	3795
08:00	0	223	272	0	495	163	0	63	0	226	126	154	0	0	280	0	0	0	0	0	0	1001	1001
08:15	0	180	244	0	424	127	0	63	0	190	107	150	0	0	257	0	0	0	0	0	0	871	871
08:30	0	167	239	0	406	100	0	41	1	141	144	156	0	0	300	0	0	0	0	0	1	847	848
08:45	0	207	214	0	421	124	0	53	0	177	102	188	0	0	290	0	0	0	0	0	0	888	888
Total	0	777	969	0	1746	514	0	220	1	734	479	648	0	0	1127	0	0	0	0	0	1	3607	3608
16:00	0	127	139	0	266	72	0	48	0	120	240	352	0	0	592	0	0	0	0	0	0	978	978
16:15	0	151	111	0	262	58	2	55	1	115	181	341	0	0	522	0	0	0	0	0	1	899	900
16:30	0	131	130	0	261	60	0	48	0	108	311	381	0	0	692	0	0	0	0	0	0	1061	1061
16:45	0	142	120	0	262	78	0	41	3	119	214	385	0	0	599	0	0	0	0	0	3	980	983
Total	0	551	500	0	1051	268	2	192	4	462	946	1459	0	0	2405	0	0	0	0	0	4	3918	3922
17:00	0	182	127	0	309	61	0	65	0	126	322	457	0	0	779	0	0	0	0	0	0	1214	1214
17:15	0	153	124	0	277	92	1	69	1	162	262	443	0	0	705	0	0	0	0	0	1	1144	1145
17:30	0	141	112	0	253	62	0	51	1	113	251	456	0	0	707	0	0	0	0	0	1	1073	1074
17:45	0	152	124	0	276	82	0	60	0	142	186	393	0	0	579	0	0	0	0	0	0	997	997
Total	0	628	487	0	1115	297	1	245	2	543	1021	1749	0	0	2770	0	0	0	0	0	2	4428	4430
Grand Total	0	2754	3221	0	5975	1685	4	878	8	2567	2822	4383	0	0	7205	0	0	0	0	0	8	15747	15755
Apprch %	0	46.1	53.9			65.6	0.2	34.2			39.2	60.8	0			0	0	0					
Total %	0	17.5	20.5		37.9	10.7	0	5.6		16.3	17.9	27.8	0		45.8	0	0	0		0	0.1	99.9	

	El Dorado Hills Road Southbound				US-50 Westbound Ramps Westbound				El Dorado Hills Road Northbound				US-50 Westbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	192	328	520	137	0	57	194	90	108	0	198	0	0	0	0	912
07:30	0	197	**331**	528	145	0	51	196	101	124	0	225	0	0	0	0	949
07:45	0	**295**	320	**615**	**207**	**1**	**70**	**278**	100	**173**	0	273	0	0	0	0	**1166**
08:00	0	223	272	495	163	0	63	226	**126**	154	0	**280**	0	0	0	0	1001
Total Volume	0	907	1251	2158	652	1	241	894	417	559	0	976	0	0	0	0	4028

% App. Total	0	42	58		72.9	0.1	27		42.7	57.3	0		0	0	0		
PHF	.000	.769	.945	.877	.787	.250	.861	.804	.827	.808	.000	.871	.000	.000	.000	.000	.864



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

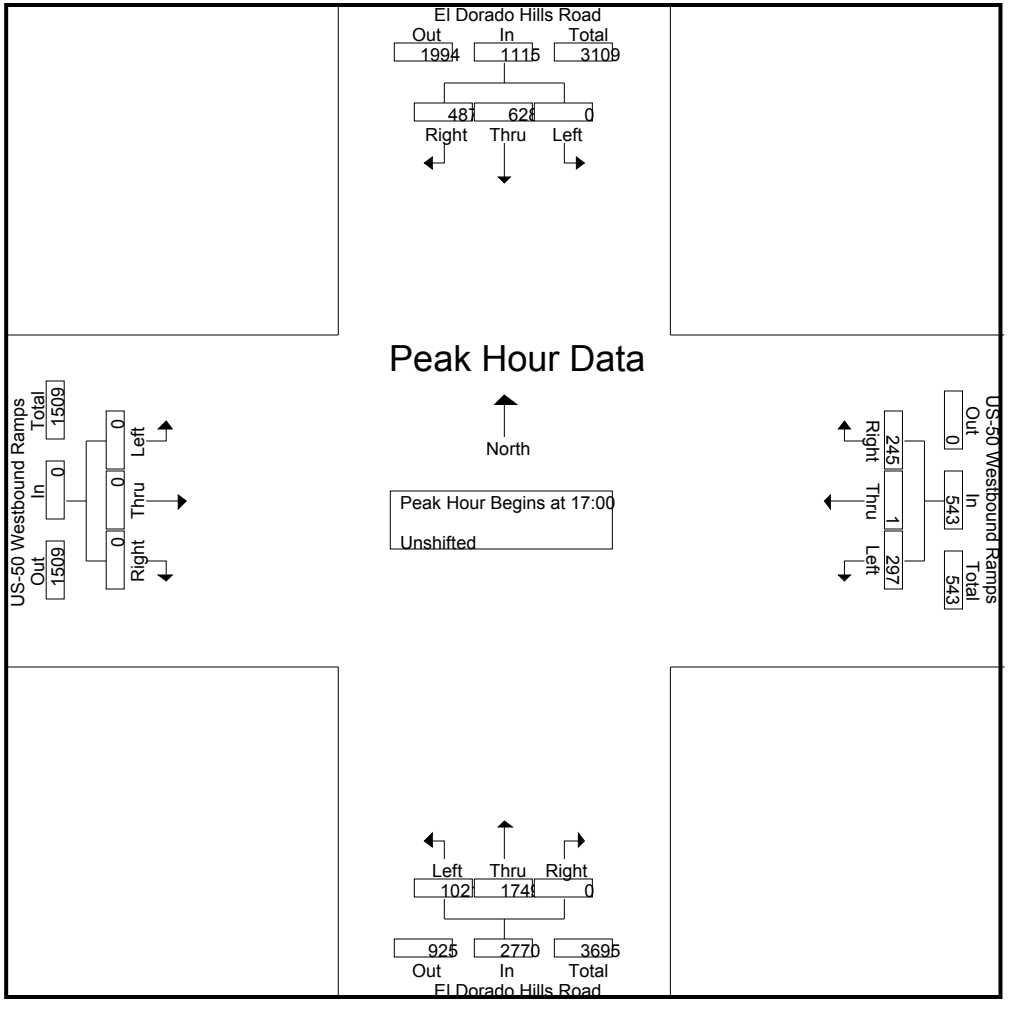
17:00	0	**182**	**127**	**309**	61	0	65	126	**322**	**457**	0	**779**	0	0	0	0	**1214**
17:15	0	153	124	277	**92**	**1**	**69**	**162**	262	443	0	705	0	0	0	0	1144
17:30	0	141	112	253	62	0	51	113	251	456	0	707	0	0	0	0	1073
17:45	0	152	124	276	82	0	60	142	186	393	0	579	0	0	0	0	997
Total Volume	0	628	487	1115	297	1	245	543	1021	1749	0	2770	0	0	0	0	4428
% App. Total	0	56.3	43.7		54.7	0.2	45.1		36.9	63.1	0		0	0	0		
PHF	.000	.863	.959	.902	.807	.250	.888	.838	.793	.957	.000	.889	.000	.000	.000	.000	.912

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-006 El Dorado Hills-US50 WB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

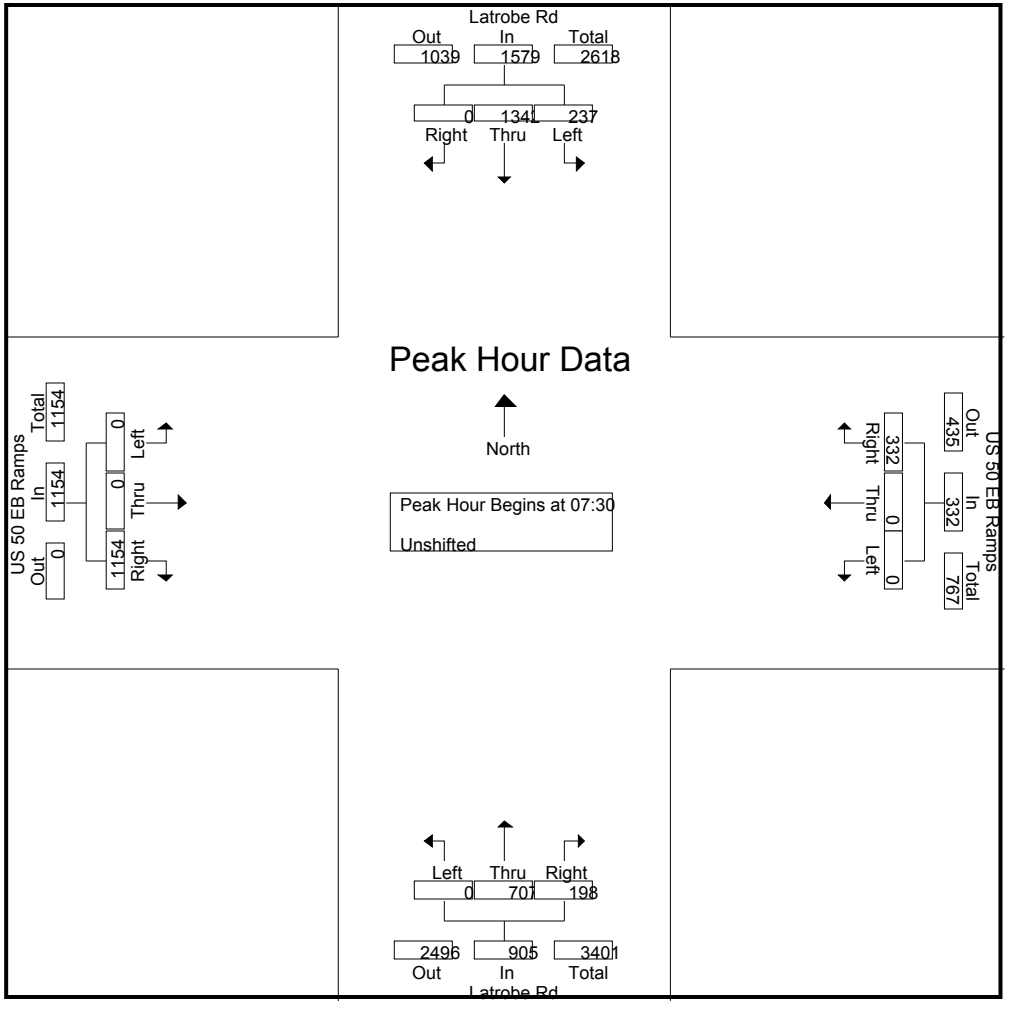
File Name : 12-7225-007 Latrobe-US50 EB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Rd Southbound					US 50 EB Ramps Westbound					Latrobe Rd Northbound					US 50 EB Ramps Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	37	198	0	0	235	0	0	65	0	65	0	147	43	0	190	0	0	209	0	209	0	699	699
07:15	52	264	0	0	316	0	0	52	0	52	0	132	38	0	170	0	0	238	0	238	0	776	776
07:30	71	302	0	0	373	0	0	74	0	74	0	154	47	0	201	0	0	256	0	256	0	904	904
07:45	83	398	0	0	481	0	0	96	1	96	0	167	42	0	209	0	0	309	0	309	1	1095	1096
Total	243	1162	0	0	1405	0	0	287	1	287	0	600	170	0	770	0	0	1012	0	1012	1	3474	3475
08:00	48	362	0	0	410	0	0	85	0	85	0	187	50	0	237	0	0	284	0	284	0	1016	1016
08:15	35	280	0	0	315	0	0	77	0	77	0	199	59	0	258	0	0	305	0	305	0	955	955
08:30	41	230	0	0	271	0	0	83	1	83	0	214	63	0	277	0	0	225	0	225	1	856	857
08:45	37	280	0	0	317	0	0	78	0	78	0	211	39	0	250	0	0	222	0	222	0	867	867
Total	161	1152	0	0	1313	0	0	323	1	323	0	811	211	0	1022	0	0	1036	0	1036	1	3694	3695
16:00	38	160	0	0	198	0	0	202	0	202	0	402	144	0	546	0	0	146	0	146	0	1092	1092
16:15	47	176	0	0	223	0	0	185	1	185	0	334	123	0	457	0	0	174	0	174	1	1039	1040
16:30	38	145	0	0	183	0	0	235	0	235	0	432	182	0	614	0	0	181	0	181	0	1213	1213
16:45	44	175	0	0	219	0	0	221	0	221	0	405	179	0	584	0	0	197	0	197	0	1221	1221
Total	167	656	0	0	823	0	0	843	1	843	0	1573	628	0	2201	0	0	698	0	698	1	4565	4566
17:00	77	168	0	0	245	0	0	251	1	251	0	542	196	0	738	0	0	160	0	160	1	1394	1395
17:15	40	201	0	0	241	0	0	170	1	170	0	522	226	0	748	0	0	202	0	202	1	1361	1362
17:30	40	155	0	0	195	0	0	279	1	279	0	387	146	0	533	0	0	195	0	195	1	1202	1203
17:45	54	198	0	0	252	0	0	249	0	249	0	336	134	0	470	0	0	212	0	212	0	1183	1183
Total	211	722	0	0	933	0	0	949	3	949	0	1787	702	0	2489	0	0	769	0	769	3	5140	5143
Grand Total	782	3692	0	0	4474	0	0	2402	6	2402	0	4771	1711	0	6482	0	0	3515	0	3515	6	16873	16879
Apprch %	17.5	82.5	0			0	0	100			0	73.6	26.4			0	0	100					
Total %	4.6	21.9	0		26.5	0	0	14.2		14.2	0	28.3	10.1		38.4	0	0	20.8		20.8	0	100	

	Latrobe Rd Southbound				US 50 EB Ramps Westbound				Latrobe Rd Northbound				US 50 EB Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	71	302	0	373	0	0	74	74	0	154	47	201	0	0	256	256	904
07:45	**83**	**398**	0	**481**	0	0	**96**	**96**	0	167	42	209	0	0	**309**	**309**	**1095**
08:00	48	362	0	410	0	0	85	85	0	187	50	237	0	0	284	284	1016
08:15	35	280	0	315	0	0	77	77	0	**199**	**59**	**258**	0	0	305	305	955
Total Volume	237	1342	0	1579	0	0	332	332	0	707	198	905	0	0	1154	1154	3970

% App. Total	15	85	0		0	0	100		0	78.1	21.9		0	0	100		
PHF	.714	.843	.000	.821	.000	.000	.865	.865	.000	.888	.839	.877	.000	.000	.934	.934	.906



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

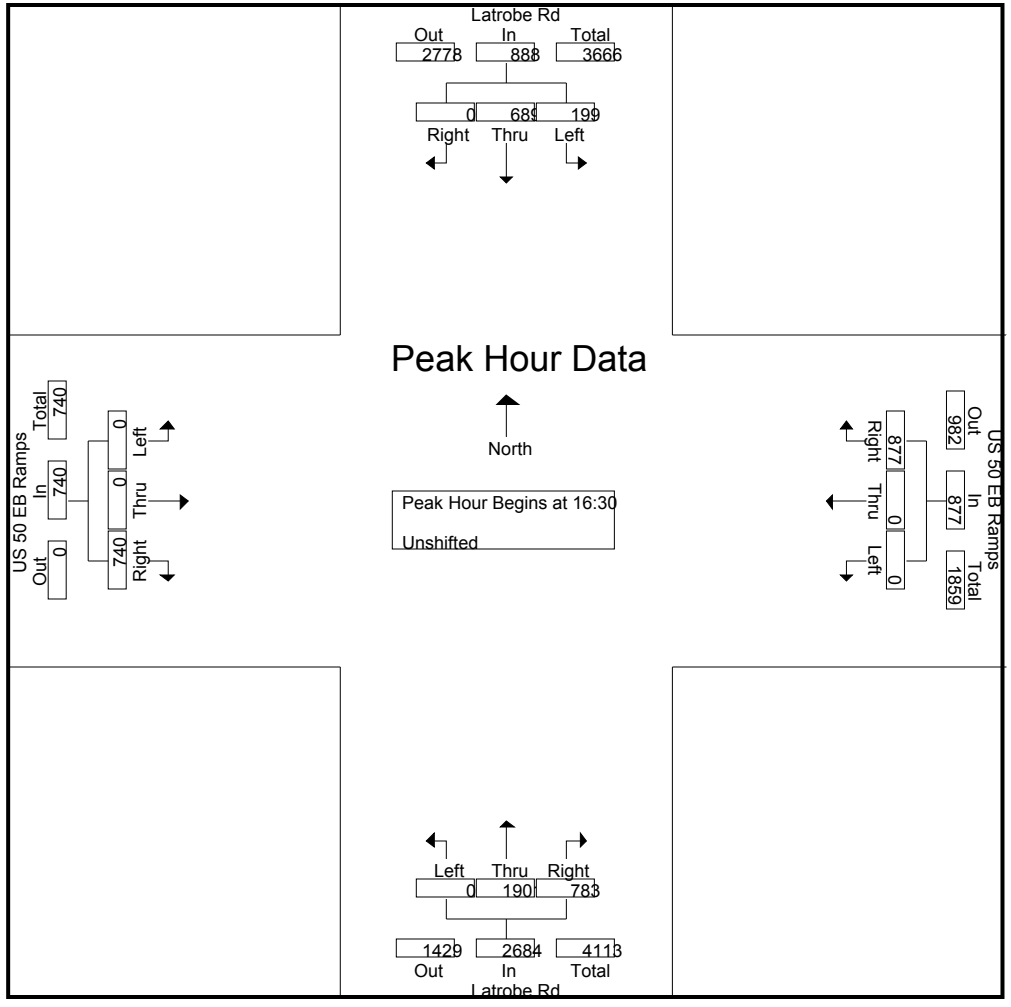
16:30	38	145	0	183	0	0	235	235	0	432	182	614	0	0	181	181	1213
16:45	44	175	0	219	0	0	221	221	0	405	179	584	0	0	197	197	1221
17:00	**77**	168	0	**245**	0	0	**251**	**251**	0	**542**	196	738	0	0	160	160	**1394**
17:15	40	**201**	0	241	0	0	170	170	0	522	**226**	**748**	0	0	**202**	**202**	1361
Total Volume	199	689	0	888	0	0	877	877	0	1901	783	2684	0	0	740	740	5189
% App. Total	22.4	77.6	0		0	0	100		0	70.8	29.2		0	0	100		
PHF	.646	.857	.000	.906	.000	.000	.874	.874	.000	.877	.866	.897	.000	.000	.916	.916	.931

All Traffic Data

(916) 771-8700

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-007 Latrobe-US50 EB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

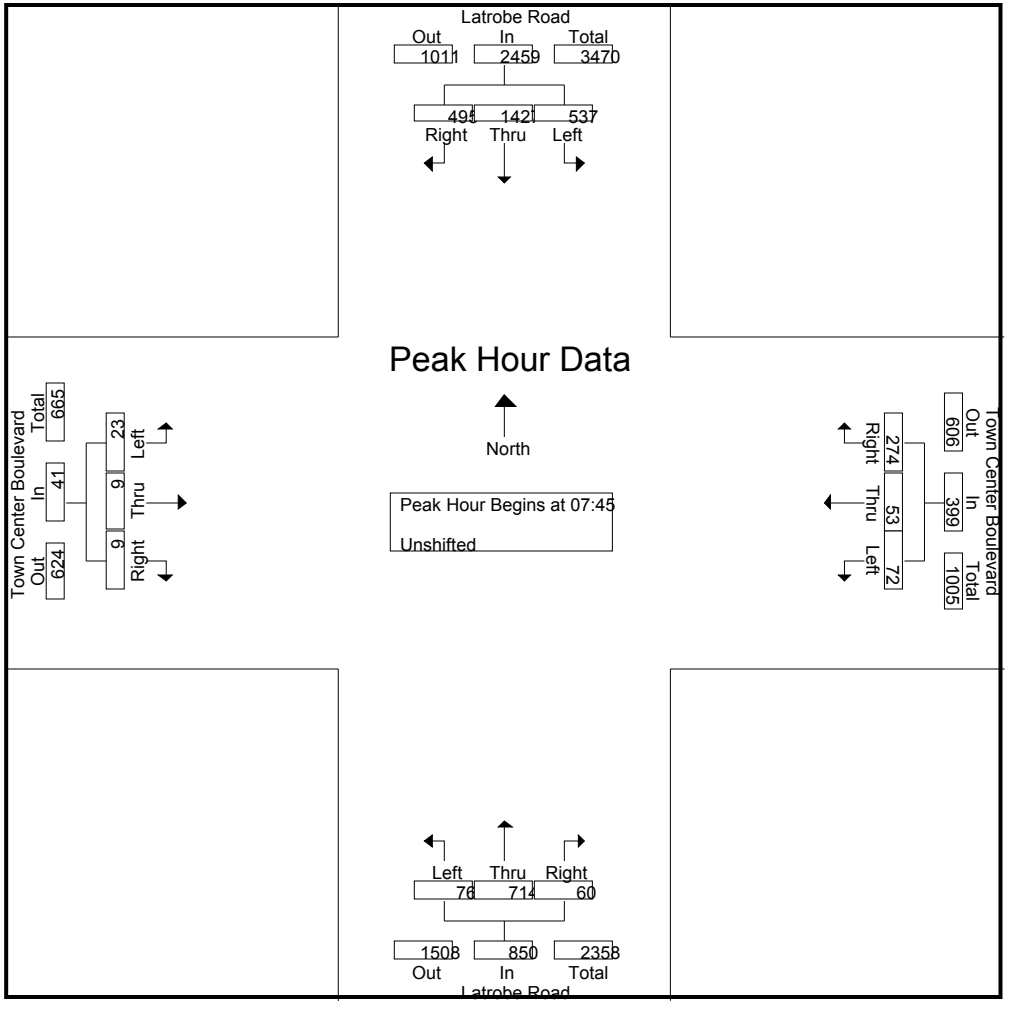
File Name : 12-7225-008 Latrobe-Town Center
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Road Southbound					Town Center Boulevard Westbound					Latrobe Road Northbound					Town Center Boulevard Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	88	243	61	0	392	15	8	40	0	63	10	146	12	0	168	2	1	1	0	4	0	627	627
07:15	110	306	106	0	522	13	11	53	0	77	15	130	8	0	153	3	0	1	0	4	0	756	756
07:30	115	297	124	0	536	15	10	48	0	73	15	144	5	4	164	5	0	0	3	5	7	778	785
07:45	158	423	169	0	750	21	15	57	0	93	26	164	15	1	205	4	3	3	0	10	1	1058	1059
Total	471	1269	460	0	2200	64	44	198	0	306	66	584	40	5	690	14	4	5	3	23	8	3219	3227
08:00	116	408	145	0	669	23	12	60	0	95	15	174	16	1	205	7	4	3	0	14	1	983	984
08:15	126	347	103	0	576	17	16	67	0	100	15	183	12	1	210	4	0	0	0	4	1	890	891
08:30	137	249	78	0	464	11	10	90	0	111	20	193	17	0	230	8	2	3	0	13	0	818	818
08:45	142	288	71	0	501	14	7	98	0	119	13	157	25	5	195	3	2	2	0	7	5	822	827
Total	521	1292	397	0	2210	65	45	315	0	425	63	707	70	7	840	22	8	8	0	38	7	3513	3520
16:00	117	152	4	0	273	16	1	162	0	179	4	314	27	0	345	83	9	13	0	105	0	902	902
16:15	159	196	5	0	360	7	2	156	0	165	4	263	27	2	294	63	17	18	3	98	5	917	922
16:30	122	188	5	0	315	12	3	176	0	191	1	316	12	0	329	112	17	26	0	155	0	990	990
16:45	159	192	9	0	360	11	2	191	0	204	0	356	39	0	395	84	11	28	0	123	0	1082	1082
Total	557	728	23	0	1308	46	8	685	0	739	9	1249	105	2	1363	342	54	85	3	481	5	3891	3896
17:00	147	183	6	0	336	16	3	191	0	210	1	428	37	2	466	113	32	51	2	196	4	1208	1212
17:15	204	253	4	0	461	19	2	225	0	246	1	397	37	0	435	103	10	40	0	153	0	1295	1295
17:30	121	214	4	0	339	13	2	154	0	169	1	292	29	0	322	65	7	13	0	85	0	915	915
17:45	167	225	10	0	402	10	2	141	0	153	0	279	24	0	303	57	5	11	0	73	0	931	931
Total	639	875	24	0	1538	58	9	711	0	778	3	1396	127	2	1526	338	54	115	2	507	4	4349	4353
Grand Total	2188	4164	904	0	7256	233	106	1909	0	2248	141	3936	342	16	4419	716	120	213	8	1049	24	14972	14996
Apprch %	30.2	57.4	12.5			10.4	4.7	84.9			3.2	89.1	7.7			68.3	11.4	20.3					
Total %	14.6	27.8	6		48.5	1.6	0.7	12.8		15	0.9	26.3	2.3		29.5	4.8	0.8	1.4		7	0.2	99.8	

	Latrobe Road Southbound				Town Center Boulevard Westbound				Latrobe Road Northbound				Town Center Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**158**	**423**	**169**	**750**	21	15	57	93	**26**	164	15	205	4	3	**3**	10	**1058**
08:00	116	408	145	669	**23**	12	60	95	15	174	16	205	7	**4**	3	**14**	983
08:15	126	347	103	576	17	**16**	67	100	15	183	12	210	4	0	0	4	890
08:30	137	249	78	464	11	10	**90**	**111**	20	**193**	**17**	**230**	**8**	2	3	13	818
Total Volume	537	1427	495	2459	72	53	274	399	76	714	60	850	23	9	9	41	3749

% App. Total	21.8	58	20.1		18	13.3	68.7		8.9	84	7.1		56.1	22	22		
PHF	.850	.843	.732	.820	.783	.828	.761	.899	.731	.925	.882	.924	.719	.563	.750	.732	.886



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

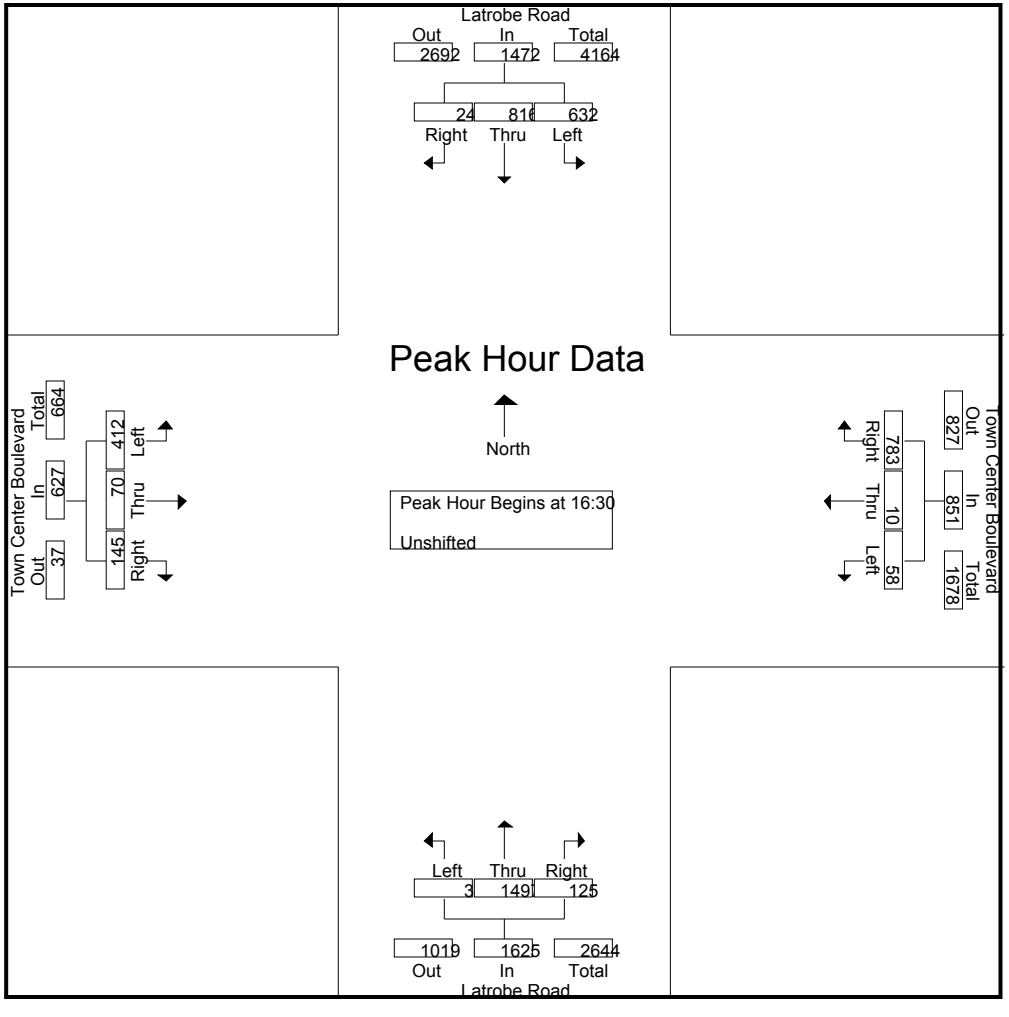
16:30	122	188	5	315	12	**3**	176	191	**1**	316	12	329	112	17	26	155	990
16:45	159	192	**9**	360	11	2	191	204	0	356	**39**	395	84	11	28	123	1082
17:00	147	183	6	336	16	3	191	210	1	**428**	37	**466**	**113**	**32**	**51**	**196**	1208
17:15	**204**	**253**	4	**461**	**19**	2	**225**	**246**	1	397	37	435	103	10	40	153	**1295**
Total Volume	632	816	24	1472	58	10	783	851	3	1497	125	1625	412	70	145	627	4575
% App. Total	42.9	55.4	1.6		6.8	1.2	92		0.2	92.1	7.7		65.7	11.2	23.1		
PHF	.775	.806	.667	.798	.763	.833	.870	.865	.750	.874	.801	.872	.912	.547	.711	.800	.883

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-008 Latrobe-Town Center
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

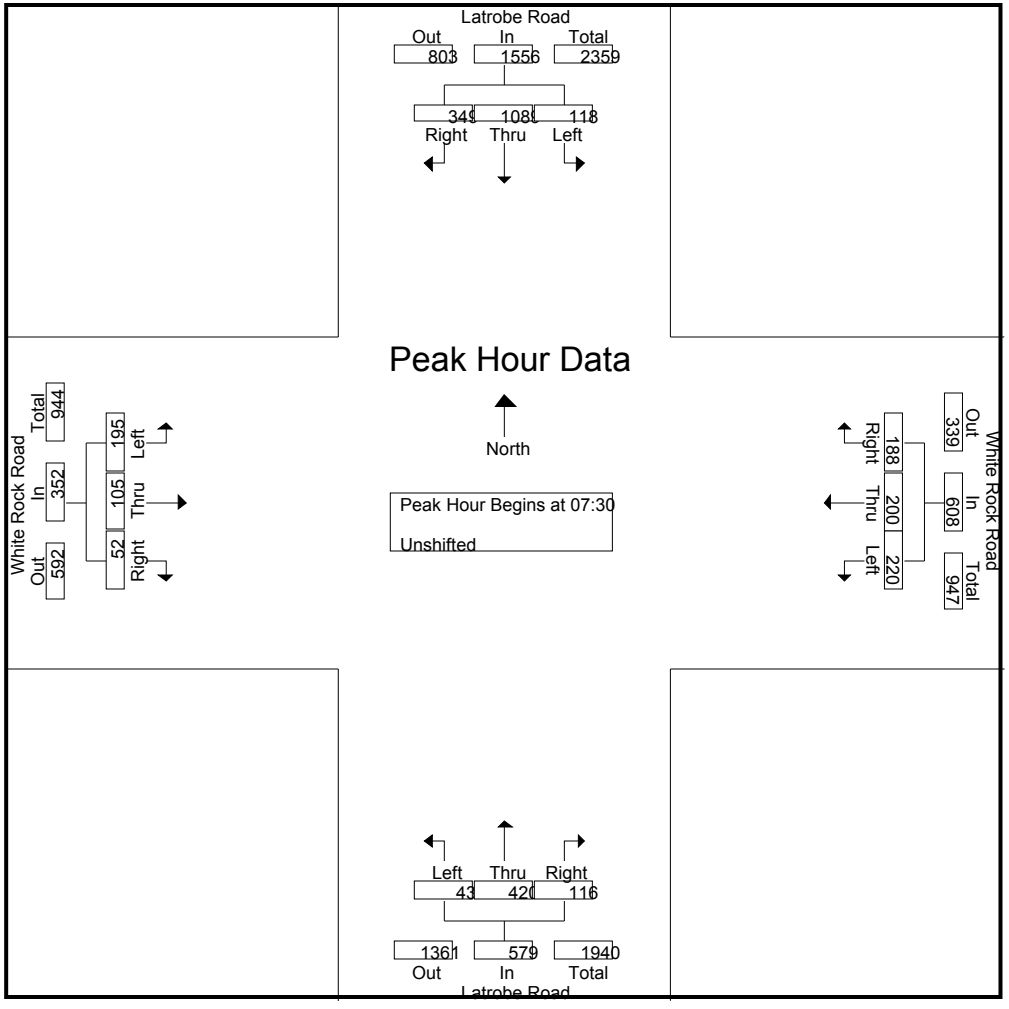
File Name : 12-7225-009 Latrobe-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Latrobe Road Southbound					White Rock Road Westbound					Latrobe Road Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	17	207	48	0	272	22	27	32	0	81	5	97	12	0	114	44	17	9	0	70	0	537	537
07:15	28	215	61	0	304	37	41	46	0	124	11	69	12	0	92	27	21	7	0	55	0	575	575
07:30	32	219	71	0	322	31	50	54	0	135	13	82	18	3	113	45	37	8	0	90	3	660	663
07:45	28	305	97	0	430	66	63	49	0	178	8	105	17	0	130	49	20	15	0	84	0	822	822
Total	105	946	277	0	1328	156	181	181	0	518	37	353	59	3	449	165	95	39	0	299	3	2594	2597
08:00	30	283	107	0	420	66	37	42	0	145	11	116	44	1	171	55	22	17	0	94	1	830	831
08:15	28	282	74	0	384	57	50	43	1	150	11	117	37	1	165	46	26	12	0	84	2	783	785
08:30	24	190	55	0	269	60	28	50	0	138	14	128	31	2	173	44	19	14	0	77	2	657	659
08:45	32	220	54	0	306	41	18	45	0	104	10	101	30	0	141	54	22	11	0	87	0	638	638
Total	114	975	290	0	1379	224	133	180	1	537	46	462	142	4	650	199	89	54	0	342	5	2908	2913
16:00	61	77	43	0	181	31	27	56	0	114	22	281	65	0	368	79	55	11	0	145	0	808	808
16:15	79	85	48	0	212	41	28	49	0	118	16	173	41	0	230	57	53	16	0	126	0	686	686
16:30	77	105	48	1	230	34	32	59	1	125	20	289	79	0	388	53	54	11	0	118	2	861	863
16:45	77	114	57	0	248	30	29	41	0	100	17	233	82	0	332	77	58	14	0	149	0	829	829
Total	294	381	196	1	871	136	116	205	1	457	75	976	267	0	1318	266	220	52	0	538	2	3184	3186
17:00	81	87	64	0	232	28	37	76	0	141	32	323	89	1	444	110	79	12	0	201	1	1018	1019
17:15	83	137	66	2	286	50	23	62	0	135	11	216	65	0	292	68	61	25	1	154	3	867	870
17:30	98	129	41	0	268	27	22	55	0	104	27	236	66	0	329	55	53	22	0	130	0	831	831
17:45	90	115	46	0	251	40	37	44	0	121	13	192	38	0	243	53	50	23	0	126	0	741	741
Total	352	468	217	2	1037	145	119	237	0	501	83	967	258	1	1308	286	243	82	1	611	4	3457	3461
Grand Total	865	2770	980	3	4615	661	549	803	2	2013	241	2758	726	8	3725	916	647	227	1	1790	14	12143	12157
Apprch %	18.7	60	21.2			32.8	27.3	39.9			6.5	74	19.5			51.2	36.1	12.7					
Total %	7.1	22.8	8.1		38	5.4	4.5	6.6		16.6	2	22.7	6		30.7	7.5	5.3	1.9		14.7	0.1	99.9	

	Latrobe Road Southbound				White Rock Road Westbound				Latrobe Road Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	**32**	219	71	322	31	50	**54**	135	**13**	82	18	113	45	**37**	8	90	660
07:45	28	**305**	97	**430**	**66**	**63**	49	**178**	8	105	17	130	49	20	15	84	822
08:00	30	283	**107**	420	66	37	42	145	11	116	**44**	**171**	**55**	22	**17**	**94**	**830**
08:15	28	282	74	384	57	50	43	150	11	**117**	37	165	46	26	12	84	783
Total Volume	118	1089	349	1556	220	200	188	608	43	420	116	579	195	105	52	352	3095

% App. Total	7.6	70	22.4		36.2	32.9	30.9		7.4	72.5	20		55.4	29.8	14.8		
PHF	.922	.893	.815	.905	.833	.794	.870	.854	.827	.897	.659	.846	.886	.709	.765	.936	.932



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

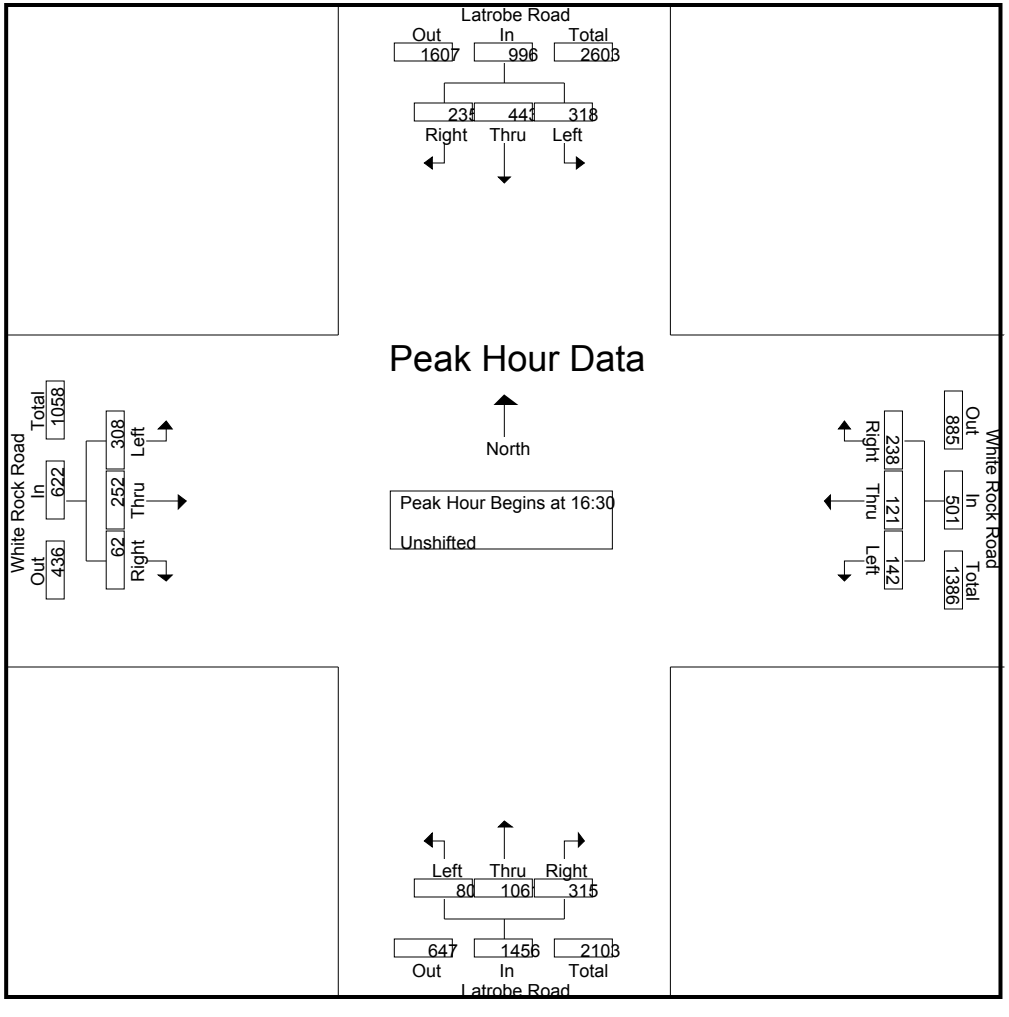
16:30	77	105	48	230	34	32	59	125	20	289	79	388	53	54	11	118	861
16:45	77	114	57	248	30	29	41	100	17	233	82	332	77	58	14	149	829
17:00	81	87	64	232	28	**37**	**76**	**141**	**32**	**323**	**89**	**444**	**110**	**79**	12	**201**	**1018**
17:15	**83**	**137**	**66**	**286**	**50**	23	62	135	11	216	65	292	68	61	**25**	154	867
Total Volume	318	443	235	996	142	121	238	501	80	1061	315	1456	308	252	62	622	3575
% App. Total	31.9	44.5	23.6		28.3	24.2	47.5		5.5	72.9	21.6		49.5	40.5	10		
PHF	.958	.808	.890	.871	.710	.818	.783	.888	.625	.821	.885	.820	.700	.797	.620	.774	.878

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-009 Latrobe-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

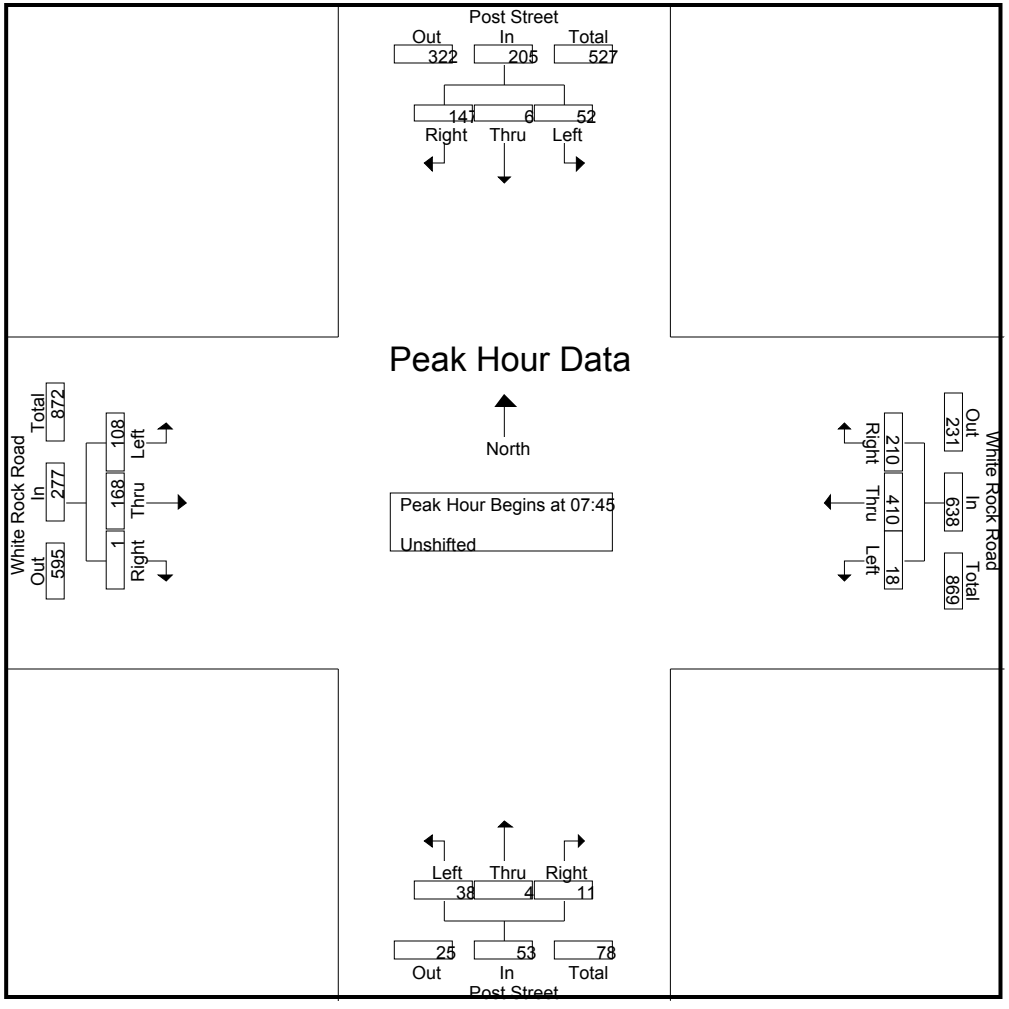
File Name : 12-7225-010 Post-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Post Street Southbound					White Rock Road Westbound					Post Street Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	10	0	21	1	31	3	58	31	1	92	4	0	0	0	4	14	28	0	0	42	2	169	171
07:15	11	1	27	0	39	7	105	44	0	156	11	0	0	0	11	13	46	0	0	59	0	265	265
07:30	11	3	23	0	37	3	93	35	0	131	13	1	2	0	16	12	50	0	0	62	0	246	246
07:45	9	1	35	0	45	5	136	58	0	199	5	1	1	0	7	16	38	0	0	54	0	305	305
Total	41	5	106	1	152	18	392	168	1	578	33	2	3	0	38	55	162	0	0	217	2	985	987
08:00	16	2	27	0	45	3	92	56	0	151	12	2	7	0	21	29	45	1	1	75	1	292	293
08:15	15	2	36	1	53	8	105	47	0	160	10	0	2	0	12	39	44	0	0	83	1	308	309
08:30	12	1	49	1	62	2	77	49	0	128	11	1	1	0	13	24	41	0	1	65	2	268	270
08:45	19	3	28	0	50	5	81	37	0	123	4	1	0	0	5	27	44	0	0	71	0	249	249
Total	62	8	140	2	210	18	355	189	0	562	37	4	10	0	51	119	174	1	2	294	4	1117	1121
16:00	34	4	45	0	83	6	57	29	0	92	18	3	8	0	29	33	132	1	0	166	0	370	370
16:15	35	3	22	0	60	6	85	32	0	123	12	2	3	1	17	42	120	1	0	163	1	363	364
16:30	33	4	38	1	75	2	80	34	0	116	6	5	1	0	12	48	139	0	0	187	1	390	391
16:45	39	5	40	0	84	6	66	34	0	106	4	7	7	0	18	55	129	0	1	184	1	392	393
Total	141	16	145	1	302	20	288	129	0	437	40	17	19	1	76	178	520	2	1	700	3	1515	1518
17:00	35	4	44	0	83	1	89	27	0	117	11	2	3	2	16	58	171	4	1	233	3	449	452
17:15	59	3	48	0	110	3	83	29	0	115	4	5	4	0	13	31	155	1	0	187	0	425	425
17:30	48	1	27	1	76	2	78	32	0	112	1	1	2	0	4	36	164	0	0	200	1	392	393
17:45	46	2	28	0	76	5	91	41	0	137	7	1	3	0	11	37	132	2	1	171	1	395	396
Total	188	10	147	1	345	11	341	129	0	481	23	9	12	2	44	162	622	7	2	791	5	1661	1666
Grand Total	432	39	538	5	1009	67	1376	615	1	2058	133	32	44	3	209	514	1478	10	5	2002	14	5278	5292
Apprch %	42.8	3.9	53.3			3.3	66.9	29.9			63.6	15.3	21.1			25.7	73.8	0.5					
Total %	8.2	0.7	10.2		19.1	1.3	26.1	11.7		39	2.5	0.6	0.8		4	9.7	28	0.2		37.9	0.3	99.7	

	Post Street Southbound				White Rock Road Westbound				Post Street Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	9	1	35	45	5	**136**	**58**	**199**	5	1	1	7	16	38	0	54	305
08:00	**16**	**2**	27	45	3	92	56	151	**12**	**2**	**7**	**21**	29	**45**	**1**	75	292
08:15	15	2	36	53	**8**	105	47	160	10	0	2	12	**39**	44	0	**83**	**308**
08:30	12	1	**49**	**62**	2	77	49	128	11	1	1	13	24	41	0	65	268
Total Volume	52	6	147	205	18	410	210	638	38	4	11	53	108	168	1	277	1173

% App. Total	25.4	2.9	71.7		2.8	64.3	32.9		71.7	7.5	20.8		39	60.6	0.4		
PHF	.813	.750	.750	.827	.563	.754	.905	.802	.792	.500	.393	.631	.692	.933	.250	.834	.952



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

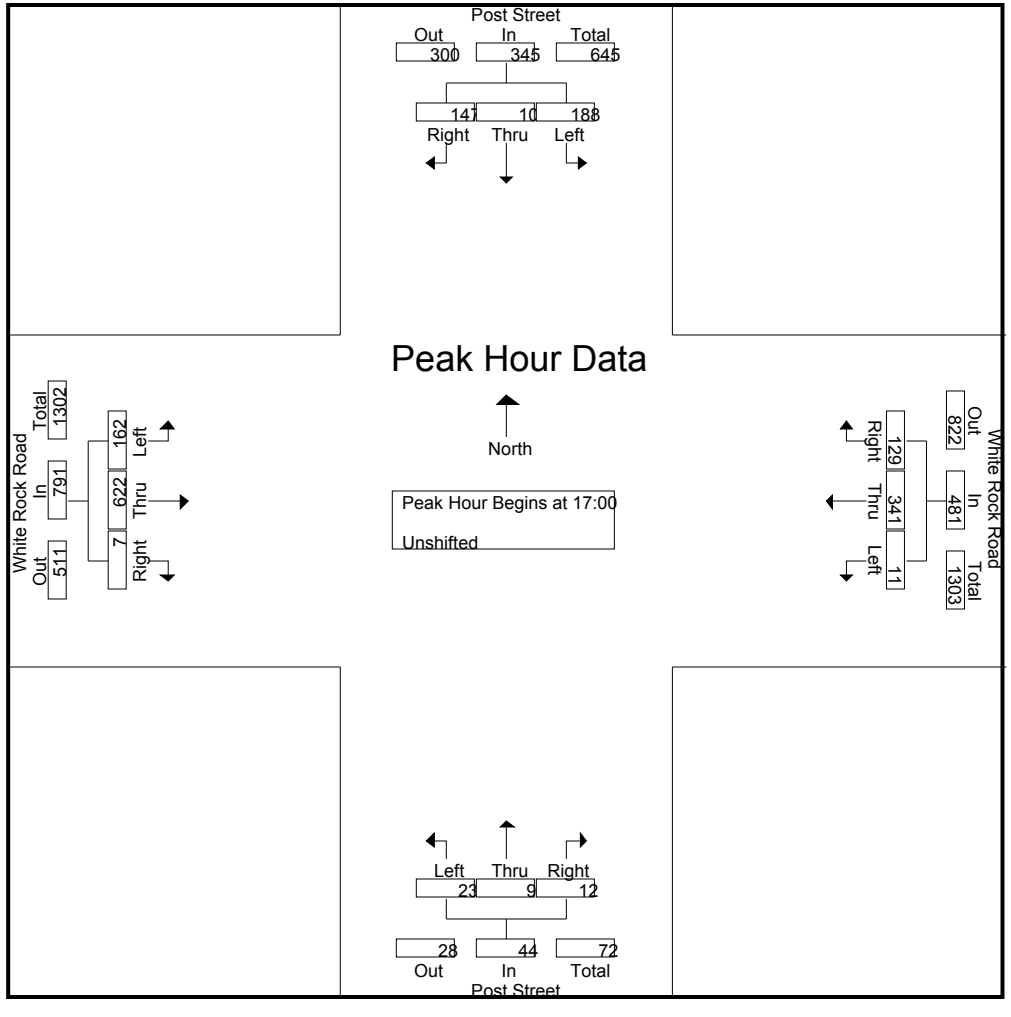
17:00	35	**4**	44	83	1	89	27	117	**11**	2	3	**16**	**58**	**171**	**4**	**233**	**449**
17:15	**59**	3	**48**	**110**	3	83	29	115	4	**5**	**4**	13	31	155	1	187	425
17:30	48	1	27	76	2	78	32	112	1	1	2	4	36	164	0	200	392
17:45	46	2	28	76	**5**	**91**	**41**	**137**	7	1	3	11	37	132	2	171	395
Total Volume	188	10	147	345	11	341	129	481	23	9	12	44	162	622	7	791	1661
% App. Total	54.5	2.9	42.6		2.3	70.9	26.8		52.3	20.5	27.3		20.5	78.6	0.9		
PHF	.797	.625	.766	.784	.550	.937	.787	.878	.523	.450	.750	.688	.698	.909	.438	.849	.925

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-010 Post-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

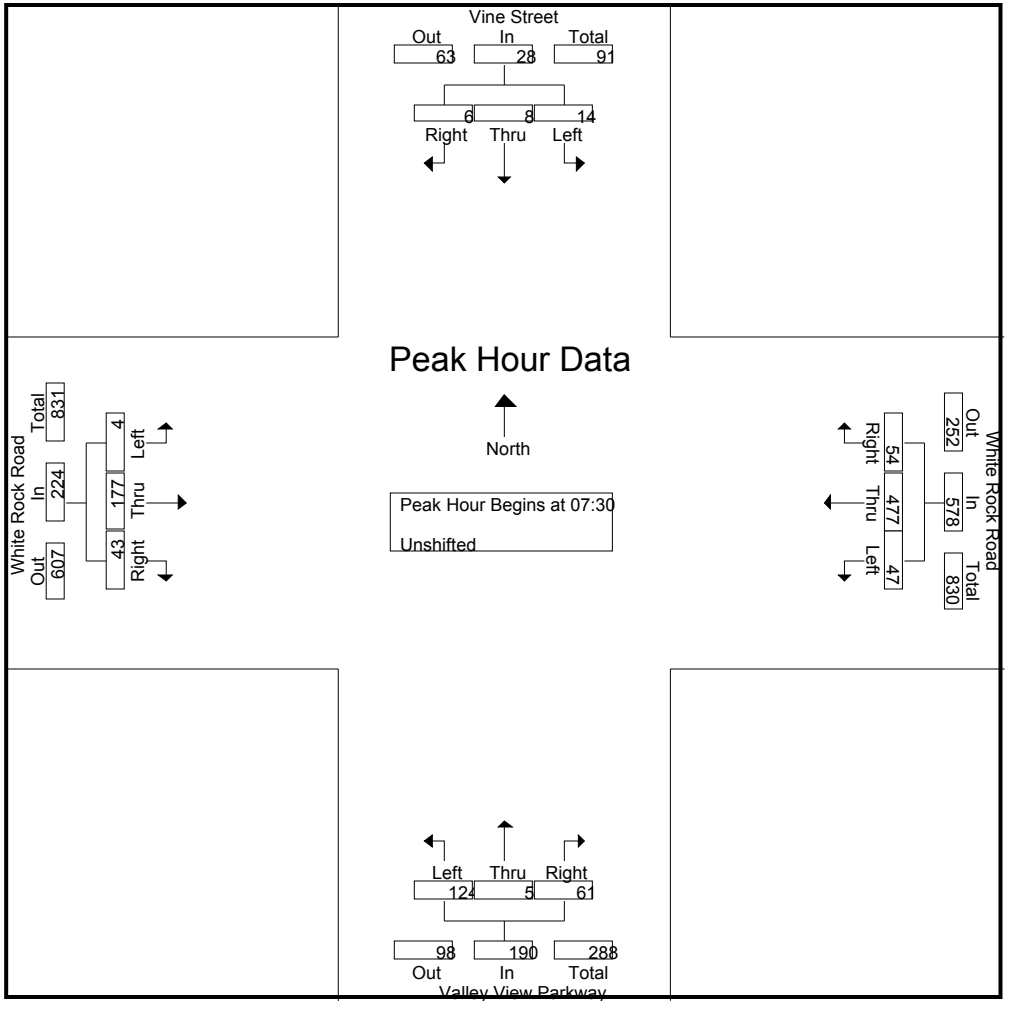
File Name : 12-7225-011 Valley View-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	Vine Street Southbound					White Rock Road Westbound					Valley View Parkway Northbound					White Rock Road Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	3	1	0	0	4	2	57	2	0	61	28	1	7	0	36	0	32	4	1	36	1	137	138
07:15	2	0	0	0	2	4	97	3	0	104	35	2	21	1	58	1	47	6	1	54	2	218	220
07:30	3	2	2	0	7	12	89	11	0	112	31	0	23	0	54	1	55	7	1	63	1	236	237
07:45	1	3	1	0	5	18	178	14	0	210	31	3	21	0	55	1	48	13	1	62	1	332	333
Total	9	6	3	0	18	36	421	30	0	487	125	6	72	1	203	3	182	30	4	215	5	923	928
08:00	4	2	1	1	7	9	105	19	2	133	28	2	6	0	36	2	40	12	1	54	4	230	234
08:15	6	1	2	0	9	8	105	10	0	123	34	0	11	0	45	0	34	11	0	45	0	222	222
08:30	8	1	3	1	12	7	79	11	0	97	22	4	4	0	30	2	29	10	6	41	7	180	187
08:45	7	4	1	0	12	4	71	15	0	90	20	6	6	0	32	4	39	7	2	50	2	184	186
Total	25	8	7	2	40	28	360	55	2	443	104	12	27	0	143	8	142	40	9	190	13	816	829
16:00	41	5	6	0	52	5	44	20	0	69	15	2	7	0	24	14	107	18	0	139	0	284	284
16:15	29	8	10	0	47	4	68	18	0	90	16	5	4	0	25	14	82	14	3	110	3	272	275
16:30	24	7	16	0	47	7	51	24	0	82	12	10	4	0	26	10	108	18	0	136	0	291	291
16:45	35	7	8	0	50	7	51	16	0	74	13	4	11	0	28	19	107	28	3	154	3	306	309
Total	129	27	40	0	196	23	214	78	0	315	56	21	26	0	103	57	404	78	6	539	6	1153	1159
17:00	42	7	12	0	61	4	50	13	0	67	21	3	6	0	30	16	133	25	3	174	3	332	335
17:15	40	5	19	0	64	2	50	18	0	70	15	2	10	0	27	9	113	31	3	153	3	314	317
17:30	38	8	7	0	53	2	42	17	0	61	20	3	7	0	30	8	125	32	4	165	4	309	313
17:45	32	14	6	0	52	6	65	22	0	93	26	6	7	0	39	15	101	28	1	144	1	328	329
Total	152	34	44	0	230	14	207	70	0	291	82	14	30	0	126	48	472	116	11	636	11	1283	1294
Grand Total	315	75	94	2	484	101	1202	233	2	1536	367	53	155	1	575	116	1200	264	30	1580	35	4175	4210
Apprch %	65.1	15.5	19.4			6.6	78.3	15.2			63.8	9.2	27			7.3	75.9	16.7					
Total %	7.5	1.8	2.3		11.6	2.4	28.8	5.6		36.8	8.8	1.3	3.7		13.8	2.8	28.7	6.3		37.8	0.8	99.2	

	Vine Street Southbound				White Rock Road Westbound				Valley View Parkway Northbound				White Rock Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	3	2	**2**	7	12	89	11	112	31	0	**23**	54	1	**55**	7	**63**	236
07:45	1	**3**	1	5	**18**	**178**	14	**210**	31	**3**	21	**55**	1	48	**13**	62	**332**
08:00	4	2	1	7	9	105	**19**	133	28	2	6	36	**2**	40	12	54	230
08:15	**6**	1	2	**9**	8	105	10	123	**34**	0	11	45	0	34	11	45	222
Total Volume	14	8	6	28	47	477	54	578	124	5	61	190	4	177	43	224	1020

% App. Total	50	28.6	21.4		8.1	82.5	9.3		65.3	2.6	32.1		1.8	79	19.2		
PHF	.583	.667	.750	.778	.653	.670	.711	.688	.912	.417	.663	.864	.500	.805	.827	.889	.768



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 17:00

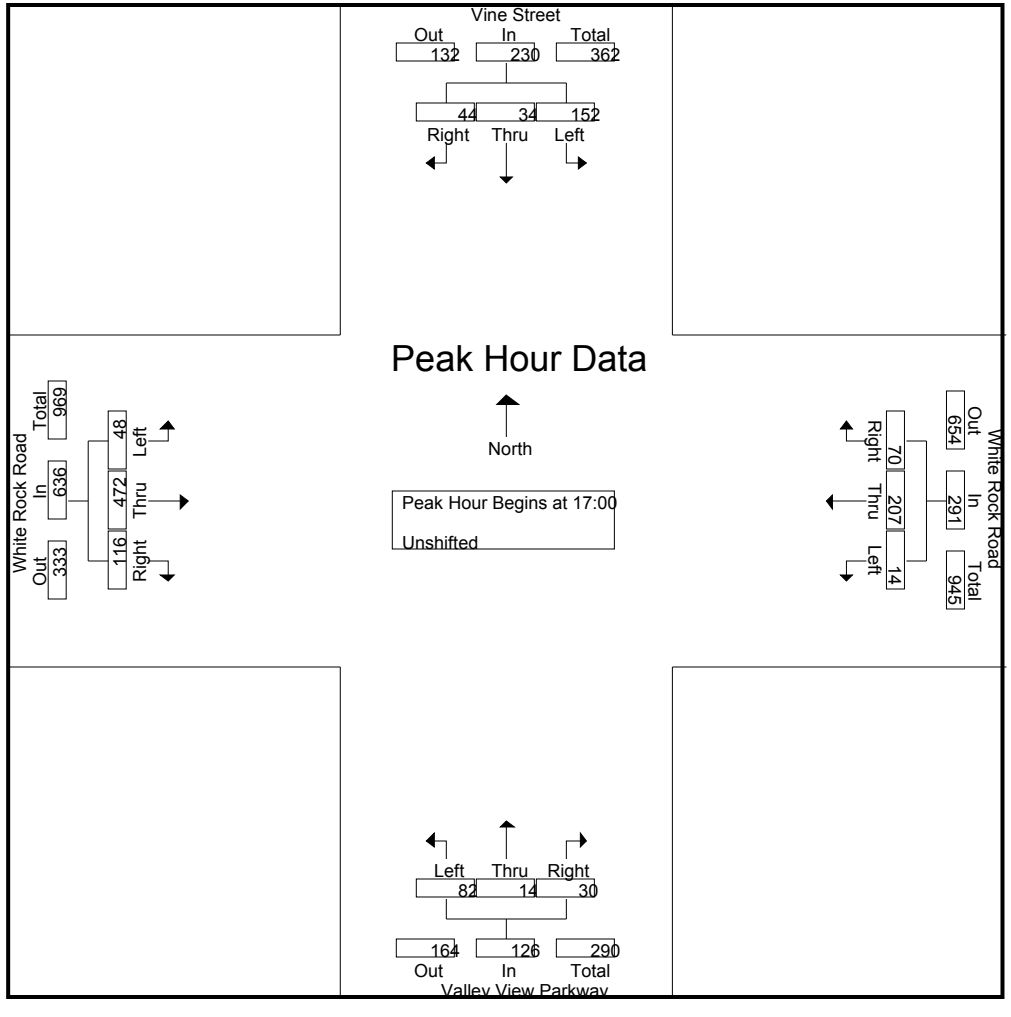
17:00	**42**	7	12	61	4	50	13	67	21	3	6	30	**16**	**133**	25	**174**	**332**
17:15	40	5	**19**	**64**	2	50	18	70	15	2	**10**	27	9	113	31	153	314
17:30	38	8	7	53	2	42	17	61	20	3	7	30	8	125	**32**	165	309
17:45	32	**14**	6	52	**6**	**65**	**22**	**93**	**26**	**6**	7	**39**	15	101	28	144	328
Total Volume	152	34	44	230	14	207	70	291	82	14	30	126	48	472	116	636	1283
% App. Total	66.1	14.8	19.1		4.8	71.1	24.1		65.1	11.1	23.8		7.5	74.2	18.2		
PHF	.905	.607	.579	.898	.583	.796	.795	.782	.788	.583	.750	.808	.750	.887	.906	.914	.966

All Traffic Data

(916) 771-8700

El Dorado County
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-011 Valley View-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION

Count Summary Beginning: December 16, 2014

Count Station:	1600219	Counter ID:	72
City/Town:	El Dorado Hills	Mile Post:	**3.56**
Road Name:	**El Dorado Hills Blvd.**	Location:	**300 ft S. of Francisco Dr.**
Lanes:	2	Direction:	NORTHBOUND

Date	21	22	16	17	18	19	20	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100			29						29
200			20						20
300			9						9
400			10						10
500			18						18
600			74						74
700			177						177
800			469						469
900			501						501
1000			337						337
1100			374						374
1200			412						412
1300			433						433
1400			412						412
1500			518						518
1600			611						611
1700			712						712
1800			699						699
1900			521						521
2000			356						356
2100			286						286
2200			208						208
2300			139						139
2400			64						64
Totals			7389						7389
AM Peak Hr			9:00						9:00
AM Count			501						501
PM Peak Hr			5:00						5:00
PM Count			712						712

TOTAL ADT: 15,444

EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY: TRANSPORTATION DIVISION

Count Summary Beginning: December 16, 2014

Count Station:	1600219	Counter ID:	72
City/Town:	El Dorado Hills	Mile Post:	**3.56**
Road Name:	**El Dorado Hills Blvd.**	Location:	**300 ft S. of Francisco Dr.**
Lanes:	2	Direction:	SOUTHBOUND

Date	21	22	16	17	18	19	20	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100			22						22
200			11						11
300			15						15
400			15						15
500			49						49
600			159						159
700			462						462
800			823						823
900			741						741
1000			431						431
1100			398						398
1200			475						475
1300			419						419
1400			450						450
1500			607						607
1600			525						525
1700			587						587
1800			584						584
1900			450						450
2000			293						293
2100			227						227
2200			169						169
2300			103						103
2400			40						40
Totals			8055						8055
AM Peak Hr			8:00						8:00
AM Count			823						823
PM Peak Hr			3:00						3:00
PM Count			607						607

TOTAL ADT: 15,444

13-7462-001 El Dorado Hills Mainline Count

US-50 between El Dorado Hills Blvd and East Bidwell Street

Tuesday, August 20, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	202	12	9	0	223
6:15 AM	266	21	11	0	298
6:30 AM	385	22	17	0	424
6:45 AM	496	24	16	0	536
7:00 AM	477	35	12	0	524
7:15 AM	558	24	26	0	608
7:30 AM	566	20	27	0	613
7:45 AM	714	20	28	0	762
8:00 AM	617	23	30	0	670
8:15 AM	611	37	34	0	682
8:30 AM	598	33	32	0	663
8:45 AM	580	31	33	0	644
Totals:	6070	302	275	0	6647

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	626	14	61	4	705
6:15 AM	765	16	58	0	839
6:30 AM	887	16	79	1	983
6:45 AM	938	15	80	1	1034
7:00 AM	1086	11	80	0	1177
7:15 AM	1072	18	118	1	1209
7:30 AM	893	6	123	0	1022
7:45 AM	725	19	144	1	889
8:00 AM	852	21	119	0	992
8:15 AM	872	20	103	0	995
8:30 AM	881	23	76	0	980
8:45 AM	771	17	58	0	846
Totals:	10368	196	1099	8	11671

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	716	12	76	0	804
3:15 PM	815	9	84	0	908
3:30 PM	887	13	129	0	1029
3:45 PM	972	8	109	0	1089
4:00 PM	974	12	119	0	1105
4:15 PM	970	5	121	0	1096
4:30 PM	1009	8	122	0	1139
4:45 PM	1068	3	148	0	1219
5:00 PM	1066	8	123	0	1197
5:15 PM	1133	8	129	0	1270
5:30 PM	1052	2	102	0	1156
5:45 PM	997	6	111	0	1114
Totals:	11659	94	1373	0	13126

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	655	22	56	1	734
3:15 PM	643	23	79	0	745
3:30 PM	683	34	74	1	792
3:45 PM	631	17	62	0	710
4:00 PM	664	19	66	0	749
4:15 PM	731	16	58	0	805
4:30 PM	698	19	53	0	770
4:45 PM	667	27	57	1	752
5:00 PM	784	16	65	0	865
5:15 PM	778	4	67	0	849
5:30 PM	714	6	66	0	786
5:45 PM	680	12	66	0	758
Totals:	8328	215	769	3	9315

13-7462-001 El Dorado Hills Mainline Count

US-50 between El Dorado Hills Blvd and East Bidwell Street

Wednesday, August 21, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	218	12	12	0	242
6:15 AM	248	25	10	0	283
6:30 AM	361	28	30	0	419
6:45 AM	532	43	21	0	596
7:00 AM	426	32	25	0	483
7:15 AM	562	29	29	0	620
7:30 AM	631	35	43	0	709
7:45 AM	674	22	43	0	739
8:00 AM	558	29	40	0	627
8:15 AM	581	30	28	0	639
8:30 AM	582	25	33	0	640
8:45 AM	557	31	27	0	615
Totals:	5930	341	341	0	6612

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	579	14	55	0	648
6:15 AM	718	15	59	0	792
6:30 AM	876	15	81	0	972
6:45 AM	959	12	67	0	1038
7:00 AM	1028	17	88	0	1133
7:15 AM	1047	14	141	0	1202
7:30 AM	1016	25	164	0	1205
7:45 AM	944	19	124	1	1088
8:00 AM	965	20	99	0	1084
8:15 AM	820	26	72	0	918
8:30 AM	777	28	80	0	885
8:45 AM	769	28	57	0	854
Totals:	10498	233	1087	1	11819

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	785	8	103	0	896
3:15 PM	777	9	76	0	862
3:30 PM	868	9	121	0	998
3:45 PM	994	8	119	0	1121
4:00 PM	932	7	117	0	1056
4:15 PM	1038	6	129	0	1173
4:30 PM	1068	8	108	0	1184
4:45 PM	988	4	135	0	1127
5:00 PM	1044	6	125	0	1175
5:15 PM	1066	5	136	0	1207
5:30 PM	1046	8	128	0	1182
5:45 PM	1006	6	137	0	1149
Totals:	11612	84	1434	0	13130

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	680	28	69	0	777
3:15 PM	663	22	67	0	752
3:30 PM	655	34	68	0	757
3:45 PM	659	23	63	0	745
4:00 PM	700	13	47	1	761
4:15 PM	681	17	51	0	749
4:30 PM	730	10	60	0	800
4:45 PM	717	17	68	1	803
5:00 PM	711	15	59	0	785
5:15 PM	770	11	56	0	837
5:30 PM	638	14	50	0	702
5:45 PM	655	11	46	0	712
Totals:	8259	215	704	2	9180

13-7462-001 El Dorado Hills Mainline Count

US-50 between El Dorado Hills Blvd and East Bidwell Street

Thursday, August 22, 2013

Eastbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	179	22	5	0	206
6:15 AM	254	27	13	0	294
6:30 AM	408	28	19	0	455
6:45 AM	490	20	27	0	537
7:00 AM	451	22	25	0	498
7:15 AM	581	21	48	0	650
7:30 AM	675	33	53	0	761
7:45 AM	673	22	25	0	720
8:00 AM	596	22	33	0	651
8:15 AM	646	36	35	0	717
8:30 AM	627	40	41	0	708
8:45 AM	682	19	34	0	735
Totals:	6262	312	358	0	6932

Westbound

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
6:00 AM	599	10	49	0	658
6:15 AM	677	11	50	0	738
6:30 AM	860	18	83	0	961
6:45 AM	949	16	79	0	1044
7:00 AM	1000	15	91	0	1106
7:15 AM	1012	19	125	1	1157
7:30 AM	985	17	122	1	1125
7:45 AM	964	21	129	0	1114
8:00 AM	915	22	112	3	1052
8:15 AM	849	15	65	0	929
8:30 AM	807	15	72	0	894
8:45 AM	738	20	53	0	811
Totals:	10355	199	1030	5	11589

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	839	15	105	0	959
3:15 PM	871	14	115	1	1001
3:30 PM	869	17	128	0	1014
3:45 PM	981	5	115	0	1101
4:00 PM	951	9	108	0	1068
4:15 PM	1044	9	129	0	1182
4:30 PM	1048	4	125	0	1177
4:45 PM	1149	6	165	0	1320
5:00 PM	1067	4	148	0	1219
5:15 PM	1137	7	141	0	1285
5:30 PM	1095	5	140	0	1240
5:45 PM	1026	2	137	0	1165
Totals:	12077	97	1556	1	13731

	Non-HOV		HOV Lane		
	Vehicles	Trucks	HOV Lane	HOV Trucks	Total
3:00 PM	645	36	67	1	749
3:15 PM	671	36	70	0	777
3:30 PM	694	29	60	1	784
3:45 PM	681	23	85	0	789
4:00 PM	675	19	71	0	765
4:15 PM	736	15	78	0	829
4:30 PM	678	21	58	0	757
4:45 PM	712	23	81	0	816
5:00 PM	744	17	56	0	817
5:15 PM	730	11	62	0	803
5:30 PM	697	11	51	0	759
5:45 PM	617	22	60	0	699
Totals:	8280	263	799	2	9344

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	153	218	229	25	35	699	75	290	168	7	91	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1546		1770	3539	1560	3433	3516		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1546		1770	3539	1560	3433	3516		1770	1863
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85
Adj. Flow (vph)	159	227	239	28	39	777	83	345	200	8	107	325
RTOR Reduction (vph)	0	0	175	0	0	0	62	0	2	0	0	0
Lane Group Flow (vph)	159	227	64	0	67	777	21	345	206	0	107	325
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	7.7	29.6	29.6		5.9	27.8	27.8	13.7	45.6		9.3	41.7
Effective Green, g (s)	7.7	29.6	29.6		5.9	27.8	27.8	13.7	45.6		9.3	41.7
Actuated g/C Ratio	0.07	0.27	0.27		0.05	0.25	0.25	0.12	0.41		0.08	0.38
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	240	952	416		95	894	394	428	1458		150	706
v/s Ratio Prot	c0.05	0.06			0.04	c0.22		c0.10	0.06		0.06	0.17
v/s Ratio Perm			0.04				0.01					
v/c Ratio	0.66	0.24	0.15		0.71	0.87	0.05	0.81	0.14		0.71	0.46
Uniform Delay, d1	49.9	31.4	30.7		51.2	39.4	31.1	46.9	20.0		49.1	25.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.0	0.1		17.6	8.7	0.0	10.0	0.2		12.5	2.2
Delay (s)	55.1	31.4	30.7		68.8	48.1	31.2	56.9	20.2		61.6	27.8
Level of Service	E	C	C		E	D	C	E	C		E	C
Approach Delay (s)		37.2				48.1			43.1			32.8
Approach LOS		D				D			D			C

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	367
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	432
RTOR Reduction (vph)	129
Lane Group Flow (vph)	303
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	41.7
Effective Green, g (s)	41.7
Actuated g/C Ratio	0.38
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	592
v/s Ratio Prot	
v/s Ratio Perm	c0.19
v/c Ratio	0.51
Uniform Delay, d1	26.3
Progression Factor	1.00
Incremental Delay, d2	3.1
Delay (s)	29.4
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	267	17	60	716	47	36	63	25	106	229	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	1846		1770	1843		1770	1770			1834	1544
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	1846		1770	1843		1770	1770			1834	1544
Peak-hour factor, PHF	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Adj. Flow (vph)	27	318	20	67	804	53	55	95	38	132	286	199
RTOR Reduction (vph)	0	2	0	0	2	0	0	12	0	0	0	129
Lane Group Flow (vph)	27	336	0	67	855	0	55	121	0	0	418	70
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	4.3	32.0		17.6	45.3		11.4	11.4			23.2	23.2
Effective Green, g (s)	4.3	32.0		17.6	45.3		11.4	11.4			23.2	23.2
Actuated g/C Ratio	0.04	0.31		0.17	0.43		0.11	0.11			0.22	0.22
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	73	564		298	797		193	193			406	342
v/s Ratio Prot	c0.02	0.18		0.04	c0.46		0.03	c0.07			c0.23	
v/s Ratio Perm												0.05
v/c Ratio	0.37	0.60		0.22	1.07		0.28	0.63			1.03	0.20
Uniform Delay, d1	48.9	30.9		37.7	29.7		42.9	44.6			40.8	33.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	2.3	2.5		0.3	53.4		0.3	4.6			52.5	0.1
Delay (s)	51.2	33.4		37.9	83.1		43.2	49.2			93.2	33.3
Level of Service	D	C		D	F		D	D			F	C
Approach Delay (s)		34.7			79.8			47.4			73.9	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM Average Control Delay	67.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	104.7	Sum of lost time (s)	20.5
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	205	191	59	539	19	281	49	33	5	38	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1545	1770	1852		1770	1735			1833	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1545	1770	1852		1770	1735			1833	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Adj. Flow (vph)	2	220	205	65	592	21	396	69	46	6	49	4
RTOR Reduction (vph)	0	0	143	0	1	0	0	17	0	0	2	0
Lane Group Flow (vph)	2	220	62	65	612	0	396	98	0	0	57	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	0.8	25.9	25.9	6.7	31.8		26.9	26.9			7.8	
Effective Green, g (s)	0.8	25.9	25.9	6.7	31.8		26.9	26.9			7.8	
Actuated g/C Ratio	0.01	0.30	0.30	0.08	0.37		0.31	0.31			0.09	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	17	564	467	139	688		556	545			167	
v/s Ratio Prot	0.00	0.12		c0.04	c0.33		c0.22	0.06			c0.03	
v/s Ratio Perm			0.04									
v/c Ratio	0.12	0.39	0.13	0.47	0.89		0.71	0.18			0.34	
Uniform Delay, d1	42.0	23.6	21.7	37.7	25.2		25.9	21.3			36.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.2	0.4	0.1	1.8	13.4		4.0	0.1			0.9	
Delay (s)	44.3	24.1	21.8	39.6	38.6		29.9	21.4			37.4	
Level of Service	D	C	C	D	D		C	C			D	
Approach Delay (s)		23.1			38.7			28.0			37.4	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	18.3
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	49	453	45	63	42	361	115	37	125	248	3
Peak Hour Factor	0.86	0.86	0.86	0.52	0.52	0.52	0.92	0.92	0.92	0.75	0.75	0.75
Hourly flow rate (vph)	2	57	527	87	121	81	392	125	40	167	331	4

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	586	288	392	165	167	335
Volume Left (vph)	2	87	392	0	167	0
Volume Right (vph)	527	81	0	40	0	4
Hadj (s)	-0.50	-0.07	0.53	-0.14	0.53	0.03
Departure Headway (s)	8.1	9.1	9.4	8.8	9.6	9.1
Degree Utilization, x	1.31	0.73	1.03	0.40	0.45	0.85
Capacity (veh/h)	452	387	392	406	360	390
Control Delay (s)	180.0	33.1	84.5	16.4	18.9	44.8
Approach Delay (s)	180.0	33.1	64.3		36.2	
Approach LOS	F	D	F		E	

Intersection Summary			
Delay	87.5		
HCM Level of Service	F		
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	1	83	154	2	62	20	190	41	23	226	19
Peak Hour Factor	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Hourly flow rate (vph)	51	1	122	220	3	89	32	302	65	33	328	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	311	398	388
Volume Left (vph)	51	220	32	33
Volume Right (vph)	122	89	65	28
Hadj (s)	-0.33	0.00	-0.05	0.01
Departure Headway (s)	7.2	7.0	6.6	6.7
Degree Utilization, x	0.35	0.61	0.73	0.72
Capacity (veh/h)	402	465	509	510
Control Delay (s)	14.0	20.4	25.4	25.0
Approach Delay (s)	14.0	20.4	25.4	25.0
Approach LOS	B	C	D	C

Intersection Summary			
Delay	22.5		
HCM Level of Service	C		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	399	147	309	328	265	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1545	3229		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1545	3229		3433	3539
Peak-hour factor, PHF	0.72	0.72	0.83	0.83	0.90	0.90
Adj. Flow (vph)	554	204	372	395	294	900
RTOR Reduction (vph)	0	83	154	0	0	0
Lane Group Flow (vph)	554	121	613	0	294	900
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	41.2	41.2	22.5		13.0	39.5
Effective Green, g (s)	41.2	41.2	22.5		13.0	39.5
Actuated g/C Ratio	0.43	0.43	0.24		0.14	0.41
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	763	666	760		467	1462
v/s Ratio Prot	c0.31		c0.19		0.09	c0.25
v/s Ratio Perm		0.08				
v/c Ratio	0.73	0.18	0.81		0.63	0.62
Uniform Delay, d1	22.5	16.8	34.5		39.0	22.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.0	5.9		1.9	0.5
Delay (s)	25.5	16.8	40.4		40.9	22.6
Level of Service	C	B	D		D	C
Approach Delay (s)	23.1		40.4			27.1
Approach LOS	C		D			C

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	14.9
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	89	221	113	66	10	426	212	37	33	170	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1525	1770	1818		1770	1807		1770	1863	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1525	1770	1818		1770	1807		1770	1863	1520
Peak-hour factor, PHF	0.57	0.57	0.57	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	121	156	388	145	85	13	473	236	41	37	189	336
RTOR Reduction (vph)	0	0	330	0	3	0	0	3	0	0	0	276
Lane Group Flow (vph)	121	156	58	145	95	0	473	274	0	37	189	60
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	16.8	16.8	16.8	17.7	17.7		40.2	54.1		6.4	20.3	20.3
Effective Green, g (s)	16.8	16.8	16.8	17.7	17.7		40.2	54.1		6.4	20.3	20.3
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16		0.36	0.48		0.06	0.18	0.18
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	263	277	227	277	285		630	866		100	335	273
v/s Ratio Prot	0.07	c0.08		c0.08	0.05		c0.27	0.15		0.02	c0.10	
v/s Ratio Perm			0.04									0.04
v/c Ratio	0.46	0.56	0.25	0.52	0.33		0.75	0.32		0.37	0.56	0.22
Uniform Delay, d1	43.9	44.6	42.5	43.7	42.3		31.9	18.1		51.3	42.3	39.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	1.6	0.2	1.8	0.7		4.8	0.2		1.7	1.8	0.3
Delay (s)	44.4	46.2	42.7	45.5	43.0		36.7	18.2		53.0	44.0	39.8
Level of Service	D	D	D	D	D		D	B		D	D	D
Approach Delay (s)		43.8			44.5			29.9			42.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	38.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	17.9
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	161	44	558	1177	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1560	1770	3539	3521	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1560	1770	3539	3521	
Peak-hour factor, PHF	0.75	0.75	0.95	0.95	0.88	0.88
Adj. Flow (vph)	80	215	46	587	1338	40
RTOR Reduction (vph)	0	176	0	0	1	0
Lane Group Flow (vph)	80	39	46	587	1377	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.7	11.7	4.0	43.1	35.5	
Effective Green, g (s)	11.7	11.7	4.0	43.1	35.5	
Actuated g/C Ratio	0.18	0.18	0.06	0.67	0.55	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	322	284	110	2372	1944	
v/s Ratio Prot	c0.05		c0.03	0.17	c0.39	
v/s Ratio Perm		0.03				
v/c Ratio	0.25	0.14	0.42	0.25	0.71	
Uniform Delay, d1	22.5	22.1	29.0	4.2	10.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.2	1.3	0.1	1.2	
Delay (s)	23.0	22.3	30.3	4.2	11.8	
Level of Service	C	C	C	A	B	
Approach Delay (s)	22.5			6.1	11.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	13.1
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	1	199	4	0	0	58	495	5	8	1347	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1775	1556		1770		1770	3533		1766	3516	
Flt Permitted		0.95	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1775	1556		1770		1770	3533		1766	3516	
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	114	1	212	10	0	0	66	562	6	9	1433	56
RTOR Reduction (vph)	0	0	187	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	115	25	0	10	0	66	568	0	9	1488	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		11.3	11.3		3.9		6.8	60.4		0.6	54.2	
Effective Green, g (s)		11.3	11.3		3.9		6.8	60.4		0.6	54.2	
Actuated g/C Ratio		0.12	0.12		0.04		0.07	0.63		0.01	0.57	
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3		2.0	3.3	
Lane Grp Cap (vph)		210	184		72		126	2234		11	1995	
v/s Ratio Prot		c0.06			c0.01		c0.04	0.16		0.01	c0.42	
v/s Ratio Perm			0.02									
v/c Ratio		0.55	0.14		0.14		0.52	0.25		0.82	0.75	
Uniform Delay, d1		39.7	37.7		44.2		42.8	7.7		47.4	15.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.4		0.3		1.8	0.1		162.4	1.6	
Delay (s)		42.8	38.1		44.5		44.6	7.8		209.8	17.1	
Level of Service		D	D		D		D	A		F	B	
Approach Delay (s)		39.8			44.5			11.6			18.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	19.3
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	14	65	605	26	83	35	456	191	76	1455	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	4.0	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88		1.00	0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1632		1681	1644		1770	3539	1583	1770	3531	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1632		1681	1644		1770	3539	1583	1770	3531	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	15	71	658	28	90	38	496	208	83	1582	21
RTOR Reduction (vph)	0	67	0	0	7	0	0	0	208	0	1	0
Lane Group Flow (vph)	21	19	0	395	374	0	38	496	0	83	1602	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		NA	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.1	5.1		25.3	25.3		4.2	37.3	0.0	7.4	40.5	
Effective Green, g (s)	5.1	5.1		25.3	25.3		4.2	37.3	0.0	7.4	40.5	
Actuated g/C Ratio	0.05	0.05		0.27	0.27		0.05	0.40	0.00	0.08	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2		2.0	4.2	
Lane Grp Cap (vph)	97	90		458	448		80	1422	0	141	1541	
v/s Ratio Prot	c0.01	0.01		c0.23	0.23		0.02	0.14		c0.05	c0.45	
v/s Ratio Perm												
v/c Ratio	0.22	0.21		0.86	0.84		0.47	0.35	0.00	0.59	1.04	
Uniform Delay, d1	41.9	41.9		32.1	31.8		43.2	19.3	46.4	41.2	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4		15.8	13.2		1.6	0.2	0.0	4.0	34.0	
Delay (s)	42.3	42.3		47.9	45.0		44.8	19.5	46.4	45.2	60.2	
Level of Service	D	D		D	D		D	B	D	D	E	
Approach Delay (s)		42.3			46.5			28.4			59.4	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	17.7
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	251	30	3	652	62	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	306	37	4	858	78	5
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			343		1192	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			343		1192	326
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		62	99
cM capacity (veh/h)			1216		206	714

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	343	4	858	84
Volume Left	0	4	0	78
Volume Right	37	0	0	5
cSH	1700	1216	1700	215
Volume to Capacity	0.20	0.00	0.50	0.39
Queue Length 95th (ft)	0	0	0	43
Control Delay (s)	0.0	8.0	0.0	32.0
Lane LOS		A		D
Approach Delay (s)	0.0	0.0		32.0
Approach LOS				D

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	145	86	263	316	416	173	198	119	217	303	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.91		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3324		1770	3211		1770	3539	1560	1770	3327	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3324		1770	3211		1770	3539	1560	1770	3327	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Adj. Flow (vph)	119	186	110	306	367	484	279	319	192	261	365	211
RTOR Reduction (vph)	0	74	0	0	183	0	0	0	151	0	66	0
Lane Group Flow (vph)	119	222	0	306	668	0	279	319	41	261	510	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	12.1	20.2		20.6	28.7		20.6	21.6	21.6	20.3	21.3	
Effective Green, g (s)	12.1	20.2		20.6	28.7		20.6	21.6	21.6	20.3	21.3	
Actuated g/C Ratio	0.12	0.20		0.20	0.28		0.20	0.21	0.21	0.20	0.21	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	211	663		360	910		360	755	333	355	700	
v/s Ratio Prot	0.07	0.07		c0.17	c0.21		c0.16	0.09		0.15	c0.15	
v/s Ratio Perm									0.03			
v/c Ratio	0.56	0.34		0.85	0.73		0.78	0.42	0.12	0.74	0.73	
Uniform Delay, d1	42.1	34.8		38.9	32.9		38.2	34.5	32.2	38.0	37.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.2		16.6	2.9		9.6	0.3	0.1	7.3	3.6	
Delay (s)	44.9	35.0		55.5	35.8		47.8	34.7	32.3	45.3	40.9	
Level of Service	D	D		E	D		D	C	C	D	D	
Approach Delay (s)		37.8			41.0			38.8			42.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	13.3
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	100	47	200	191	191	43	373	91	118	1059	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3353		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3353		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	205	116	55	244	233	233	58	504	123	137	1231	391
RTOR Reduction (vph)	0	48	0	0	0	203	0	0	25	0	0	143
Lane Group Flow (vph)	205	123	0	244	233	30	58	504	98	137	1231	248
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.2	17.6		15.6	18.9	18.9	8.9	81.1	81.1	11.3	83.5	83.5
Effective Green, g (s)	14.2	17.6		15.6	18.9	18.9	8.9	81.1	81.1	11.3	83.5	83.5
Actuated g/C Ratio	0.10	0.12		0.11	0.13	0.13	0.06	0.55	0.55	0.08	0.56	0.56
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	329	399		362	452	199	106	3511	855	262	2869	881
v/s Ratio Prot	0.06	0.04		c0.07	c0.07		0.03	0.08		c0.04	c0.24	
v/s Ratio Perm						0.02			0.06			0.16
v/c Ratio	0.62	0.31		0.67	0.52	0.15	0.55	0.14	0.11	0.52	0.43	0.28
Uniform Delay, d1	64.3	59.6		63.8	60.3	57.4	67.6	16.4	16.1	65.8	18.5	16.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.4		4.9	1.0	0.3	5.7	0.1	0.3	1.9	0.5	0.8
Delay (s)	68.0	60.1		68.6	61.3	57.8	73.3	16.5	16.4	67.6	19.0	17.5
Level of Service	E	E		E	E	E	E	B	B	E	B	B
Approach Delay (s)		64.4			62.7			21.3			22.5	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	238	1	18	429	193	41	4	10	47	7	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3346		1770	1618		1770	1578	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3346		1770	1618		1770	1578	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	84	287	1	22	536	241	48	5	12	51	8	122
RTOR Reduction (vph)	0	0	0	0	23	0	0	12	0	0	111	0
Lane Group Flow (vph)	84	287	1	22	754	0	48	5	0	51	19	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	9.8	92.5	92.5	3.2	85.2		6.4	2.8		15.5	12.7	
Effective Green, g (s)	9.8	92.5	92.5	3.2	85.2		6.4	2.8		15.5	12.7	
Actuated g/C Ratio	0.07	0.69	0.69	0.02	0.63		0.05	0.02		0.11	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	128	2425	1055	42	2112		84	34		203	148	
v/s Ratio Prot	c0.05	0.08		0.01	c0.23		c0.03	0.00		c0.03	0.01	
v/s Ratio Perm			0.00									
v/c Ratio	0.66	0.12	0.00	0.52	0.36		0.57	0.15		0.25	0.13	
Uniform Delay, d1	61.0	7.3	6.7	65.1	11.9		63.0	64.9		54.5	56.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.9	0.1	0.0	5.3	0.5		5.7	0.8		0.7	0.4	
Delay (s)	69.8	7.4	6.7	70.5	12.3		68.7	65.7		55.1	56.5	
Level of Service	E	A	A	E	B		E	E		E	E	
Approach Delay (s)		21.5			13.9			67.9			56.1	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.9
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	177	43	47	477	54	124	5	61	14	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.86		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1800		1770	1830		1770	1571		1770	1730	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1768	1800		1770	1830		1770	1571		1770	1730	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Adj. Flow (vph)	4	199	48	68	691	78	144	6	71	17	10	7
RTOR Reduction (vph)	0	4	0	0	2	0	0	60	0	0	6	0
Lane Group Flow (vph)	4	243	0	68	767	0	144	17	0	17	11	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.8	40.9		6.5	47.3		13.3	13.3		6.3	6.3	
Effective Green, g (s)	0.8	40.9		6.5	47.3		13.3	13.3		6.3	6.3	
Actuated g/C Ratio	0.01	0.48		0.08	0.56		0.16	0.16		0.07	0.07	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	17	867		136	1020		277	246		131	128	
v/s Ratio Prot	0.00	0.13		c0.04	c0.42		c0.08	0.01		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.24	0.28		0.50	0.75		0.52	0.07		0.13	0.08	
Uniform Delay, d1	41.7	13.2		37.6	14.3		32.9	30.5		36.7	36.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.2		1.1	3.2		2.0	0.1		0.5	0.3	
Delay (s)	44.3	13.4		38.7	17.5		34.8	30.7		37.3	36.9	
Level of Service	D	B		D	B		C	C		D	D	
Approach Delay (s)		13.9			19.2			33.4			37.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	17.2
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	602	1338	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	654	1454	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1141	
pX, platoon unblocked	0.72	0.72	0.72			
vC, conflicting volume	1782	727	1454			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1307	0	853			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	109	781	563			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	327	327	970	485
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.19	0.19	0.57	0.29
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

SimTraffic Post-Processor **Serrano Westside**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 13 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	55	53	96.7%	51.1	4.0	D
	Through	579	600	103.5%	9.5	2.4	A
	Right Turn	30	32	107.0%	5.2	1.6	A
	Subtotal	**664**	**685**	**103.1%**	**12.5**	**2.3**	**B**
SB	Left Turn	148	147	99.4%	78.6	13.5	E
	Through	1892	1915	101.2%	43.1	10.3	D
	Right Turn	17	14	81.2%	45.0	18.5	D
	Subtotal	**2057**	**2076**	**100.9%**	**45.6**	**10.4**	**D**
EB	Left Turn	19	17	88.9%	43.2	6.9	D
	Through	16	17	105.6%	51.3	9.5	D
	Right Turn	107	111	104.1%	14.9	2.1	B
	Subtotal	**142**	**145**	**102.3%**	**22.4**	**2.5**	**C**
WB	Left Turn	22	21	94.5%	45.9	6.5	D
	Through	7	7	101.4%	40.9	10.0	D
	Right Turn	67	72	107.5%	5.7	1.6	A
	Subtotal	**96**	**100**	**104.1%**	**16.6**	**2.8**	**B**
Total		**2959**	**3006**	**101.6%**	**35.9**	**7.3**	**D**

Intersection 14 **El Dorado Hills Boulevard/Saratoga Way** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	618	633	102.4%	5.2	0.6	A
	Right Turn	185	196	105.9%	2.5	0.6	A
	Subtotal	**803**	**829**	**103.2%**	**4.6**	**0.5**	**A**
SB	Left Turn	64	64	99.2%	58.1	6.2	E
	Through	1957	1871	95.6%	78.2	9.5	E
	Right Turn						
	Subtotal	**2021**	**1935**	**95.7%**	**77.5**	**9.3**	**E**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	218	225	103.0%	71.0	24.9	E
	Through						
	Right Turn	46	52	113.3%	8.9	9.0	A
	Subtotal	**264**	**277**	**104.8%**	**59.4**	**22.7**	**E**
Total		**3088**	**3040**	**98.5%**	**56.0**	**5.9**	**E**

SimTraffic Post-Processor **Serrano Westside**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 15 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	417	408	97.8%	141.5	52.3	F
	Through	562	591	105.1%	9.6	0.9	A
	Right Turn						
	Subtotal	**979**	**999**	**102.0%**	**63.6**	**22.1**	**E**
SB	Left Turn						
	Through	924	886	95.9%	17.4	0.8	B
	Right Turn	1251	1207	96.5%	8.0	0.5	A
	Subtotal	**2175**	**2093**	**96.2%**	**12.0**	**0.5**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	652	656	100.6%	107.4	29.3	F
	Through						
	Right Turn	241	246	101.9%	53.8	26.5	D
	Subtotal	**893**	**902**	**101.0%**	**92.8**	**28.6**	**F**
Total		**4047**	**3993**	**98.7%**	**43.2**	**8.1**	**D**

Intersection 16 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	672	690	102.7%	12.0	10.9	B
	Right Turn	177	181	102.1%	8.4	1.1	A
	Subtotal	**849**	**871**	**102.6%**	**11.2**	**8.7**	**B**
SB	Left Turn	254	243	95.7%	42.6	3.2	D
	Through	1322	1294	97.9%	8.0	0.5	A
	Right Turn						
	Subtotal	**1576**	**1537**	**97.5%**	**13.4**	**0.8**	**B**
EB	Left Turn						
	Through						
	Right Turn	1087	1127	103.7%	24.7	2.0	C
	Subtotal	**1087**	**1127**	**103.7%**	**24.7**	**2.0**	**C**
WB	Left Turn						
	Through						
	Right Turn	307	314	102.3%	2.9	0.3	A
	Subtotal	**307**	**314**	**102.3%**	**2.9**	**0.3**	**A**
Total		**3819**	**3849**	**100.8%**	**15.4**	**1.9**	**B**

Intersection 17 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	70	99.0%	88.3	5.9	F
	Through	612	630	102.9%	25.8	2.5	C
	Right Turn	44	45	101.4%	7.1	1.9	A
	Subtotal	**727**	**745**	**102.4%**	**30.5**	**2.7**	**C**
SB	Left Turn	499	501	100.4%	77.6	3.0	E
	Through	1366	1363	99.8%	15.6	1.3	B
	Right Turn	544	550	101.0%	7.3	0.5	A
	Subtotal	**2409**	**2414**	**100.2%**	**26.6**	**1.4**	**C**
EB	Left Turn	19	18	96.3%	83.4	11.0	F
	Through	7	9	124.3%	85.6	21.1	F
	Right Turn	7	8	108.6%	16.5	9.1	B
	Subtotal	**33**	**35**	**104.8%**	**68.8**	**7.2**	**E**
WB	Left Turn	72	75	103.9%	81.2	5.0	F
	Through	48	50	105.0%	75.9	4.1	E
	Right Turn	218	231	105.7%	18.6	2.1	B
	Subtotal	**338**	**356**	**105.2%**	**39.9**	**1.6**	**D**
Total		**3507**	**3549**	**101.2%**	**29.2**	**1.3**	**C**

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	418	689	314	80	61	433	67	308	248	17	105	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1546		1770	3539	1560	3433	3502		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1546		1770	3539	1560	3433	3502		1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90
Adj. Flow (vph)	449	741	338	90	69	487	75	367	295	20	117	228
RTOR Reduction (vph)	0	0	253	0	0	0	59	0	4	0	0	0
Lane Group Flow (vph)	449	741	85	0	159	487	16	367	311	0	117	228
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	15.5	27.8	27.8		11.5	23.8	23.8	13.8	41.4		9.7	37.8
Effective Green, g (s)	15.5	27.8	27.8		11.5	23.8	23.8	13.8	41.4		9.7	37.8
Actuated g/C Ratio	0.14	0.25	0.25		0.10	0.22	0.22	0.13	0.38		0.09	0.34
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	484	894	391		185	766	338	431	1318		156	640
v/s Ratio Prot	c0.13	c0.21			0.09	0.14		c0.11	0.09		0.07	c0.12
v/s Ratio Perm			0.06				0.01					
v/c Ratio	0.93	0.83	0.22		0.86	0.64	0.05	0.85	0.24		0.75	0.36
Uniform Delay, d1	46.7	38.9	32.5		48.5	39.2	34.1	47.1	23.5		49.0	27.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	23.7	6.1	0.1		29.6	1.3	0.0	14.4	0.4		16.3	1.5
Delay (s)	70.3	45.0	32.6		78.0	40.4	34.2	61.5	23.9		65.3	28.5
Level of Service	E	D	C		E	D	C	E	C		E	C
Approach Delay (s)		49.7				48.1			44.1			34.9
Approach LOS		D				D			D			C

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	200
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	222
RTOR Reduction (vph)	146
Lane Group Flow (vph)	76
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	37.8
Effective Green, g (s)	37.8
Actuated g/C Ratio	0.34
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	537
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.14
Uniform Delay, d1	24.9
Progression Factor	1.00
Incremental Delay, d2	0.6
Delay (s)	25.5
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	758	24	30	460	77	55	153	57	49	70	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	1854		1770	1817		1770	1774			1825	1544
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	1854		1770	1817		1770	1774			1825	1544
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	123	815	26	36	548	92	65	182	68	55	79	106
RTOR Reduction (vph)	0	1	0	0	4	0	0	10	0	0	0	94
Lane Group Flow (vph)	123	840	0	36	636	0	65	240	0	0	134	12
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	16.1	57.0		4.8	45.7		19.0	19.0			13.3	13.3
Effective Green, g (s)	16.1	57.0		4.8	45.7		19.0	19.0			13.3	13.3
Actuated g/C Ratio	0.14	0.50		0.04	0.40		0.17	0.17			0.12	0.12
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	249	922		74	725		293	294			212	179
v/s Ratio Prot	c0.07	c0.45		0.02	0.35		0.04	c0.14			c0.07	
v/s Ratio Perm												0.01
v/c Ratio	0.49	0.91		0.49	0.88		0.22	0.82			0.63	0.07
Uniform Delay, d1	45.5	26.5		53.7	31.9		41.4	46.1			48.3	45.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.1	13.6		3.6	12.5		0.1	15.1			4.5	0.1
Delay (s)	46.6	40.1		57.3	44.3		41.5	61.2			52.8	45.2
Level of Service	D	D		E	D		D	E			D	D
Approach Delay (s)		41.0			45.0			57.2			49.4	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	590	268	34	354	3	211	15	56	2	7	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1545	1770	1860		1770	1612			1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1545	1770	1860		1770	1612			1791	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Adj. Flow (vph)	6	615	279	37	385	3	234	17	62	3	10	3
RTOR Reduction (vph)	0	0	117	0	0	0	0	48	0	0	3	0
Lane Group Flow (vph)	6	615	162	37	388	0	234	31	0	0	13	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	0.8	33.7	33.7	3.9	36.8		16.9	16.9			3.5	
Effective Green, g (s)	0.8	33.7	33.7	3.9	36.8		16.9	16.9			3.5	
Actuated g/C Ratio	0.01	0.44	0.44	0.05	0.48		0.22	0.22			0.05	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	19	823	682	90	897		392	357			82	
v/s Ratio Prot	0.00	c0.33		c0.02	c0.21		c0.13	0.02			c0.01	
v/s Ratio Perm			0.11									
v/c Ratio	0.32	0.75	0.24	0.41	0.43		0.60	0.09			0.16	
Uniform Delay, d1	37.5	17.8	13.3	35.1	12.9		26.6	23.6			35.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	6.8	3.7	0.2	2.2	0.3		2.0	0.1			0.7	
Delay (s)	44.3	21.5	13.5	37.3	13.3		28.7	23.6			35.7	
Level of Service	D	C	B	D	B		C	C			D	
Approach Delay (s)		19.2			15.3			27.4			35.7	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	41	449	26	35	40	504	281	19	9	156	2
Peak Hour Factor	0.89	0.89	0.89	0.60	0.60	0.60	0.94	0.94	0.94	0.84	0.84	0.84
Hourly flow rate (vph)	0	46	504	43	58	67	536	299	20	11	186	2

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	551	168	536	319	11	188
Volume Left (vph)	0	43	536	0	11	0
Volume Right (vph)	504	67	0	20	0	2
Hadj (s)	-0.52	-0.15	0.53	-0.01	0.53	0.03
Departure Headway (s)	6.4	7.9	8.2	7.6	9.0	8.5
Degree Utilization, x	0.98	0.37	1.22	0.68	0.03	0.44
Capacity (veh/h)	558	443	445	462	391	417
Control Delay (s)	58.4	15.4	142.8	23.9	11.0	16.8
Approach Delay (s)	58.4	15.4	98.4		16.5	
Approach LOS	F	C	F		C	

Intersection Summary			
Delay	68.9		
HCM Level of Service	F		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	4	39	56	2	43	70	243	89	47	191	89
Peak Hour Factor	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	22	5	49	64	2	49	82	286	105	55	225	105

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	116	473	385
Volume Left (vph)	22	64	82	55
Volume Right (vph)	49	49	105	105
Hadj (s)	-0.30	-0.11	-0.06	-0.10
Departure Headway (s)	6.0	6.1	5.0	5.0
Degree Utilization, x	0.13	0.20	0.65	0.54
Capacity (veh/h)	492	508	699	684
Control Delay (s)	9.9	10.5	16.8	13.8
Approach Delay (s)	9.9	10.5	16.8	13.8
Approach LOS	A	B	C	B

Intersection Summary			
Delay	14.5		
HCM Level of Service	B		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	141	125	844	184	162	539
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1549	3432		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1549	3432		3433	3539
Peak-hour factor, PHF	0.84	0.84	0.94	0.94	0.87	0.87
Adj. Flow (vph)	168	149	898	196	186	620
RTOR Reduction (vph)	0	123	11	0	0	0
Lane Group Flow (vph)	168	26	1083	0	186	620
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	12.8	12.8	33.2		9.6	46.8
Effective Green, g (s)	12.8	12.8	33.2		9.6	46.8
Actuated g/C Ratio	0.17	0.17	0.45		0.13	0.63
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	305	267	1534		444	2229
v/s Ratio Prot	c0.09		c0.32		c0.05	0.18
v/s Ratio Perm		0.02				
v/c Ratio	0.55	0.10	0.71		0.42	0.28
Uniform Delay, d1	28.1	25.9	16.6		29.8	6.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.1	1.2		0.2	0.0
Delay (s)	29.3	25.9	17.8		30.0	6.2
Level of Service	C	C	B		C	A
Approach Delay (s)	27.7		17.8			11.7
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	18.7
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	10	185	8	10	5	177	284	10	9	195	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1534	1770	1757		1770	1850		1770	1863	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1534	1770	1757		1770	1850		1770	1863	1531
Peak-hour factor, PHF	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	139	11	213	13	17	8	208	334	12	10	217	74
RTOR Reduction (vph)	0	0	175	0	7	0	0	1	0	0	0	52
Lane Group Flow (vph)	139	11	38	13	18	0	208	345	0	10	217	22
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	13.0	13.0	13.0	6.4	6.4		16.2	35.6		0.8	20.2	20.2
Effective Green, g (s)	13.0	13.0	13.0	6.4	6.4		16.2	35.6		0.8	20.2	20.2
Actuated g/C Ratio	0.18	0.18	0.18	0.09	0.09		0.22	0.48		0.01	0.27	0.27
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	312	329	271	154	153		389	894		19	511	420
v/s Ratio Prot	c0.08	0.01		0.01	c0.01		c0.12	c0.19		0.01	0.12	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.45	0.03	0.14	0.08	0.12		0.53	0.39		0.53	0.42	0.05
Uniform Delay, d1	27.1	25.1	25.6	31.0	31.0		25.4	12.1		36.3	22.0	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1	0.2	0.3		1.1	0.2		18.6	0.4	0.0
Delay (s)	27.5	25.2	25.7	31.2	31.4		26.5	12.3		54.9	22.4	19.7
Level of Service	C	C	C	C	C		C	B		D	C	B
Approach Delay (s)		26.4			31.3			17.6			22.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	12.6
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	28	73	170	1039	653	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1563	1770	3539	3523	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1563	1770	3539	3523	
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	84	185	1129	710	20
RTOR Reduction (vph)	0	71	0	0	2	0
Lane Group Flow (vph)	32	13	185	1129	728	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.1	8.1	11.4	36.6	21.6	
Effective Green, g (s)	8.1	8.1	11.4	36.6	21.6	
Actuated g/C Ratio	0.15	0.15	0.21	0.68	0.40	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	265	234	372	2390	1404	
v/s Ratio Prot	c0.02		0.10	c0.32	0.21	
v/s Ratio Perm		0.01				
v/c Ratio	0.12	0.05	0.50	0.47	0.52	
Uniform Delay, d1	20.0	19.8	18.9	4.2	12.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.1	0.5	0.2	0.3	
Delay (s)	20.2	19.9	19.4	4.4	12.7	
Level of Service	C	B	B	A	B	
Approach Delay (s)	20.0			6.5	12.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	9.5
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	0	120	2	1	2	177	1166	2	0	681	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7			5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	
Frpb, ped/bikes		1.00	0.98		0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	
Frt		1.00	0.85		0.94		1.00	1.00			0.99	
Flt Protected		0.95	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1770	1557		1712		1770	3538			3501	
Flt Permitted		0.95	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (perm)		1770	1557		1712		1770	3538			3501	
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	44	0	128	5	2	5	201	1325	2	0	724	48
RTOR Reduction (vph)	0	0	112	0	5	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	44	16	0	7	0	201	1327	0	0	769	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.7	8.7		4.0		14.2	43.2			25.3	
Effective Green, g (s)		8.7	8.7		4.0		14.2	43.2			25.3	
Actuated g/C Ratio		0.12	0.12		0.06		0.20	0.60			0.35	
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7			5.7	
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3			3.3	
Lane Grp Cap (vph)		215	189		96		352	2138			1239	
v/s Ratio Prot		c0.02			c0.00		0.11	c0.38			0.22	
v/s Ratio Perm			0.01									
v/c Ratio		0.20	0.08		0.08		0.57	0.62			0.62	
Uniform Delay, d1		28.3	27.9		32.0		25.9	9.0			19.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.5	0.2		0.1		1.4	0.6			1.0	
Delay (s)		28.8	28.1		32.1		27.3	9.5			20.1	
Level of Service		C	C		C		C	A			C	
Approach Delay (s)		28.3			32.1			11.9			20.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	15.6
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	16	48	263	16	35	99	1292	543	37	731	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1652		1681	1649		1770	3539	1544	1770	3511	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1652		1681	1649		1770	3539	1544	1770	3511	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	17	52	286	17	38	108	1404	590	40	795	38
RTOR Reduction (vph)	0	49	0	0	7	0	0	0	156	0	2	0
Lane Group Flow (vph)	20	20	0	172	162	0	108	1404	434	40	831	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.0	5.0		16.2	16.2		10.3	51.4	51.4	4.3	45.4	
Effective Green, g (s)	5.0	5.0		16.2	16.2		10.3	51.4	51.4	4.3	45.4	
Actuated g/C Ratio	0.05	0.05		0.17	0.17		0.11	0.54	0.54	0.05	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	94	87		288	282		193	1923	839	80	1685	
v/s Ratio Prot	0.01	c0.01		c0.10	0.10		c0.06	c0.40		0.02	0.24	
v/s Ratio Perm									0.28			
v/c Ratio	0.21	0.23		0.60	0.57		0.56	0.73	0.52	0.50	0.49	
Uniform Delay, d1	42.9	42.9		36.2	36.0		40.0	16.3	13.7	44.1	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.5		3.9	3.3		2.0	1.6	0.8	1.8	0.3	
Delay (s)	43.3	43.4		40.1	39.4		42.0	17.9	14.5	45.9	17.1	
Level of Service	D	D		D	D		D	B	B	D	B	
Approach Delay (s)		43.4			39.7			18.2			18.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	17.7
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	543	53	2	277	37	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	662	65	3	364	47	4
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			727		1066	697
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			727		1066	697
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		81	99
cM capacity (veh/h)			876		245	441

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	727	3	364	51
Volume Left	0	3	0	47
Volume Right	65	0	0	4
cSH	1700	876	1700	253
Volume to Capacity	0.43	0.00	0.21	0.20
Queue Length 95th (ft)	0	0	0	18
Control Delay (s)	0.0	9.1	0.0	22.7
Lane LOS		A		C
Approach Delay (s)	0.0	0.1		22.7
Approach LOS				C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	297	49	111	193	263	65	288	285	162	148	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3457		1770	3207		1770	3539	1561	1770	3327	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3457		1770	3207		1770	3539	1561	1770	3327	
Peak-hour factor, PHF	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Adj. Flow (vph)	178	386	64	129	224	306	107	472	467	193	176	102
RTOR Reduction (vph)	0	11	0	0	218	0	0	0	317	0	58	0
Lane Group Flow (vph)	178	439	0	129	312	0	107	472	150	193	220	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	13.8	17.5		11.7	15.4		8.8	20.7	20.7	14.7	26.6	
Effective Green, g (s)	13.8	17.5		11.7	15.4		8.8	20.7	20.7	14.7	26.6	
Actuated g/C Ratio	0.17	0.21		0.14	0.19		0.11	0.25	0.25	0.18	0.32	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	294	727		249	594		187	880	388	313	1064	
v/s Ratio Prot	c0.10	c0.13		0.07	0.10		0.06	c0.13		c0.11	0.07	
v/s Ratio Perm									0.10			
v/c Ratio	0.61	0.60		0.52	0.53		0.57	0.54	0.39	0.62	0.21	
Uniform Delay, d1	32.2	29.7		33.1	30.6		35.4	27.1	26.0	31.6	20.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	1.2		1.4	0.6		3.4	0.5	0.5	3.1	0.1	
Delay (s)	35.1	30.9		34.5	31.2		38.8	27.6	26.4	34.7	20.7	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		32.1			31.9			28.2			26.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	13.3
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	243	82	145	129	237	83	1057	258	352	479	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	333	283	95	177	157	289	112	1428	349	409	557	252
RTOR Reduction (vph)	0	28	0	0	0	223	0	0	30	0	0	125
Lane Group Flow (vph)	333	350	0	177	157	66	112	1428	319	409	557	127
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	19.5	24.4		12.9	17.7	17.7	13.6	68.6	68.6	19.7	74.7	74.7
Effective Green, g (s)	19.5	24.4		12.9	17.7	17.7	13.6	68.6	68.6	19.7	74.7	74.7
Actuated g/C Ratio	0.13	0.16		0.09	0.12	0.12	0.09	0.46	0.46	0.13	0.50	0.50
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	452	560		299	423	187	163	2970	724	457	2567	788
v/s Ratio Prot	c0.10	c0.10		0.05	0.04		0.06	c0.22		c0.12	0.11	
v/s Ratio Perm						0.04			0.20			0.08
v/c Ratio	0.74	0.63		0.59	0.37	0.35	0.69	0.48	0.44	0.89	0.22	0.16
Uniform Delay, d1	61.8	57.5		65.0	60.0	59.9	65.1	27.4	26.8	63.1	20.4	19.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	2.2		3.1	0.6	1.2	11.4	0.6	1.9	19.6	0.2	0.4
Delay (s)	67.9	59.7		68.1	60.6	61.1	76.5	28.0	28.7	82.7	20.6	20.2
Level of Service	E	E		E	E	E	E	C	C	F	C	C
Approach Delay (s)		63.6			62.9			31.0			41.4	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	43.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	22.4
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	683	7	11	341	129	23	9	12	188	10	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3368		1770	1669		1770	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3368		1770	1669		1770	1579	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	196	823	8	14	426	161	27	10	14	204	11	160
RTOR Reduction (vph)	0	0	2	0	22	0	0	14	0	0	134	0
Lane Group Flow (vph)	196	823	6	14	565	0	27	10	0	204	37	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	17.0	86.8	86.8	2.2	71.3		4.0	4.2		20.8	21.8	
Effective Green, g (s)	17.0	86.8	86.8	2.2	71.3		4.0	4.2		20.8	21.8	
Actuated g/C Ratio	0.13	0.64	0.64	0.02	0.53		0.03	0.03		0.15	0.16	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	223	2275	990	29	1779		52	52		273	255	
v/s Ratio Prot	c0.11	c0.23		0.01	0.17		c0.02	0.01		c0.12	0.02	
v/s Ratio Perm			0.00									
v/c Ratio	0.88	0.36	0.01	0.48	0.32		0.52	0.20		0.75	0.14	
Uniform Delay, d1	58.0	11.2	8.6	65.8	18.1		64.6	63.8		54.6	48.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.2	0.4	0.0	4.5	0.5		3.6	0.7		10.6	0.3	
Delay (s)	87.2	11.7	8.6	70.4	18.5		68.2	64.5		65.2	48.9	
Level of Service	F	B	A	E	B		E	E		E	D	
Approach Delay (s)		26.1			19.7			66.4			57.8	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	472	116	14	207	70	82	14	30	152	34	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.90		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1799		1770	1781		1770	1644		1770	1683	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1799		1770	1781		1770	1644		1770	1683	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	53	519	127	18	265	90	101	17	37	169	38	49
RTOR Reduction (vph)	0	4	0	0	6	0	0	32	0	0	32	0
Lane Group Flow (vph)	53	642	0	18	349	0	101	22	0	169	55	0
Confl. Peds. (#/hr)	2		2			2			2			2
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.3	46.2		2.3	42.9		12.8	12.8		15.3	15.3	
Effective Green, g (s)	6.3	46.2		2.3	42.9		12.8	12.8		15.3	15.3	
Actuated g/C Ratio	0.07	0.49		0.02	0.45		0.14	0.14		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	118	880		43	809		240	223		287	272	
v/s Ratio Prot	c0.03	c0.36		0.01	0.20		c0.06	0.01		c0.10	0.03	
v/s Ratio Perm												
v/c Ratio	0.45	0.73		0.42	0.43		0.42	0.10		0.59	0.20	
Uniform Delay, d1	42.4	19.2		45.4	17.5		37.5	35.8		36.7	34.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	3.2		2.4	0.4		1.5	0.2		3.4	0.5	
Delay (s)	43.4	22.4		47.8	17.9		38.9	36.0		40.0	34.8	
Level of Service	D	C		D	B		D	D		D	C	
Approach Delay (s)		24.0			19.3			37.9			38.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1209	726	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1314	789	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1141	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	1446	395	789			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1261	83	525			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	145	857	927			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	657	657	526	263
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.39	0.39	0.31	0.15
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection 13 **El Dorado Hills Boulevard/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	111	114	102.5%	50.9	2.1	D
	Through	1630	1624	99.6%	24.0	1.9	C
	Right Turn	59	59	99.8%	18.6	3.5	B
	Subtotal	**1800**	**1796**	**99.8%**	**25.5**	**1.8**	**C**
SB	Left Turn	140	142	101.6%	55.5	5.3	E
	Through	879	890	101.2%	18.3	1.8	B
	Right Turn	23	23	98.7%	12.3	4.6	B
	Subtotal	**1042**	**1055**	**101.2%**	**23.2**	**2.0**	**C**
EB	Left Turn	38	36	95.0%	43.6	3.4	D
	Through	13	13	100.8%	44.7	8.1	D
	Right Turn	72	71	97.9%	3.6	0.4	A
	Subtotal	**123**	**120**	**97.3%**	**20.3**	**1.7**	**C**
WB	Left Turn	55	56	101.1%	35.1	3.5	D
	Through	22	20	92.7%	45.3	6.5	D
	Right Turn	266	266	100.2%	21.4	3.2	C
	Subtotal	**343**	**342**	**99.8%**	**25.1**	**3.1**	**C**
Total		**3308**	**3313**	**100.2%**	**24.5**	**1.5**	**C**

Intersection 14 **El Dorado Hills Boulevard/Saratoga Way** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1709	1695	99.2%	7.2	0.7	A
	Right Turn	326	332	101.8%	4.5	0.6	A
	Subtotal	**2035**	**2027**	**99.6%**	**6.8**	**0.7**	**A**
SB	Left Turn	61	58	94.4%	58.9	12.1	E
	Through	945	955	101.1%	23.9	8.9	C
	Right Turn						
	Subtotal	**1006**	**1013**	**100.7%**	**25.9**	**9.0**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	201	203	100.8%	40.2	3.0	D
	Through						
	Right Turn	91	95	104.8%	34.9	3.3	C
	Subtotal	**292**	**298**	**102.1%**	**38.5**	**2.3**	**D**
Total		**3333**	**3338**	**100.1%**	**15.4**	**3.1**	**B**

SimTraffic Post-Processor **Serrano Westside**
Results from 1 Run **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 15 **El Dorado Hills Boulevard/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1021	1008	98.8%	43.2	7.0	D
	Through	1769	1766	99.8%	18.9	2.2	B
	Right Turn						
	Subtotal	**2790**	**2775**	**99.4%**	**27.7**	**3.7**	**C**
SB	Left Turn						
	Through	659	661	100.3%	34.8	2.3	C
	Right Turn	487	488	100.1%	23.0	1.7	C
	Subtotal	**1146**	**1149**	**100.2%**	**29.8**	**1.6**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	297	301	101.3%	42.0	2.4	D
	Through						
	Right Turn	266	266	99.8%	25.8	3.9	C
	Subtotal	**563**	**566**	**100.6%**	**34.4**	**2.9**	**C**
Total		**4499**	**4490**	**99.8%**	**29.1**	**2.7**	**C**

Intersection 16 **Latrobe Road/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1841	1822	99.0%	14.7	1.6	B
	Right Turn	702	693	98.7%	19.8	1.6	B
	Subtotal	**2543**	**2515**	**98.9%**	**16.1**	**1.4**	**B**
SB	Left Turn	211	209	99.0%	58.6	2.2	E
	Through	745	758	101.7%	4.7	1.2	A
	Right Turn						
	Subtotal	**956**	**967**	**101.1%**	**16.4**	**1.4**	**B**
EB	Left Turn						
	Through						
	Right Turn	700	709	101.2%	14.0	5.1	B
	Subtotal	**700**	**709**	**101.2%**	**14.0**	**5.1**	**B**
WB	Left Turn						
	Through						
	Right Turn	949	954	100.5%	6.8	1.0	A
	Subtotal	**949**	**954**	**100.5%**	**6.8**	**1.0**	**A**
Total		**5148**	**5144**	**99.9%**	**14.2**	**1.1**	**B**

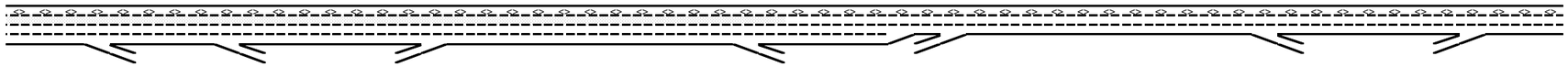
Intersection 17 **Latrobe Road/Town Center Boulevard** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	2	80.0%	100.4	43.6	F
	Through	1450	1434	98.9%	100.1	15.9	F
	Right Turn	127	125	98.5%	10.0	2.4	A
	Subtotal	**1580**	**1562**	**98.8%**	**92.9**	**14.8**	**F**
SB	Left Turn	546	555	101.6%	87.8	18.9	F
	Through	875	879	100.5%	19.1	1.2	B
	Right Turn	24	24	101.7%	1.8	0.2	A
	Subtotal	**1445**	**1458**	**100.9%**	**44.9**	**7.3**	**D**
EB	Left Turn	352	337	95.6%	187.4	78.2	F
	Through	54	55	101.3%	71.1	9.8	E
	Right Turn	115	122	106.2%	33.3	8.3	C
	Subtotal	**521**	**513**	**98.5%**	**138.9**	**52.5**	**F**
WB	Left Turn	58	60	103.3%	88.3	13.2	F
	Through	9	8	91.1%	87.9	29.5	F
	Right Turn	741	742	100.1%	50.1	13.5	D
	Subtotal	**808**	**810**	**100.3%**	**53.3**	**13.8**	**D**
Total		**4354**	**4344**	**99.8%**	**74.8**	**4.9**	**E**

Existing Roadway Segments Analysis		Peak Hour Volume		LOS Thresholds			V/ C Ratio		LOS	
Central El Dorado	**Number of Lanes**	**AM**	**PM**	**LOS C**	**LOS D**	**LOS E**	**AM**	**PM**	**AM**	**PM**
El Dorado Hills Blvd - Green Valley to US 50 (5 segments)										
Green Valley to Francisco	2A	430	389	850	1540	1650	0.26	0.24	C or better	C or better
Francisco to Governor	2A	1,324	1,319	850	1540	1650	0.80	0.80	D	D
Governor to Wilson	4AD	2,010	1,935	1850	3220	3290	0.61	0.59	D	D
Wilson to Serrano	4AD	2,108	2,148	1850	3220	3290	0.64	0.65	D	D
Serrano to Saratoga	5AD	2,807	2,976	2305	3950	4000	0.70	0.74	D	D
Saratoga to US 50	6AD	2,685	2,806	2760	4680	4710	0.57	0.60	C or better	D
Latrobe Road - US 50 to S. Shingle Rd (5 Segemtns)										
US 50 to Town Center	6AD	3,339	4,081	2760	4680	4710	0.71	0.87	D	D
Town Center to White Rock Rd	6AD	2,253	2,628	2760	4680	4710	0.48	0.56	C or better	C or better
White Rock to Golden Foothill Pkwy	4AD	1,813	2,104	1850	3220	3290	0.55	0.64	C or better	D
Golden Foothill Pkwy to Sun Ridge Meadow Rd	2A	1,225	1,246	850	1540	1650	0.74	0.76	D	D
Sun Ridge Meadow Rd to S. Shingle Rd	2A	256	295	850	1540	1650	0.16	0.18	C or better	C or better
White Rock Road - Scott Road to US 50 (5 Segments)										
Scott Rd to Four Seasons Dr.	2A	603	863	850	1540	1650	0.37	0.52	C or better	D
Four Seasons Dr to Latrobe Rd	4AD	893	1,040	1850	3220	3290	0.27	0.32	C or better	C or better
Latrobe Rd to Vine St	2A	831	969	850	1540	1650	0.50	0.59	C or better	D
Vine St to US 50	2A	830	945	850	1540	1650	0.50	0.57	C or better	D
Silva Valley Pkwy - Green Valley Rd to US 50 (4 Segments)										
Green Valley to Glenwood Way	2A	651	591	850	1540	1650	0.39	0.36	C or better	C or better
Glenwood Way to Appian Way	2A	555	630	850	1540	1650	0.34	0.38	C or better	C or better
Appian Way to Harvard Way	2A	796	681	850	1540	1650	0.48	0.41	C or better	C or better
Harvard Way to Serrano Pkwy	4AD	1,402	1,084	1850	3220	3290	0.43	0.33	C or better	C or better
Serrano Pkwy to US 50	2A	1,142	946	850	1540	1650	0.69	0.57	D	D
Serrano Pkwy - EDH Blvd to Bass Lake Rd - 3 segments										
EDH Blvd to Silva Valley Pkwy	2A	995	910	850	1540	1650	0.60	0.55	D	D
Silva Valley to Villagio Dr	4AD	1,476	1,311	1850	3220	3290	0.45	0.40	C or better	C or better
Villagio Dr to Bass Lake Rd	2A	453	417	850	1540	1650	0.27	0.25	C or better	C or better
Saratoga Way - west of EDH Blvd (2 segments)										
EDH to Arrowhead	2A	222	279	850	1540	1650	0.13	0.17	C or better	C or better
Wilson Way - west of EDH Blvd (2 segments)										
EDH Blvd to Ridgeview Dr	4AU	418	384	1760	3070	3130	0.13	0.12	C or better	C or better
Olson Ln/Gillette Dr - west of EDH Blvd (2 segemtns)										
EDH Blvd to Gillete	2A	300	289	850	1540	1650	0.18	0.18	C or better	C or better
Harvard Way - EDH Blvd to Silva Valley Pkwy (1 segments)										
EDH Blvd to Silva Valley Pkwy	4AU	1,139	612	1760	3070	3130	0.36	0.20	C or better	C or better

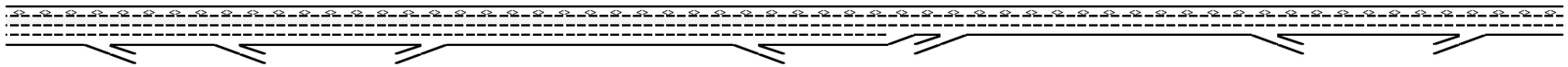
Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment												
Type	Diverge	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	1,500	7,500	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length				275				500				500
Decel Length	150	150				150				150		
Mainline Volume	2,560	1,473	1,166	1,166	1,597	1,597	1,405	1,405	1,541	1,541	1,394	1,394
On Ramp Volume				431				136				423
Off Ramp Volume	1,087	307				192				147		
Express Lane Volume	128	74	58	58	80	80	70	70	77	77	70	70
EL On Ramp Volume												
EL Off Ramp Volume												
Calculate Flow Rate in General Purpose Lanes (GP)												
GP Volume (vph)	2,432	1,399	1,108	1,539	1,517	1,517	1,335	1,471	1,464	1,464	1,324	1,747
PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,851	1,641	1,299	1,804	2,023	1,779	1,565	1,724	1,716	1,716	1,553	2,049
GP Flow (pcphpl)	950	547	433	601	674	593	522	862	858	858	776	1,024
Calculate Speed in General Purpose Lanes												
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	
TRD	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes												
v/c ratio	0.40	0.23	0.18	0.26	0.29	0.25	0.22	0.37	0.37	0.37	0.33	0.44
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.6	8.4	6.7	9.3	10.4	9.1	8.0	13.3	13.2	13.2	11.9	15.8
LOS	B	A	A	A	A	A	A	B	B	B	B	B
Calculate Operations for Entering GP Lanes												
GP_{IN} Vol (pcph)				1,331				1,531				1,582
GP_{IN} Cap (pcph)				7,050				4,700				4,700
GP_{IN} v/c ratio				0.19				0.33				0.34
Calculate Operations for Exiting GP Lanes												
GP_{OUT} Vol (pcph)	1,658	1,304				1,517	1,565			1,553		
GP_{OUT} Cap (pcph)	7,050	7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.24	0.18				0.22	0.33			0.33		

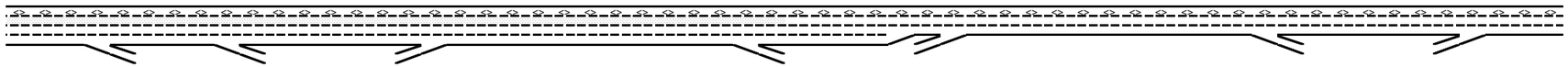


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)												
EL Volume (vph)	128	74	58	58	80	80	70	70	77	77	70	70
PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	166	95	75	75	112	103	91	91	100	100	90	90
EL Flow (pcphpl)	166	95	75	75	112	103	91	91	100	100	90	90
Calculate Speed in Express Lanes												
Lane Width (ft)												
Shoulder Width												
TRD												
f_{LW}												
f_{LC}												
Calc'd FFS												
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes												
EL_{IN} v/c ratio	0.09	0.05	0.04	0.04	0.06	0.06	0.05	0.05	0.06	0.06	0.05	0.05
Calculate On Ramp Flow Rate												
On Volume (vph)				431				136				423
PHF				0.92				0.71				0.92
Total Lanes				1				1				1
Terrain				Level				Level				Level
Grade %				0.0%				0.0%				0.0%
Grade Length (mi)				0.00				0.00				0.00
Truck & Bus %				2.0%				2.0%				3.0%
RV %				0.0%				0.0%				0.0%
E_T				1.5				1.5				1.5
E_R				1.2				1.2				1.2
f_{HV}				0.990				0.990				0.985
f_P				1.00				1.00				1.00
On Flow (pcph)				473				193				467
On Flow (pcphpl)				473				193				467
Calculate On Ramp Roadway Operations												
On Ramp Type				Right				Right				Right
On Ramp Speed (mph)				45				45				25
On Ramp Cap (pcph)				2,100				2,100				1,900
On Ramp v/c ratio				0.23				0.09				0.25



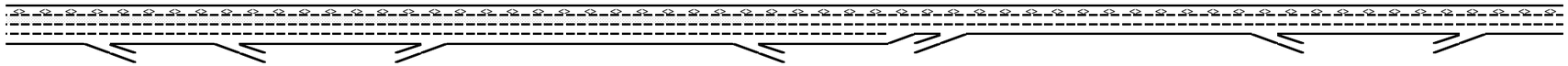
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate												
Off Volume (vph)	1,087	307				192				147		
PHF	0.92	0.92				0.74				0.91		
Total Lanes	1	1				1				1		
Terrain	Level	Level				Level				Level		
Grade %	0.0%	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%				2.0%				2.0%		
RV %	0.0%	0.0%				0.0%				0.0%		
E_T	1.5	1.5				1.5				1.5		
E_R	1.2	1.2				1.2				1.2		
f_{HV}	0.990	0.990				0.990				0.990		
f_P	1.00	1.00				1.00				1.00		
Off Flow (pcph)	1,193	337				262				163		
Off Flow (pcphpl)	1,193	337				262				163		
Calculate Off Ramp Roadway Operations												
Off Ramp Type	Right	Right				Right				Right		
Off Ramp Speed	45	25				45				45		
Off Ramp Cap (pcph)	2,100	1,900				2,100				2,100		
Off Ramp v/c ratio	0.57	0.18				0.12				0.08		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps												
Up Type		Off		Off		On						
Up Distance		2,350		1,975		10,500						
Up Flow (pcph)		1,193		337		473						
Down Type	Off	On		Off		On						
Down Distance	850	1,975		10,500		2,100						
Down Flow (pcph)	337	473		262		193						
Calculate Merge Influence Area Operations												
Effective v_P (pcph)				1,331				1,531				1,582
Up Ramp L_{EQ}				460								
Down Ramp L_{EQ}				1,885								
P_{FM} (Eqn 13-3)				0.585				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!		0.681								
P_{FM} (Eqn 13-5)	0.653			0.555								
P_{FM}				0.681				1.000				1.000
v_{12} (pcph)				906				1,531				1,582
v_3 (pcph)				425								
v_{34} (pcph)												
v_{12a} (pcph)				906				1,531				1,582
v_{R12a} (pcph)				1,379				1,724				2,049
Merge Speed Index				0.31				0.30				0.33
Merge Area Speed				57.8				58.1				57.5
Outer Lanes Volume				425								
Outer Lanes Speed				65.0								
Segment Speed				59.4				58.1				57.5
Merge v/c ratio				0.30				0.37				0.45
Merge Density				14.3				15.7				18.1
Merge LOS				B				B				B

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

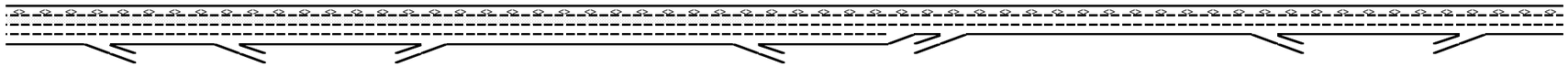
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations												
Effective v_P (pcph)	2,851	1,641				1,779				1,716		
Up Ramp L_{EQ}		14,357				5,143						
Down Ramp L_{EQ}	545	486				194						
P_{FD} (Eqn 13-9)	0.634	0.703				0.703				0.710		
P_{FD} (Eqn 13-10)						0.675						
P_{FD} (Eqn 13-11)	0.606			#VALUE!								
P_{FD}	0.634	0.703				0.703				1.000		
v_{12} (pcph)	2,244	1,254				1,329				1,716		
v_3 (pcph)	607	387				450						
v_{34} (pcph)												
v_{12a} (pcph)	2,244	1,254				1,329				1,716		
Diverge Speed Index	0.41	0.59				0.32				0.31		
Diverge Area Speed	55.7	51.5				57.6				57.8		
Outer Lanes Volume	607	387				450						
Outer Lanes Speed	71.3	71.3				71.3						
Segment Speed	58.4	55.1				60.5				57.8		
Diverge v/c ratio	0.51	0.29				0.30				0.39		
Diverge Density	22.2	13.7				14.3				17.7		
Diverge LOS	C	B				B				B		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments												
Calculate On Ramp to Mainline Flow Rate for Weave Segments												
Calculate Mainline to Off Ramp Flow Rate for Weave Segments												
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments												
Calculate Weave Segment Operations												
Summarize Segment Operations												
Segment v/c ratio	0.51	0.29	0.18	0.30	0.29	0.30	0.22	0.37	0.37	0.39	0.33	0.45
Segment Density	22.2	13.7	6.7	14.3	10.4	14.3	8.0	15.7	13.2	17.7	11.9	18.1
Segment LOS	C	B	A	B	A	B	A	B	B	B	B	B
Over Capacity												

Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

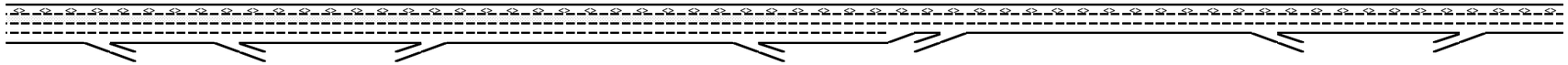
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment												
Type	Diverge	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	1,500	7,500	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length				275				500				500
Decel Length	150	150				150				150		
Mainline Volume	4,870	4,077	3,128	3,128	4,041	4,041	3,423	3,423	3,527	3,527	3,004	3,004
On Ramp Volume				913				104				318
Off Ramp Volume	793	949				618				523		
Express Lane Volume	536	448	344	344	445	445	377	377	388	388	330	330
EL On Ramp Volume												
EL Off Ramp Volume												
Calculate Flow Rate in General Purpose Lanes (GP)												
GP Volume (vph)	4,334	3,629	2,784	3,697	3,596	3,596	3,046	3,150	3,139	3,139	2,674	2,992
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,491	3,759	2,884	3,830	3,893	3,726	3,156	3,264	3,252	3,252	2,770	3,100
GP Flow (pcphpl)	1,497	1,253	961	1,277	1,298	1,242	1,052	1,632	1,626	1,626	1,385	1,550
Calculate Speed in General Purpose Lanes												
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes												
v/c ratio	0.64	0.53	0.41	0.54	0.55	0.53	0.45	0.69	0.69	0.69	0.59	0.66
Speed (mph)	64.9	65.0	65.0	65.0	65.0	65.0	65.0	64.2	64.3	64.3	65.0	64.7
Density (pcphpl)	23.1	19.3	14.8	19.6	20.0	19.1	16.2	25.4	25.3	25.3	21.3	24.0
LOS	C	C	B	C	C	C	B	C	C	C	C	C
Calculate Operations for Entering GP Lanes												
GP_{IN} Vol (pcph)				2,828				3,138				2,750
GP_{IN} Cap (pcph)				7,050				4,700				4,700
GP_{IN} v/c ratio				0.40				0.67				0.59
Calculate Operations for Exiting GP Lanes												
GP_{OUT} Vol (pcph)	3,620	2,718				3,083	3,156			2,678		
GP_{OUT} Cap (pcph)	7,050	7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.51	0.39				0.44	0.67			0.57		

Location	1	2	3	4	5	6	7	8	9	10	11	12

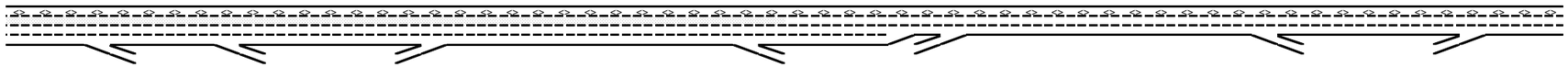


Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)												
EL Volume (vph)	536	448	344	344	445	445	377	377	388	388	330	330
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	601	503	386	386	538	499	423	423	435	435	371	371
EL Flow (pcphpl)	601	503	386	386	538	499	423	423	435	435	371	371
Calculate Speed in Express Lanes												
Lane Width (ft)												
Shoulder Width												
TRD												
f_{LW}												
f_{LC}												
Calc'd FFS												
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes												
EL_{IN} v/c ratio	0.34	0.29	0.22	0.22	0.31	0.29	0.24	0.24	0.25	0.25	0.21	0.21
Calculate On Ramp Flow Rate												
On Volume (vph)				913				104				318
PHF				0.92				0.83				0.92
Total Lanes				1				1				1
Terrain				Level				Level				Level
Grade %				0.0%				0.0%				0.0%
Grade Length (mi)				0.00				0.00				0.00
Truck & Bus %				2.0%				2.0%				2.0%
RV %				0.0%				0.0%				0.0%
E_T				1.5				1.5				1.5
E_R				1.2				1.2				1.2
f_{HV}				0.990				0.990				0.990
f_P				1.00				1.00				1.00
On Flow (pcph)				1,002				127				349
On Flow (pcphpl)				1,002				127				349
Calculate On Ramp Roadway Operations												
On Ramp Type				Right				Right				Right
On Ramp Speed (mph)				45				45				25
On Ramp Cap (pcph)				2,100				2,100				1,900
On Ramp v/c ratio				0.48				0.06				0.18



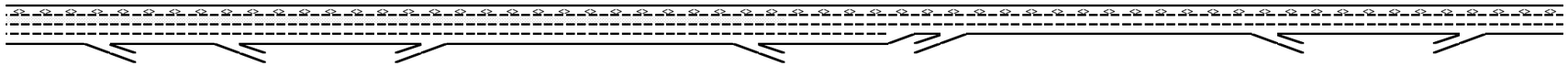
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate												
Off Volume (vph)	793	949				618				523		
PHF	0.92	0.92				0.97				0.92		
Total Lanes	1	1				1				1		
Terrain	Level	Level				Level				Level		
Grade %	0.0%	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%				2.0%				2.0%		
RV %	0.0%	0.0%				0.0%				0.0%		
E_T	1.5	1.5				1.5				1.5		
E_R	1.2	1.2				1.2				1.2		
f_{HV}	0.990	0.990				0.990				0.990		
f_P	1.00	1.00				1.00				1.00		
Off Flow (pcph)	871	1,042				643				574		
Off Flow (pcphpl)	871	1,042				643				574		
Calculate Off Ramp Roadway Operations												
Off Ramp Type	Right	Right				Right				Right		
Off Ramp Speed	45	25				45				45		
Off Ramp Cap (pcph)	2,100	1,900				2,100				2,100		
Off Ramp v/c ratio	0.41	0.55				0.31				0.27		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps												
Up Type		Off		Off		On						
Up Distance		2,350		1,975		10,500						
Up Flow (pcph)		871		1,042		1,002						
Down Type	Off	On		Off		On						
Down Distance	850	1,975		10,500		2,100						
Down Flow (pcph)	1,042	1,002		643		127						
Calculate Merge Influence Area Operations												
Effective v_P (pcph)				2,828				3,138				2,750
Up Ramp L_{EQ}				893								
Down Ramp L_{EQ}				4,629								
P_{FM} (Eqn 13-3)				0.585				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!		0.653								
P_{FM} (Eqn 13-5)	0.871			0.565								
P_{FM}				0.653				1.000				1.000
v_{12} (pcph)				1,848				3,138				2,750
v_3 (pcph)				980								
v_{34} (pcph)												
v_{12a} (pcph)				1,848				3,138				2,750
v_{R12a} (pcph)				2,850				3,264				3,100
Merge Speed Index				0.36				0.38				0.38
Merge Area Speed				56.6				56.3				56.2
Outer Lanes Volume				980								
Outer Lanes Speed				63.3								
Segment Speed				58.2				56.3				56.2
Merge v/c ratio				0.62				0.71				0.67
Merge Density				25.5				27.7				26.4
Merge LOS				C				C				C

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

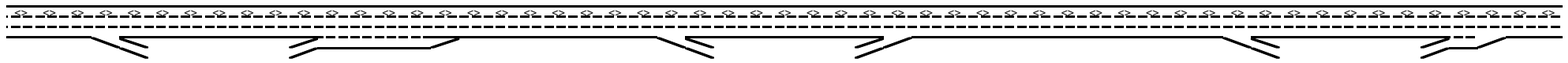
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations												
Effective v_P (pcph)	4,491	3,759				3,726				3,252		
Up Ramp L_{EQ}		11,120				9,298						
Down Ramp L_{EQ}	1,521	1,553				160						
P_{FD} (Eqn 13-9)	0.608	0.618				0.637				0.652		
P_{FD} (Eqn 13-10)						0.629						
P_{FD} (Eqn 13-11)	0.675			#VALUE!								
P_{FD}	0.675	0.618				0.637				1.000		
v_{12} (pcph)	3,313	2,722				2,608				3,252		
v_3 (pcph)	1,178	1,038				1,118						
v_{34} (pcph)												
v_{12a} (pcph)	3,313	2,722				2,608				3,252		
Diverge Speed Index	0.38	0.65				0.36				0.35		
Diverge Area Speed	56.3	50.0				56.8				57.0		
Outer Lanes Volume	1,178	1,038				1,118						
Outer Lanes Speed	70.6	71.2				70.8						
Segment Speed	59.5	54.5				60.4				57.0		
Diverge v/c ratio	0.75	0.62				0.59				0.74		
Diverge Density	31.4	26.3				25.3				30.9		
Diverge LOS	D	C				C				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments												
Calculate On Ramp to Mainline Flow Rate for Weave Segments												
Calculate Mainline to Off Ramp Flow Rate for Weave Segments												
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments												
Calculate Weave Segment Operations												
Summarize Segment Operations												
Segment v/c ratio	0.75	0.62	0.41	0.62	0.55	0.59	0.45	0.71	0.69	0.74	0.59	0.67
Segment Density	31.4	26.3	14.8	25.5	20.0	25.3	16.2	27.7	25.3	30.9	21.3	26.4
Segment LOS	D	C	B	C	C	C	B	C	C	D	C	C
Over Capacity												

Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing Conditions
Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour

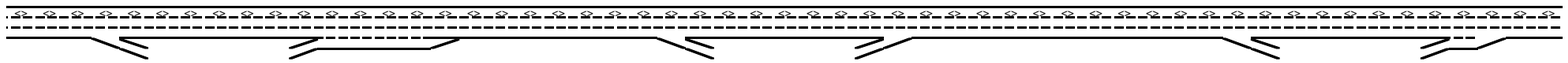
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment											
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	7,500	1,500	3,250	1,500
Accel Length			1,500				375				880
Decel Length	150				150				150		
Mainline Volume	2,935	2,499	2,499	3,069	3,069	2,968	2,968	3,701	3,701	2,807	2,807
On Ramp Volume			570				733				1,669
Off Ramp Volume	436				101				894		
Express Lane Volume	323	275	275	338	338	326	326	407	407	309	309
EL On Ramp Volume											
EL Off Ramp Volume											
Calculate Flow Rate in General Purpose Lanes (GP)											
GP Volume (vph)	2,612	2,224	2,794	2,731	2,731	2,642	3,375	3,294	3,294	2,498	4,167
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94	0.94
GP Lanes	2	2	3	2	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,793	2,378	2,987	2,920	2,920	2,824	3,608	3,598	3,522	2,671	4,455
GP Flow (pcphpl)	1,396	1,189	996	1,460	1,460	1,412	1,804	1,799	1,761	1,335	2,228
Calculate Speed in General Purpose Lanes											
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes											
v/c ratio	0.59	0.51	0.42	0.62	0.62	0.60	0.77	0.77	0.75	0.57	0.95
Speed (mph)	65.0	65.0	65.0	64.9	64.9	65.0	62.7	62.7	63.2	65.0	55.3
Density (pcphpl)	21.5	18.3	15.3	22.5	22.5	21.7	28.8	28.7	27.9	20.5	40.3
LOS	C	C	B	C	C	C	D	D	D	C	E
Calculate Operations for Entering GP Lanes											
GP_{IN} Vol (pcph)			2,388				2,776				2,623
GP_{IN} Cap (pcph)			4,700				4,700				4,700
GP_{IN} v/c ratio			0.51				0.59				0.56
Calculate Operations for Exiting GP Lanes											
GP_{OUT} Vol (pcph)	2,126				2,753				2,540		
GP_{OUT} Cap (pcph)	4,700				4,700				4,700		
GP_{OUT} v/c ratio	0.45				0.59				0.54		

Location	1	2	3	4	5	6	7	8	9	10	11



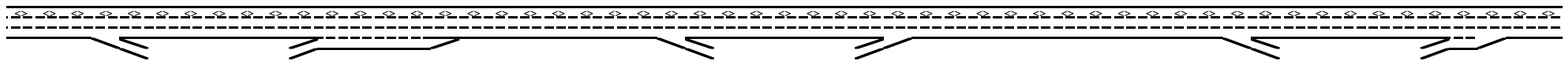
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)											
EL Volume (vph)	323	275	275	338	338	326	326	407	407	309	309
PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	366	312	312	383	383	370	370	462	462	350	350
EL Flow (pcphpl)	366	312	312	383	383	370	370	462	462	350	350
Calculate Speed in Express Lanes											
Lane Width (ft)											
Shoulder Width											
TRD											
f_{LW}											
f_{LC}											
Calc'd FFS											
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes											
EL_{IN} v/c ratio	0.21	0.18	0.18	0.22	0.22	0.21	0.21	0.26	0.26	0.20	0.20
Calculate On Ramp Flow Rate											
On Volume (vph)			570				733				1,669
PHF			0.96				0.89				0.92
Total Lanes			1				1				1
Terrain			Level				Level				Level
Grade %			0.0%				0.0%				0.0%
Grade Length (mi)			0.00				0.00				0.00
Truck & Bus %			2.0%				2.0%				2.0%
RV %			0.0%				0.0%				0.0%
E_T			1.5				1.5				1.5
E_R			1.2				1.2				1.2
f_{HV}			0.990				0.990				0.990
f_P			1.00				1.00				1.00
On Flow (pcph)			600				832				1,832
On Flow (pcphpl)			600				832				1,832
Calculate On Ramp Roadway Operations											
On Ramp Type			Right				Right				Right
On Ramp Speed (mph)			25				45				45
On Ramp Cap (pcph)			1,900				2,100				2,100
On Ramp v/c ratio			0.32				0.40				0.87

Location	1	2	3	4	5	6	7	8	9	10	11



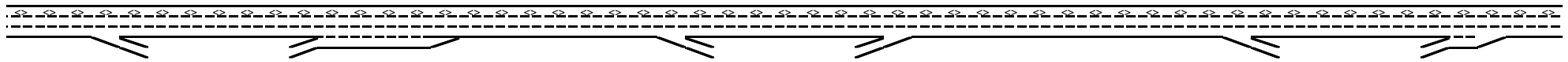
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate											
Off Volume (vph)	436				101				894		
PHF	0.66				0.61				0.92		
Total Lanes	1				1				1		
Terrain	Level				Level				Level		
Grade %	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00				0.00				0.00		
Truck & Bus %	2.0%				2.0%				2.0%		
RV %	0.0%				0.0%				0.0%		
E_T	1.5				1.5				1.5		
E_R	1.2				1.2				1.2		
f_{HV}	0.990				0.990				0.990		
f_P	1.00				1.00				1.00		
Off Flow (pcph)	667				167				981		
Off Flow (pcphpl)	667				167				981		
Calculate Off Ramp Roadway Operations											
Off Ramp Type	Right				Right				Right		
Off Ramp Speed	45				45				45		
Off Ramp Cap (pcph)	2,100				2,100				2,100		
Off Ramp v/c ratio	0.32				0.08				0.47		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type			Off								
Up Distance			1,250								
Up Flow (pcph)			667								
Down Type			Off								
Down Distance			7,900								
Down Flow (pcph)			167								
Calculate Merge Influence Area Operations											
Effective v_P (pcph)			2,388				2,776				2,623
Up Ramp L_{EQ}			210								
Down Ramp L_{EQ}			619								
P_{FM} (Eqn 13-3)			0.620				0.588				0.602
P_{FM} (Eqn 13-4)			0.685								
P_{FM} (Eqn 13-5)			0.554								
P_{FM}			1.000				1.000				1.000
v_{12} (pcph)			2,388				2,776				2,623
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)			2,388				2,776				2,623
v_{R12a} (pcph)			2,987				3,608				4,455
Merge Speed Index			0.32				0.43				0.58
Merge Area Speed			57.6				55.1				51.7
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed			57.6				55.1				51.7
Merge v/c ratio			0.65				0.78				0.97
Merge Density			19.1				30.9				33.9
Merge LOS			B				D				D

Location	1	2	3	4	5	6	7	8	9	10	11



Key

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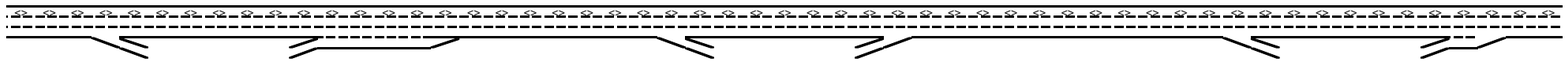
No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations											
Effective v_P (pcph)	2,793				2,920				3,522		
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)	0.659				0.679				0.627		
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)			#VALUE!								
P_{FD}	1.000				1.000				1.000		
v_{12} (pcph)	2,793				2,920				3,522		
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)	2,793				2,920				3,522		
Diverge Speed Index	0.36				0.31				0.39		
Diverge Area Speed	56.8				57.8				56.1		
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed	56.8				57.8				56.1		
Diverge v/c ratio	0.63				0.66				0.80		
Diverge Density	26.9				28.0				33.2		
Diverge LOS	C				D				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments											
Calculate On Ramp to Mainline Flow Rate for Weave Segments											
Calculate Mainline to Off Ramp Flow Rate for Weave Segments											
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments											
Calculate Weave Segment Operations											
Summarize Segment Operations											
Segment v/c ratio	0.63	0.51	0.65	0.62	0.66	0.60	0.78	0.77	0.80	0.57	0.97
Segment Density	26.9	18.3	19.1	22.5	28.0	21.7	30.9	28.7	33.2	20.5	33.9
Segment LOS	C	C	B	C	D	C	D	D	D	C	D
Over Capacity											

Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing Conditions
Freeway Corridor: Westbound US 50 **Time Period:** PM Peak Hour

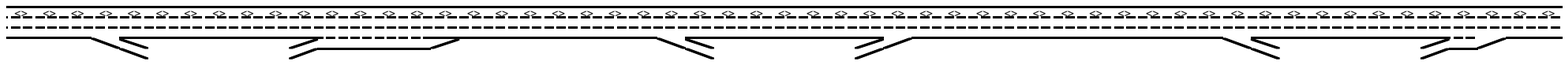
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment											
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	7,500	1,500	3,250	1,500
Accel Length			1,500				375				880
Decel Length	150				150				150		
Mainline Volume	2,330	1,882	1,882	2,120	2,120	1,988	1,988	2,246	2,246	1,682	1,682
On Ramp Volume			238				258				1,509
Off Ramp Volume	448				132				564		
Express Lane Volume	186	151	151	170	170	159	159	180	180	135	135
EL On Ramp Volume											
EL Off Ramp Volume											
Calculate Flow Rate in General Purpose Lanes (GP)											
GP Volume (vph)	2,144	1,731	1,969	1,950	1,950	1,829	2,087	2,066	2,066	1,547	3,056
PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	2	2	3	2	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,255	1,822	2,072	2,052	2,052	1,924	2,196	2,174	2,174	1,628	3,216
GP Flow (pcphpl)	1,128	911	691	1,026	1,026	962	1,098	1,087	1,087	814	1,608
Calculate Speed in General Purpose Lanes											
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes											
v/c ratio	0.48	0.39	0.29	0.44	0.44	0.41	0.47	0.46	0.46	0.35	0.68
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.4
Density (pcphpl)	17.3	14.0	10.6	15.8	15.8	14.8	16.9	16.7	16.7	12.5	25.0
LOS	B	B	A	B	B	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes											
GP_{IN} Vol (pcph)			1,805				1,924				1,559
GP_{IN} Cap (pcph)			4,700				4,700				4,700
GP_{IN} v/c ratio			0.38				0.41				0.33
Calculate Operations for Exiting GP Lanes											
GP_{OUT} Vol (pcph)	1,747				1,879				1,555		
GP_{OUT} Cap (pcph)	4,700				4,700				4,700		
GP_{OUT} v/c ratio	0.37				0.40				0.33		

Location	1	2	3	4	5	6	7	8	9	10	11



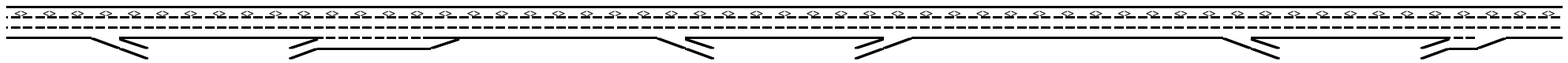
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)											
EL Volume (vph)	186	151	151	170	170	159	159	180	180	135	135
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	209	169	169	190	190	178	178	202	202	151	151
EL Flow (pcphpl)	209	169	169	190	190	178	178	202	202	151	151
Calculate Speed in Express Lanes											
Lane Width (ft)											
Shoulder Width											
TRD											
f_{LW}											
f_{LC}											
Calc'd FFS											
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes											
EL_{IN} v/c ratio	0.12	0.10	0.10	0.11	0.11	0.10	0.10	0.12	0.12	0.09	0.09
Calculate On Ramp Flow Rate											
On Volume (vph)			238				258				1,509
PHF			0.9				0.96				0.92
Total Lanes			1				1				1
Terrain			Level				Level				Level
Grade %			0.0%				0.0%				0.0%
Grade Length (mi)			0.00				0.00				0.00
Truck & Bus %			2.0%				2.0%				2.0%
RV %			0.0%				0.0%				0.0%
E_T			1.5				1.5				1.5
E_R			1.2				1.2				1.2
f_{HV}			0.990				0.990				0.990
f_P			1.00				1.00				1.00
On Flow (pcph)			267				271				1,657
On Flow (pcphpl)			267				271				1,657
Calculate On Ramp Roadway Operations											
On Ramp Type			Right				Right				Right
On Ramp Speed (mph)			25				45				45
On Ramp Cap (pcph)			1,900				2,100				2,100
On Ramp v/c ratio			0.14				0.13				0.79

Location	1	2	3	4	5	6	7	8	9	10	11



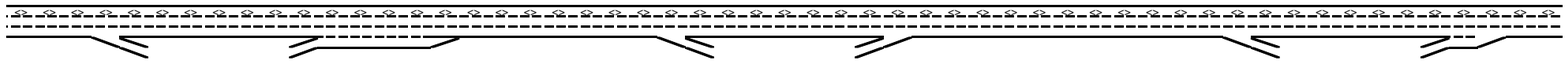
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate											
Off Volume (vph)	448				132				564		
PHF	0.89				0.77				0.92		
Total Lanes	1				1				1		
Terrain	Level				Level				Level		
Grade %	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00				0.00				0.00		
Truck & Bus %	2.0%				2.0%				2.0%		
RV %	0.0%				0.0%				0.0%		
E_T	1.5				1.5				1.5		
E_R	1.2				1.2				1.2		
f_{HV}	0.990				0.990				0.990		
f_P	1.00				1.00				1.00		
Off Flow (pcph)	508				173				619		
Off Flow (pcphpl)	508				173				619		
Calculate Off Ramp Roadway Operations											
Off Ramp Type	Right				Right				Right		
Off Ramp Speed	45				45				45		
Off Ramp Cap (pcph)	2,100				2,100				2,100		
Off Ramp v/c ratio	0.24				0.08				0.29		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type			Off								
Up Distance			1,250								
Up Flow (pcph)			508								
Down Type			Off								
Down Distance			7,900								
Down Flow (pcph)			173								
Calculate Merge Influence Area Operations											
Effective v_P (pcph)			1,805				1,924				1,559
Up Ramp L_{EQ}			14								
Down Ramp L_{EQ}			641								
P_{FM} (Eqn 13-3)			0.620				0.588				0.602
P_{FM} (Eqn 13-4)			0.697								
P_{FM} (Eqn 13-5)			0.554								
P_{FM}			1.000				1.000				1.000
v_{12} (pcph)			1,805				1,924				1,559
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)			1,805				1,924				1,559
v_{R12a} (pcph)			2,072				2,196				3,216
Merge Speed Index			0.28				0.32				0.34
Merge Area Speed			58.6				57.6				57.2
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed			58.6				57.6				57.2
Merge v/c ratio			0.45				0.48				0.70
Merge Density			12.1				20.1				24.3
Merge LOS			B				C				C

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations											
Effective v_P (pcph)	2,255				2,052				2,174		
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)	0.680				0.701				0.677		
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)			#VALUE!								
P_{FD}	1.000				1.000				1.000		
v_{12} (pcph)	2,255				2,052				2,174		
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)	2,255				2,052				2,174		
Diverge Speed Index	0.34				0.31				0.35		
Diverge Area Speed	57.1				57.8				56.9		
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed	57.1				57.8				56.9		
Diverge v/c ratio	0.51				0.47				0.49		
Diverge Density	22.3				20.5				21.6		
Diverge LOS	C				C				C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments											
Calculate On Ramp to Mainline Flow Rate for Weave Segments											
Calculate Mainline to Off Ramp Flow Rate for Weave Segments											
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments											
Calculate Weave Segment Operations											
Summarize Segment Operations											
Segment v/c ratio	0.51	0.39	0.45	0.44	0.47	0.41	0.48	0.46	0.49	0.35	0.70
Segment Density	22.3	14.0	12.1	15.8	20.5	14.8	20.1	16.7	21.6	12.5	24.3
Segment LOS	C	B	B	B	C	B	C	B	C	B	C
Over Capacity											

APPENDIX A:

Existing Plus Project Conditions Technical Calculations

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	153	223	246	25	35	709	75	331	177	7	91	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1546		1770	3539	1560	3433	3518		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1546		1770	3539	1560	3433	3518		1770	1863
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85
Adj. Flow (vph)	159	232	256	28	39	788	83	394	211	8	107	331
RTOR Reduction (vph)	0	0	186	0	0	0	62	0	2	0	0	0
Lane Group Flow (vph)	159	232	70	0	67	788	21	394	217	0	107	331
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	7.7	30.0	30.0		5.9	28.2	28.2	14.9	45.2		9.3	40.1
Effective Green, g (s)	7.7	30.0	30.0		5.9	28.2	28.2	14.9	45.2		9.3	40.1
Actuated g/C Ratio	0.07	0.27	0.27		0.05	0.26	0.26	0.14	0.41		0.08	0.36
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	240	965	422		95	907	400	465	1446		150	679
v/s Ratio Prot	c0.05	0.07			0.04	c0.22		c0.11	0.06		0.06	0.18
v/s Ratio Perm			0.05				0.01					
v/c Ratio	0.66	0.24	0.17		0.71	0.87	0.05	0.85	0.15		0.71	0.49
Uniform Delay, d1	49.9	31.1	30.5		51.2	39.1	30.8	46.4	20.3		49.1	27.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.0	0.1		17.6	8.6	0.0	12.9	0.2		12.5	2.5
Delay (s)	55.1	31.2	30.5		68.8	47.7	30.9	59.3	20.6		61.6	29.5
Level of Service	E	C	C		E	D	C	E	C		E	C
Approach Delay (s)		36.8				47.7			45.5			34.3
Approach LOS		D				D			D			C

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	367
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	432
RTOR Reduction (vph)	127
Lane Group Flow (vph)	305
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	40.1
Effective Green, g (s)	40.1
Actuated g/C Ratio	0.36
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	569
v/s Ratio Prot	
v/s Ratio Perm	c0.20
v/c Ratio	0.54
Uniform Delay, d1	27.6
Progression Factor	1.00
Incremental Delay, d2	3.6
Delay (s)	31.2
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	267	22	65	716	47	46	73	36	106	233	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	1842		1770	1843		1770	1755			1834	1544
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	1842		1770	1843		1770	1755			1834	1544
Peak-hour factor, PHF	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Adj. Flow (vph)	27	318	26	73	804	53	70	111	55	132	291	199
RTOR Reduction (vph)	0	3	0	0	2	0	0	14	0	0	0	128
Lane Group Flow (vph)	27	341	0	73	855	0	70	152	0	0	423	71
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	4.3	33.0		16.7	45.4		13.5	13.5			23.2	23.2
Effective Green, g (s)	4.3	33.0		16.7	45.4		13.5	13.5			23.2	23.2
Actuated g/C Ratio	0.04	0.31		0.16	0.42		0.13	0.13			0.22	0.22
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	71	569		277	783		224	222			398	335
v/s Ratio Prot	0.02	0.19		c0.04	c0.46		0.04	c0.09			c0.23	
v/s Ratio Perm												0.05
v/c Ratio	0.38	0.60		0.26	1.09		0.31	0.68			1.06	0.21
Uniform Delay, d1	50.0	31.3		39.7	30.8		42.5	44.7			41.9	34.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	2.6		0.4	60.3		0.3	6.8			62.7	0.1
Delay (s)	52.5	33.9		40.1	91.0		42.8	51.5			104.6	34.5
Level of Service	D	C		D	F		D	D			F	C
Approach Delay (s)		35.3			87.0			48.9			82.2	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM Average Control Delay	72.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	216	191	59	544	19	281	49	33	5	38	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1545	1770	1852		1770	1735			1833	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1545	1770	1852		1770	1735			1833	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Adj. Flow (vph)	2	232	205	65	598	21	396	69	46	6	49	4
RTOR Reduction (vph)	0	0	142	0	1	0	0	17	0	0	2	0
Lane Group Flow (vph)	2	232	63	65	618	0	396	98	0	0	57	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	0.8	26.3	26.3	6.7	32.2		26.8	26.8			7.8	
Effective Green, g (s)	0.8	26.3	26.3	6.7	32.2		26.8	26.8			7.8	
Actuated g/C Ratio	0.01	0.31	0.31	0.08	0.37		0.31	0.31			0.09	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	16	570	473	138	694		552	541			166	
v/s Ratio Prot	0.00	0.12		c0.04	c0.33		c0.22	0.06			c0.03	
v/s Ratio Perm			0.04									
v/c Ratio	0.12	0.41	0.13	0.47	0.89		0.72	0.18			0.34	
Uniform Delay, d1	42.2	23.6	21.6	37.9	25.2		26.2	21.5			36.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.6	0.5	0.1	1.8	13.6		4.1	0.1			0.9	
Delay (s)	44.8	24.1	21.7	39.7	38.8		30.3	21.7			37.6	
Level of Service	D	C	C	D	D		C	C			D	
Approach Delay (s)		23.1			38.9			28.4			37.6	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	18.3
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	49	475	45	63	42	412	146	37	125	262	3
Peak Hour Factor	0.86	0.86	0.86	0.52	0.52	0.52	0.92	0.92	0.92	0.75	0.75	0.75
Hourly flow rate (vph)	2	57	552	87	121	81	448	159	40	167	349	4

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	612	288	448	199	167	353
Volume Left (vph)	2	87	448	0	167	0
Volume Right (vph)	552	81	0	40	0	4
Hadj (s)	-0.51	-0.07	0.53	-0.11	0.53	0.03
Departure Headway (s)	8.1	9.2	9.5	8.9	9.6	9.1
Degree Utilization, x	1.38	0.74	1.18	0.49	0.45	0.90
Capacity (veh/h)	452	384	383	393	360	383
Control Delay (s)	209.2	33.8	135.0	18.9	19.0	52.7
Approach Delay (s)	209.2	33.8	99.3		41.9	
Approach LOS	F	D	F		E	

Intersection Summary			
Delay	108.3		
HCM Level of Service	F		
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	1	83	154	2	62	20	193	41	23	227	19
Peak Hour Factor	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Hourly flow rate (vph)	51	1	122	220	3	89	32	306	65	33	329	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	311	403	390
Volume Left (vph)	51	220	32	33
Volume Right (vph)	122	89	65	28
Hadj (s)	-0.33	0.00	-0.05	0.01
Departure Headway (s)	7.2	7.1	6.6	6.7
Degree Utilization, x	0.35	0.61	0.74	0.73
Capacity (veh/h)	399	463	509	506
Control Delay (s)	14.1	20.6	26.2	25.4
Approach Delay (s)	14.1	20.6	26.2	25.4
Approach LOS	B	C	D	D

Intersection Summary			
Delay	23.0		
HCM Level of Service	C		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	408	147	408	351	265	853
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.97	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1543	3259		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1543	3259		3433	3539
Peak-hour factor, PHF	0.72	0.72	0.83	0.83	0.90	0.90
Adj. Flow (vph)	567	204	492	423	294	948
RTOR Reduction (vph)	0	85	117	0	0	0
Lane Group Flow (vph)	567	119	798	0	294	948
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	41.2	41.2	29.5		13.8	47.3
Effective Green, g (s)	41.2	41.2	29.5		13.8	47.3
Actuated g/C Ratio	0.40	0.40	0.29		0.13	0.46
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	705	614	929		458	1617
v/s Ratio Prot	c0.32		c0.24		c0.09	0.27
v/s Ratio Perm		0.08				
v/c Ratio	0.80	0.19	0.86		0.64	0.59
Uniform Delay, d1	27.6	20.3	35.0		42.5	20.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.3	0.1	7.7		2.3	0.4
Delay (s)	33.8	20.4	42.7		44.8	21.2
Level of Service	C	C	D		D	C
Approach Delay (s)	30.3		42.7			26.8
Approach LOS	C		D			C

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	89	223	113	66	10	428	214	37	33	171	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1525	1770	1818		1770	1807		1770	1863	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1525	1770	1818		1770	1807		1770	1863	1520
Peak-hour factor, PHF	0.57	0.57	0.57	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	156	391	145	85	13	476	238	41	37	190	336
RTOR Reduction (vph)	0	0	333	0	3	0	0	3	0	0	0	276
Lane Group Flow (vph)	123	156	58	145	95	0	476	276	0	37	190	60
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	16.8	16.8	16.8	17.7	17.7		40.9	54.8		6.4	20.3	20.3
Effective Green, g (s)	16.8	16.8	16.8	17.7	17.7		40.9	54.8		6.4	20.3	20.3
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16		0.36	0.48		0.06	0.18	0.18
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	262	276	226	276	283		637	872		100	333	272
v/s Ratio Prot	0.07	c0.08		c0.08	0.05		c0.27	0.15		0.02	c0.10	
v/s Ratio Perm			0.04									0.04
v/c Ratio	0.47	0.57	0.26	0.53	0.33		0.75	0.32		0.37	0.57	0.22
Uniform Delay, d1	44.3	45.0	42.9	44.1	42.7		31.8	18.0		51.7	42.7	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	1.6	0.2	1.8	0.7		4.5	0.2		1.7	1.9	0.3
Delay (s)	44.8	46.6	43.1	45.9	43.4		36.4	18.1		53.3	44.6	40.2
Level of Service	D	D	D	D	D		D	B		D	D	D
Approach Delay (s)		44.2			44.9			29.6			42.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	38.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	113.6	Sum of lost time (s)	17.9
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	67	173	51	673	1227	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1560	1770	3539	3521	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1560	1770	3539	3521	
Peak-hour factor, PHF	0.75	0.75	0.95	0.95	0.88	0.88
Adj. Flow (vph)	89	231	54	708	1394	42
RTOR Reduction (vph)	0	191	0	0	1	0
Lane Group Flow (vph)	89	40	54	708	1435	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.1	12.1	4.3	47.8	39.9	
Effective Green, g (s)	12.1	12.1	4.3	47.8	39.9	
Actuated g/C Ratio	0.17	0.17	0.06	0.69	0.57	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	309	272	110	2438	2024	
v/s Ratio Prot	c0.05		c0.03	0.20	c0.41	
v/s Ratio Perm		0.03				
v/c Ratio	0.29	0.15	0.49	0.29	0.71	
Uniform Delay, d1	24.9	24.3	31.5	4.2	10.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.3	1.8	0.1	1.2	
Delay (s)	25.4	24.5	33.2	4.3	11.8	
Level of Service	C	C	C	A	B	
Approach Delay (s)	24.8			6.3	11.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.1
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	109	1	220	39	0	8	68	601	57	21	27	1445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.99			1.00	0.99
Flt Protected		0.95	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1775	1556		1743		1770	3485			1763	3518
Flt Permitted		0.95	1.00		0.96		0.95	1.00			0.98	1.00
Satd. Flow (perm)		1775	1556		1743		1770	3485			1811	3518
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.92	0.94	0.94
Adj. Flow (vph)	116	1	234	93	0	19	77	683	65	23	29	1537
RTOR Reduction (vph)	0	0	206	0	6	0	0	5	0	0	0	2
Lane Group Flow (vph)	0	117	28	0	106	0	77	743	0	0	52	1592
Confl. Peds. (#/hr)	2		2	2		2	2		2	2	2	
Turn Type	Split		Perm	Split			Prot				Prot	
Protected Phases	4	4		3	3		5	2			1	6
Permitted Phases			4									
Actuated Green, G (s)		12.0	12.0		12.3		7.6	53.6			4.1	50.1
Effective Green, g (s)		12.0	12.0		12.3		7.6	53.6			4.1	50.1
Actuated g/C Ratio		0.12	0.12		0.12		0.08	0.53			0.04	0.49
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3			2.0	3.3
Lane Grp Cap (vph)		210	184		212		133	1844			73	1740
v/s Ratio Prot		c0.07			c0.06		c0.04	c0.21				c0.45
v/s Ratio Perm			0.02								0.03	
v/c Ratio		0.56	0.15		0.50		0.58	0.40			0.71	0.92
Uniform Delay, d1		42.1	40.1		41.6		45.3	14.3			48.0	23.6
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		3.4	0.4		0.7		3.8	0.2			23.7	8.0
Delay (s)		45.5	40.5		42.3		49.1	14.4			71.8	31.6
Level of Service		D	D		D		D	B			E	C
Approach Delay (s)		42.2			42.3			17.7				32.9
Approach LOS		D			D			B				C

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	25.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	54
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	14	66	710	28	119	37	604	198	93	1576	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88		1.00	0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1632		1681	1635		1770	3539	1544	1770	3531	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1632		1681	1635		1770	3539	1544	1770	3531	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	15	72	772	30	129	40	657	215	101	1713	22
RTOR Reduction (vph)	0	68	0	0	9	0	0	0	134	0	1	0
Lane Group Flow (vph)	23	19	0	471	451	0	40	657	81	101	1734	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.2	5.2		25.3	25.3		4.4	35.3	35.3	9.8	40.7	
Effective Green, g (s)	5.2	5.2		25.3	25.3		4.4	35.3	35.3	9.8	40.7	
Actuated g/C Ratio	0.06	0.06		0.27	0.27		0.05	0.38	0.38	0.11	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	99	91		456	443		83	1339	584	186	1540	
v/s Ratio Prot	c0.01	0.01		c0.28	0.28		0.02	0.19		c0.06	c0.49	
v/s Ratio Perm									0.05			
v/c Ratio	0.23	0.21		1.03	1.02		0.48	0.49	0.14	0.54	1.13	
Uniform Delay, d1	42.1	42.1		34.0	34.0		43.3	22.1	19.0	39.6	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4		50.9	47.6		1.6	0.4	0.2	1.7	65.8	
Delay (s)	42.6	42.5		84.9	81.6		44.9	22.6	19.2	41.4	92.1	
Level of Service	D	D		F	F		D	C	B	D	F	
Approach Delay (s)		42.5			83.2			22.8			89.3	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	70.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	17.7
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	265	30	3	659	62	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	323	37	4	867	78	5
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			360		1218	343
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		1218	343
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		60	99
cM capacity (veh/h)			1199		198	698

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	360	4	867	84
Volume Left	0	4	0	78
Volume Right	37	0	0	5
cSH	1700	1199	1700	207
Volume to Capacity	0.21	0.00	0.51	0.40
Queue Length 95th (ft)	0	0	0	45
Control Delay (s)	0.0	8.0	0.0	33.6
Lane LOS		A		D
Approach Delay (s)	0.0	0.0		33.6
Approach LOS				D

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	150	91	263	318	416	175	198	119	217	303	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.91		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3320		1770	3212		1770	3539	1560	1770	3325	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3320		1770	3212		1770	3539	1560	1770	3325	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Adj. Flow (vph)	124	192	117	306	370	484	282	319	192	261	365	214
RTOR Reduction (vph)	0	78	0	0	181	0	0	0	151	0	68	0
Lane Group Flow (vph)	124	231	0	306	673	0	282	319	41	261	511	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	12.4	20.7		20.6	28.9		20.6	21.7	21.7	20.3	21.4	
Effective Green, g (s)	12.4	20.7		20.6	28.9		20.6	21.7	21.7	20.3	21.4	
Actuated g/C Ratio	0.12	0.20		0.20	0.28		0.20	0.21	0.21	0.20	0.21	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	215	674		358	911		358	754	332	353	698	
v/s Ratio Prot	0.07	0.07		c0.17	c0.21		c0.16	0.09		0.15	c0.15	
v/s Ratio Perm									0.03			
v/c Ratio	0.58	0.34		0.85	0.74		0.79	0.42	0.12	0.74	0.73	
Uniform Delay, d1	42.3	34.8		39.2	33.1		38.6	34.7	32.4	38.3	37.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.2		17.5	3.0		10.6	0.3	0.1	7.5	3.7	
Delay (s)	45.3	35.0		56.7	36.1		49.1	35.0	32.5	45.8	41.3	
Level of Service	D	C		E	D		D	C	C	D	D	
Approach Delay (s)		38.0			41.5			39.4			42.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	13.3
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	100	47	200	191	194	43	391	91	126	1102	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3353		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3353		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	213	116	55	244	233	237	58	528	123	147	1281	409
RTOR Reduction (vph)	0	48	0	0	0	207	0	0	24	0	0	144
Lane Group Flow (vph)	213	123	0	244	233	30	58	528	99	147	1281	265
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.5	17.8		15.6	18.8	18.8	8.9	80.5	80.5	11.7	83.3	83.3
Effective Green, g (s)	14.5	17.8		15.6	18.8	18.8	8.9	80.5	80.5	11.7	83.3	83.3
Actuated g/C Ratio	0.10	0.12		0.11	0.13	0.13	0.06	0.54	0.54	0.08	0.56	0.56
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	336	403		362	450	198	106	3485	849	271	2862	879
v/s Ratio Prot	0.06	0.04		c0.07	c0.07		0.03	0.08		c0.04	c0.25	
v/s Ratio Perm						0.02			0.06			0.17
v/c Ratio	0.63	0.30		0.67	0.52	0.15	0.55	0.15	0.12	0.54	0.45	0.30
Uniform Delay, d1	64.2	59.4		63.8	60.4	57.5	67.6	16.8	16.4	65.6	18.9	17.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.4		4.9	1.0	0.4	5.7	0.1	0.3	2.2	0.5	0.9
Delay (s)	68.1	59.9		68.6	61.4	57.9	73.3	16.9	16.7	67.8	19.4	17.9
Level of Service	E	E		E	E	E	E	B	B	E	B	B
Approach Delay (s)		64.4			62.7			21.5			22.9	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	243	1	18	431	193	41	4	10	47	7	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.89		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3347		1770	1618		1770	1578	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3347		1770	1618		1770	1578	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	88	293	1	22	539	241	48	5	12	51	8	123
RTOR Reduction (vph)	0	0	0	0	23	0	0	12	0	0	111	0
Lane Group Flow (vph)	88	293	1	22	757	0	48	5	0	51	20	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	10.1	92.5	92.5	3.2	84.9		6.4	2.8		15.5	12.7	
Effective Green, g (s)	10.1	92.5	92.5	3.2	84.9		6.4	2.8		15.5	12.7	
Actuated g/C Ratio	0.07	0.69	0.69	0.02	0.63		0.05	0.02		0.11	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	132	2425	1055	42	2105		84	34		203	148	
v/s Ratio Prot	c0.05	0.08		0.01	c0.23		c0.03	0.00		c0.03	0.01	
v/s Ratio Perm			0.00									
v/c Ratio	0.67	0.12	0.00	0.52	0.36		0.57	0.15		0.25	0.13	
Uniform Delay, d1	60.8	7.3	6.7	65.1	12.0		63.0	64.9		54.5	56.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	0.1	0.0	5.3	0.5		5.7	0.8		0.7	0.4	
Delay (s)	70.3	7.4	6.7	70.5	12.5		68.7	65.7		55.1	56.5	
Level of Service	E	A	A	E	B		E	E		E	E	
Approach Delay (s)		21.9			14.1			67.9			56.1	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.9
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	177	45	47	477	54	125	5	61	14	8	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.86		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1797		1770	1830		1770	1571		1770	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1768	1797		1770	1830		1770	1571		1770	1710	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Adj. Flow (vph)	8	199	51	68	691	78	145	6	71	17	10	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	60	0	0	8	0
Lane Group Flow (vph)	8	246	0	68	767	0	145	17	0	17	11	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.8	41.0		6.5	47.4		13.3	13.3		6.3	6.3	
Effective Green, g (s)	0.8	41.0		6.5	47.4		13.3	13.3		6.3	6.3	
Actuated g/C Ratio	0.01	0.48		0.08	0.56		0.16	0.16		0.07	0.07	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	17	867		135	1020		277	246		131	127	
v/s Ratio Prot	0.00	0.14		c0.04	c0.42		c0.08	0.01		c0.01	0.01	
v/s Ratio Perm												
v/c Ratio	0.47	0.28		0.50	0.75		0.52	0.07		0.13	0.08	
Uniform Delay, d1	41.9	13.2		37.7	14.3		32.9	30.6		36.8	36.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.3	0.2		1.1	3.2		2.1	0.1		0.5	0.3	
Delay (s)	49.2	13.4		38.8	17.5		35.0	30.7		37.3	37.0	
Level of Service	D	B		D	B		D	C		D	D	
Approach Delay (s)		14.5			19.2			33.5			37.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	82	15	724	1395	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	89	16	787	1516	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1141	
pX, platoon unblocked	0.71	0.71	0.71			
vC, conflicting volume	1945	761	1522			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1513	0	917			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	88	97			
cM capacity (veh/h)	76	769	525			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	89	16	393	393	1011	511
Volume Left	0	16	0	0	0	0
Volume Right	89	0	0	0	0	5
cSH	769	525	1700	1700	1700	1700
Volume to Capacity	0.12	0.03	0.23	0.23	0.59	0.30
Queue Length 95th (ft)	10	2	0	0	0	0
Control Delay (s)	10.3	12.1	0.0	0.0	0.0	0.0
Lane LOS	B	B				
Approach Delay (s)	10.3	0.2			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	27	699	45	15	1689
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	760	49	16	1836
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1104			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	1735	404			809	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1545	14			479	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			98	
cM capacity (veh/h)	90	923			938	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	29	507	302	16	918	918
Volume Left	0	0	0	16	0	0
Volume Right	29	0	49	0	0	0
cSH	923	1700	1700	938	1700	1700
Volume to Capacity	0.03	0.30	0.18	0.02	0.54	0.54
Queue Length 95th (ft)	2	0	0	1	0	0
Control Delay (s)	9.0	0.0	0.0	8.9	0.0	0.0
Lane LOS	A			A		
Approach Delay (s)	9.0	0.0		0.1		
Approach LOS	A					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	289	16	2	717	2	0	0	6	0	0	140
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	314	17	2	779	2	0	0	7	0	0	152
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		560										
pX, platoon unblocked												
vC, conflicting volume	782			332			1259	1109	323	1114	1116	780
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	782			332			1259	1109	323	1114	1116	780
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	61
cM capacity (veh/h)	836			1228			91	209	718	184	207	395

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	332	2	782	7	152
Volume Left	0	2	0	0	0
Volume Right	17	0	2	7	152
cSH	1700	1228	1700	718	395
Volume to Capacity	0.20	0.00	0.46	0.01	0.39
Queue Length 95th (ft)	0	0	0	1	44
Control Delay (s)	0.0	7.9	0.0	10.1	19.7
Lane LOS		A		B	C
Approach Delay (s)	0.0	0.0		10.1	19.7
Approach LOS				B	C

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	230	103	11	10	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	250	112	12	11	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			861			
pX, platoon unblocked						
vC, conflicting volume	124				265	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124				265	62
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	1461				697	990

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	125	125	75	49	16
Volume Left	11	0	0	0	0	11
Volume Right	0	0	0	0	12	5
cSH	1461	1700	1700	1700	1700	773
Volume to Capacity	0.01	0.07	0.07	0.04	0.03	0.02
Queue Length 95th (ft)	1	0	0	0	0	2
Control Delay (s)	7.5	0.0	0.0	0.0	0.0	9.8
Lane LOS	A					A
Approach Delay (s)	0.3			0.0		9.8
Approach LOS						A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

SimTraffic Post-Processor | **Serrano Westside**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	55	58	105.3%	55.2	2.4	E
	Through	707	742	105.0%	17.2	2.0	B
	Right Turn	59	58	97.5%	11.0	1.6	B
	Subtotal	**821**	**858**	**104.4%**	**19.3**	**1.9**	**B**
SB	Left Turn	169	147	86.8%	124.7	5.9	F
	Through	2163	1766	81.7%	85.0	5.2	F
	Right Turn	20	17	83.5%	81.4	10.5	F
	Subtotal	**2352**	**1930**	**82.0%**	**88.0**	**5.2**	**F**
EB	Left Turn	22	22	101.4%	47.8	6.4	D
	Through	17	18	102.9%	53.6	10.7	D
	Right Turn	107	112	104.2%	16.5	2.1	B
	Subtotal	**146**	**151**	**103.6%**	**25.2**	**1.4**	**C**
WB	Left Turn	154	156	101.0%	49.8	7.4	D
	Through	9	10	113.3%	44.7	9.2	D
	Right Turn	110	118	107.3%	8.4	1.3	A
	Subtotal	**273**	**284**	**103.9%**	**32.2**	**3.4**	**C**
Total		**3592**	**3222**	**89.7%**	**61.9**	**2.7**	**E**

Intersection 14 **El Dorado Hills Blvd/Saratoga Way** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	773	807	104.5%	6.9	0.7	A
	Right Turn	189	192	101.6%	3.0	0.7	A
	Subtotal	**962**	**1000**	**103.9%**	**6.1**	**0.6**	**A**
SB	Left Turn	73	58	79.9%	59.6	4.0	E
	Through	2351	1931	82.1%	81.3	5.5	F
	Right Turn						
	Subtotal	**2424**	**1989**	**82.0%**	**80.7**	**5.4**	**F**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	233	244	104.5%	99.7	24.5	F
	Through						
	Right Turn	48	51	105.4%	17.3	9.2	B
	Subtotal	**281**	**294**	**104.7%**	**85.6**	**22.2**	**F**
Total		**3667**	**3282**	**89.5%**	**58.3**	**3.4**	**E**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	417	411	98.7%	97.0	39.1	F
	Through	702	734	104.5%	11.0	1.1	B
	Right Turn						
	Subtotal	**1119**	**1145**	**102.4%**	**42.0**	**14.1**	**D**
SB	Left Turn						
	Through	1153	973	84.4%	16.9	0.6	B
	Right Turn	1431	1201	83.9%	7.5	0.2	A
	Subtotal	**2584**	**2174**	**84.1%**	**11.7**	**0.3**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	652	662	101.5%	79.2	21.9	E
	Through						
	Right Turn	260	275	105.7%	31.4	16.6	C
	Subtotal	**912**	**937**	**102.7%**	**65.3**	**20.5**	**E**
Total		**4615**	**4256**	**92.2%**	**31.6**	**5.3**	**C**

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	735	759	103.3%	8.5	1.5	A
	Right Turn	177	184	103.7%	8.6	1.2	A
	Subtotal	**912**	**943**	**103.4%**	**8.5**	**1.4**	**A**
SB	Left Turn	296	246	83.0%	42.2	3.1	D
	Through	1509	1385	91.8%	8.6	0.4	A
	Right Turn						
	Subtotal	**1805**	**1631**	**90.4%**	**13.7**	**0.7**	**B**
EB	Left Turn						
	Through						
	Right Turn	1087	1153	106.1%	26.1	1.7	C
	Subtotal	**1087**	**1153**	**106.1%**	**26.1**	**1.7**	**C**
WB	Left Turn						
	Through						
	Right Turn	384	391	101.8%	3.4	0.3	A
	Subtotal	**384**	**391**	**101.8%**	**3.4**	**0.3**	**A**
Total		**4188**	**4118**	**98.3%**	**15.0**	**0.6**	**B**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	71	100.6%	88.9	9.2	F
	Through	653	678	103.8%	28.1	2.5	C
	Right Turn	44	44	100.0%	8.8	2.2	A
	Subtotal	**768**	**793**	**103.3%**	**32.5**	**2.1**	**C**
SB	Left Turn	530	519	98.0%	76.2	2.4	E
	Through	1501	1467	97.7%	16.0	0.8	B
	Right Turn	565	555	98.2%	7.5	0.3	A
	Subtotal	**2596**	**2541**	**97.9%**	**26.4**	**0.8**	**C**
EB	Left Turn	29	27	92.8%	86.0	10.4	F
	Through	7	5	75.7%	80.2	19.8	F
	Right Turn	7	8	117.1%	10.6	6.1	B
	Subtotal	**43**	**40**	**94.0%**	**69.7**	**10.4**	**E**
WB	Left Turn	72	70	97.1%	78.6	7.8	E
	Through	48	55	113.8%	78.7	6.2	E
	Right Turn	230	241	104.9%	19.7	2.7	B
	Subtotal	**350**	**366**	**104.5%**	**39.8**	**3.8**	**D**
Total		**3757**	**3741**	**99.6%**	**29.5**	**1.0**	**C**

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	418	699	369	80	61	441	67	342	256	17	105	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1546		1770	3539	1560	3433	3503		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1546		1770	3539	1560	3433	3503		1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90
Adj. Flow (vph)	449	752	397	90	69	496	75	407	305	20	117	242
RTOR Reduction (vph)	0	0	295	0	0	0	58	0	4	0	0	0
Lane Group Flow (vph)	449	752	102	0	159	496	17	407	321	0	117	242
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	15.5	28.3	28.3		11.5	24.3	24.3	14.7	40.9		9.7	36.4
Effective Green, g (s)	15.5	28.3	28.3		11.5	24.3	24.3	14.7	40.9		9.7	36.4
Actuated g/C Ratio	0.14	0.26	0.26		0.10	0.22	0.22	0.13	0.37		0.09	0.33
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	484	910	398		185	782	345	459	1302		156	616
v/s Ratio Prot	c0.13	c0.21			0.09	0.14		c0.12	0.09		0.07	c0.13
v/s Ratio Perm			0.07				0.01					
v/c Ratio	0.93	0.83	0.26		0.86	0.63	0.05	0.89	0.25		0.75	0.39
Uniform Delay, d1	46.7	38.5	32.5		48.5	38.8	33.7	46.8	23.9		49.0	28.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	23.7	5.9	0.1		29.6	1.2	0.0	17.8	0.5		16.3	1.9
Delay (s)	70.3	44.4	32.6		78.0	40.1	33.8	64.7	24.3		65.3	30.2
Level of Service	E	D	C		E	D	C	E	C		E	C
Approach Delay (s)		48.8				47.7			46.8			35.8
Approach LOS		D				D			D			D

Intersection Summary			
HCM Average Control Delay	46.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	200
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	222
RTOR Reduction (vph)	149
Lane Group Flow (vph)	73
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	36.4
Effective Green, g (s)	36.4
Actuated g/C Ratio	0.33
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	517
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.14
Uniform Delay, d1	25.8
Progression Factor	1.00
Incremental Delay, d2	0.6
Delay (s)	26.4
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	758	34	43	460	77	63	161	65	49	83	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	1851		1770	1817		1770	1769			1829	1543
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	1851		1770	1817		1770	1769			1829	1543
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	123	815	37	51	548	92	75	192	77	55	93	106
RTOR Reduction (vph)	0	1	0	0	4	0	0	11	0	0	0	93
Lane Group Flow (vph)	123	851	0	51	636	0	75	258	0	0	148	13
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	17.5	56.0		7.1	45.6		20.6	20.6			14.2	14.2
Effective Green, g (s)	17.5	56.0		7.1	45.6		20.6	20.6			14.2	14.2
Actuated g/C Ratio	0.15	0.47		0.06	0.39		0.17	0.17			0.12	0.12
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	262	875		106	700		308	308			219	185
v/s Ratio Prot	c0.07	c0.46		0.03	0.35		0.04	c0.15			c0.08	
v/s Ratio Perm												0.01
v/c Ratio	0.47	0.97		0.48	0.91		0.24	0.84			0.68	0.07
Uniform Delay, d1	46.2	30.4		53.9	34.4		42.2	47.3			49.9	46.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	24.0		2.5	16.4		0.2	17.1			6.3	0.1
Delay (s)	47.2	54.5		56.4	50.8		42.3	64.3			56.2	46.3
Level of Service	D	D		E	D		D	E			E	D
Approach Delay (s)		53.5			51.2			59.5			52.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	53.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	598	268	34	367	3	211	15	56	2	7	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	1863	1545	1770	1860		1770	1612			1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	1863	1545	1770	1860		1770	1612			1791	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Adj. Flow (vph)	6	623	279	37	399	3	234	17	62	3	10	3
RTOR Reduction (vph)	0	0	114	0	0	0	0	48	0	0	3	0
Lane Group Flow (vph)	6	623	165	37	402	0	234	31	0	0	13	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	0.8	34.2	34.2	3.9	37.3		16.9	16.9			3.5	
Effective Green, g (s)	0.8	34.2	34.2	3.9	37.3		16.9	16.9			3.5	
Actuated g/C Ratio	0.01	0.45	0.45	0.05	0.49		0.22	0.22			0.05	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	18	830	688	90	903		389	355			82	
v/s Ratio Prot	0.00	c0.33		c0.02	c0.22		c0.13	0.02			c0.01	
v/s Ratio Perm			0.11									
v/c Ratio	0.33	0.75	0.24	0.41	0.45		0.60	0.09			0.16	
Uniform Delay, d1	37.7	17.7	13.2	35.3	13.0		26.9	23.8			35.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	7.8	3.8	0.2	2.2	0.4		2.2	0.1			0.7	
Delay (s)	45.5	21.6	13.4	37.6	13.3		29.1	23.9			35.9	
Level of Service	D	C	B	D	B		C	C			D	
Approach Delay (s)		19.2			15.4			27.8			35.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	41	517	26	35	40	546	305	19	9	192	2
Peak Hour Factor	0.89	0.89	0.89	0.60	0.60	0.60	0.94	0.94	0.94	0.84	0.84	0.84
Hourly flow rate (vph)	0	46	581	43	58	67	581	324	20	11	229	2

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	627	168	581	345	11	231
Volume Left (vph)	0	43	581	0	11	0
Volume Right (vph)	581	67	0	20	0	2
Hadj (s)	-0.52	-0.15	0.53	-0.01	0.53	0.03
Departure Headway (s)	6.6	8.2	8.2	7.6	9.0	8.5
Degree Utilization, x	1.15	0.38	1.32	0.73	0.03	0.54
Capacity (veh/h)	540	419	449	463	391	409
Control Delay (s)	110.2	16.1	182.5	27.6	11.0	19.9
Approach Delay (s)	110.2	16.1	124.8		19.5	
Approach LOS	F	C	F		C	

Intersection Summary			
Delay	97.8		
HCM Level of Service	F		
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	4	39	56	2	43	70	246	89	47	193	89
Peak Hour Factor	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	22	5	49	64	2	49	82	289	105	55	227	105

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	116	476	387
Volume Left (vph)	22	64	82	55
Volume Right (vph)	49	49	105	105
Hadj (s)	-0.30	-0.11	-0.06	-0.10
Departure Headway (s)	6.0	6.1	5.0	5.1
Degree Utilization, x	0.13	0.20	0.66	0.54
Capacity (veh/h)	490	506	698	683
Control Delay (s)	9.9	10.6	17.0	13.9
Approach Delay (s)	9.9	10.6	17.0	13.9
Approach LOS	A	B	C	B

Intersection Summary			
Delay	14.7		
HCM Level of Service	B		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	167	125	922	202	162	662
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1546	3431		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1546	3431		3433	3539
Peak-hour factor, PHF	0.84	0.84	0.94	0.94	0.87	0.87
Adj. Flow (vph)	199	149	981	215	186	761
RTOR Reduction (vph)	0	124	10	0	0	0
Lane Group Flow (vph)	199	25	1186	0	186	761
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	14.4	14.4	43.6		9.4	57.0
Effective Green, g (s)	14.4	14.4	43.6		9.4	57.0
Actuated g/C Ratio	0.17	0.17	0.50		0.11	0.66
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	295	258	1731		373	2335
v/s Ratio Prot	c0.11		c0.35		c0.05	0.22
v/s Ratio Perm		0.02				
v/c Ratio	0.67	0.10	0.69		0.50	0.33
Uniform Delay, d1	33.8	30.5	16.2		36.3	6.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.7	0.1	0.9		0.4	0.0
Delay (s)	38.5	30.5	17.1		36.7	6.4
Level of Service	D	C	B		D	A
Approach Delay (s)	35.1		17.1			12.3
Approach LOS	D		B			B

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	10	188	8	10	5	179	286	10	9	195	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1534	1770	1757		1770	1850		1770	1863	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1534	1770	1757		1770	1850		1770	1863	1531
Peak-hour factor, PHF	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	140	11	216	13	17	8	211	336	12	10	217	74
RTOR Reduction (vph)	0	0	178	0	7	0	0	1	0	0	0	52
Lane Group Flow (vph)	140	11	38	13	18	0	211	347	0	10	217	22
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	13.1	13.1	13.1	6.4	6.4		16.4	35.9		0.8	20.3	20.3
Effective Green, g (s)	13.1	13.1	13.1	6.4	6.4		16.4	35.9		0.8	20.3	20.3
Actuated g/C Ratio	0.18	0.18	0.18	0.09	0.09		0.22	0.48		0.01	0.27	0.27
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	313	329	271	153	152		392	896		19	510	419
v/s Ratio Prot	c0.08	0.01		0.01	c0.01		c0.12	c0.19		0.01	0.12	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.45	0.03	0.14	0.08	0.12		0.54	0.39		0.53	0.43	0.05
Uniform Delay, d1	27.3	25.3	25.7	31.2	31.2		25.5	12.1		36.5	22.1	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.1	0.2	0.3		1.1	0.2		18.6	0.4	0.0
Delay (s)	27.6	25.3	25.8	31.4	31.6		26.6	12.3		55.1	22.5	19.8
Level of Service	C	C	C	C	C		C	B		E	C	B
Approach Delay (s)		26.5			31.5			17.7			22.9	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.6
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	33	85	183	1130	793	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1562	1770	3539	3519	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1562	1770	3539	3519	
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	98	199	1228	862	29
RTOR Reduction (vph)	0	85	0	0	2	0
Lane Group Flow (vph)	38	13	199	1228	889	0
Confl. Peds. (#/hr)		2				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.2	8.2	12.9	42.4	25.9	
Effective Green, g (s)	8.2	8.2	12.9	42.4	25.9	
Actuated g/C Ratio	0.14	0.14	0.21	0.71	0.43	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	241	213	380	2497	1517	
v/s Ratio Prot	c0.02		0.11	c0.35	c0.25	
v/s Ratio Perm		0.01				
v/c Ratio	0.16	0.06	0.52	0.49	0.59	
Uniform Delay, d1	22.9	22.6	20.9	4.0	13.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	0.8	0.2	0.6	
Delay (s)	23.2	22.7	21.6	4.2	13.6	
Level of Service	C	C	C	A	B	
Approach Delay (s)	22.9			6.6	13.6	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	15.2
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	42	0	137	66	2	21	199	1300	12	11	9	834
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00			1.00	0.99
Flt Protected		0.95	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1770	1553		1733		1770	3533			1767	3508
Flt Permitted		0.95	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1770	1553		1733		1770	3533			1772	3508
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.92	0.94	0.94
Adj. Flow (vph)	45	0	146	157	5	50	226	1477	14	12	10	887
RTOR Reduction (vph)	0	0	133	0	8	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	45	13	0	204	0	226	1491	0	0	22	935
Confl. Peds. (#/hr)	2		2	2		2	2		2	2	2	
Turn Type	Split		Perm	Split			Prot				Prot	
Protected Phases	4	4		3	3		5	2			1	6
Permitted Phases			4									
Actuated Green, G (s)		8.9	8.9		17.6		18.7	53.8			4.2	39.3
Effective Green, g (s)		8.9	8.9		17.6		18.7	53.8			4.2	39.3
Actuated g/C Ratio		0.09	0.09		0.17		0.18	0.52			0.04	0.38
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3			2.0	3.3
Lane Grp Cap (vph)		152	133		294		319	1831			72	1328
v/s Ratio Prot		c0.03			c0.12		c0.13	c0.42				0.27
v/s Ratio Perm			0.01								0.01	
v/c Ratio		0.30	0.09		0.69		0.71	0.81			0.31	0.70
Uniform Delay, d1		44.5	43.7		40.6		40.0	20.8			48.4	27.3
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.2	0.3		5.6		5.8	2.9			0.9	1.8
Delay (s)		45.7	44.1		46.2		45.8	23.8			49.3	29.1
Level of Service		D	D		D		D	C			D	C
Approach Delay (s)		44.5			46.2			26.7				29.5
Approach LOS		D			D			C				C

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	19.3
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	47
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	50
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	19	49	327	18	60	99	1568	580	86	865	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1663		1681	1633		1770	3539	1543	1770	3515	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1663		1681	1633		1770	3539	1543	1770	3515	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	21	53	355	20	65	108	1704	630	93	940	39
RTOR Reduction (vph)	0	50	0	0	11	0	0	0	153	0	2	0
Lane Group Flow (vph)	22	24	0	224	205	0	108	1704	477	93	977	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.3	5.3		19.9	19.9		10.8	50.8	50.8	9.9	49.9	
Effective Green, g (s)	5.3	5.3		19.9	19.9		10.8	50.8	50.8	9.9	49.9	
Actuated g/C Ratio	0.05	0.05		0.19	0.19		0.10	0.49	0.49	0.10	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	91	85		323	314		185	1735	757	169	1693	
v/s Ratio Prot	0.01	c0.01		c0.13	0.13		c0.06	c0.48		0.05	0.28	
v/s Ratio Perm									0.31			
v/c Ratio	0.24	0.28		0.69	0.65		0.58	0.98	0.63	0.55	0.58	
Uniform Delay, d1	47.2	47.3		39.0	38.7		44.3	26.0	19.5	44.7	19.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.7		6.8	5.4		3.0	17.5	2.0	2.2	0.6	
Delay (s)	47.7	48.0		45.8	44.0		47.3	43.4	21.5	46.9	19.9	
Level of Service	D	D		D	D		D	D	C	D	B	
Approach Delay (s)		47.9			44.9			37.9			22.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	103.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	559	53	2	292	37	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	682	65	3	384	47	4
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			746		1105	716
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			746		1105	716
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		80	99
cM capacity (veh/h)			862		232	429

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	746	3	384	51
Volume Left	0	3	0	47
Volume Right	65	0	0	4
cSH	1700	862	1700	240
Volume to Capacity	0.44	0.00	0.23	0.21
Queue Length 95th (ft)	0	0	0	19
Control Delay (s)	0.0	9.2	0.0	23.9
Lane LOS		A		C
Approach Delay (s)	0.0	0.1		23.9
Approach LOS				C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	303	55	111	198	263	70	288	285	162	148	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3451		1770	3211		1770	3539	1561	1770	3320	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3451		1770	3211		1770	3539	1561	1770	3320	
Peak-hour factor, PHF	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Adj. Flow (vph)	183	394	71	129	230	306	115	472	467	193	176	108
RTOR Reduction (vph)	0	12	0	0	208	0	0	0	320	0	69	0
Lane Group Flow (vph)	183	453	0	129	328	0	115	472	147	193	215	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	14.2	18.1		11.7	15.6		11.0	19.5	19.5	14.8	23.3	
Effective Green, g (s)	14.2	18.1		11.7	15.6		11.0	19.5	19.5	14.8	23.3	
Actuated g/C Ratio	0.17	0.22		0.14	0.19		0.13	0.24	0.24	0.18	0.28	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	304	755		250	606		235	834	368	317	935	
v/s Ratio Prot	c0.10	c0.13		0.07	0.10		0.06	c0.13		c0.11	c0.06	
v/s Ratio Perm									0.09			
v/c Ratio	0.60	0.60		0.52	0.54		0.49	0.57	0.40	0.61	0.23	
Uniform Delay, d1	31.6	29.0		32.9	30.3		33.2	27.9	26.7	31.3	22.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	1.1		1.3	0.8		1.2	0.7	0.5	2.8	0.1	
Delay (s)	34.5	30.1		34.2	31.1		34.4	28.6	27.2	34.1	22.9	
Level of Service	C	C		C	C		C	C	C	C	C	
Approach Delay (s)		31.3			31.7			28.6			27.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	243	82	145	129	250	83	1106	258	360	512	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3394		3433	3539	1561	1770	6408	1561	3433	5085	1561
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	355	283	95	177	157	305	112	1495	349	419	595	266
RTOR Reduction (vph)	0	27	0	0	0	221	0	0	29	0	0	132
Lane Group Flow (vph)	355	351	0	177	157	84	112	1495	320	419	595	134
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	20.2	24.8		12.9	17.4	17.4	13.6	68.1	68.1	19.8	74.3	74.3
Effective Green, g (s)	20.2	24.8		12.9	17.4	17.4	13.6	68.1	68.1	19.8	74.3	74.3
Actuated g/C Ratio	0.14	0.17		0.09	0.12	0.12	0.09	0.46	0.46	0.13	0.50	0.50
Clearance Time (s)	6.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	469	569		299	416	184	163	2949	718	459	2553	784
v/s Ratio Prot	c0.10	c0.10		0.05	0.04		0.06	c0.23		c0.12	0.12	
v/s Ratio Perm						0.05			0.21			0.09
v/c Ratio	0.76	0.62		0.59	0.38	0.46	0.69	0.51	0.45	0.91	0.23	0.17
Uniform Delay, d1	61.5	57.2		65.0	60.3	60.9	65.1	28.1	27.1	63.2	20.8	20.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	2.0		3.1	0.6	1.8	11.4	0.6	2.0	22.4	0.2	0.5
Delay (s)	68.4	59.2		68.1	60.9	62.7	76.5	28.8	29.1	85.6	21.0	20.5
Level of Service	E	E		E	E	E	E	C	C	F	C	C
Approach Delay (s)		63.6			63.8			31.6			42.1	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	22.4
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	687	7	11	348	129	23	9	12	188	10	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1539	1770	3371		1770	1669		1770	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1539	1770	3371		1770	1669		1770	1579	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	201	828	8	14	435	161	27	10	14	204	11	166
RTOR Reduction (vph)	0	0	2	0	21	0	0	14	0	0	139	0
Lane Group Flow (vph)	201	828	6	14	575	0	27	10	0	204	38	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	17.2	86.8	86.8	2.2	71.1		4.0	4.2		20.8	21.8	
Effective Green, g (s)	17.2	86.8	86.8	2.2	71.1		4.0	4.2		20.8	21.8	
Actuated g/C Ratio	0.13	0.64	0.64	0.02	0.53		0.03	0.03		0.15	0.16	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	226	2275	990	29	1775		52	52		273	255	
v/s Ratio Prot	c0.11	c0.23		0.01	0.17		c0.02	0.01		c0.12	0.02	
v/s Ratio Perm			0.00									
v/c Ratio	0.89	0.36	0.01	0.48	0.32		0.52	0.20		0.75	0.15	
Uniform Delay, d1	58.0	11.2	8.6	65.8	18.2		64.6	63.8		54.6	48.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.0	0.5	0.0	4.5	0.5		3.6	0.7		10.6	0.3	
Delay (s)	88.9	11.7	8.6	70.4	18.7		68.2	64.5		65.2	48.9	
Level of Service	F	B	A	E	B		E	E		E	D	
Approach Delay (s)		26.6			19.9			66.4			57.6	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	472	117	14	207	70	84	14	30	152	34	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.90		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1799		1770	1781		1770	1644		1770	1675	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1799		1770	1781		1770	1644		1770	1675	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	56	519	129	18	265	90	104	17	37	169	38	54
RTOR Reduction (vph)	0	4	0	0	6	0	0	32	0	0	35	0
Lane Group Flow (vph)	56	644	0	18	349	0	104	22	0	169	57	0
Confl. Peds. (#/hr)	2		2			2			2			2
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.4	46.2		2.3	42.8		12.9	12.9		15.3	15.3	
Effective Green, g (s)	6.4	46.2		2.3	42.8		12.9	12.9		15.3	15.3	
Actuated g/C Ratio	0.07	0.49		0.02	0.45		0.14	0.14		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	120	879		43	806		241	224		286	271	
v/s Ratio Prot	c0.03	c0.36		0.01	0.20		c0.06	0.01		c0.10	0.03	
v/s Ratio Perm												
v/c Ratio	0.47	0.73		0.42	0.43		0.43	0.10		0.59	0.21	
Uniform Delay, d1	42.5	19.3		45.5	17.6		37.5	35.8		36.7	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	3.3		2.4	0.4		1.5	0.2		3.5	0.5	
Delay (s)	43.5	22.6		47.9	18.0		39.0	36.0		40.3	34.9	
Level of Service	D	C		D	B		D	D		D	C	
Approach Delay (s)		24.3			19.5			38.0			38.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	43	61	1313	858	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	47	66	1427	933	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1141	
pX, platoon unblocked	0.83	0.83	0.83			
vC, conflicting volume	1790	477	954			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1550	0	549			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	92			
cM capacity (veh/h)	80	905	849			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	47	66	714	714	622	333
Volume Left	0	66	0	0	0	0
Volume Right	47	0	0	0	0	22
cSH	905	849	1700	1700	1700	1700
Volume to Capacity	0.05	0.08	0.42	0.42	0.37	0.20
Queue Length 95th (ft)	4	6	0	0	0	0
Control Delay (s)	9.2	9.6	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.2	0.4			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	19	1492	156	50	987
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	1622	170	54	1073
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1014			
pX, platoon unblocked	0.53	0.53			0.53	
vC, conflicting volume	2352	896			1791	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1778	0			722	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			88	
cM capacity (veh/h)	34	575			465	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	1081	710	54	536	536
Volume Left	0	0	0	54	0	0
Volume Right	21	0	170	0	0	0
cSH	575	1700	1700	465	1700	1700
Volume to Capacity	0.04	0.64	0.42	0.12	0.32	0.32
Queue Length 95th (ft)	3	0	0	10	0	0
Control Delay (s)	11.5	0.0	0.0	13.8	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	11.5	0.0		0.7		
Approach LOS	B					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	603	82	4	318	7	0	0	9	0	0	87
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	655	89	4	346	8	0	0	10	0	0	95
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		560										
pX, platoon unblocked												
vC, conflicting volume	353			745			1149	1062	700	1068	1103	349
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	353			745			1149	1062	700	1068	1103	349
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	98	100	100	86
cM capacity (veh/h)	1205			863			151	222	439	194	210	694

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	745	4	353	10	95
Volume Left	0	4	0	0	0
Volume Right	89	0	8	10	95
cSH	1700	863	1700	439	694
Volume to Capacity	0.44	0.01	0.21	0.02	0.14
Queue Length 95th (ft)	0	0	0	2	12
Control Delay (s)	0.0	9.2	0.0	13.4	11.0
Lane LOS		A		B	B
Approach Delay (s)	0.0	0.1		13.4	11.0
Approach LOS				B	B

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	46.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	12	165	183	25	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	179	199	27	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			751			
pX, platoon unblocked						
vC, conflicting volume	226				328	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226				328	113
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1340				635	918

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	13	90	90	133	93	11
Volume Left	13	0	0	0	0	5
Volume Right	0	0	0	0	27	5
cSH	1340	1700	1700	1700	1700	750
Volume to Capacity	0.01	0.05	0.05	0.08	0.05	0.01
Queue Length 95th (ft)	1	0	0	0	0	1
Control Delay (s)	7.7	0.0	0.0	0.0	0.0	9.9
Lane LOS	A					A
Approach Delay (s)	0.5			0.0		9.9
Approach LOS						A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

SimTraffic Post-Processor **Serrano Westside**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Drive** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	111	107	95.9%	56.5	2.7	E
	Through	1898	1796	94.6%	37.5	2.4	D
	Right Turn	201	186	92.6%	33.5	2.8	C
	Subtotal	**2210**	**2088**	**94.5%**	**38.1**	**2.3**	**D**
SB	Left Turn	179	175	97.7%	108.9	28.1	F
	Through	1037	1042	100.5%	50.2	29.4	D
	Right Turn	25	24	97.2%	37.5	25.6	D
	Subtotal	**1241**	**1241**	**100.0%**	**58.2**	**28.8**	**E**
EB	Left Turn	41	39	94.1%	49.0	3.6	D
	Through	16	17	105.0%	49.1	8.6	D
	Right Turn	72	76	105.0%	5.0	0.8	A
	Subtotal	**129**	**131**	**101.6%**	**23.6**	**3.1**	**C**
WB	Left Turn	161	164	101.8%	56.0	29.0	E
	Through	23	22	95.2%	50.5	4.9	D
	Right Turn	308	310	100.6%	23.7	4.2	C
	Subtotal	**492**	**496**	**100.8%**	**35.7**	**11.2**	**D**
Total		**4072**	**3956**	**97.2%**	**43.7**	**9.7**	**D**

Intersection 14 **El Dorado Hills Blvd/Saratoga Way** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2110	1980	93.8%	8.8	0.7	A
	Right Turn	344	321	93.2%	5.6	0.5	A
	Subtotal	**2454**	**2301**	**93.8%**	**8.3**	**0.7**	**A**
SB	Left Turn	62	62	99.5%	100.7	62.6	F
	Through	1208	1199	99.3%	62.3	47.0	E
	Right Turn						
	Subtotal	**1270**	**1261**	**99.3%**	**64.2**	**47.5**	**E**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	202	201	99.6%	40.0	3.9	D
	Through						
	Right Turn	100	97	97.3%	33.9	2.8	C
	Subtotal	**302**	**298**	**98.8%**	**38.0**	**2.6**	**D**
Total		**4026**	**3860**	**95.9%**	**28.7**	**15.1**	**C**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1021	964	94.4%	44.4	11.8	D
	Through	2137	1999	93.5%	31.5	3.0	C
	Right Turn						
	Subtotal	**3158**	**2963**	**93.8%**	**35.8**	**3.5**	**D**
SB	Left Turn						
	Through	783	765	97.7%	37.7	5.6	D
	Right Turn	627	623	99.3%	24.4	3.7	C
	Subtotal	**1410**	**1388**	**98.4%**	**31.7**	**4.6**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	297	293	98.6%	42.6	2.9	D
	Through						
	Right Turn	317	309	97.4%	44.0	10.7	D
	Subtotal	**614**	**602**	**98.0%**	**43.4**	**6.4**	**D**
Total		**5182**	**4952**	**95.6%**	**35.5**	**3.2**	**D**

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1986	1874	94.3%	21.5	2.5	C
	Right Turn	702	639	91.0%	25.9	2.1	C
	Subtotal	**2688**	**2512**	**93.5%**	**22.6**	**2.2**	**C**
SB	Left Turn	243	228	94.0%	57.6	2.2	E
	Through	837	833	99.5%	4.9	0.5	A
	Right Turn						
	Subtotal	**1080**	**1061**	**98.3%**	**16.2**	**0.9**	**B**
EB	Left Turn						
	Through						
	Right Turn	700	695	99.3%	12.9	1.2	B
	Subtotal	**700**	**695**	**99.3%**	**12.9**	**1.2**	**B**
WB	Left Turn						
	Through						
	Right Turn	1172	1107	94.4%	130.5	41.8	F
	Subtotal	**1172**	**1107**	**94.4%**	**130.5**	**41.8**	**F**
Total		**5640**	**5375**	**95.3%**	**42.2**	**8.5**	**D**

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside
Existing Plus Project
PM Peak Hour

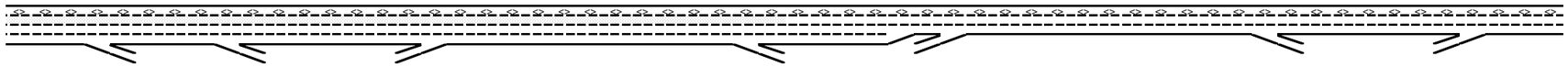
Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	3	110.0%	179.5	106.1	F
	Through	1531	1424	93.0%	180.9	75.0	F
	Right Turn	127	113	88.9%	53.8	57.1	D
	Subtotal	**1661**	**1541**	**92.8%**	**171.6**	**74.2**	**F**
SB	Left Turn	571	561	98.2%	83.6	11.2	F
	Through	928	924	99.6%	20.1	0.8	C
	Right Turn	38	38	100.5%	1.8	0.3	A
	Subtotal	**1537**	**1523**	**99.1%**	**43.1**	**4.8**	**D**
EB	Left Turn	377	319	84.7%	422.4	178.9	F
	Through	54	54	100.6%	95.5	29.9	F
	Right Turn	115	114	99.0%	41.2	17.7	D
	Subtotal	**546**	**487**	**89.2%**	**297.5**	**125.5**	**F**
WB	Left Turn	58	62	106.7%	142.4	67.4	F
	Through	9	10	113.3%	135.6	75.1	F
	Right Turn	780	770	98.7%	106.1	69.0	F
	Subtotal	**847**	**842**	**99.4%**	**109.1**	**69.0**	**F**
Total		**4591**	**4393**	**95.7%**	**128.3**	**30.9**	**F**

Existing Plus Project Roadway Segments Analysis		E+P Volume		LOS Thresholds			V/ C Ratio		LOS	
Pedregal - Central El Dorado	**Number of Lanes**	**AM**	**PM**	**LOS C**	**LOS D**	**LOS E**	**AM**	**PM**	**AM**	**PM**
El Dorado Hills Blvd - Green Valley to US 50 (5 segments)										
Green Valley to Francisco	2A	458	428	850	1540	1650	0.28	0.26	C or better	C or better
Francisco to Governor	2A	1456	1505	850	1540	1650	0.88	0.91	D	D
Governor to Wilson	4AD	2177	2170	1850	3220	3290	0.66	0.66	D	D
Wilson to Serrano	4AD	2629	2882	1850	3220	3290	0.80	0.88	D	D
Serrano to Saratoga	5AD	3265	3622	2305	3950	4000	0.82	0.91	D	D
Saratoga to US 50	6AD	3143	3452	2760	4680	4710	0.67	0.73	D	D
Latrobe Road - US 50 to S. Shingle Rd (5 Segemtns)										
US 50 to Town Center	6AD	3499	4306	2760	4680	4710	0.74	0.91	D	D
Town Center to White Rock Rd	6AD	2343	2755	2760	4680	4710	0.50	0.58	C or better	C or better
White Rock to Golden Foothill Pkwy	4AD	1869	2182	1850	3220	3290	0.57	0.66	D	D
Golden Foothill Pkwy to Sun Ridge Meadow Rd	2A	1239	1266	850	1540	1650	0.75	0.77	D	D
Sun Ridge Meadow Rd to S. Shingle Rd	2A	263	305	850	1540	1650	0.16	0.18	C or better	C or better
White Rock Road - Scott Road to US 50 (5 Segments)										
Scott Rd to Four Seasons Dr.	2A	624	892	850	1540	1650	0.38	0.54	C or better	D
Four Seasons Dr to Latrobe Rd	4AD	914	1069	1850	3220	3290	0.28	0.32	C or better	C or better
Latrobe Rd to Vine St	2A	838	979	850	1540	1650	0.51	0.59	C or better	D
Vine St to US 50	2A	830	945	850	1540	1650	0.50	0.57	C or better	D
Silva Valley Pkwy - Green Valley Rd to US 50 (4 Segments)										
Green Valley to Glenwood Way	2A	654	596	850	1540	1650	0.40	0.36	C or better	C or better
Glenwood Way to Appian Way	2A	558	635	850	1540	1650	0.34	0.38	C or better	C or better
Appian Way to Harvard Way	2A	799	686	850	1540	1650	0.48	0.42	C or better	C or better
Harvard Way to Serrano Pkwy	4AD	1409	1094	1850	3220	3290	0.43	0.33	C or better	C or better
Serrano Pkwy to US 50	2A	1149	956	850	1540	1650	0.70	0.58	D	D
Serrano Pkwy - EDH Blvd to Bass Lake Rd - 3 segments										
EDH Blvd to Silva Valley Pkwy	2A	1016	939	850	1540	1650	0.62	0.57	D	D
Silva Valley to Villagio Dr	4AD	1483	1321	1850	3220	3290	0.45	0.40	C or better	C or better
Villagio Dr to Bass Lake Rd	2A	455	420	850	1540	1650	0.28	0.25	C or better	C or better
Saratoga Way - west of EDH Blvd (2 segments)										
EDH to Arrowhead	2A	229	289	850	1540	1650	0.14	0.18	C or better	C or better
Wilson Way - west of EDH Blvd (2 segments)										
EDH Blvd to Ridgeview Dr	4AU	425	394	1760	3070	3130	0.14	0.13	C or better	C or better
Olson Ln/Gillette Dr - west of EDH Blvd (2 segemtns)										
EDH Blvd to Gillete	2A	307	299	850	1540	1650	0.19	0.18	C or better	C or better
Harvard Way - EDH Blvd to Silva Valley Pkwy (1 segments)										
EDH Blvd to Silva Valley Pkwy	4AU	1170	656	1760	3070	3130	0.37	0.21	C or better	C or better

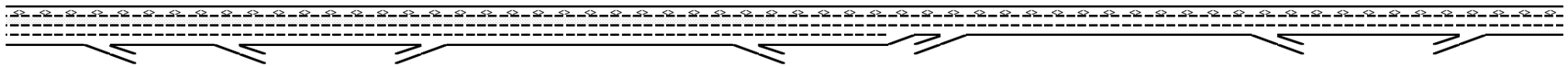
Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing + Project Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment												
Type	Diverge	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	1,500	7,500	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length				275				500				500
Decel Length	150	150				150				150		
Mainline Volume	2,637	1,550	1,166	1,166	1,639	1,639	1,447	1,447	1,583	1,583	1,436	1,436
On Ramp Volume				473				136				423
Off Ramp Volume	1,087	384				192				147		
Express Lane Volume	132	78	58	58	82	82	72	72	79	79	72	72
EL On Ramp Volume												
EL Off Ramp Volume												
Calculate Flow Rate in General Purpose Lanes (GP)												
GP Volume (vph)	2,505	1,473	1,108	1,581	1,557	1,557	1,375	1,511	1,504	1,504	1,364	1,787
PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,937	1,726	1,299	1,853	2,076	1,826	1,612	1,771	1,763	1,763	1,599	2,095
GP Flow (pcphpl)	979	575	433	618	692	609	537	886	882	882	800	1,048
Calculate Speed in General Purpose Lanes												
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	
TRD	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes												
v/c ratio	0.42	0.24	0.18	0.26	0.29	0.26	0.23	0.38	0.38	0.38	0.34	0.45
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	15.1	8.9	6.7	9.5	10.6	9.4	8.3	13.6	13.6	13.6	12.3	16.1
LOS	B	A	A	A	A	A	A	B	B	B	B	B
Calculate Operations for Entering GP Lanes												
GP_{IN} Vol (pcph)				1,334				1,578				1,629
GP_{IN} Cap (pcph)				7,050				4,700				4,700
GP_{IN} v/c ratio				0.19				0.34				0.35
Calculate Operations for Exiting GP Lanes												
GP_{OUT} Vol (pcph)	1,744	1,305				1,563	1,612			1,600		
GP_{OUT} Cap (pcph)	7,050	7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.25	0.19				0.22	0.34			0.34		

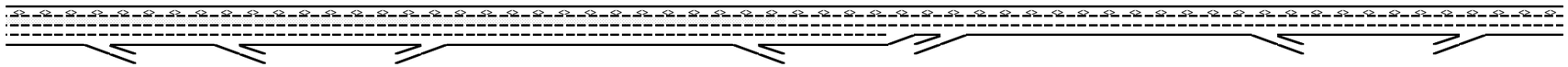


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)												
EL Volume (vph)	132	78	58	58	82	82	72	72	79	79	72	72
PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	171	100	75	75	115	106	94	94	102	102	93	93
EL Flow (pcphpl)	171	100	75	75	115	106	94	94	102	102	93	93
Calculate Speed in Express Lanes												
Lane Width (ft)												
Shoulder Width												
TRD												
f_{LW}												
f_{LC}												
Calc'd FFS												
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes												
EL_{IN} v/c ratio	0.10	0.06	0.04	0.04	0.07	0.06	0.05	0.05	0.06	0.06	0.05	0.05
Calculate On Ramp Flow Rate												
On Volume (vph)				473				136				423
PHF				0.92				0.71				0.92
Total Lanes				1				1				1
Terrain				Level				Level				Level
Grade %				0.0%				0.0%				0.0%
Grade Length (mi)				0.00				0.00				0.00
Truck & Bus %				2.0%				2.0%				3.0%
RV %				0.0%				0.0%				0.0%
E_T				1.5				1.5				1.5
E_R				1.2				1.2				1.2
f_{HV}				0.990				0.990				0.985
f_P				1.00				1.00				1.00
On Flow (pcph)				519				193				467
On Flow (pcphpl)				519				193				467
Calculate On Ramp Roadway Operations												
On Ramp Type				Right				Right				Right
On Ramp Speed (mph)				45				45				25
On Ramp Cap (pcph)				2,100				2,100				1,900
On Ramp v/c ratio				0.25				0.09				0.25



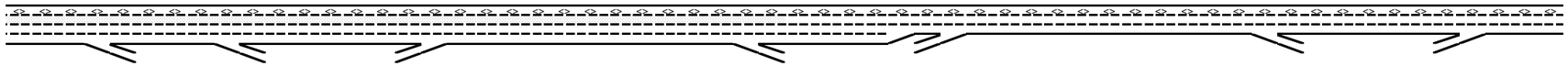
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate												
Off Volume (vph)	1,087	384				192				147		
PHF	0.92	0.92				0.74				0.91		
Total Lanes	1	1				1				1		
Terrain	Level	Level				Level				Level		
Grade %	0.0%	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%				2.0%				2.0%		
RV %	0.0%	0.0%				0.0%				0.0%		
E_T	1.5	1.5				1.5				1.5		
E_R	1.2	1.2				1.2				1.2		
f_{HV}	0.990	0.990				0.990				0.990		
f_P	1.00	1.00				1.00				1.00		
Off Flow (pcph)	1,193	422				262				163		
Off Flow (pcphpl)	1,193	422				262				163		
Calculate Off Ramp Roadway Operations												
Off Ramp Type	Right	Right				Right				Right		
Off Ramp Speed	45	25				45				45		
Off Ramp Cap (pcph)	2,100	1,900				2,100				2,100		
Off Ramp v/c ratio	0.57	0.22				0.12				0.08		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps												
Up Type		Off		Off		On						
Up Distance		2,350		1,975		10,500						
Up Flow (pcph)		1,193		422		519						
Down Type	Off	On		Off		On						
Down Distance	850	1,975		10,500		2,100						
Down Flow (pcph)	422	519		262		193						
Calculate Merge Influence Area Operations												
Effective v_P (pcph)				1,334				1,578				1,629
Up Ramp L_{EQ}				470								
Down Ramp L_{EQ}				1,885								
P_{FM} (Eqn 13-3)				0.585				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!		0.680								
P_{FM} (Eqn 13-5)	0.679			0.555								
P_{FM}				0.680				1.000				1.000
v_{12} (pcph)				907				1,578				1,629
v_3 (pcph)				427								
v_{34} (pcph)												
v_{12a} (pcph)				907				1,578				1,629
v_{R12a} (pcph)				1,426				1,771				2,095
Merge Speed Index				0.31				0.30				0.33
Merge Area Speed				57.8				58.1				57.5
Outer Lanes Volume				427								
Outer Lanes Speed				65.0								
Segment Speed				59.3				58.1				57.5
Merge v/c ratio				0.31				0.39				0.46
Merge Density				14.6				16.1				18.5
Merge LOS				B				B				B

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

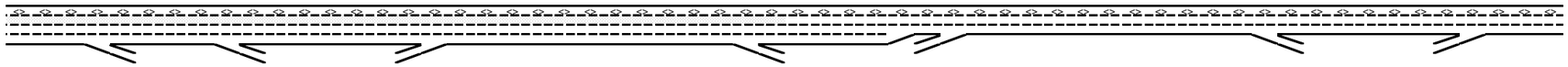
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations												
Effective v_P (pcph)	2,937	1,726				1,826				1,763		
Up Ramp L_{EQ}		15,169				5,579						
Down Ramp L_{EQ}	685	553				194						
P_{FD} (Eqn 13-9)	0.632	0.697				0.702				0.708		
P_{FD} (Eqn 13-10)						0.676						
P_{FD} (Eqn 13-11)	0.616			#VALUE!								
P_{FD}	0.632	0.697				0.702				1.000		
v_{12} (pcph)	2,295	1,332				1,360				1,763		
v_3 (pcph)	642	395				465						
v_{34} (pcph)												
v_{12a} (pcph)	2,295	1,332				1,360				1,763		
Diverge Speed Index	0.41	0.60				0.32				0.31		
Diverge Area Speed	55.7	51.3				57.6				57.8		
Outer Lanes Volume	642	395				465						
Outer Lanes Speed	71.3	71.3				71.3						
Segment Speed	58.5	54.8				60.6				57.8		
Diverge v/c ratio	0.52	0.30				0.31				0.40		
Diverge Density	22.6	14.4				14.6				18.1		
Diverge LOS	C	B				B				B		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments												
Calculate On Ramp to Mainline Flow Rate for Weave Segments												
Calculate Mainline to Off Ramp Flow Rate for Weave Segments												
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments												
Calculate Weave Segment Operations												
Summarize Segment Operations												
Segment v/c ratio	0.52	0.30	0.18	0.31	0.29	0.31	0.23	0.39	0.38	0.40	0.34	0.46
Segment Density	22.6	14.4	6.7	14.6	10.6	14.6	8.3	16.1	13.6	18.1	12.3	18.5
Segment LOS	C	B	A	B	A	B	A	B	B	B	B	B
Over Capacity												

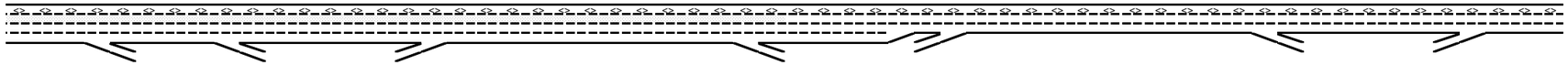
Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing + Project Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment												
Type	Diverge	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	1,500	7,500	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length				275				500				500
Decel Length	150	150				150				150		
Mainline Volume	5,093	4,300	3,128	3,128	4,073	4,073	3,455	3,455	3,559	3,559	3,036	3,036
On Ramp Volume				945				104				318
Off Ramp Volume	793	1,172				618				523		
Express Lane Volume	560	473	344	344	448	448	380	380	391	391	334	334
EL On Ramp Volume												
EL Off Ramp Volume												
Calculate Flow Rate in General Purpose Lanes (GP)												
GP Volume (vph)	4,533	3,827	2,784	3,729	3,625	3,625	3,075	3,179	3,168	3,168	2,702	3,020
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,696	3,965	2,884	3,863	3,924	3,756	3,186	3,294	3,282	3,282	2,800	3,129
GP Flow (pcphpl)	1,565	1,322	961	1,288	1,308	1,252	1,062	1,647	1,641	1,641	1,400	1,565
Calculate Speed in General Purpose Lanes												
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes												
v/c ratio	0.67	0.56	0.41	0.55	0.56	0.53	0.45	0.70	0.70	0.70	0.60	0.67
Speed (mph)	64.6	65.0	65.0	65.0	65.0	65.0	65.0	64.1	64.2	64.2	65.0	64.6
Density (pcphpl)	24.2	20.3	14.8	19.8	20.1	19.3	16.3	25.7	25.6	25.6	21.5	24.2
LOS	C	C	B	C	C	C	B	C	C	C	C	C
Calculate Operations for Entering GP Lanes												
GP_{IN} Vol (pcph)				2,826				3,167				2,780
GP_{IN} Cap (pcph)				7,050				4,700				4,700
GP_{IN} v/c ratio				0.40				0.67				0.59
Calculate Operations for Exiting GP Lanes												
GP_{OUT} Vol (pcph)	3,826	2,678				3,112	3,186			2,708		
GP_{OUT} Cap (pcph)	7,050	7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.54	0.38				0.44	0.68			0.58		



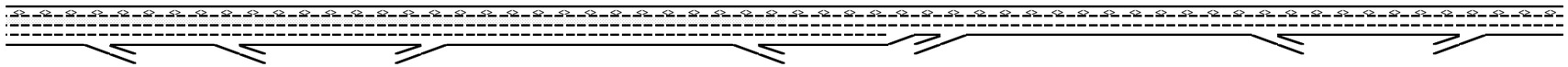
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)												
EL Volume (vph)	560	473	344	344	448	448	380	380	391	391	334	334
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	629	531	386	386	543	503	427	427	439	439	375	375
EL Flow (pcphpl)	629	531	386	386	543	503	427	427	439	439	375	375
Calculate Speed in Express Lanes												
Lane Width (ft)												
Shoulder Width												
TRD												
f_{LW}												
f_{LC}												
Calc'd FFS												
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes												
EL_{IN} v/c ratio	0.36	0.30	0.22	0.22	0.31	0.29	0.24	0.24	0.25	0.25	0.21	0.21
Calculate On Ramp Flow Rate												
On Volume (vph)				945				104				318
PHF				0.92				0.83				0.92
Total Lanes				1				1				1
Terrain				Level				Level				Level
Grade %				0.0%				0.0%				0.0%
Grade Length (mi)				0.00				0.00				0.00
Truck & Bus %				2.0%				2.0%				2.0%
RV %				0.0%				0.0%				0.0%
E_T				1.5				1.5				1.5
E_R				1.2				1.2				1.2
f_{HV}				0.990				0.990				0.990
f_P				1.00				1.00				1.00
On Flow (pcph)				1,037				127				349
On Flow (pcphpl)				1,037				127				349
Calculate On Ramp Roadway Operations												
On Ramp Type				Right				Right				Right
On Ramp Speed (mph)				45				45				25
On Ramp Cap (pcph)				2,100				2,100				1,900
On Ramp v/c ratio				0.49				0.06				0.18

Location	1	2	3	4	5	6	7	8	9	10	11	12



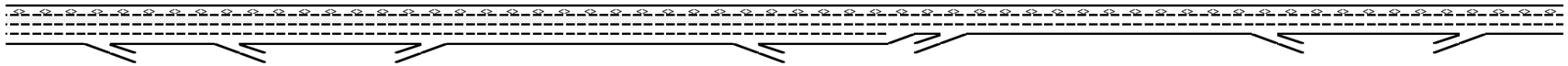
Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate												
Off Volume (vph)	793	1,172				618				523		
PHF	0.92	0.92				0.97				0.92		
Total Lanes	1	1				1				1		
Terrain	Level	Level				Level				Level		
Grade %	0.0%	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%				2.0%				2.0%		
RV %	0.0%	0.0%				0.0%				0.0%		
E_T	1.5	1.5				1.5				1.5		
E_R	1.2	1.2				1.2				1.2		
f_{HV}	0.990	0.990				0.990				0.990		
f_P	1.00	1.00				1.00				1.00		
Off Flow (pcph)	871	1,287				643				574		
Off Flow (pcphpl)	871	1,287				643				574		
Calculate Off Ramp Roadway Operations												
Off Ramp Type	Right	Right				Right				Right		
Off Ramp Speed	45	25				45				45		
Off Ramp Cap (pcph)	2,100	1,900				2,100				2,100		
Off Ramp v/c ratio	0.41	0.68				0.31				0.27		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps												
Up Type		Off		Off		On						
Up Distance		2,350		1,975		10,500						
Up Flow (pcph)		871		1,287		1,037						
Down Type	Off	On		Off		On						
Down Distance	850	1,975		10,500		2,100						
Down Flow (pcph)	1,287	1,037		643		127						
Calculate Merge Influence Area Operations												
Effective v_P (pcph)				2,826				3,167				2,780
Up Ramp L_{EQ}				900								
Down Ramp L_{EQ}				4,629								
P_{FM} (Eqn 13-3)				0.585				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!		0.653								
P_{FM} (Eqn 13-5)	0.947			0.565								
P_{FM}				0.653				1.000				1.000
v_{12} (pcph)				1,845				3,167				2,780
v_3 (pcph)				981								
v_{34} (pcph)												
v_{12a} (pcph)				1,845				3,167				2,780
v_{R12a} (pcph)				2,882				3,294				3,129
Merge Speed Index				0.37				0.38				0.39
Merge Area Speed				56.6				56.2				56.1
Outer Lanes Volume				981								
Outer Lanes Speed				63.3								
Segment Speed				58.1				56.2				56.1
Merge v/c ratio				0.63				0.72				0.68
Merge Density				25.8				28.0				26.6
Merge LOS				C				C				C

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

<> Express Lane (HOV)

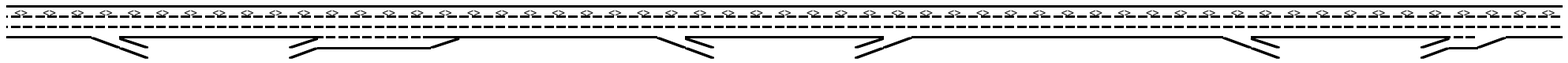
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations												
Effective v_P (pcph)	4,696	3,965				3,756				3,282		
Up Ramp L_{EQ}		13,516				9,564						
Down Ramp L_{EQ}	1,896	1,892				160						
P_{FD} (Eqn 13-9)	0.603	0.602				0.637				0.652		
P_{FD} (Eqn 13-10)						0.630						
P_{FD} (Eqn 13-11)	0.706			#VALUE!								
P_{FD}	0.706	0.602				0.637				1.000		
v_{12} (pcph)	3,573	2,898				2,624				3,282		
v_3 (pcph)	1,124	1,067				1,131						
v_{34} (pcph)												
v_{12a} (pcph)	3,573	2,898				2,624				3,282		
Diverge Speed Index	0.38	0.67				0.36				0.35		
Diverge Area Speed	56.3	49.5				56.8				57.0		
Outer Lanes Volume	1,124	1,067				1,131						
Outer Lanes Speed	70.8	71.0				70.8						
Segment Speed	59.2	53.9				60.4				57.0		
Diverge v/c ratio	0.81	0.66				0.60				0.75		
Diverge Density	33.6	27.8				25.5				31.1		
Diverge LOS	D	C				C				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments												
Calculate On Ramp to Mainline Flow Rate for Weave Segments												
Calculate Mainline to Off Ramp Flow Rate for Weave Segments												
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments												
Calculate Weave Segment Operations												
Summarize Segment Operations												
Segment v/c ratio	0.81	0.66	0.41	0.63	0.56	0.60	0.45	0.72	0.70	0.75	0.60	0.68
Segment Density	33.6	27.8	14.8	25.8	20.1	25.5	16.3	28.0	25.6	31.1	21.5	26.6
Segment LOS	D	C	B	C	C	C	B	C	C	D	C	C
Over Capacity												

Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing + Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value

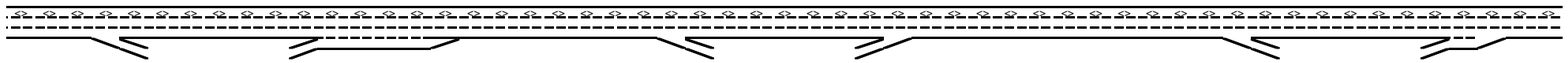
Location	1	2	3	4	5	6	7	8	9	10	11



Key
<> Express Lane (HOV)
No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment											
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	7,500	1,500	3,250	1,500
Accel Length			1,500				375				880
Decel Length	150				150				150		
Mainline Volume	2,954	2,518	2,518	3,088	3,088	2,987	2,987	3,720	3,720	2,807	2,807
On Ramp Volume			570				733				1,849
Off Ramp Volume	436				101				913		
Express Lane Volume	325	277	277	340	340	329	329	409	409	309	309
EL On Ramp Volume											
EL Off Ramp Volume											
Calculate Flow Rate in General Purpose Lanes (GP)											
GP Volume (vph)	2,629	2,241	2,811	2,748	2,748	2,658	3,391	3,311	3,311	2,498	4,347
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94	0.94
GP Lanes	2	2	3	2	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,811	2,396	3,005	2,938	2,938	2,842	3,626	3,617	3,540	2,671	4,648
GP Flow (pcphpl)	1,405	1,198	1,002	1,469	1,469	1,421	1,813	1,808	1,770	1,335	2,324
Calculate Speed in General Purpose Lanes											
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes											
v/c ratio	0.60	0.51	0.43	0.63	0.63	0.60	0.77	0.77	0.75	0.57	0.99
Speed (mph)	65.0	65.0	65.0	64.9	64.9	65.0	62.6	62.6	63.1	65.0	52.9
Density (pcphpl)	21.6	18.4	15.4	22.6	22.6	21.9	29.0	28.9	28.1	20.5	43.9
LOS	C	C	B	C	C	C	D	D	D	C	E
Calculate Operations for Entering GP Lanes											
GP_{IN} Vol (pcph)			2,406				2,794				2,618
GP_{IN} Cap (pcph)			4,700				4,700				4,700
GP_{IN} v/c ratio			0.51				0.59				0.56
Calculate Operations for Exiting GP Lanes											
GP_{OUT} Vol (pcph)	2,144				2,771				2,537		
GP_{OUT} Cap (pcph)	4,700				4,700				4,700		
GP_{OUT} v/c ratio	0.46				0.59				0.54		

Location	1	2	3	4	5	6	7	8	9	10	11



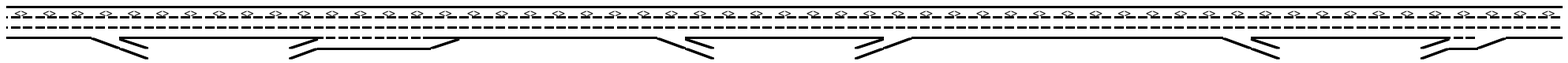
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)											
EL Volume (vph)	325	277	277	340	340	329	329	409	409	309	309
PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	369	314	314	385	385	373	373	464	464	350	350
EL Flow (pcphpl)	369	314	314	385	385	373	373	464	464	350	350
Calculate Speed in Express Lanes											
Lane Width (ft)											
Shoulder Width											
TRD											
f_{LW}											
f_{LC}											
Calc'd FFS											
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes											
EL_{IN} v/c ratio	0.21	0.18	0.18	0.22	0.22	0.21	0.21	0.27	0.27	0.20	0.20
Calculate On Ramp Flow Rate											
On Volume (vph)			570				733				1,849
PHF			0.96				0.89				0.92
Total Lanes			1				1				1
Terrain			Level				Level				Level
Grade %			0.0%				0.0%				0.0%
Grade Length (mi)			0.00				0.00				0.00
Truck & Bus %			2.0%				2.0%				2.0%
RV %			0.0%				0.0%				0.0%
E_T			1.5				1.5				1.5
E_R			1.2				1.2				1.2
f_{HV}			0.990				0.990				0.990
f_P			1.00				1.00				1.00
On Flow (pcph)			600				832				2,030
On Flow (pcphpl)			600				832				2,030
Calculate On Ramp Roadway Operations											
On Ramp Type			Right				Right				Right
On Ramp Speed (mph)			25				45				45
On Ramp Cap (pcph)			1,900				2,100				2,100
On Ramp v/c ratio			0.32				0.40				0.97

Location	1	2	3	4	5	6	7	8	9	10	11



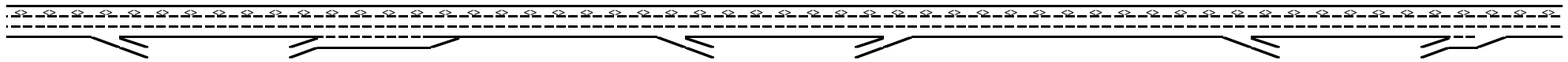
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate											
Off Volume (vph)	436				101				913		
PHF	0.66				0.61				0.92		
Total Lanes	1				1				1		
Terrain	Level				Level				Level		
Grade %	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00				0.00				0.00		
Truck & Bus %	2.0%				2.0%				2.0%		
RV %	0.0%				0.0%				0.0%		
E_T	1.5				1.5				1.5		
E_R	1.2				1.2				1.2		
f_{HV}	0.990				0.990				0.990		
f_P	1.00				1.00				1.00		
Off Flow (pcph)	667				167				1,002		
Off Flow (pcphpl)	667				167				1,002		
Calculate Off Ramp Roadway Operations											
Off Ramp Type	Right				Right				Right		
Off Ramp Speed	45				45				45		
Off Ramp Cap (pcph)	2,100				2,100				2,100		
Off Ramp v/c ratio	0.32				0.08				0.48		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type			Off								
Up Distance			1,250								
Up Flow (pcph)			667								
Down Type			Off								
Down Distance			7,900								
Down Flow (pcph)			167								
Calculate Merge Influence Area Operations											
Effective v_P (pcph)			2,406				2,794				2,618
Up Ramp L_{EQ}			214								
Down Ramp L_{EQ}			619								
P_{FM} (Eqn 13-3)			0.620				0.588				0.602
P_{FM} (Eqn 13-4)			0.685								
P_{FM} (Eqn 13-5)			0.554								
P_{FM}			1.000				1.000				1.000
v_{12} (pcph)			2,406				2,794				2,618
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)			2,406				2,794				2,618
v_{R12a} (pcph)			3,005				3,626				4,648
Merge Speed Index			0.32				0.43				0.65
Merge Area Speed			57.5				55.0				50.1
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed			57.5				55.0				50.1
Merge v/c ratio			0.65				0.79				1.01
Merge Density			19.2				31.0				35.3
Merge LOS			B				D				F

Location	1	2	3	4	5	6	7	8	9	10	11



Key

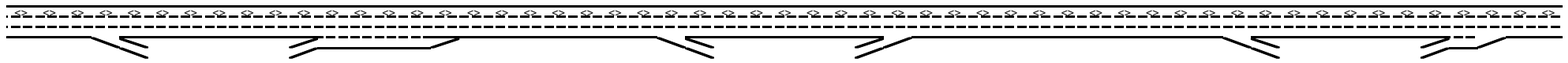
<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations											
Effective v_P (pcph)	2,811				2,938				3,540		
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)	0.659				0.679				0.625		
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)			#VALUE!								
P_{FD}	1.000				1.000				1.000		
v_{12} (pcph)	2,811				2,938				3,540		
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)	2,811				2,938				3,540		
Diverge Speed Index	0.36				0.31				0.39		
Diverge Area Speed	56.8				57.8				56.1		
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed	56.8				57.8				56.1		
Diverge v/c ratio	0.64				0.67				0.80		
Diverge Density	27.1				28.2				33.3		
Diverge LOS	C				D				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments											
Calculate On Ramp to Mainline Flow Rate for Weave Segments											
Calculate Mainline to Off Ramp Flow Rate for Weave Segments											
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments											
Calculate Weave Segment Operations											
Summarize Segment Operations											
Segment v/c ratio	0.64	0.51	0.65	0.63	0.67	0.60	0.79	0.77	0.80	0.57	1.01
Segment Density	27.1	18.4	19.2	22.6	28.2	21.9	31.0	28.9	33.3	20.5	-
Segment LOS	C	C	B	C	D	C	D	D	D	C	F
Over Capacity											Merge

Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing + Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** PM Peak Hour

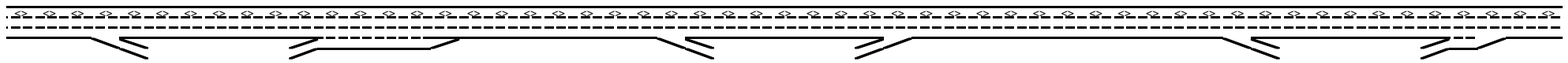
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment											
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	7,500	1,500	3,250	1,500
Accel Length			1,500				375				880
Decel Length	150				150				150		
Mainline Volume	2,381	1,933	1,933	2,171	2,171	2,039	2,039	2,297	2,297	1,682	1,682
On Ramp Volume			238				258				1,649
Off Ramp Volume	448				132				615		
Express Lane Volume	190	155	155	174	174	163	163	184	184	135	135
EL On Ramp Volume											
EL Off Ramp Volume											
Calculate Flow Rate in General Purpose Lanes (GP)											
GP Volume (vph)	2,191	1,778	2,016	1,997	1,997	1,876	2,134	2,113	2,113	1,547	3,196
PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	2	2	3	2	2	2	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,305	1,871	2,121	2,101	2,101	1,974	2,245	2,223	2,223	1,628	3,363
GP Flow (pcphpl)	1,152	935	707	1,051	1,051	987	1,123	1,112	1,112	814	1,681
Calculate Speed in General Purpose Lanes											
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes											
v/c ratio	0.49	0.40	0.30	0.45	0.45	0.42	0.48	0.47	0.47	0.35	0.72
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	63.9
Density (pcphpl)	17.7	14.4	10.9	16.2	16.2	15.2	17.3	17.1	17.1	12.5	26.3
LOS	B	B	A	B	B	B	B	B	B	B	D
Calculate Operations for Entering GP Lanes											
GP_{IN} Vol (pcph)			1,854				1,974				1,553
GP_{IN} Cap (pcph)			4,700				4,700				4,700
GP_{IN} v/c ratio			0.39				0.42				0.33
Calculate Operations for Exiting GP Lanes											
GP_{OUT} Vol (pcph)	1,796				1,928				1,548		
GP_{OUT} Cap (pcph)	4,700				4,700				4,700		
GP_{OUT} v/c ratio	0.38				0.41				0.33		

Location	1	2	3	4	5	6	7	8	9	10	11



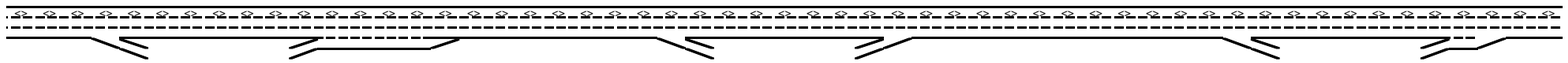
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)											
EL Volume (vph)	190	155	155	174	174	163	163	184	184	135	135
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	214	174	174	195	195	183	183	206	206	151	151
EL Flow (pcphpl)	214	174	174	195	195	183	183	206	206	151	151
Calculate Speed in Express Lanes											
Lane Width (ft)											
Shoulder Width											
TRD											
f_{LW}											
f_{LC}											
Calc'd FFS											
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes											
EL_{IN} v/c ratio	0.12	0.10	0.10	0.11	0.11	0.10	0.10	0.12	0.12	0.09	0.09
Calculate On Ramp Flow Rate											
On Volume (vph)			238				258				1,649
PHF			0.9				0.96				0.92
Total Lanes			1				1				1
Terrain			Level				Level				Level
Grade %			0.0%				0.0%				0.0%
Grade Length (mi)			0.00				0.00				0.00
Truck & Bus %			2.0%				2.0%				2.0%
RV %			0.0%				0.0%				0.0%
E_T			1.5				1.5				1.5
E_R			1.2				1.2				1.2
f_{HV}			0.990				0.990				0.990
f_P			1.00				1.00				1.00
On Flow (pcph)			267				271				1,810
On Flow (pcphpl)			267				271				1,810
Calculate On Ramp Roadway Operations											
On Ramp Type			Right				Right				Right
On Ramp Speed (mph)			25				45				45
On Ramp Cap (pcph)			1,900				2,100				2,100
On Ramp v/c ratio			0.14				0.13				0.86

Location	1	2	3	4	5	6	7	8	9	10	11



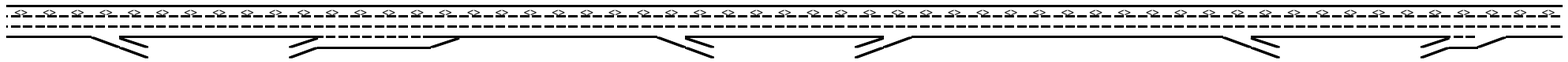
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate											
Off Volume (vph)	448				132				615		
PHF	0.89				0.77				0.92		
Total Lanes	1				1				1		
Terrain	Level				Level				Level		
Grade %	0.0%				0.0%				0.0%		
Grade Length (mi)	0.00				0.00				0.00		
Truck & Bus %	2.0%				2.0%				2.0%		
RV %	0.0%				0.0%				0.0%		
E_T	1.5				1.5				1.5		
E_R	1.2				1.2				1.2		
f_{HV}	0.990				0.990				0.990		
f_P	1.00				1.00				1.00		
Off Flow (pcph)	508				173				675		
Off Flow (pcphpl)	508				173				675		
Calculate Off Ramp Roadway Operations											
Off Ramp Type	Right				Right				Right		
Off Ramp Speed	45				45				45		
Off Ramp Cap (pcph)	2,100				2,100				2,100		
Off Ramp v/c ratio	0.24				0.08				0.32		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type			Off								
Up Distance			1,250								
Up Flow (pcph)			508								
Down Type			Off								
Down Distance			7,900								
Down Flow (pcph)			173								
Calculate Merge Influence Area Operations											
Effective v_P (pcph)			1,854				1,974				1,553
Up Ramp L_{EQ}			25								
Down Ramp L_{EQ}			641								
P_{FM} (Eqn 13-3)			0.620				0.588				0.602
P_{FM} (Eqn 13-4)			0.697								
P_{FM} (Eqn 13-5)			0.554								
P_{FM}			1.000				1.000				1.000
v_{12} (pcph)			1,854				1,974				1,553
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)			1,854				1,974				1,553
v_{R12a} (pcph)			2,121				2,245				3,363
Merge Speed Index			0.28				0.32				0.35
Merge Area Speed			58.6				57.5				56.8
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed			58.6				57.5				56.8
Merge v/c ratio			0.46				0.49				0.73
Merge Density			12.5				20.5				25.4
Merge LOS			B				C				C

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations											
Effective v_P (pcph)	2,305				2,101				2,223		
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)	0.679				0.700				0.673		
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)			#VALUE!								
P_{FD}	1.000				1.000				1.000		
v_{12} (pcph)	2,305				2,101				2,223		
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)	2,305				2,101				2,223		
Diverge Speed Index	0.34				0.31				0.36		
Diverge Area Speed	57.1				57.8				56.7		
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed	57.1				57.8				56.7		
Diverge v/c ratio	0.52				0.48				0.51		
Diverge Density	22.7				21.0				22.0		
Diverge LOS	C				C				C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments											
Calculate On Ramp to Mainline Flow Rate for Weave Segments											
Calculate Mainline to Off Ramp Flow Rate for Weave Segments											
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments											
Calculate Weave Segment Operations											
Summarize Segment Operations											
Segment v/c ratio	0.52	0.40	0.46	0.45	0.48	0.42	0.49	0.47	0.51	0.35	0.73
Segment Density	22.7	14.4	12.5	16.2	21.0	15.2	20.5	17.1	22.0	12.5	25.4
Segment LOS	C	B	B	B	C	B	C	B	C	B	C
Over Capacity											

APPENDIX A:

Cumulative Technical Calculations

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	140	300	220	30	100	820	100	230	220	30	130	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1547		1770	3539	1560	3433	3469		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1547		1770	3539	1560	3433	3469		1770	1863
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85
Adj. Flow (vph)	146	312	229	33	111	911	111	274	262	36	153	388
RTOR Reduction (vph)	0	0	166	0	0	0	77	0	10	0	0	0
Lane Group Flow (vph)	146	312	63	0	144	911	34	274	288	0	153	388
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	5.7	27.3	27.3		8.8	30.4	30.4	11.0	35.3		9.0	33.8
Effective Green, g (s)	5.7	27.3	27.3		8.8	30.4	30.4	11.0	35.3		9.0	33.8
Actuated g/C Ratio	0.06	0.27	0.27		0.09	0.30	0.30	0.11	0.35		0.09	0.34
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	196	966	422		156	1076	474	378	1225		159	630
v/s Ratio Prot	0.04	0.09			c0.08	c0.26		c0.08	0.08		c0.09	c0.21
v/s Ratio Perm			0.04				0.02					
v/c Ratio	0.74	0.32	0.15		0.92	0.85	0.07	0.72	0.24		0.96	0.62
Uniform Delay, d1	46.4	29.0	27.5		45.3	32.6	24.8	43.0	22.8		45.3	27.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.6	0.1	0.1		49.0	6.0	0.0	5.8	0.5		59.5	4.5
Delay (s)	59.0	29.1	27.6		94.3	38.7	24.8	48.8	23.3		104.8	32.1
Level of Service	E	C	C		F	D	C	D	C		F	C
Approach Delay (s)		34.9				44.2			35.5			43.3
Approach LOS		C				D			D			D

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	310
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	365
RTOR Reduction (vph)	111
Lane Group Flow (vph)	254
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	33.8
Effective Green, g (s)	33.8
Actuated g/C Ratio	0.34
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	528
v/s Ratio Prot	
v/s Ratio Perm	0.16
v/c Ratio	0.48
Uniform Delay, d1	26.2
Progression Factor	1.00
Incremental Delay, d2	3.1
Delay (s)	29.3
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Signalized Intersection Capacity Analysis - Cumulative No Project AM
2: El Dorado Hills Blvd/El Dorado Hills Blvd / Salmon Falls Rd & Green Valley Rd

9/3/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	440	30	150	1040	100	10	40	50	190	260	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3505		1770	3486		1770	1693			1824	1559
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	3505		1770	3486		1770	1693			1824	1559
Peak-hour factor, PHF	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Adj. Flow (vph)	12	524	36	169	1169	112	15	61	76	238	325	138
RTOR Reduction (vph)	0	4	0	0	6	0	0	38	0	0	0	92
Lane Group Flow (vph)	12	556	0	169	1275	0	15	99	0	0	563	46
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	1.8	25.6		20.7	44.5		10.8	10.8			38.7	38.7
Effective Green, g (s)	1.8	25.6		20.7	44.5		10.8	10.8			38.7	38.7
Actuated g/C Ratio	0.02	0.22		0.18	0.38		0.09	0.09			0.33	0.33
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	27	771		315	1333		164	157			606	518
v/s Ratio Prot	0.01	0.16		c0.10	c0.37		0.01	c0.06			c0.31	
v/s Ratio Perm												0.03
v/c Ratio	0.44	0.72		0.54	0.96		0.09	0.63			0.93	0.09
Uniform Delay, d1	56.8	42.0		43.4	35.0		48.3	50.8			37.5	26.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	8.3	4.1		1.4	15.7		0.1	5.6			20.3	0.0
Delay (s)	65.0	46.1		44.8	50.7		48.3	56.4			57.8	26.7
Level of Service	E	D		D	D		D	E			E	C
Approach Delay (s)		46.5			50.0			55.6			51.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	20.5
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	430	230	130	840	30	390	60	70	20	60	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.92			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	3539	1544	1770	3518		1770	1700			1732	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	3539	1544	1770	3518		1770	1700			1732	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Adj. Flow (vph)	22	462	247	143	923	33	549	85	99	26	78	78
RTOR Reduction (vph)	0	0	195	0	2	0	0	36	0	0	27	0
Lane Group Flow (vph)	22	462	52	143	954	0	549	148	0	0	155	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	2.2	21.1	21.1	12.2	31.1		34.2	34.2			13.7	
Effective Green, g (s)	2.2	21.1	21.1	12.2	31.1		34.2	34.2			13.7	
Actuated g/C Ratio	0.02	0.21	0.21	0.12	0.31		0.34	0.34			0.14	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	39	750	327	217	1099		608	584			238	
v/s Ratio Prot	0.01	0.13		c0.08	c0.27		c0.31	0.09			c0.09	
v/s Ratio Perm			0.03									
v/c Ratio	0.56	0.62	0.16	0.66	0.87		0.90	0.25			0.65	
Uniform Delay, d1	48.2	35.5	32.0	41.7	32.3		31.1	23.5			40.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	14.3	1.5	0.2	6.3	7.4		16.7	0.2			5.6	
Delay (s)	62.4	37.0	32.2	48.0	39.7		47.8	23.6			46.3	
Level of Service	E	D	C	D	D		D	C			D	
Approach Delay (s)		36.2			40.8			41.7			46.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	18.3
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	40	20	410	10	50	10	390	180	60	490	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1771		1681	1646		1770	3539	1544	1770	3527	
Flt Permitted	0.95	1.00		0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1771		1681	1646		1770	3539	1544	1770	3527	
Peak-hour factor, PHF	0.86	0.86	0.86	0.52	0.52	0.52	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	12	47	23	788	19	96	11	424	196	80	653	13
RTOR Reduction (vph)	0	21	0	0	12	0	0	0	137	0	1	0
Lane Group Flow (vph)	12	49	0	457	434	0	11	424	59	80	665	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.8	6.8		24.7	24.7		0.7	22.2	22.2	4.4	25.9	
Effective Green, g (s)	6.8	6.8		24.7	24.7		0.7	22.2	22.2	4.4	25.9	
Actuated g/C Ratio	0.09	0.09		0.33	0.33		0.01	0.30	0.30	0.06	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	163		560	549		17	1060	463	105	1233	
v/s Ratio Prot	0.01	c0.03		c0.27	0.26		0.01	0.12		c0.05	c0.19	
v/s Ratio Perm									0.04			
v/c Ratio	0.07	0.30		0.82	0.79		0.65	0.40	0.13	0.76	0.54	
Uniform Delay, d1	30.8	31.4		22.6	22.4		36.6	20.7	18.9	34.3	19.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.0		9.0	7.6		62.0	1.1	0.6	27.3	1.7	
Delay (s)	31.0	32.5		31.6	30.0		98.6	21.8	19.5	61.6	21.0	
Level of Service	C	C		C	C		F	C	B	E	C	
Approach Delay (s)		32.3			30.8			22.4			25.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	10	110	240	10	110	40	230	120	70	330	30
Peak Hour Factor	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Hourly flow rate (vph)	74	15	162	343	14	157	63	365	190	101	478	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	250	514	619	623
Volume Left (vph)	74	343	63	101
Volume Right (vph)	162	157	190	43
Hadj (s)	-0.30	-0.02	-0.13	0.02
Departure Headway (s)	9.3	8.6	8.5	8.7
Degree Utilization, x	0.64	1.23	1.46	1.50
Capacity (veh/h)	380	413	435	428
Control Delay (s)	27.6	150.9	244.7	260.7
Approach Delay (s)	27.6	150.9	244.7	260.7
Approach LOS	D	F	F	F

Intersection Summary			
Delay	198.6		
HCM Level of Service	F		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	370	260	390	410	420	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1546	3232		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1546	3232		3433	3539
Peak-hour factor, PHF	0.72	0.72	0.83	0.83	0.90	0.90
Adj. Flow (vph)	514	361	470	494	467	1089
RTOR Reduction (vph)	0	240	183	0	0	0
Lane Group Flow (vph)	514	121	781	0	467	1089
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	29.1	29.1	24.4		14.2	42.6
Effective Green, g (s)	29.1	29.1	24.4		14.2	42.6
Actuated g/C Ratio	0.33	0.33	0.28		0.16	0.49
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	592	517	906		560	1733
v/s Ratio Prot	c0.29		c0.24		c0.14	0.31
v/s Ratio Perm		0.08				
v/c Ratio	0.87	0.23	0.86		0.83	0.63
Uniform Delay, d1	27.2	20.9	29.7		35.3	16.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.4	0.1	8.2		9.9	0.5
Delay (s)	39.5	21.0	37.9		45.2	16.9
Level of Service	D	C	D		D	B
Approach Delay (s)	31.9		37.9			25.4
Approach LOS	C		D			C

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	100	400	120	80	20	650	320	50	40	400	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1544	1770	1793		1770	1809		1770	1863	1512
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1544	1770	1793		1770	1809		1770	1863	1512
Peak-hour factor, PHF	0.57	0.57	0.57	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	158	175	702	154	103	26	722	356	56	44	444	322
RTOR Reduction (vph)	0	0	461	0	7	0	0	3	0	0	0	145
Lane Group Flow (vph)	158	175	241	154	122	0	722	409	0	44	444	177
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	24.4	24.4	24.4	18.9	18.9		43.2	71.9		6.5	35.2	35.2
Effective Green, g (s)	24.4	24.4	24.4	18.9	18.9		43.2	71.9		6.5	35.2	35.2
Actuated g/C Ratio	0.17	0.17	0.17	0.14	0.14		0.31	0.52		0.05	0.25	0.25
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	309	326	270	240	243		548	932		82	470	381
v/s Ratio Prot	0.09	0.09		c0.09	0.07		c0.41	0.23		0.02	c0.24	
v/s Ratio Perm			c0.16									0.12
v/c Ratio	0.51	0.54	0.89	0.64	0.50		1.32	0.44		0.54	0.94	0.46
Uniform Delay, d1	52.2	52.5	56.3	57.1	56.0		48.2	21.2		65.1	51.2	44.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.9	27.9	5.8	1.6		155.4	0.2		5.2	27.9	0.7
Delay (s)	52.8	53.3	84.2	62.9	57.6		203.6	21.4		70.2	79.1	44.9
Level of Service	D	D	F	E	E		F	C		E	E	D
Approach Delay (s)		74.2			60.5			137.4			65.0	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM Average Control Delay	92.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	17.9
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	70	160	60	680	1330	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1560	1770	3539	3517	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1560	1770	3539	3517	
Peak-hour factor, PHF	0.75	0.75	0.95	0.95	0.88	0.88
Adj. Flow (vph)	93	213	63	716	1511	57
RTOR Reduction (vph)	0	119	0	0	2	0
Lane Group Flow (vph)	93	94	63	716	1566	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.2	12.2	5.0	49.7	41.1	
Effective Green, g (s)	12.2	12.2	5.0	49.7	41.1	
Actuated g/C Ratio	0.17	0.17	0.07	0.70	0.58	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	302	267	124	2463	2024	
v/s Ratio Prot	0.05		c0.04	0.20	c0.45	
v/s Ratio Perm		c0.06				
v/c Ratio	0.31	0.35	0.51	0.29	0.77	
Uniform Delay, d1	25.9	26.1	32.0	4.1	11.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.8	1.7	0.1	1.9	
Delay (s)	26.5	27.0	33.7	4.2	13.5	
Level of Service	C	C	C	A	B	
Approach Delay (s)	26.8			6.6	13.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	13.1
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	10	290	100	10	20	90	610	120	10	1470	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780	1556		1752		1770	3436		1770	3513	
Flt Permitted		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1780	1556		1752		1770	3436		1770	3513	
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	149	11	309	238	24	48	102	693	136	11	1564	74
RTOR Reduction (vph)	0	0	144	0	4	0	0	6	0	0	2	0
Lane Group Flow (vph)	0	160	165	0	306	0	102	823	0	11	1636	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		17.1	17.1		27.7		9.3	80.2		2.5	73.4	
Effective Green, g (s)		17.1	17.1		27.7		9.3	80.2		2.5	73.4	
Actuated g/C Ratio		0.12	0.12		0.19		0.06	0.55		0.02	0.50	
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3		2.0	3.3	
Lane Grp Cap (vph)		207	181		331		112	1877		30	1757	
v/s Ratio Prot		0.09			c0.17		c0.06	0.24		0.01	c0.47	
v/s Ratio Perm			c0.11									
v/c Ratio		0.77	0.91		0.92		0.91	0.44		0.37	0.93	
Uniform Delay, d1		63.0	64.1		58.5		68.3	19.9		71.4	34.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.6	42.8		30.2		56.9	0.2		2.8	9.5	
Delay (s)		79.5	106.9		88.7		125.2	20.0		74.1	43.8	
Level of Service		E	F		F		F	C		E	D	
Approach Delay (s)		97.6			88.7			31.6			44.0	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM Average Control Delay	52.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	146.8	Sum of lost time (s)	19.3
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	80	590	40	110	50	660	130	80	1730	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1660		1681	1633		1770	3539	1540	1770	3525	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1660		1681	1633		1770	3539	1540	1770	3525	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	33	87	641	43	120	54	717	141	87	1880	43
RTOR Reduction (vph)	0	60	0	0	10	0	0	0	71	0	1	0
Lane Group Flow (vph)	54	60	0	410	384	0	54	717	70	87	1922	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	7.5	7.5		38.2	38.2		5.0	73.6	73.6	11.7	80.3	
Effective Green, g (s)	7.5	7.5		38.2	38.2		5.0	73.6	73.6	11.7	80.3	
Actuated g/C Ratio	0.05	0.05		0.26	0.26		0.03	0.49	0.49	0.08	0.54	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	89	84		432	420		60	1752	762	139	1904	
v/s Ratio Prot	0.03	c0.04		c0.24	0.23		c0.03	0.20		0.05	c0.55	
v/s Ratio Perm									0.05			
v/c Ratio	0.61	0.72		0.95	0.91		0.90	0.41	0.09	0.63	1.01	
Uniform Delay, d1	69.2	69.6		54.3	53.6		71.6	23.8	19.9	66.4	34.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.8	21.3		30.5	24.3		79.8	0.2	0.1	6.2	23.0	
Delay (s)	76.9	90.9		84.8	78.0		151.4	24.0	19.9	72.6	57.2	
Level of Service	E	F		F	E		F	C	B	E	E	
Approach Delay (s)		86.6			81.4			30.9			57.8	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	57.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	148.7	Sum of lost time (s)	17.7
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	180	60	10	660	90	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	220	73	13	868	114	13
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			293		1153	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			293		1153	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		47	98
cM capacity (veh/h)			1269		216	779

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	293	13	868	127
Volume Left	0	13	0	114
Volume Right	73	0	0	13
cSH	1700	1269	1700	232
Volume to Capacity	0.17	0.01	0.51	0.54
Queue Length 95th (ft)	0	1	0	73
Control Delay (s)	0.0	7.9	0.0	37.6
Lane LOS		A		E
Approach Delay (s)	0.0	0.1		37.6
Approach LOS				E

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	80	120	610	250	460	240	520	190	300	690	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.90		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3191		1770	3164		1770	3539	1559	1770	3429	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3191		1770	3164		1770	3539	1559	1770	3429	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Adj. Flow (vph)	115	103	154	709	291	535	387	839	306	361	831	193
RTOR Reduction (vph)	0	140	0	0	230	0	0	0	146	0	13	0
Lane Group Flow (vph)	115	117	0	709	596	0	387	839	160	361	1011	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	13.2	12.9		44.1	43.8		27.0	33.5	33.5	30.0	36.5	
Effective Green, g (s)	13.2	12.9		44.1	43.8		27.0	33.5	33.5	30.0	36.5	
Actuated g/C Ratio	0.09	0.09		0.32	0.31		0.19	0.24	0.24	0.22	0.26	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	167	295		561	996		343	852	375	381	899	
v/s Ratio Prot	0.06	0.04		c0.40	c0.19		c0.22	0.24		0.20	c0.29	
v/s Ratio Perm									0.10			
v/c Ratio	0.69	0.40		1.26	0.60		1.13	0.98	0.43	0.95	1.12	
Uniform Delay, d1	61.0	59.4		47.5	40.2		56.0	52.5	44.7	53.8	51.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.3	0.6		132.5	0.8		88.0	26.9	0.6	32.5	70.3	
Delay (s)	71.3	60.1		180.0	41.0		144.1	79.4	45.3	86.2	121.6	
Level of Service	E	E		F	D		F	E	D	F	F	
Approach Delay (s)		63.5			105.2			88.9			112.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	98.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	139.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative No Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	110	103	93.2%	73.6	16.2	E
	Through	640	635	99.2%	8.2	0.9	A
	Right Turn	30	29	95.0%	5.1	2.4	A
	Subtotal	**780**	**766**	**98.2%**	**16.8**	**2.0**	**B**
SB	Left Turn	70	67	95.1%	102.3	10.1	F
	Through	1670	1686	101.0%	26.5	2.2	C
	Right Turn	660	657	99.6%	43.2	5.4	D
	Subtotal	**2400**	**2410**	**100.4%**	**33.2**	**3.3**	**C**
EB	Left Turn	150	145	96.3%	83.9	9.7	F
	Through	90	91	101.6%	88.8	12.4	F
	Right Turn	60	59	97.7%	10.8	3.0	B
	Subtotal	**300**	**295**	**98.2%**	**70.9**	**9.2**	**E**
WB	Left Turn	30	32	106.7%	61.2	8.2	E
	Through	70	70	99.3%	69.7	5.8	E
	Right Turn	50	54	107.6%	40.3	9.3	D
	Subtotal	**150**	**155**	**103.5%**	**57.9**	**4.9**	**E**
Total		**3630**	**3626**	**99.9%**	**33.8**	**2.8**	**C**

Intersection 15 **El Dorado Hills Blvd/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	910	831	91.3%	103.9	16.0	F
	Through	470	470	100.1%	24.6	2.1	C
	Right Turn	130	135	103.8%	5.1	0.5	A
	Subtotal	**1510**	**1436**	**95.1%**	**68.7**	**9.2**	**E**
SB	Left Turn	70	73	104.0%	67.3	5.3	E
	Through	1080	1081	100.1%	20.7	2.6	C
	Right Turn	610	622	102.0%	3.5	0.3	A
	Subtotal	**1760**	**1775**	**100.9%**	**16.6**	**1.6**	**B**
EB	Left Turn	250	245	97.9%	143.3	41.0	F
	Through	70	74	105.9%	168.8	51.1	F
	Right Turn	570	590	103.5%	22.0	22.1	C
	Subtotal	**890**	**909**	**102.1%**	**66.8**	**29.8**	**E**
WB	Left Turn	80	83	104.1%	63.4	4.4	E
	Through	100	98	98.0%	66.0	4.2	E
	Right Turn	60	66	109.8%	4.1	0.8	A
	Subtotal	**240**	**247**	**103.0%**	**48.7**	**2.8**	**D**
Total		**4400**	**4368**	**99.3%**	**46.0**	**6.8**	**D**

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative No Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 16 **El Dorado Hills Blvd/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1320	1251	94.8%	29.8	9.4	C
	Right Turn	490	475	96.9%	10.2	0.3	B
	Subtotal	**1810**	**1726**	**95.4%**	**24.3**	**6.7**	**C**
SB	Left Turn	280	272	97.2%	38.2	7.4	D
	Through	1450	1472	101.5%	15.0	9.3	B
	Right Turn						
	Subtotal	**1730**	**1744**	**100.8%**	**18.6**	**8.3**	**B**
EB	Left Turn						
	Through						
	Right Turn	1090	1108	101.7%	35.6	20.7	D
	Subtotal	**1090**	**1108**	**101.7%**	**35.6**	**20.7**	**D**
WB	Left Turn						
	Through						
	Right Turn	190	190	99.8%	0.6	0.1	A
	Subtotal	**190**	**190**	**99.8%**	**0.6**	**0.1**	**A**
Total		**4820**	**4768**	**98.9%**	**23.9**	**8.4**	**C**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	30	27	91.0%	247.4	87.0	F
	Through	1430	1347	94.2%	149.0	49.9	F
	Right Turn	60	60	99.8%	13.4	8.3	B
	Subtotal	**1520**	**1434**	**94.4%**	**145.3**	**48.9**	**F**
SB	Left Turn	530	534	100.8%	122.7	37.9	F
	Through	1540	1565	101.6%	20.6	1.7	C
	Right Turn	470	481	102.4%	7.6	1.6	A
	Subtotal	**2540**	**2580**	**101.6%**	**39.3**	**8.7**	**D**
EB	Left Turn	60	62	102.8%	64.7	7.3	E
	Through	20	20	99.5%	65.0	10.7	E
	Right Turn	20	19	93.5%	17.5	3.5	B
	Subtotal	**100**	**100**	**100.3%**	**55.9**	**5.3**	**E**
WB	Left Turn	110	112	102.2%	95.0	26.4	F
	Through	50	52	104.6%	95.6	27.8	F
	Right Turn	320	321	100.2%	57.8	17.8	E
	Subtotal	**480**	**485**	**101.1%**	**70.4**	**20.6**	**E**
Total		**4640**	**4600**	**99.1%**	**75.9**	**17.6**	**E**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	150	40	390	600	190	10	980	170	110	820	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4908		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4908		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.92	0.86	0.86	0.82	0.82	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Adj. Flow (vph)	380	174	47	476	732	207	14	1065	230	120	891	804
RTOR Reduction (vph)	0	36	0	0	0	116	0	0	38	0	0	220
Lane Group Flow (vph)	380	185	0	476	732	91	14	1065	193	120	891	584
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.9	32.1		20.0	35.1	35.1	1.2	52.5	52.5	13.0	64.3	64.3
Effective Green, g (s)	18.9	32.1		20.0	35.1	35.1	1.2	52.5	52.5	13.0	64.3	64.3
Actuated g/C Ratio	0.13	0.23		0.14	0.25	0.25	0.01	0.38	0.38	0.09	0.46	0.46
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	463	1125		490	887	397	15	2403	585	319	2335	727
v/s Ratio Prot	0.11	0.04		c0.14	c0.21		0.01	c0.17		0.03	0.18	
v/s Ratio Perm						0.06			0.12			c0.37
v/c Ratio	0.82	0.16		0.97	0.83	0.23	0.93	0.44	0.33	0.38	0.38	0.80
Uniform Delay, d1	58.9	43.2		59.7	49.6	41.7	69.4	32.8	31.2	59.7	24.8	32.4
Progression Factor	1.00	1.00		0.90	0.58	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.1	0.1		30.1	5.4	0.3	197.1	0.6	1.5	0.7	0.5	9.2
Delay (s)	70.0	43.3		84.0	34.4	26.6	266.4	33.4	32.7	60.4	25.3	41.6
Level of Service	E	D		F	C	C	F	C	C	E	C	D
Approach Delay (s)		60.2			49.9			35.8			34.8	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	260	10	40	1020	200	40	10	20	50	20	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1538	1770	4938		1770	1650		1770	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1538	1770	4938		1770	1650		1770	1603	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	193	313	12	50	1275	250	47	12	23	54	22	130
RTOR Reduction (vph)	0	0	4	0	16	0	0	22	0	0	119	0
Lane Group Flow (vph)	193	313	8	50	1509	0	47	13	0	54	33	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	26.7	93.9	93.9	6.4	72.9		7.9	5.6		13.1	11.6	
Effective Green, g (s)	26.7	93.9	93.9	6.4	72.9		7.9	5.6		13.1	11.6	
Actuated g/C Ratio	0.19	0.67	0.67	0.05	0.52		0.06	0.04		0.09	0.08	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	338	3411	1032	81	2571		100	66		166	133	
v/s Ratio Prot	c0.11	0.06		0.03	c0.31		c0.03	0.01		c0.03	c0.02	
v/s Ratio Perm			0.01									
v/c Ratio	0.57	0.09	0.01	0.62	0.59		0.47	0.20		0.33	0.25	
Uniform Delay, d1	51.4	8.1	7.6	65.6	23.2		64.0	65.0		59.3	60.1	
Progression Factor	0.88	0.79	0.88	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.1	0.0	9.4	1.0		1.3	0.5		1.1	1.0	
Delay (s)	46.5	6.4	6.7	75.0	24.1		65.3	65.6		60.5	61.1	
Level of Service	D	A	A	E	C		E	E		E	E	
Approach Delay (s)		21.4			25.8			65.4			60.9	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.4
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	280	50	50	1100	100	130	20	280	10	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.86		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	4953		1770	5012		1770	1581		1770	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1769	4953		1770	5012		1770	1581		1770	1710	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Adj. Flow (vph)	11	315	56	72	1594	145	151	23	326	12	25	25
RTOR Reduction (vph)	0	19	0	0	8	0	0	263	0	0	23	0
Lane Group Flow (vph)	11	352	0	72	1731	0	151	86	0	12	27	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.6	30.6		6.3	37.0		14.7	14.7		6.0	6.0	
Effective Green, g (s)	0.6	30.6		6.3	37.0		14.7	14.7		6.0	6.0	
Actuated g/C Ratio	0.01	0.41		0.08	0.49		0.19	0.19		0.08	0.08	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	14	2007		148	2456		345	308		141	136	
v/s Ratio Prot	0.01	0.07		c0.04	c0.35		c0.09	0.05		0.01	c0.02	
v/s Ratio Perm												
v/c Ratio	0.79	0.18		0.49	0.70		0.44	0.28		0.09	0.20	
Uniform Delay, d1	37.4	14.4		33.1	15.0		26.8	25.9		32.2	32.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	123.8	0.1		0.9	0.9		1.1	0.6		0.3	0.9	
Delay (s)	161.2	14.4		34.0	15.9		27.8	26.5		32.5	33.4	
Level of Service	F	B		C	B		C	C		C	C	
Approach Delay (s)		18.7			16.7			26.9			33.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative No Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 25 **Silva Valley Pkwy/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	570	551	96.6%	7.5	0.4	A
	Right Turn	30	29	95.7%	2.5	0.2	A
	Subtotal	**600**	**580**	**96.6%**	**7.2**	**0.4**	**A**
SB	Left Turn						
	Through	440	428	97.4%	21.0	2.1	C
	Right Turn	1010	1007	99.7%	28.3	5.7	C
	Subtotal	**1450**	**1435**	**99.0%**	**26.1**	**4.6**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	960	978	101.8%	20.7	2.2	C
	Through	10	10	100.0%	25.1	5.0	C
	Right Turn	270	263	97.5%	13.3	0.7	B
	Subtotal	**1240**	**1251**	**100.9%**	**19.2**	**1.8**	**B**
Total		**3290**	**3266**	**99.3%**	**20.1**	**2.2**	**C**

Intersection 26 **Silva Valley Pkwy/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	350	338	96.4%	3.9	0.4	A
	Right Turn	210	206	97.9%	7.9	0.3	A
	Subtotal	**560**	**543**	**97.0%**	**5.4**	**0.3**	**A**
SB	Left Turn						
	Through	1120	1145	102.2%	2.7	0.2	A
	Right Turn	280	261	93.3%	5.4	0.2	A
	Subtotal	**1400**	**1406**	**100.4%**	**3.2**	**0.2**	**A**
EB	Left Turn	250	242	96.7%	14.6	0.7	B
	Through						
	Right Turn	40	44	110.5%	13.7	1.6	B
	Subtotal	**290**	**286**	**98.6%**	**14.4**	**0.5**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2250**	**2235**	**99.3%**	**5.2**	**0.2**	**A**

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	320	850	280	80	110	550	120	310	330	90	140	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1547		1770	3539	1560	3433	3415		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1547		1770	3539	1560	3433	3415		1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90
Adj. Flow (vph)	344	914	301	90	124	618	135	369	393	107	156	267
RTOR Reduction (vph)	0	0	209	0	0	0	97	0	24	0	0	0
Lane Group Flow (vph)	344	914	92	0	214	618	38	369	476	0	156	267
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	12.5	29.8	29.8		11.0	28.3	28.3	12.6	31.6		8.0	27.5
Effective Green, g (s)	12.5	29.8	29.8		11.0	28.3	28.3	12.6	31.6		8.0	27.5
Actuated g/C Ratio	0.12	0.30	0.30		0.11	0.28	0.28	0.13	0.32		0.08	0.28
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	429	1055	461		195	1002	441	433	1079		142	512
v/s Ratio Prot	0.10	c0.26			c0.12	0.17		c0.11	0.14		c0.09	c0.14
v/s Ratio Perm			0.06				0.02					
v/c Ratio	0.80	0.87	0.20		1.10	0.62	0.09	0.85	0.44		1.10	0.52
Uniform Delay, d1	42.5	33.2	26.2		44.5	31.1	26.4	42.8	27.2		46.0	30.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.8	7.4	0.1		92.9	0.8	0.0	14.4	1.3		104.4	3.8
Delay (s)	52.3	40.6	26.3		137.4	31.9	26.4	57.2	28.5		150.4	34.4
Level of Service	D	D	C		F	C	C	E	C		F	C
Approach Delay (s)		40.4				54.5			40.7			61.4
Approach LOS		D				D			D			E

Intersection Summary			
HCM Average Control Delay	47.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	180
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1561
Flt Permitted	1.00
Satd. Flow (perm)	1561
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	200
RTOR Reduction (vph)	145
Lane Group Flow (vph)	55
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	27.5
Effective Green, g (s)	27.5
Actuated g/C Ratio	0.28
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	429
v/s Ratio Prot	
v/s Ratio Perm	0.04
v/c Ratio	0.13
Uniform Delay, d1	27.2
Progression Factor	1.00
Incremental Delay, d2	0.6
Delay (s)	27.9
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Signalized Intersection Capacity Analysis - Cumulative No Project PM
2: El Dorado Hills Blvd/El Dorado Hills Blvd / Salmon Falls Rd & Green Valley Rd

9/7/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1110	10	100	720	140	60	190	150	130	50	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3534		1770	3440		1770	1727			1798	1560
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3534		1770	3440		1770	1727			1798	1560
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	75	1194	11	119	857	167	71	226	179	146	56	67
RTOR Reduction (vph)	0	1	0	0	13	0	0	25	0	0	0	57
Lane Group Flow (vph)	75	1204	0	119	1011	0	71	380	0	0	202	10
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	10.6	37.1		10.7	37.2		25.0	25.0			16.2	16.2
Effective Green, g (s)	10.6	37.1		10.7	37.2		25.0	25.0			16.2	16.2
Actuated g/C Ratio	0.10	0.34		0.10	0.34		0.23	0.23			0.15	0.15
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	171	1197		172	1168		404	394			266	230
v/s Ratio Prot	0.04	c0.34		c0.07	0.29		0.04	c0.22			c0.11	
v/s Ratio Perm												0.01
v/c Ratio	0.44	1.01		0.69	0.87		0.18	0.97			0.76	0.04
Uniform Delay, d1	46.6	36.2		47.8	33.8		34.0	41.8			44.8	40.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.3	27.5		10.5	7.5		0.1	35.8			10.5	0.0
Delay (s)	48.0	63.7		58.3	41.3		34.0	77.6			55.3	40.0
Level of Service	D	E		E	D		C	E			E	D
Approach Delay (s)		62.8			43.1			71.1			51.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	20.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	920	400	70	600	20	300	40	120	10	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.89			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	3539	1546	1770	3519		1770	1635			1670	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	3539	1546	1770	3519		1770	1635			1670	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Adj. Flow (vph)	73	958	417	76	652	22	333	44	133	14	29	87
RTOR Reduction (vph)	0	0	269	0	2	0	0	101	0	0	78	0
Lane Group Flow (vph)	73	958	148	76	672	0	333	76	0	0	52	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	6.5	24.4	24.4	5.7	23.6		17.9	17.9			7.6	
Effective Green, g (s)	6.5	24.4	24.4	5.7	23.6		17.9	17.9			7.6	
Actuated g/C Ratio	0.09	0.33	0.33	0.08	0.32		0.24	0.24			0.10	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	155	1168	510	136	1123		428	396			171	
v/s Ratio Prot	0.04	c0.27		c0.04	0.19		c0.19	0.05			c0.03	
v/s Ratio Perm			0.10									
v/c Ratio	0.47	0.82	0.29	0.56	0.60		0.78	0.19			0.30	
Uniform Delay, d1	32.1	22.7	18.3	32.9	21.2		26.1	22.3			30.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.6	4.7	0.3	3.9	0.9		8.3	0.2			0.7	
Delay (s)	33.7	27.5	18.6	36.8	22.0		34.5	22.4			31.4	
Level of Service	C	C	B	D	C		C	C			C	
Approach Delay (s)		25.2			23.5			30.3			31.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	18.3
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	10	250	10	50	10	560	400	30	480	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1794		1681	1626		1770	3539	1546	1770	3527	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1794		1681	1626		1770	3539	1546	1770	3527	
Peak-hour factor, PHF	0.89	0.89	0.89	0.60	0.60	0.60	0.94	0.94	0.94	0.84	0.84	0.84
Adj. Flow (vph)	22	34	11	417	17	83	11	596	426	36	571	12
RTOR Reduction (vph)	0	10	0	0	23	0	0	0	253	0	2	0
Lane Group Flow (vph)	22	35	0	263	231	0	11	596	173	36	581	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	4.9	4.9		14.7	14.7		0.6	25.3	25.3	1.5	26.2	
Effective Green, g (s)	4.9	4.9		14.7	14.7		0.6	25.3	25.3	1.5	26.2	
Actuated g/C Ratio	0.08	0.08		0.24	0.24		0.01	0.41	0.41	0.02	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	141		396	383		17	1435	627	43	1481	
v/s Ratio Prot	0.01	c0.02		c0.16	0.14		0.01	c0.17		c0.02	0.16	
v/s Ratio Perm									0.11			
v/c Ratio	0.16	0.25		0.66	0.60		0.65	0.42	0.28	0.84	0.39	
Uniform Delay, d1	26.8	27.0		21.6	21.3		30.8	13.3	12.4	30.3	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.9		4.2	2.7		62.0	0.9	1.1	76.6	0.8	
Delay (s)	27.4	27.9		25.8	23.9		92.8	14.2	13.5	106.9	13.4	
Level of Service	C	C		C	C		F	B	B	F	B	
Approach Delay (s)		27.7			24.9			14.7			18.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	10	60	150	10	90	100	380	120	100	260	100
Peak Hour Factor	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	38	13	76	172	11	103	118	447	141	118	306	118

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	127	287	706	541
Volume Left (vph)	38	172	118	118
Volume Right (vph)	76	103	141	118
Hadj (s)	-0.27	-0.06	-0.05	-0.05
Departure Headway (s)	8.3	7.7	6.8	6.8
Degree Utilization, x	0.29	0.61	1.33	1.02
Capacity (veh/h)	403	458	543	541
Control Delay (s)	14.7	22.1	181.2	69.8
Approach Delay (s)	14.7	22.1	181.2	69.8
Approach LOS	B	C	F	F

Intersection Summary			
Delay	104.7		
HCM Level of Service	F		
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	180	250	1060	210	280	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1548	3440		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1548	3440		3433	3539
Peak-hour factor, PHF	0.84	0.84	0.94	0.94	0.87	0.87
Adj. Flow (vph)	214	298	1128	223	322	759
RTOR Reduction (vph)	0	247	15	0	0	0
Lane Group Flow (vph)	214	51	1336	0	322	759
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	13.5	13.5	35.7		10.5	50.2
Effective Green, g (s)	13.5	13.5	35.7		10.5	50.2
Actuated g/C Ratio	0.17	0.17	0.45		0.13	0.64
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	304	266	1560		458	2257
v/s Ratio Prot	c0.12		c0.39		c0.09	0.21
v/s Ratio Perm		0.03				
v/c Ratio	0.70	0.19	0.86		0.70	0.34
Uniform Delay, d1	30.7	27.9	19.2		32.6	6.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.9	0.1	4.7		4.0	0.0
Delay (s)	36.6	28.1	23.9		36.6	6.6
Level of Service	D	C	C		D	A
Approach Delay (s)	31.6		23.9			15.5
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	20	380	20	20	20	350	500	20	20	370	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.98		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1549	1770	1695		1770	1848		1770	1863	1521
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1549	1770	1695		1770	1848		1770	1863	1521
Peak-hour factor, PHF	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	126	23	437	33	33	33	412	588	24	22	411	78
RTOR Reduction (vph)	0	0	380	0	27	0	0	1	0	0	0	35
Lane Group Flow (vph)	126	23	57	33	39	0	412	611	0	22	411	43
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	14.0	14.0	14.0	9.5	9.5		31.3	62.8		3.1	34.6	34.6
Effective Green, g (s)	14.0	14.0	14.0	9.5	9.5		31.3	62.8		3.1	34.6	34.6
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09		0.29	0.59		0.03	0.32	0.32
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	231	243	202	157	150		516	1082		51	601	490
v/s Ratio Prot	c0.07	0.01		0.02	c0.02		c0.23	0.33		0.01	c0.22	
v/s Ratio Perm			0.04									0.03
v/c Ratio	0.55	0.09	0.28	0.21	0.26		0.80	0.56		0.43	0.68	0.09
Uniform Delay, d1	43.7	41.1	42.1	45.4	45.6		35.1	13.8		51.2	31.6	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.3	0.7	0.9		8.2	0.6		4.2	2.9	0.1
Delay (s)	45.1	41.1	42.4	46.1	46.5		43.3	14.3		55.4	34.5	25.4
Level of Service	D	D	D	D	D		D	B		E	C	C
Approach Delay (s)		42.9			46.4			26.0			34.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	107.3	Sum of lost time (s)	17.9
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	40	80	160	1230	780	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1561	1770	3539	3516	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1561	1770	3539	3516	
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	92	174	1337	848	33
RTOR Reduction (vph)	0	78	0	0	3	0
Lane Group Flow (vph)	46	14	174	1337	878	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.6	8.6	10.4	38.4	24.4	
Effective Green, g (s)	8.6	8.6	10.4	38.4	24.4	
Actuated g/C Ratio	0.15	0.15	0.18	0.68	0.43	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	269	238	326	2405	1518	
v/s Ratio Prot	c0.03		0.10	c0.38	0.25	
v/s Ratio Perm		0.01				
v/c Ratio	0.17	0.06	0.53	0.56	0.58	
Uniform Delay, d1	20.8	20.5	20.9	4.7	12.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	1.0	0.3	0.6	
Delay (s)	21.2	20.6	21.9	5.0	12.7	
Level of Service	C	C	C	A	B	
Approach Delay (s)	20.8			6.9	12.7	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	9.5
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	10	150	110	10	10	260	1380	120	10	820	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	1550		1767		1770	3489		1770	3499	
Flt Permitted		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	1550		1767		1770	3489		1770	3499	
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	64	11	160	262	24	24	295	1568	136	11	872	64
RTOR Reduction (vph)	0	0	149	0	2	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	75	11	0	308	0	295	1700	0	11	932	0
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.4	8.4		26.5		25.3	70.3		2.2	47.2	
Effective Green, g (s)		8.4	8.4		26.5		25.3	70.3		2.2	47.2	
Actuated g/C Ratio		0.07	0.07		0.21		0.20	0.55		0.02	0.37	
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7		3.7	5.7	
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3		2.0	3.3	
Lane Grp Cap (vph)		118	103		370		353	1936		31	1303	
v/s Ratio Prot		c0.04			c0.17		c0.17	c0.49		0.01	0.27	
v/s Ratio Perm			0.01									
v/c Ratio		0.64	0.10		0.83		0.84	0.88		0.35	0.72	
Uniform Delay, d1		57.7	55.6		48.0		48.7	24.5		61.5	34.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.0	0.5		14.0		15.0	4.9		2.5	1.9	
Delay (s)		68.6	56.1		62.0		63.7	29.4		64.1	35.9	
Level of Service		E	E		E		E	C		E	D	
Approach Delay (s)		60.1			62.0			34.5			36.3	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	126.7	Sum of lost time (s)	13.6
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	40	70	110	40	40	120	1680	530	50	950	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1684		1681	1635		1770	3539	1542	1770	3497	
Flt Permitted	0.95	1.00		0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1684		1681	1635		1770	3539	1542	1770	3497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	43	76	120	43	43	130	1826	576	54	1033	76
RTOR Reduction (vph)	0	49	0	0	22	0	0	0	160	0	4	0
Lane Group Flow (vph)	54	70	0	104	80	0	130	1826	416	54	1105	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.9	6.9		14.5	14.5		12.3	72.2	72.2	5.3	65.2	
Effective Green, g (s)	6.9	6.9		14.5	14.5		12.3	72.2	72.2	5.3	65.2	
Actuated g/C Ratio	0.06	0.06		0.12	0.12		0.11	0.62	0.62	0.05	0.56	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	105	100		209	203		187	2191	955	80	1955	
v/s Ratio Prot	0.03	c0.04		c0.06	0.05		c0.07	c0.52		0.03	0.32	
v/s Ratio Perm									0.27			
v/c Ratio	0.51	0.70		0.50	0.39		0.70	0.83	0.44	0.68	0.57	
Uniform Delay, d1	53.2	53.8		47.7	47.0		50.3	17.5	11.6	54.8	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8	16.5		2.5	1.7		8.7	3.1	0.5	16.2	0.5	
Delay (s)	55.0	70.4		50.2	48.7		59.1	20.5	12.1	71.0	17.1	
Level of Service	D	E		D	D		E	C	B	E	B	
Approach Delay (s)		65.6			49.5			20.6			19.6	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	116.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	550	70	10	150	50	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	671	85	13	197	63	13
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			756		939	715
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			756		939	715
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		78	97
cM capacity (veh/h)			855		288	430

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	756	13	197	76
Volume Left	0	13	0	63
Volume Right	85	0	0	13
cSH	1700	855	1700	305
Volume to Capacity	0.44	0.02	0.12	0.25
Queue Length 95th (ft)	0	1	0	24
Control Delay (s)	0.0	9.3	0.0	20.7
Lane LOS		A		C
Approach Delay (s)	0.0	0.6		20.7
Approach LOS				C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	300	90	210	90	340	90	700	590	230	510	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.88		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3405		1770	3083		1770	3539	1559	1770	3478	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3405		1770	3083		1770	3539	1559	1770	3478	
Peak-hour factor, PHF	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Adj. Flow (vph)	169	390	117	244	105	395	148	1148	967	274	607	71
RTOR Reduction (vph)	0	20	0	0	312	0	0	0	231	0	6	0
Lane Group Flow (vph)	169	487	0	244	188	0	148	1148	736	274	672	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	14.6	21.8		17.1	24.3		15.6	46.6	46.6	24.5	55.5	
Effective Green, g (s)	14.6	21.8		17.1	24.3		15.6	46.6	46.6	24.5	55.5	
Actuated g/C Ratio	0.11	0.17		0.13	0.19		0.12	0.36	0.36	0.19	0.43	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	200	577		235	582		214	1282	564	337	1501	
v/s Ratio Prot	0.10	c0.14		c0.14	0.06		0.08	0.32		c0.15	0.19	
v/s Ratio Perm									c0.47			
v/c Ratio	0.84	0.84		1.04	0.32		0.69	0.90	1.30	0.81	0.45	
Uniform Delay, d1	55.9	51.8		55.8	45.0		54.2	38.7	41.0	49.9	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	26.1	10.7		69.1	0.2		8.6	8.4	149.4	13.6	0.2	
Delay (s)	82.0	62.5		124.8	45.3		62.8	47.1	190.4	63.4	25.9	
Level of Service	F	E		F	D		E	D	F	E	C	
Approach Delay (s)		67.4			71.4			109.4			36.7	
Approach LOS		E			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	128.6	Sum of lost time (s)	18.6
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative No Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	70	57	81.0%	51.9	6.9	D
	Through	1510	1388	91.9%	32.2	4.2	C
	Right Turn	70	62	89.0%	36.8	8.3	D
	Subtotal	**1650**	**1507**	**91.3%**	**33.1**	**4.1**	**C**
SB	Left Turn	90	90	99.6%	136.3	51.4	F
	Through	820	824	100.5%	50.3	11.3	D
	Right Turn	220	233	105.9%	39.2	4.1	D
	Subtotal	**1130**	**1147**	**101.5%**	**55.1**	**13.1**	**E**
EB	Left Turn	610	464	76.1%	357.1	14.3	F
	Through	110	89	80.5%	359.3	14.9	F
	Right Turn	450	352	78.3%	95.1	4.6	F
	Subtotal	**1170**	**905**	**77.3%**	**255.5**	**11.6**	**F**
WB	Left Turn	70	62	88.0%	83.8	25.0	F
	Through	130	114	87.9%	309.8	89.2	F
	Right Turn	210	188	89.3%	287.9	94.4	F
	Subtotal	**410**	**364**	**88.7%**	**260.2**	**80.6**	**F**
Total		**4360**	**3922**	**90.0%**	**111.9**	**8.8**	**F**

Intersection 15 **El Dorado Hills Blvd/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1280	939	73.4%	81.0	10.9	F
	Through	1310	1169	89.2%	20.7	1.3	C
	Right Turn	220	195	88.5%	6.7	0.6	A
	Subtotal	**2810**	**2303**	**82.0%**	**44.0**	**4.3**	**D**
SB	Left Turn	70	64	91.6%	56.5	8.4	E
	Through	1150	1068	92.9%	38.3	8.9	D
	Right Turn	120	115	95.5%	1.6	0.4	A
	Subtotal	**1340**	**1247**	**93.1%**	**35.9**	**7.9**	**D**
EB	Left Turn	240	233	97.0%	95.7	41.1	F
	Through	50	52	103.4%	119.9	64.7	F
	Right Turn	530	517	97.5%	25.7	35.1	C
	Subtotal	**820**	**801**	**97.7%**	**52.0**	**37.9**	**D**
WB	Left Turn	60	59	98.2%	69.1	8.0	E
	Through	80	82	102.6%	69.6	3.7	E
	Right Turn	100	104	103.7%	3.7	0.9	A
	Subtotal	**240**	**245**	**102.0%**	**41.6**	**3.8**	**D**
Total		**5210**	**4596**	**88.2%**	**42.9**	**9.0**	**D**

Intersection 16 **El Dorado Hills Blvd/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2280	1784	78.2%	13.9	3.9	B
	Right Turn	500	414	82.8%	8.0	0.4	A
	Subtotal	**2780**	**2198**	**79.1%**	**12.8**	**3.1**	**B**
SB	Left Turn	200	183	91.7%	51.4	11.6	D
	Through	1540	1410	91.6%	65.9	42.4	E
	Right Turn						
	Subtotal	**1740**	**1594**	**91.6%**	**64.3**	**38.4**	**E**
EB	Left Turn						
	Through						
	Right Turn	760	736	96.8%	52.5	50.8	D
	Subtotal	**760**	**736**	**96.8%**	**52.5**	**50.8**	**D**
WB	Left Turn						
	Through						
	Right Turn	530	532	100.3%	1.5	0.2	A
	Subtotal	**530**	**532**	**100.3%**	**1.5**	**0.2**	**A**
Total		**5810**	**5059**	**87.1%**	**33.5**	**19.0**	**C**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	10	6	63.0%	730.1	149.7	F
	Through	1590	1376	86.5%	310.6	66.3	F
	Right Turn	110	106	95.9%	44.9	19.4	D
	Subtotal	**1710**	**1488**	**87.0%**	**293.5**	**63.4**	**F**
SB	Left Turn	700	627	89.5%	162.1	24.7	F
	Through	1540	1467	95.3%	28.5	4.3	C
	Right Turn	60	54	89.7%	3.6	1.2	A
	Subtotal	**2300**	**2148**	**93.4%**	**67.0**	**10.5**	**E**
EB	Left Turn	330	326	98.8%	72.9	7.6	E
	Through	60	59	97.8%	64.9	4.0	E
	Right Turn	90	97	107.8%	20.2	3.6	C
	Subtotal	**480**	**482**	**100.4%**	**61.3**	**5.2**	**E**
WB	Left Turn	20	12	60.5%	599.3	88.6	F
	Through	20	11	52.5%	502.8	68.8	F
	Right Turn	860	493	57.3%	369.8	32.4	F
	Subtotal	**900**	**516**	**57.3%**	**377.9**	**32.9**	**F**
Total		**5390**	**4633**	**86.0%**	**172.9**	**18.9**	**F**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	650	50	310	370	250	10	880	620	350	790	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	674	756	58	378	451	305	14	1189	838	407	919	593
RTOR Reduction (vph)	0	6	0	0	0	146	0	0	104	0	0	222
Lane Group Flow (vph)	674	808	0	378	451	159	14	1189	734	407	919	371
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	25.0	32.5		20.4	29.8	29.8	2.0	66.7	66.7	18.0	82.7	82.7
Effective Green, g (s)	25.0	32.5		20.4	29.8	29.8	2.0	66.7	66.7	18.0	82.7	82.7
Actuated g/C Ratio	0.16	0.20		0.13	0.19	0.19	0.01	0.42	0.42	0.11	0.52	0.52
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	536	1021		438	659	295	22	2671	651	386	2628	818
v/s Ratio Prot	c0.20	c0.16		0.11	0.13		0.01	0.19		c0.12	0.18	
v/s Ratio Perm						0.10			c0.47			0.23
v/c Ratio	1.26	0.79		0.86	0.68	0.54	0.64	0.45	1.13	1.05	0.35	0.45
Uniform Delay, d1	67.5	60.5		68.4	60.7	58.9	78.6	33.4	46.6	71.0	22.8	24.4
Progression Factor	1.00	1.00		0.62	0.91	1.13	1.00	1.00	1.00	0.76	0.19	0.35
Incremental Delay, d2	130.4	4.3		14.5	2.6	1.8	47.5	0.5	75.6	57.3	0.3	1.5
Delay (s)	197.9	64.8		57.2	58.1	68.3	126.1	33.9	122.3	111.3	4.6	10.1
Level of Service	F	E		E	E	E	F	C	F	F	A	B
Approach Delay (s)		125.1			60.6			70.9			28.9	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	69.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1310	20	30	580	120	40	20	30	200	20	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1536	1770	4930		1770	1667		1770	1578	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1536	1770	4930		1770	1667		1770	1578	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	349	1578	24	38	725	150	47	23	35	217	22	337
RTOR Reduction (vph)	0	0	5	0	17	0	0	34	0	0	306	0
Lane Group Flow (vph)	349	1578	19	38	858	0	47	24	0	217	53	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	48.3	101.8	101.8	6.0	58.8		17.2	6.3		24.9	14.8	
Effective Green, g (s)	48.3	101.8	101.8	6.0	58.8		17.2	6.3		24.9	14.8	
Actuated g/C Ratio	0.30	0.64	0.64	0.04	0.37		0.11	0.04		0.16	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	534	3235	977	66	1812		190	66		275	146	
v/s Ratio Prot	c0.20	c0.31		0.02	0.17		0.03	0.01		c0.12	c0.03	
v/s Ratio Perm			0.01									
v/c Ratio	0.65	0.49	0.02	0.58	0.47		0.25	0.37		0.79	0.36	
Uniform Delay, d1	48.6	15.3	10.7	75.7	38.7		65.5	74.9		65.0	68.2	
Progression Factor	0.88	0.70	0.58	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2	0.0	7.3	0.9		0.2	1.3		13.9	1.5	
Delay (s)	43.6	10.9	6.3	83.1	39.6		65.7	76.2		78.9	69.7	
Level of Service	D	B	A	F	D		E	E		E	E	
Approach Delay (s)		16.7			41.4			71.5			73.2	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1130	130	270	520	110	90	20	180	170	70	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.87		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4994		1770	4931		1770	1590		1770	1734	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	4994		1770	4931		1770	1590		1770	1734	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	66	1242	143	346	667	141	111	25	222	189	78	56
RTOR Reduction (vph)	0	10	0	0	21	0	0	194	0	0	21	0
Lane Group Flow (vph)	66	1375	0	346	787	0	111	53	0	189	113	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Effective Green, g (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Actuated g/C Ratio	0.06	0.33		0.23	0.50		0.12	0.12		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	110	1641		405	2474		221	198		278	272	
v/s Ratio Prot	0.04	c0.28		c0.20	0.16		c0.06	0.03		c0.11	0.07	
v/s Ratio Perm												
v/c Ratio	0.60	0.84		0.85	0.32		0.50	0.27		0.68	0.42	
Uniform Delay, d1	50.9	34.7		41.2	16.5		45.5	44.1		44.3	42.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	4.0		15.4	0.1		2.2	0.9		6.8	1.3	
Delay (s)	56.7	38.7		56.6	16.5		47.7	45.0		51.1	43.6	
Level of Service	E	D		E	B		D	D		D	D	
Approach Delay (s)		39.5			28.5			45.8			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	111.4	Sum of lost time (s)	17.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative No Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 25 **Silva Valley Pkwy/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1220	1214	99.5%	9.0	1.1	A
	Right Turn	40	37	93.0%	2.8	0.2	A
	Subtotal	**1260**	**1251**	**99.3%**	**8.8**	**1.0**	**A**
SB	Left Turn						
	Through	770	744	96.6%	13.2	0.6	B
	Right Turn	390	399	102.3%	11.9	0.7	B
	Subtotal	**1160**	**1143**	**98.5%**	**12.7**	**0.6**	**B**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	540	538	99.7%	18.3	0.6	B
	Through	10	10	101.0%	24.3	4.2	C
	Right Turn	430	437	101.6%	24.2	1.5	C
	Subtotal	**980**	**986**	**100.6%**	**21.0**	**0.9**	**C**
Total		**3400**	**3380**	**99.4%**	**13.7**	**0.4**	**B**

Intersection 26 **Silva Valley Pkwy/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	600	603	100.5%	6.9	0.4	A
	Right Turn	770	777	100.9%	8.3	0.7	A
	Subtotal	**1370**	**1381**	**100.8%**	**7.7**	**0.5**	**A**
SB	Left Turn						
	Through	950	932	98.1%	6.5	0.4	A
	Right Turn	360	352	97.7%	5.7	0.2	A
	Subtotal	**1310**	**1284**	**98.0%**	**6.3**	**0.3**	**A**
EB	Left Turn	660	648	98.1%	15.6	1.0	B
	Through						
	Right Turn	40	38	94.5%	14.0	0.9	B
	Subtotal	**700**	**686**	**97.9%**	**15.5**	**0.9**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3380**	**3350**	**99.1%**	**8.8**	**0.2**	**A**

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	140	300	220	30	100	840	100	240	230	20	130	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1547		1770	3539	1560	3433	3493		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1547		1770	3539	1560	3433	3493		1770	1863
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85
Adj. Flow (vph)	146	312	229	33	111	933	111	286	274	24	153	376
RTOR Reduction (vph)	0	0	165	0	0	0	77	0	6	0	0	0
Lane Group Flow (vph)	146	312	64	0	144	933	34	286	292	0	153	376
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	5.7	27.8	27.8		8.8	30.9	30.9	11.0	34.8		9.0	33.3
Effective Green, g (s)	5.7	27.8	27.8		8.8	30.9	30.9	11.0	34.8		9.0	33.3
Actuated g/C Ratio	0.06	0.28	0.28		0.09	0.31	0.31	0.11	0.35		0.09	0.33
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	196	984	430		156	1094	482	378	1216		159	620
v/s Ratio Prot	0.04	0.09			c0.08	c0.26		c0.08	0.08		c0.09	c0.20
v/s Ratio Perm			0.04				0.02					
v/c Ratio	0.74	0.32	0.15		0.92	0.85	0.07	0.76	0.24		0.96	0.61
Uniform Delay, d1	46.4	28.6	27.2		45.3	32.4	24.4	43.2	23.2		45.3	27.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.6	0.1	0.1		49.0	6.4	0.0	7.5	0.5		59.5	4.4
Delay (s)	59.0	28.7	27.2		94.3	38.8	24.4	50.7	23.7		104.8	32.2
Level of Service	E	C	C		F	D	C	D	C		F	C
Approach Delay (s)		34.6				44.2			36.9			43.7
Approach LOS		C				D			D			D

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	320
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	376
RTOR Reduction (vph)	110
Lane Group Flow (vph)	266
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	33.3
Effective Green, g (s)	33.3
Actuated g/C Ratio	0.33
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	520
v/s Ratio Prot	
v/s Ratio Perm	0.17
v/c Ratio	0.51
Uniform Delay, d1	26.8
Progression Factor	1.00
Incremental Delay, d2	3.6
Delay (s)	30.4
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: El Dorado Hills Blvd/El Dorado Hills Blvd / Salmon Falls Rd & Green Valley Rd
Cumulative Plus Project AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	440	30	160	1000	100	10	40	60	190	270	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3505		1770	3484		1770	1679			1825	1559
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (perm)	1770	3505		1770	3484		1770	1679			1825	1559
Peak-hour factor, PHF	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Adj. Flow (vph)	12	524	36	180	1124	112	15	61	91	238	338	125
RTOR Reduction (vph)	0	4	0	0	6	0	0	45	0	0	0	83
Lane Group Flow (vph)	12	556	0	180	1230	0	15	107	0	0	576	42
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	2.2	23.9		20.6	42.3		11.2	11.2			39.1	39.1
Effective Green, g (s)	2.2	23.9		20.6	42.3		11.2	11.2			39.1	39.1
Actuated g/C Ratio	0.02	0.21		0.18	0.37		0.10	0.10			0.34	0.34
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	33	726		316	1278		171	163			618	528
v/s Ratio Prot	0.01	0.16		c0.10	c0.35		0.01	c0.06			c0.32	
v/s Ratio Perm												0.03
v/c Ratio	0.36	0.77		0.57	0.96		0.09	0.66			0.93	0.08
Uniform Delay, d1	55.9	43.1		43.3	35.7		47.4	50.2			36.8	25.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	4.9	5.7		1.9	17.2		0.1	7.0			20.8	0.0
Delay (s)	60.8	48.8		45.2	52.9		47.5	57.2			57.6	25.9
Level of Service	E	D		D	D		D	E			E	C
Approach Delay (s)		49.0			52.0			56.4			51.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	20.5
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	420	250	120	810	30	390	60	80	20	60	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.91			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	3539	1544	1770	3517		1770	1690			1732	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	3539	1544	1770	3517		1770	1690			1732	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Adj. Flow (vph)	22	452	269	132	890	33	549	85	113	26	78	78
RTOR Reduction (vph)	0	0	211	0	2	0	0	46	0	0	30	0
Lane Group Flow (vph)	22	452	58	132	921	0	549	152	0	0	152	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	2.2	19.4	19.4	9.9	27.1		29.7	29.7			12.9	
Effective Green, g (s)	2.2	19.4	19.4	9.9	27.1		29.7	29.7			12.9	
Actuated g/C Ratio	0.02	0.22	0.22	0.11	0.30		0.33	0.33			0.14	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	43	761	332	194	1056		582	556			247	
v/s Ratio Prot	0.01	0.13		c0.07	c0.26		c0.31	0.09			c0.09	
v/s Ratio Perm			0.04									
v/c Ratio	0.51	0.59	0.17	0.68	0.87		0.94	0.27			0.62	
Uniform Delay, d1	43.5	31.9	28.9	38.6	29.9		29.4	22.3			36.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	7.5	1.3	0.3	8.6	8.1		24.0	0.2			3.9	
Delay (s)	50.9	33.1	29.1	47.3	38.0		53.4	22.5			40.2	
Level of Service	D	C	C	D	D		D	C			D	
Approach Delay (s)		32.2			39.1			45.2			40.2	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	18.3
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	40	20	410	10	50	10	410	190	60	480	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1771		1681	1646		1770	3539	1544	1770	3527	
Flt Permitted	0.95	1.00		0.95	0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1771		1681	1646		1770	3539	1544	1770	3527	
Peak-hour factor, PHF	0.86	0.86	0.86	0.52	0.52	0.52	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	12	47	23	788	19	96	11	446	207	80	640	13
RTOR Reduction (vph)	0	21	0	0	12	0	0	0	145	0	1	0
Lane Group Flow (vph)	12	49	0	457	434	0	11	446	62	80	652	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.8	6.8		24.7	24.7		0.7	22.2	22.2	4.4	25.9	
Effective Green, g (s)	6.8	6.8		24.7	24.7		0.7	22.2	22.2	4.4	25.9	
Actuated g/C Ratio	0.09	0.09		0.33	0.33		0.01	0.30	0.30	0.06	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	163		560	549		17	1060	463	105	1233	
v/s Ratio Prot	0.01	c0.03		c0.27	0.26		0.01	0.13		c0.05	c0.18	
v/s Ratio Perm									0.04			
v/c Ratio	0.07	0.30		0.82	0.79		0.65	0.42	0.13	0.76	0.53	
Uniform Delay, d1	30.8	31.4		22.6	22.4		36.6	20.8	18.9	34.3	19.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.0		9.0	7.6		62.0	1.2	0.6	27.3	1.6	
Delay (s)	31.0	32.5		31.6	30.0		98.6	22.0	19.5	61.6	20.9	
Level of Service	C	C		C	C		F	C	B	E	C	
Approach Delay (s)		32.3			30.8			22.5			25.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	10	110	240	10	110	40	230	120	70	350	30
Peak Hour Factor	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Hourly flow rate (vph)	74	15	162	343	14	157	63	365	190	101	507	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	250	514	619	652
Volume Left (vph)	74	343	63	101
Volume Right (vph)	162	157	190	43
Hadj (s)	-0.30	-0.02	-0.13	0.03
Departure Headway (s)	9.3	8.6	8.5	8.7
Degree Utilization, x	0.64	1.23	1.46	1.57
Capacity (veh/h)	380	413	435	419
Control Delay (s)	27.6	150.9	244.7	290.6
Approach Delay (s)	27.6	150.9	244.7	290.6
Approach LOS	D	F	F	F

Intersection Summary			
Delay	209.0		
HCM Level of Service	F		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	370	260	410	430	420	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1546	3232		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1546	3232		3433	3539
Peak-hour factor, PHF	0.72	0.72	0.83	0.83	0.90	0.90
Adj. Flow (vph)	514	361	494	518	467	1067
RTOR Reduction (vph)	0	241	181	0	0	0
Lane Group Flow (vph)	514	120	831	0	467	1067
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	29.2	29.2	25.6		14.1	43.7
Effective Green, g (s)	29.2	29.2	25.6		14.1	43.7
Actuated g/C Ratio	0.33	0.33	0.29		0.16	0.50
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	586	512	938		549	1753
v/s Ratio Prot	c0.29		c0.26		c0.14	0.30
v/s Ratio Perm		0.08				
v/c Ratio	0.88	0.23	0.89		0.85	0.61
Uniform Delay, d1	27.8	21.4	29.9		36.0	16.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	13.5	0.1	9.8		11.6	0.4
Delay (s)	41.3	21.5	39.7		47.6	16.5
Level of Service	D	C	D		D	B
Approach Delay (s)	33.1		39.7			26.0
Approach LOS	C		D			C

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	19.3
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	100	410	120	80	20	640	320	50	40	420	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	0.99		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1544	1770	1793		1770	1809		1770	1863	1512
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1544	1770	1793		1770	1809		1770	1863	1512
Peak-hour factor, PHF	0.57	0.57	0.57	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	158	175	719	154	103	26	711	356	56	44	467	311
RTOR Reduction (vph)	0	0	453	0	7	0	0	3	0	0	0	134
Lane Group Flow (vph)	158	175	266	154	122	0	711	409	0	44	467	177
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	26.1	26.1	26.1	19.0	19.0		43.1	71.6		6.6	35.1	35.1
Effective Green, g (s)	26.1	26.1	26.1	19.0	19.0		43.1	71.6		6.6	35.1	35.1
Actuated g/C Ratio	0.18	0.18	0.18	0.13	0.13		0.31	0.51		0.05	0.25	0.25
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	327	344	285	238	241		540	917		83	463	376
v/s Ratio Prot	0.09	0.09		c0.09	0.07		c0.40	0.23		0.02	c0.25	
v/s Ratio Perm			c0.17									0.12
v/c Ratio	0.48	0.51	0.93	0.65	0.51		1.32	0.45		0.53	1.01	0.47
Uniform Delay, d1	51.5	51.8	56.7	57.9	56.7		49.0	22.2		65.8	53.0	45.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	35.3	5.9	1.7		155.2	0.3		5.0	44.0	0.7
Delay (s)	51.9	52.2	92.0	63.9	58.4		204.3	22.4		70.8	97.0	45.8
Level of Service	D	D	F	E	E		F	C		E	F	D
Approach Delay (s)		79.3			61.4			137.6			76.3	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM Average Control Delay	97.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	141.2	Sum of lost time (s)	17.9
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	70	140	60	730	1360	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1560	1770	3539	3517	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1560	1770	3539	3517	
Peak-hour factor, PHF	0.75	0.75	0.95	0.95	0.88	0.88
Adj. Flow (vph)	93	187	63	768	1545	57
RTOR Reduction (vph)	0	118	0	0	2	0
Lane Group Flow (vph)	93	69	63	768	1600	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.0	12.0	5.0	51.8	43.2	
Effective Green, g (s)	12.0	12.0	5.0	51.8	43.2	
Actuated g/C Ratio	0.16	0.16	0.07	0.71	0.59	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	290	255	121	2501	2073	
v/s Ratio Prot	c0.05		c0.04	0.22	c0.45	
v/s Ratio Perm		0.04				
v/c Ratio	0.32	0.27	0.52	0.31	0.77	
Uniform Delay, d1	27.1	26.8	33.0	4.0	11.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.6	2.3	0.1	1.9	
Delay (s)	27.7	27.4	35.3	4.1	13.2	
Level of Service	C	C	D	A	B	
Approach Delay (s)	27.5			6.5	13.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	13.1
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	140	10	290	130	10	20	90	640	130	30	10	1470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.97			1.00	0.99
Flt Protected		0.96	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1780	1556		1756		1770	3433			1770	3513
Flt Permitted		0.96	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1780	1556		1756		1770	3433			1770	3513
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.92	0.94	0.94
Adj. Flow (vph)	149	11	309	310	24	48	102	727	148	33	11	1564
RTOR Reduction (vph)	0	0	123	0	3	0	0	7	0	0	0	2
Lane Group Flow (vph)	0	160	186	0	379	0	102	868	0	0	44	1636
Confl. Peds. (#/hr)	2		2	2		2	2		2	2	2	
Turn Type	Split		Perm	Split			Prot			Prot	Prot	
Protected Phases	4	4		3	3		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)		17.7	17.7		30.0		9.3	75.4			7.2	73.3
Effective Green, g (s)		17.7	17.7		30.0		9.3	75.4			7.2	73.3
Actuated g/C Ratio		0.12	0.12		0.20		0.06	0.50			0.05	0.49
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3			2.0	3.3
Lane Grp Cap (vph)		211	184		352		110	1730			85	1721
v/s Ratio Prot		0.09			c0.22		c0.06	0.25			0.02	c0.47
v/s Ratio Perm			c0.12									
v/c Ratio		0.76	1.01		1.08		0.93	0.50			0.52	0.95
Uniform Delay, d1		63.9	66.0		59.8		69.8	24.6			69.5	36.4
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		14.7	69.8		69.8		61.8	0.3			2.2	12.1
Delay (s)		78.5	135.8		129.6		131.6	24.9			71.7	48.5
Level of Service		E	F		F		F	C			E	D
Approach Delay (s)		116.3			129.6			36.0				49.1
Approach LOS		F			F			D				D

Intersection Summary			
HCM Average Control Delay	63.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	149.6	Sum of lost time (s)	19.3
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	70
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	74
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	40	80	650	40	100	50	720	120	110	1720	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1676		1681	1642		1770	3539	1539	1770	3525	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1676		1681	1642		1770	3539	1539	1770	3525	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	43	87	707	43	109	54	783	130	120	1870	43
RTOR Reduction (vph)	0	48	0	0	8	0	0	0	68	0	1	0
Lane Group Flow (vph)	65	82	0	438	413	0	54	783	62	120	1912	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.0	8.0		39.0	39.0		5.0	71.3	71.3	14.0	80.3	
Effective Green, g (s)	8.0	8.0		39.0	39.0		5.0	71.3	71.3	14.0	80.3	
Actuated g/C Ratio	0.05	0.05		0.26	0.26		0.03	0.48	0.48	0.09	0.54	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	94	89		437	427		59	1682	732	165	1887	
v/s Ratio Prot	0.04	c0.05		c0.26	0.25		0.03	0.22		c0.07	c0.54	
v/s Ratio Perm									0.04			
v/c Ratio	0.69	0.92		1.00	0.97		0.92	0.47	0.08	0.73	1.01	
Uniform Delay, d1	69.8	70.7		55.5	54.9		72.3	26.5	21.5	66.1	34.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.2	67.3		43.6	34.8		85.3	0.3	0.1	12.7	24.1	
Delay (s)	86.0	138.0		99.1	89.7		157.6	26.8	21.6	78.8	58.9	
Level of Service	F	F		F	F		F	C	C	E	E	
Approach Delay (s)		120.6			94.5			33.4			60.1	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	63.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	200	70	10	630	90	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	244	85	13	829	114	13
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			329		1144	289
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			329		1144	289
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		48	98
cM capacity (veh/h)			1230		218	749

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	329	13	829	127
Volume Left	0	13	0	114
Volume Right	85	0	0	13
cSH	1700	1230	1700	235
Volume to Capacity	0.19	0.01	0.49	0.54
Queue Length 95th (ft)	0	1	0	72
Control Delay (s)	0.0	8.0	0.0	36.9
Lane LOS		A		E
Approach Delay (s)	0.0	0.1		36.9
Approach LOS				E

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	90	120	580	250	460	240	520	190	300	730	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.90		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3207		1770	3164		1770	3539	1559	1770	3434	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3207		1770	3164		1770	3539	1559	1770	3434	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Adj. Flow (vph)	128	115	154	674	291	535	387	839	306	361	880	193
RTOR Reduction (vph)	0	140	0	0	222	0	0	0	145	0	12	0
Lane Group Flow (vph)	128	129	0	674	604	0	387	839	161	361	1061	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	14.8	13.0		42.1	40.3		28.0	34.3	34.3	31.2	37.5	
Effective Green, g (s)	14.8	13.0		42.1	40.3		28.0	34.3	34.3	31.2	37.5	
Actuated g/C Ratio	0.11	0.09		0.30	0.29		0.20	0.25	0.25	0.22	0.27	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	188	299		535	916		356	872	384	396	925	
v/s Ratio Prot	0.07	0.04		c0.38	c0.19		c0.22	0.24		0.20	c0.31	
v/s Ratio Perm									0.10			
v/c Ratio	0.68	0.43		1.26	0.66		1.09	0.96	0.42	0.91	1.15	
Uniform Delay, d1	59.9	59.6		48.5	43.4		55.6	51.8	44.1	52.7	50.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.9	0.7		131.4	1.5		73.0	21.6	0.5	24.7	78.7	
Delay (s)	68.8	60.3		180.0	45.0		128.6	73.4	44.6	77.4	129.6	
Level of Service	E	E		F	D		F	E	D	E	F	
Approach Delay (s)		63.1			105.6			81.6			116.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	97.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	139.2	Sum of lost time (s)	18.6
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Marble Valley/Pedregal/Lime Rock**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	80	79	99.0%	62.8	7.9	E
	Through	650	641	98.6%	10.5	1.0	B
	Right Turn	70	63	89.4%	7.4	2.5	A
	Subtotal	**800**	**782**	**97.8%**	**15.6**	**1.8**	**B**
SB	Left Turn	70	69	98.7%	115.3	15.3	F
	Through	1690	1677	99.2%	34.4	2.6	C
	Right Turn	690	705	102.2%	58.1	4.7	E
	Subtotal	**2450**	**2451**	**100.1%**	**43.5**	**2.6**	**D**
EB	Left Turn	160	158	98.6%	108.6	32.1	F
	Through	100	102	101.8%	118.1	36.4	F
	Right Turn	60	62	103.5%	12.6	5.7	B
	Subtotal	**320**	**322**	**100.5%**	**93.3**	**28.3**	**F**
WB	Left Turn	130	129	99.2%	64.4	9.8	E
	Through	120	120	99.7%	88.7	9.9	F
	Right Turn	80	87	108.6%	69.7	18.3	E
	Subtotal	**330**	**336**	**101.7%**	**74.4**	**11.1**	**E**
Total		**3900**	**3891**	**99.8%**	**44.8**	**4.2**	**D**

Intersection 15 **El Dorado Hills Blvd/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	920	839	91.2%	107.7	6.8	F
	Through	490	477	97.4%	24.7	2.1	C
	Right Turn	130	128	98.7%	5.3	0.6	A
	Subtotal	**1540**	**1445**	**93.8%**	**71.2**	**3.8**	**E**
SB	Left Turn	70	65	93.3%	65.2	3.7	E
	Through	1170	1172	100.2%	19.9	1.5	B
	Right Turn	640	632	98.7%	3.4	0.4	A
	Subtotal	**1880**	**1869**	**99.4%**	**15.9**	**1.0**	**B**
EB	Left Turn	250	250	99.9%	146.6	71.7	F
	Through	70	67	95.1%	169.9	75.6	F
	Right Turn	540	539	99.8%	26.1	38.1	C
	Subtotal	**860**	**856**	**99.5%**	**72.8**	**51.7**	**E**
WB	Left Turn	80	81	101.5%	64.1	4.8	E
	Through	100	103	103.3%	66.8	4.5	E
	Right Turn	60	67	111.0%	4.2	0.9	A
	Subtotal	**240**	**251**	**104.6%**	**49.5**	**3.8**	**D**
Total		**4520**	**4420**	**97.8%**	**46.9**	**9.6**	**D**

SimTraffic Post-Processor | **Marble Valley/Pedregal/Lime Rock**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 16 **El Dorado Hills Blvd/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1330	1238	93.1%	34.1	5.9	C
	Right Turn	490	479	97.7%	11.2	0.7	B
	Subtotal	**1820**	**1717**	**94.3%**	**27.7**	**4.3**	**C**
SB	Left Turn	320	316	98.7%	39.6	5.2	D
	Through	1470	1476	100.4%	16.9	8.7	B
	Right Turn						
	Subtotal	**1790**	**1792**	**100.1%**	**20.9**	**6.8**	**C**
EB	Left Turn						
	Through						
	Right Turn	1080	1077	99.7%	18.1	5.3	B
	Subtotal	**1080**	**1077**	**99.7%**	**18.1**	**5.3**	**B**
WB	Left Turn						
	Through						
	Right Turn	210	210	99.8%	0.6	0.1	A
	Subtotal	**210**	**210**	**99.8%**	**0.6**	**0.1**	**A**
Total		**4900**	**4795**	**97.9%**	**21.8**	**2.8**	**C**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	40	37	92.8%	319.2	132.2	F
	Through	1450	1343	92.6%	187.6	75.9	F
	Right Turn	50	50	100.6%	21.9	19.4	C
	Subtotal	**1540**	**1431**	**92.9%**	**185.2**	**75.0**	**F**
SB	Left Turn	550	524	95.3%	117.8	33.3	F
	Through	1550	1554	100.2%	19.4	2.3	B
	Right Turn	450	468	104.0%	7.9	1.6	A
	Subtotal	**2550**	**2546**	**99.8%**	**37.5**	**8.2**	**D**
EB	Left Turn	50	55	110.2%	68.1	10.0	E
	Through	20	20	98.5%	69.4	7.5	E
	Right Turn	20	21	106.5%	17.6	7.6	B
	Subtotal	**90**	**96**	**106.8%**	**57.1**	**4.5**	**E**
WB	Left Turn	120	115	95.5%	79.3	14.2	E
	Through	50	48	95.8%	77.2	11.6	E
	Right Turn	320	317	99.0%	47.1	8.1	D
	Subtotal	**490**	**479**	**97.8%**	**57.8**	**9.1**	**E**
Total		**4670**	**4552**	**97.5%**	**86.2**	**20.2**	**F**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	150	40	390	600	200	10	990	170	110	830	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4908		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4908		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.92	0.86	0.86	0.82	0.82	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Adj. Flow (vph)	380	174	47	476	732	217	14	1076	230	120	902	815
RTOR Reduction (vph)	0	36	0	0	0	115	0	0	37	0	0	220
Lane Group Flow (vph)	380	185	0	476	732	102	14	1076	193	120	902	595
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.9	32.1		20.0	35.1	35.1	1.2	52.5	52.5	13.0	64.3	64.3
Effective Green, g (s)	18.9	32.1		20.0	35.1	35.1	1.2	52.5	52.5	13.0	64.3	64.3
Actuated g/C Ratio	0.13	0.23		0.14	0.25	0.25	0.01	0.38	0.38	0.09	0.46	0.46
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	463	1125		490	887	397	15	2403	585	319	2335	727
v/s Ratio Prot	0.11	0.04		c0.14	c0.21		0.01	c0.17		0.03	0.18	
v/s Ratio Perm						0.06			0.12			c0.38
v/c Ratio	0.82	0.16		0.97	0.83	0.26	0.93	0.45	0.33	0.38	0.39	0.82
Uniform Delay, d1	58.9	43.2		59.7	49.6	42.0	69.4	32.9	31.2	59.7	24.9	32.8
Progression Factor	1.00	1.00		0.91	0.58	0.58	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.1	0.1		30.1	5.4	0.3	197.1	0.6	1.5	0.7	0.5	9.9
Delay (s)	70.0	43.3		84.2	34.3	24.8	266.4	33.5	32.7	60.4	25.4	42.7
Level of Service	E	D		F	C	C	F	C	C	E	C	D
Approach Delay (s)		60.2			49.5			35.8			35.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	260	10	40	1020	200	50	10	20	50	20	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1538	1770	4938		1770	1650		1770	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1538	1770	4938		1770	1650		1770	1603	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	193	313	12	50	1275	250	58	12	23	54	22	130
RTOR Reduction (vph)	0	0	4	0	16	0	0	22	0	0	119	0
Lane Group Flow (vph)	193	313	8	50	1509	0	58	13	0	54	33	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	26.7	93.7	93.7	6.4	72.7		8.1	5.6		13.3	11.6	
Effective Green, g (s)	26.7	93.7	93.7	6.4	72.7		8.1	5.6		13.3	11.6	
Actuated g/C Ratio	0.19	0.67	0.67	0.05	0.52		0.06	0.04		0.10	0.08	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	338	3403	1029	81	2564		102	66		168	133	
v/s Ratio Prot	c0.11	0.06		0.03	c0.31		c0.03	0.01		c0.03	c0.02	
v/s Ratio Perm			0.01									
v/c Ratio	0.57	0.09	0.01	0.62	0.59		0.57	0.20		0.32	0.25	
Uniform Delay, d1	51.4	8.2	7.7	65.6	23.3		64.2	65.0		59.1	60.1	
Progression Factor	0.88	0.79	0.88	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.1	0.0	9.4	1.0		4.3	0.5		1.1	1.0	
Delay (s)	46.5	6.5	6.8	75.0	24.3		68.5	65.6		60.3	61.1	
Level of Service	D	A	A	E	C		E	E		E	E	
Approach Delay (s)		21.4			25.9			67.4			60.9	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.4
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	280	50	50	1100	100	130	20	280	10	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.86		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	4953		1770	5012		1770	1581		1770	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1769	4953		1770	5012		1770	1581		1770	1710	
Peak-hour factor, PHF	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Adj. Flow (vph)	11	315	56	72	1594	145	151	23	326	12	25	25
RTOR Reduction (vph)	0	19	0	0	8	0	0	263	0	0	23	0
Lane Group Flow (vph)	11	352	0	72	1731	0	151	86	0	12	27	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	0.6	30.6		6.3	37.0		14.7	14.7		6.0	6.0	
Effective Green, g (s)	0.6	30.6		6.3	37.0		14.7	14.7		6.0	6.0	
Actuated g/C Ratio	0.01	0.41		0.08	0.49		0.19	0.19		0.08	0.08	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	14	2007		148	2456		345	308		141	136	
v/s Ratio Prot	0.01	0.07		c0.04	c0.35		c0.09	0.05		0.01	c0.02	
v/s Ratio Perm												
v/c Ratio	0.79	0.18		0.49	0.70		0.44	0.28		0.09	0.20	
Uniform Delay, d1	37.4	14.4		33.1	15.0		26.8	25.9		32.2	32.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	123.8	0.1		0.9	0.9		1.1	0.6		0.3	0.9	
Delay (s)	161.2	14.4		34.0	15.9		27.8	26.5		32.5	33.4	
Level of Service	F	B		C	B		C	C		C	C	
Approach Delay (s)		18.7			16.7			26.9			33.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	100	40	790	1480	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	109	43	859	1609	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1161	
pX, platoon unblocked	0.64	0.64	0.64			
vC, conflicting volume	2136	815	1630			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1660	0	876			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	84	91			
cM capacity (veh/h)	52	699	494			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	109	43	429	429	1072	558
Volume Left	0	43	0	0	0	0
Volume Right	109	0	0	0	0	22
cSH	699	494	1700	1700	1700	1700
Volume to Capacity	0.16	0.09	0.25	0.25	0.63	0.33
Queue Length 95th (ft)	14	7	0	0	0	0
Control Delay (s)	11.1	13.0	0.0	0.0	0.0	0.0
Lane LOS	B	B				
Approach Delay (s)	11.1	0.6			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	30	830	50	20	1870
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	902	54	22	2033
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1104			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1989	478			957	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1814	42			603	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			97	
cM capacity (veh/h)	58	869			828	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	601	355	22	1016	1016
Volume Left	0	0	0	22	0	0
Volume Right	33	0	54	0	0	0
cSH	869	1700	1700	828	1700	1700
Volume to Capacity	0.04	0.35	0.21	0.03	0.60	0.60
Queue Length 95th (ft)	3	0	0	2	0	0
Control Delay (s)	9.3	0.0	0.0	9.5	0.0	0.0
Lane LOS	A			A		
Approach Delay (s)	9.3	0.0		0.1		
Approach LOS	A					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	240	30	20	680	20	0	0	30	0	0	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	261	33	22	739	22	0	0	33	0	0	120
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		560										
pX, platoon unblocked												
vC, conflicting volume	761			293			1179	1082	277	1103	1087	750
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	761			293			1179	1082	277	1103	1087	750
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	96	100	100	71
cM capacity (veh/h)	851			1268			117	214	762	178	212	411

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	293	22	761	33	120
Volume Left	0	22	0	0	0
Volume Right	33	0	22	33	120
cSH	1700	1268	1700	762	411
Volume to Capacity	0.17	0.02	0.45	0.04	0.29
Queue Length 95th (ft)	0	1	0	3	30
Control Delay (s)	0.0	7.9	0.0	9.9	17.3
Lane LOS		A		A	C
Approach Delay (s)	0.0	0.2		9.9	17.3
Approach LOS				A	C

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	50.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	330	130	20	30	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	359	141	22	33	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			884			
pX, platoon unblocked						
vC, conflicting volume	163				353	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				353	82
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	99
cM capacity (veh/h)	1413				613	962

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	179	179	94	69	43
Volume Left	11	0	0	0	0	33
Volume Right	0	0	0	0	22	11
cSH	1413	1700	1700	1700	1700	675
Volume to Capacity	0.01	0.11	0.11	0.06	0.04	0.06
Queue Length 95th (ft)	1	0	0	0	0	5
Control Delay (s)	7.6	0.0	0.0	0.0	0.0	10.7
Lane LOS	A					B
Approach Delay (s)	0.2			0.0		10.7
Approach LOS						B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 25 **Silva Valley Pkwy/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	570	557	97.7%	8.4	0.4	A
	Right Turn	30	30	100.3%	2.3	0.4	A
	Subtotal	**600**	**587**	**97.8%**	**8.1**	**0.4**	**A**
SB	Left Turn						
	Through	450	442	98.2%	22.5	2.9	C
	Right Turn	1040	1049	100.9%	31.0	5.8	C
	Subtotal	**1490**	**1491**	**100.1%**	**28.5**	**4.9**	**C**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	1000	1011	101.1%	30.7	6.8	C
	Through	10	10	99.0%	37.9	8.6	D
	Right Turn	270	267	98.8%	14.6	1.4	B
	Subtotal	**1280**	**1288**	**100.6%**	**27.5**	**5.9**	**C**
Total		**3370**	**3366**	**99.9%**	**24.6**	**1.9**	**C**

Intersection 26 **Silva Valley Pkwy/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	350	348	99.5%	3.6	0.2	A
	Right Turn	210	203	96.6%	7.9	0.2	A
	Subtotal	**560**	**551**	**98.4%**	**5.2**	**0.2**	**A**
SB	Left Turn						
	Through	1170	1182	101.0%	2.6	0.2	A
	Right Turn	280	271	96.8%	5.4	0.2	A
	Subtotal	**1450**	**1452**	**100.2%**	**3.1**	**0.1**	**A**
EB	Left Turn	250	238	95.3%	16.7	1.1	B
	Through						
	Right Turn	40	45	111.8%	14.6	1.0	B
	Subtotal	**290**	**283**	**97.6%**	**16.4**	**0.9**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**2300**	**2286**	**99.4%**	**5.3**	**0.1**	**A**

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	330	860	280	80	100	520	120	320	330	80	140	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Lane Util. Factor	0.97	0.95	1.00		1.00	0.95	1.00	0.97	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	1547		1770	3539	1560	3433	3426		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	1547		1770	3539	1560	3433	3426		1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90
Adj. Flow (vph)	355	925	301	90	112	584	135	381	393	95	156	278
RTOR Reduction (vph)	0	0	206	0	0	0	97	0	21	0	0	0
Lane Group Flow (vph)	355	925	95	0	202	584	38	381	467	0	156	278
Confl. Peds. (#/hr)			2				2			2		
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6					
Actuated Green, G (s)	12.8	30.0	30.0		11.0	28.2	28.2	12.8	31.4		8.0	27.1
Effective Green, g (s)	12.8	30.0	30.0		11.0	28.2	28.2	12.8	31.4		8.0	27.1
Actuated g/C Ratio	0.13	0.30	0.30		0.11	0.28	0.28	0.13	0.31		0.08	0.27
Clearance Time (s)	4.0	5.7	5.7		4.0	5.7	5.7	4.0	5.9		4.0	5.4
Vehicle Extension (s)	0.2	1.9	1.9		0.2	1.9	1.9	0.2	2.1		0.2	2.6
Lane Grp Cap (vph)	439	1062	464		195	998	440	439	1076		142	505
v/s Ratio Prot	0.10	c0.26			c0.11	0.17		c0.11	0.14		c0.09	c0.15
v/s Ratio Perm			0.06				0.02					
v/c Ratio	0.81	0.87	0.21		1.04	0.59	0.09	0.87	0.43		1.10	0.55
Uniform Delay, d1	42.4	33.2	26.1		44.5	30.9	26.4	42.8	27.2		46.0	31.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.9	7.7	0.1		74.2	0.6	0.0	15.9	1.3		104.4	4.3
Delay (s)	52.4	40.9	26.2		118.7	31.4	26.5	58.7	28.5		150.4	35.5
Level of Service	D	D	C		F	C	C	E	C		F	D
Approach Delay (s)		40.7				49.8			41.7			60.9
Approach LOS		D				D			D			E

Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	190
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1561
Flt Permitted	1.00
Satd. Flow (perm)	1561
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	211
RTOR Reduction (vph)	154
Lane Group Flow (vph)	57
Confl. Peds. (#/hr)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	27.1
Effective Green, g (s)	27.1
Actuated g/C Ratio	0.27
Clearance Time (s)	5.4
Vehicle Extension (s)	2.6
Lane Grp Cap (vph)	423
v/s Ratio Prot	
v/s Ratio Perm	0.04
v/c Ratio	0.14
Uniform Delay, d1	27.6
Progression Factor	1.00
Incremental Delay, d2	0.7
Delay (s)	28.2
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: El Dorado Hills Blvd/El Dorado Hills Blvd / Salmon Falls Rd & Green Valley Rd
Cumulative Plus Project PM

9/7/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1100	10	100	710	140	60	180	140	130	50	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3534		1770	3439		1770	1728			1798	1560
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3534		1770	3439		1770	1728			1798	1560
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	75	1183	11	119	845	167	71	214	167	146	56	67
RTOR Reduction (vph)	0	1	0	0	13	0	0	24	0	0	0	57
Lane Group Flow (vph)	75	1193	0	119	999	0	71	357	0	0	202	10
Confl. Peds. (#/hr)						2			2			2
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases												3
Actuated Green, G (s)	10.8	37.1		10.9	37.2		24.2	24.2			16.2	16.2
Effective Green, g (s)	10.8	37.1		10.9	37.2		24.2	24.2			16.2	16.2
Actuated g/C Ratio	0.10	0.34		0.10	0.34		0.22	0.22			0.15	0.15
Clearance Time (s)	3.5	6.0		3.5	6.0		5.5	5.5			5.5	5.5
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)	175	1203		177	1174		393	384			267	232
v/s Ratio Prot	0.04	c0.34		c0.07	0.29		0.04	c0.21			c0.11	
v/s Ratio Perm												0.01
v/c Ratio	0.43	0.99		0.67	0.85		0.18	0.93			0.76	0.04
Uniform Delay, d1	46.1	35.8		47.3	33.3		34.3	41.5			44.5	39.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.2	24.0		8.8	6.7		0.1	28.1			10.3	0.0
Delay (s)	47.4	59.7		56.1	40.0		34.4	69.6			54.8	39.7
Level of Service	D	E		E	D		C	E			D	D
Approach Delay (s)		59.0			41.6			64.0			51.0	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	20.5
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis - Cumulative Plus Project PM
3: Silva Valley Pkwy & Green Valley Rd

9/7/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	920	380	70	590	20	300	40	140	10	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	3539	1546	1770	3519		1770	1626			1670	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	3539	1546	1770	3519		1770	1626			1670	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Adj. Flow (vph)	73	958	396	76	641	22	333	44	156	14	29	87
RTOR Reduction (vph)	0	0	256	0	2	0	0	118	0	0	78	0
Lane Group Flow (vph)	73	958	140	76	661	0	333	82	0	0	52	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									
Actuated Green, G (s)	6.5	24.4	24.4	5.7	23.6		17.9	17.9			7.6	
Effective Green, g (s)	6.5	24.4	24.4	5.7	23.6		17.9	17.9			7.6	
Actuated g/C Ratio	0.09	0.33	0.33	0.08	0.32		0.24	0.24			0.10	
Clearance Time (s)	4.0	5.7	5.7	4.0	5.7		4.6	4.6			4.0	
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	2.5			2.5	
Lane Grp Cap (vph)	155	1168	510	136	1123		428	393			171	
v/s Ratio Prot	0.04	c0.27		c0.04	0.19		c0.19	0.05			c0.03	
v/s Ratio Perm			0.09									
v/c Ratio	0.47	0.82	0.27	0.56	0.59		0.78	0.21			0.30	
Uniform Delay, d1	32.1	22.7	18.2	32.9	21.1		26.1	22.3			30.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.6	4.7	0.3	3.9	0.8		8.3	0.2			0.7	
Delay (s)	33.7	27.5	18.5	36.8	21.9		34.5	22.5			31.4	
Level of Service	C	C	B	D	C		C	C			C	
Approach Delay (s)		25.3			23.4			30.0			31.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	18.3
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	20	30	250	10	50	10	570	410	30	490	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1693		1681	1626		1770	3539	1546	1770	3527	
Flt Permitted	0.95	1.00		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1693		1681	1626		1770	3539	1546	1770	3527	
Peak-hour factor, PHF	0.89	0.89	0.89	0.60	0.60	0.60	0.94	0.94	0.94	0.84	0.84	0.84
Adj. Flow (vph)	11	22	34	417	17	83	11	606	436	36	583	12
RTOR Reduction (vph)	0	31	0	0	23	0	0	0	259	0	2	0
Lane Group Flow (vph)	11	25	0	263	231	0	11	606	177	36	593	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	4.8	4.8		14.7	14.7		0.6	25.3	25.3	1.5	26.2	
Effective Green, g (s)	4.8	4.8		14.7	14.7		0.6	25.3	25.3	1.5	26.2	
Actuated g/C Ratio	0.08	0.08		0.24	0.24		0.01	0.41	0.41	0.02	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	136	130		397	384		17	1437	628	43	1483	
v/s Ratio Prot	0.01	c0.01		c0.16	0.14		0.01	c0.17		c0.02	0.17	
v/s Ratio Perm									0.11			
v/c Ratio	0.08	0.19		0.66	0.60		0.65	0.42	0.28	0.84	0.40	
Uniform Delay, d1	26.7	26.9		21.6	21.2		30.7	13.3	12.4	30.3	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.7		4.1	2.7		62.0	0.9	1.1	76.6	0.8	
Delay (s)	27.0	27.6		25.7	23.8		92.7	14.2	13.5	106.9	13.4	
Level of Service	C	C		C	C		F	B	B	F	B	
Approach Delay (s)		27.5			24.8			14.7			18.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	10	60	150	10	90	100	390	130	100	260	100
Peak Hour Factor	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	38	13	76	172	11	103	118	459	153	118	306	118

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	127	287	729	541
Volume Left (vph)	38	172	118	118
Volume Right (vph)	76	103	153	118
Hadj (s)	-0.27	-0.06	-0.06	-0.05
Departure Headway (s)	8.3	7.7	6.8	6.8
Degree Utilization, x	0.29	0.61	1.37	1.02
Capacity (veh/h)	404	458	534	541
Control Delay (s)	14.7	22.1	198.7	69.7
Approach Delay (s)	14.7	22.1	198.7	69.7
Approach LOS	B	C	F	F

Intersection Summary			
Delay	113.3		
HCM Level of Service	F		
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	200	280	1030	210	280	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1548	3438		3433	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1548	3438		3433	3539
Peak-hour factor, PHF	0.84	0.84	0.94	0.94	0.87	0.87
Adj. Flow (vph)	238	333	1096	223	322	747
RTOR Reduction (vph)	0	270	16	0	0	0
Lane Group Flow (vph)	238	63	1303	0	322	747
Confl. Peds. (#/hr)		8		8		
Turn Type		Perm			Prot	
Protected Phases	4		2		1	6
Permitted Phases		4				
Actuated Green, G (s)	14.8	14.8	34.5		10.5	49.0
Effective Green, g (s)	14.8	14.8	34.5		10.5	49.0
Actuated g/C Ratio	0.19	0.19	0.44		0.13	0.62
Clearance Time (s)	4.6	4.6	6.0		4.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	332	291	1505		457	2201
v/s Ratio Prot	c0.13		c0.38		c0.09	0.21
v/s Ratio Perm		0.04				
v/c Ratio	0.72	0.21	0.87		0.70	0.34
Uniform Delay, d1	30.0	27.1	20.1		32.7	7.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.0	0.1	5.3		4.0	0.0
Delay (s)	36.1	27.2	25.3		36.7	7.2
Level of Service	D	C	C		D	A
Approach Delay (s)	30.9		25.3			16.1
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	20	390	20	20	20	390	510	20	20	370	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.98		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1548	1770	1694		1770	1848		1770	1863	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1548	1770	1694		1770	1848		1770	1863	1519
Peak-hour factor, PHF	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	126	23	448	33	33	33	459	600	24	22	411	78
RTOR Reduction (vph)	0	0	393	0	27	0	0	1	0	0	0	36
Lane Group Flow (vph)	126	23	55	33	39	0	459	623	0	22	411	42
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	14.1	14.1	14.1	9.8	9.8		38.4	69.7		3.2	34.5	34.5
Effective Green, g (s)	14.1	14.1	14.1	9.8	9.8		38.4	69.7		3.2	34.5	34.5
Actuated g/C Ratio	0.12	0.12	0.12	0.09	0.09		0.33	0.61		0.03	0.30	0.30
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	218	229	190	151	145		593	1123		49	560	457
v/s Ratio Prot	c0.07	0.01		0.02	c0.02		c0.26	0.34		0.01	c0.22	
v/s Ratio Perm			0.04									0.03
v/c Ratio	0.58	0.10	0.29	0.22	0.27		0.77	0.55		0.45	0.73	0.09
Uniform Delay, d1	47.5	44.7	45.7	48.9	49.1		34.3	13.3		54.9	36.0	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	0.3	0.7	1.0		6.0	0.5		4.7	4.7	0.1
Delay (s)	49.8	44.7	46.1	49.6	50.1		40.3	13.8		59.6	40.7	28.9
Level of Service	D	D	D	D	D		D	B		E	D	C
Approach Delay (s)		46.8			49.9			25.0			39.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	114.7	Sum of lost time (s)	17.9
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	40	90	160	1300	870	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8	3.6	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1561	1770	3539	3519	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1561	1770	3539	3519	
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	103	174	1413	946	33
RTOR Reduction (vph)	0	88	0	0	2	0
Lane Group Flow (vph)	46	15	174	1413	977	0
Confl. Peds. (#/hr)		4				2
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.6	8.6	10.6	40.3	26.1	
Effective Green, g (s)	8.6	8.6	10.6	40.3	26.1	
Actuated g/C Ratio	0.15	0.15	0.18	0.69	0.45	
Clearance Time (s)	3.8	3.8	3.6	5.7	5.7	
Vehicle Extension (s)	3.1	3.1	2.2	3.2	3.2	
Lane Grp Cap (vph)	261	230	321	2442	1573	
v/s Ratio Prot	c0.03		0.10	c0.40	0.28	
v/s Ratio Perm		0.01				
v/c Ratio	0.18	0.07	0.54	0.58	0.62	
Uniform Delay, d1	21.8	21.4	21.7	4.7	12.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	1.2	0.3	0.8	
Delay (s)	22.1	21.6	22.9	5.0	13.1	
Level of Service	C	C	C	A	B	
Approach Delay (s)	21.7			7.0	13.1	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	9.5
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	60	10	150	140	20	20	260	1380	150	80	20	820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.99			1.00	0.99
Flt Protected		0.96	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1787	1548		1763		1770	3478			1770	3493
Flt Permitted		0.96	1.00		0.96		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1787	1548		1763		1770	3478			1770	3493
Peak-hour factor, PHF	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	64	11	160	333	48	48	295	1568	170	85	21	872
RTOR Reduction (vph)	0	0	151	0	3	0	0	5	0	0	0	4
Lane Group Flow (vph)	0	75	9	0	426	0	295	1733	0	0	106	942
Confl. Peds. (#/hr)	2		2	2		2	2		2	2	2	
Turn Type	Split		Perm	Split			Prot			Prot	Prot	
Protected Phases	4	4		3	3		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)		8.3	8.3		36.6		27.8	75.3			10.3	57.8
Effective Green, g (s)		8.3	8.3		36.6		27.8	75.3			10.3	57.8
Actuated g/C Ratio		0.06	0.06		0.24		0.19	0.50			0.07	0.39
Clearance Time (s)		5.3	5.3		4.6		3.7	5.7			3.7	5.7
Vehicle Extension (s)		3.3	3.3		2.0		2.0	3.3			2.0	3.3
Lane Grp Cap (vph)		99	86		431		328	1748			122	1348
v/s Ratio Prot		c0.04			c0.24		c0.17	c0.50			0.06	0.27
v/s Ratio Perm			0.01									
v/c Ratio		0.76	0.10		0.99		0.90	0.99			0.87	0.70
Uniform Delay, d1		69.8	67.2		56.4		59.6	36.9			69.1	38.7
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		28.1	0.6		39.8		25.3	19.4			42.5	1.6
Delay (s)		97.9	67.8		96.2		84.9	56.3			111.6	40.3
Level of Service		F	E		F		F	E			F	D
Approach Delay (s)		77.4			96.2			60.4				47.5
Approach LOS		E			F			E				D

Intersection Summary			
HCM Average Control Delay	62.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	149.8	Sum of lost time (s)	19.3
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	70
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	74
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	40	120	160	40	40	110	1780	520	80	930	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.95		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1653		1681	1645		1770	3539	1542	1770	3496	
Flt Permitted	0.95	1.00		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1653		1681	1645		1770	3539	1542	1770	3496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	43	130	174	43	43	120	1935	565	87	1011	76
RTOR Reduction (vph)	0	83	0	0	15	0	0	0	153	0	3	0
Lane Group Flow (vph)	54	90	0	132	113	0	120	1935	412	87	1084	0
Confl. Peds. (#/hr)						2			2			2
Turn Type	Split			Split			Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	7.0	7.0		16.2	16.2		12.1	73.5	73.5	7.0	68.4	
Effective Green, g (s)	7.0	7.0		16.2	16.2		12.1	73.5	73.5	7.0	68.4	
Actuated g/C Ratio	0.06	0.06		0.13	0.13		0.10	0.61	0.61	0.06	0.56	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.7	5.7	4.0	5.7	
Vehicle Extension (s)	2.0	2.0		4.0	4.0		2.0	4.2	4.2	2.0	4.2	
Lane Grp Cap (vph)	102	95		224	220		176	2143	934	102	1970	
v/s Ratio Prot	0.03	c0.05		c0.08	0.07		c0.07	c0.55		c0.05	0.31	
v/s Ratio Perm									0.27			
v/c Ratio	0.53	0.95		0.59	0.51		0.68	0.90	0.44	0.85	0.55	
Uniform Delay, d1	55.6	57.0		49.5	48.9		52.8	20.8	12.9	56.7	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	74.0		4.6	2.7		8.4	6.0	0.5	44.6	0.4	
Delay (s)	57.9	131.1		54.1	51.6		61.2	26.8	13.4	101.3	17.2	
Level of Service	E	F		D	D		E	C	B	F	B	
Approach Delay (s)		113.7			52.9			25.5			23.4	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	121.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	550	80	10	150	60	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.76	0.76	0.79	0.79
Hourly flow rate (vph)	671	98	13	197	76	13
Pedestrians	2			2		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1220					
pX, platoon unblocked						
vC, conflicting volume			768		945	722
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			768		945	722
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		73	97
cM capacity (veh/h)			846		286	426

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	768	13	197	89
Volume Left	0	13	0	76
Volume Right	98	0	0	13
cSH	1700	846	1700	300
Volume to Capacity	0.45	0.02	0.12	0.30
Queue Length 95th (ft)	0	1	0	30
Control Delay (s)	0.0	9.3	0.0	22.0
Lane LOS		A		C
Approach Delay (s)	0.0	0.6		22.0
Approach LOS				C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	320	90	220	90	350	90	710	610	230	520	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.88		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3411		1770	3080		1770	3539	1559	1770	3479	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3411		1770	3080		1770	3539	1559	1770	3479	
Peak-hour factor, PHF	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Adj. Flow (vph)	169	416	117	256	105	407	148	1164	1000	274	619	71
RTOR Reduction (vph)	0	17	0	0	312	0	0	0	236	0	6	0
Lane Group Flow (vph)	169	516	0	256	200	0	148	1164	764	274	684	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	16.0	23.4		19.1	26.5		16.4	51.6	51.6	26.1	61.3	
Effective Green, g (s)	16.0	23.4		19.1	26.5		16.4	51.6	51.6	26.1	61.3	
Actuated g/C Ratio	0.12	0.17		0.14	0.19		0.12	0.37	0.37	0.19	0.44	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	204	575		243	588		209	1315	579	332	1536	
v/s Ratio Prot	0.10	c0.15		c0.14	c0.06		0.08	0.33		c0.15	0.20	
v/s Ratio Perm									c0.49			
v/c Ratio	0.83	0.90		1.05	0.34		0.71	0.89	1.32	0.83	0.45	
Uniform Delay, d1	60.1	56.5		59.9	48.6		58.9	40.8	43.6	54.2	26.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	22.9	16.6		72.5	0.3		9.7	7.4	155.9	15.0	0.2	
Delay (s)	82.9	73.2		132.4	48.8		68.6	48.2	199.5	69.1	27.1	
Level of Service	F	E		F	D		E	D	F	E	C	
Approach Delay (s)		75.5			76.7			115.0			39.0	
Approach LOS		E			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	87.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	138.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Marble Valley/Pedregal/Lime Rock**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	70	57	81.9%	56.3	6.5	E
	Through	1560	1450	92.9%	37.8	3.5	D
	Right Turn	170	160	94.1%	46.2	5.6	D
	Subtotal	**1800**	**1667**	**92.6%**	**39.3**	**3.6**	**D**
SB	Left Turn	100	94	93.7%	159.5	50.1	F
	Through	880	880	100.0%	57.3	16.9	E
	Right Turn	230	231	100.2%	41.7	5.0	D
	Subtotal	**1210**	**1204**	**99.5%**	**62.3**	**16.3**	**E**
EB	Left Turn	630	461	73.2%	375.0	5.0	F
	Through	130	95	73.2%	383.7	9.7	F
	Right Turn	440	308	69.9%	111.1	6.8	F
	Subtotal	**1200**	**864**	**72.0%**	**282.0**	**7.1**	**F**
WB	Left Turn	130	123	94.4%	83.3	27.5	F
	Through	120	106	88.3%	287.4	115.5	F
	Right Turn	220	203	92.1%	265.0	118.2	F
	Subtotal	**470**	**431**	**91.8%**	**219.1**	**92.6**	**F**
Total		**4680**	**4167**	**89.0%**	**114.6**	**10.5**	**F**

Intersection 15 **El Dorado Hills Blvd/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	1200	918	76.5%	67.8	12.7	E
	Through	1420	1308	92.1%	21.3	0.9	C
	Right Turn	240	212	88.1%	7.7	0.5	A
	Subtotal	**2860**	**2438**	**85.2%**	**37.6**	**4.9**	**D**
SB	Left Turn	70	63	89.9%	59.9	8.4	E
	Through	1210	1094	90.4%	43.6	5.8	D
	Right Turn	170	160	93.9%	2.1	0.8	A
	Subtotal	**1450**	**1316**	**90.8%**	**39.3**	**5.2**	**D**
EB	Left Turn	280	266	94.9%	116.9	81.1	F
	Through	60	58	97.2%	141.2	106.7	F
	Right Turn	530	519	97.9%	31.1	66.8	C
	Subtotal	**870**	**843**	**96.9%**	**65.6**	**73.6**	**E**
WB	Left Turn	60	64	105.8%	66.5	5.0	E
	Through	90	93	103.3%	69.8	5.0	E
	Right Turn	100	98	97.8%	4.1	1.2	A
	Subtotal	**250**	**254**	**101.7%**	**43.7**	**2.9**	**D**
Total		**5430**	**4851**	**89.3%**	**43.0**	**14.2**	**D**

SimTraffic Post-Processor | **Marble Valley/Pedregal/Lime Rock**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 16 **El Dorado Hills Blvd/US-50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	2330	1906	81.8%	11.9	3.4	B
	Right Turn	540	461	85.4%	8.3	0.4	A
	Subtotal	**2870**	**2367**	**82.5%**	**11.2**	**2.7**	**B**
SB	Left Turn	260	225	86.7%	48.0	12.2	D
	Through	1540	1384	89.8%	61.8	32.6	E
	Right Turn						
	Subtotal	**1800**	**1609**	**89.4%**	**60.0**	**29.6**	**E**
EB	Left Turn						
	Through						
	Right Turn	770	748	97.1%	70.2	82.2	E
	Subtotal	**770**	**748**	**97.1%**	**70.2**	**82.2**	**E**
WB	Left Turn						
	Through						
	Right Turn	530	533	100.6%	1.5	0.1	A
	Subtotal	**530**	**533**	**100.6%**	**1.5**	**0.1**	**A**
Total		**5970**	**5257**	**88.1%**	**33.4**	**17.5**	**C**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	10	8	83.0%	586.9	225.7	F
	Through	1720	1548	90.0%	271.6	58.4	F
	Right Turn	90	88	97.6%	42.1	17.3	D
	Subtotal	**1820**	**1644**	**90.3%**	**260.9**	**56.7**	**F**
SB	Left Turn	710	631	88.9%	161.6	25.3	F
	Through	1540	1445	93.8%	28.2	4.1	C
	Right Turn	60	54	89.7%	3.9	1.4	A
	Subtotal	**2310**	**2130**	**92.2%**	**67.2**	**10.8**	**E**
EB	Left Turn	320	325	101.7%	73.1	6.3	E
	Through	60	61	102.0%	60.6	7.4	E
	Right Turn	100	102	102.3%	21.1	3.1	C
	Subtotal	**480**	**489**	**101.9%**	**60.6**	**4.2**	**E**
WB	Left Turn	40	22	54.0%	608.1	52.0	F
	Through	20	10	51.0%	494.6	49.2	F
	Right Turn	830	491	59.2%	360.8	22.7	F
	Subtotal	**890**	**523**	**58.8%**	**373.6**	**23.3**	**F**
Total		**5500**	**4786**	**87.0%**	**166.2**	**20.7**	**F**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	640	650	50	310	380	270	10	910	620	370	800	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Lane Util. Factor	0.97	0.91		0.97	0.95	1.00	1.00	0.86	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5026		3433	3539	1583	1770	6408	1561	3433	5085	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	744	756	58	378	463	329	14	1230	838	430	930	593
RTOR Reduction (vph)	0	6	0	0	0	144	0	0	101	0	0	221
Lane Group Flow (vph)	744	808	0	378	463	185	14	1230	737	430	930	372
Confl. Peds. (#/hr)			2						2			
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	25.0	32.5		20.4	29.8	29.8	2.0	66.7	66.7	18.0	82.7	82.7
Effective Green, g (s)	25.0	32.5		20.4	29.8	29.8	2.0	66.7	66.7	18.0	82.7	82.7
Actuated g/C Ratio	0.16	0.20		0.13	0.19	0.19	0.01	0.42	0.42	0.11	0.52	0.52
Clearance Time (s)	4.0	5.7		6.0	5.8	5.8	5.0	5.7	5.7	5.0	5.7	5.7
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	536	1021		438	659	295	22	2671	651	386	2628	818
v/s Ratio Prot	c0.22	c0.16		0.11	0.13		0.01	0.19		c0.13	0.18	
v/s Ratio Perm						0.12			c0.47			0.24
v/c Ratio	1.39	0.79		0.86	0.70	0.63	0.64	0.46	1.13	1.11	0.35	0.46
Uniform Delay, d1	67.5	60.5		68.4	61.0	60.0	78.6	33.7	46.6	71.0	22.9	24.4
Progression Factor	1.00	1.00		0.61	0.91	1.06	1.00	1.00	1.00	0.78	0.23	0.32
Incremental Delay, d2	185.9	4.3		14.4	3.0	3.7	47.5	0.6	77.7	77.2	0.3	1.6
Delay (s)	253.4	64.8		56.4	58.2	67.1	126.1	34.2	124.3	132.7	5.6	9.3
Level of Service	F	E		E	E	E	F	C	F	F	A	A
Approach Delay (s)		154.9			60.1			71.1			34.7	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	78.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1310	20	30	610	120	40	20	30	200	20	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1536	1770	4936		1770	1667		1770	1578	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1536	1770	4936		1770	1667		1770	1578	
Peak-hour factor, PHF	0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	373	1578	24	38	762	150	47	23	35	217	22	337
RTOR Reduction (vph)	0	0	5	0	16	0	0	34	0	0	306	0
Lane Group Flow (vph)	373	1578	19	38	896	0	47	24	0	217	53	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	3		4	8	
Permitted Phases			2									
Actuated Green, G (s)	48.3	101.8	101.8	6.0	58.8		17.2	6.3		24.9	14.8	
Effective Green, g (s)	48.3	101.8	101.8	6.0	58.8		17.2	6.3		24.9	14.8	
Actuated g/C Ratio	0.30	0.64	0.64	0.04	0.37		0.11	0.04		0.16	0.09	
Clearance Time (s)	5.2	6.0	6.0	4.5	6.0		5.2	6.0		4.5	4.5	
Vehicle Extension (s)	1.0	3.6	3.6	1.0	3.6		1.0	1.0		3.0	3.0	
Lane Grp Cap (vph)	534	3235	977	66	1814		190	66		275	146	
v/s Ratio Prot	c0.21	c0.31		0.02	0.18		0.03	0.01		c0.12	c0.03	
v/s Ratio Perm			0.01									
v/c Ratio	0.70	0.49	0.02	0.58	0.49		0.25	0.37		0.79	0.36	
Uniform Delay, d1	49.4	15.3	10.7	75.7	39.1		65.5	74.9		65.0	68.2	
Progression Factor	0.89	0.69	0.58	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.1	0.0	7.3	1.0		0.2	1.3		13.9	1.5	
Delay (s)	44.9	10.8	6.2	83.1	40.1		65.7	76.2		78.9	69.7	
Level of Service	D	B	A	F	D		E	E		E	E	
Approach Delay (s)		17.2			41.8			71.5			73.2	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1130	130	270	540	110	90	20	180	170	70	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.87		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4994		1770	4936		1770	1590		1770	1734	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	4994		1770	4936		1770	1590		1770	1734	
Peak-hour factor, PHF	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Adj. Flow (vph)	66	1242	143	346	692	141	111	25	222	189	78	56
RTOR Reduction (vph)	0	10	0	0	20	0	0	194	0	0	21	0
Lane Group Flow (vph)	66	1375	0	346	813	0	111	53	0	189	113	0
Confl. Peds. (#/hr)	2		2			2			2			3
Turn Type	Prot			Prot			Split			Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases												
Actuated Green, G (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Effective Green, g (s)	6.9	36.6		25.5	55.9		13.9	13.9		17.5	17.5	
Actuated g/C Ratio	0.06	0.33		0.23	0.50		0.12	0.12		0.16	0.16	
Clearance Time (s)	3.5	6.0		3.5	5.3		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	3.7		2.0	3.0		3.6	3.6		3.6	3.6	
Lane Grp Cap (vph)	110	1641		405	2477		221	198		278	272	
v/s Ratio Prot	0.04	c0.28		c0.20	0.16		c0.06	0.03		c0.11	0.07	
v/s Ratio Perm												
v/c Ratio	0.60	0.84		0.85	0.33		0.50	0.27		0.68	0.42	
Uniform Delay, d1	50.9	34.7		41.2	16.6		45.5	44.1		44.3	42.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	4.0		15.4	0.1		2.2	0.9		6.8	1.3	
Delay (s)	56.7	38.7		56.6	16.6		47.7	45.0		51.1	43.6	
Level of Service	E	D		E	B		D	D		D	D	
Approach Delay (s)		39.5			28.4			45.8			48.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	111.4	Sum of lost time (s)	17.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	60	80	1460	930	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	87	1587	1011	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1161	
pX, platoon unblocked	0.81	0.81	0.81			
vC, conflicting volume	1995	522	1043			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1758	0	583			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	89			
cM capacity (veh/h)	55	878	799			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	65	87	793	793	674	370
Volume Left	0	87	0	0	0	0
Volume Right	65	0	0	0	0	33
cSH	878	799	1700	1700	1700	1700
Volume to Capacity	0.07	0.11	0.47	0.47	0.40	0.22
Queue Length 95th (ft)	6	9	0	0	0	0
Control Delay (s)	9.4	10.1	0.0	0.0	0.0	0.0
Lane LOS	A	B				
Approach Delay (s)	9.4	0.5			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	30	1760	110	30	1080
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	1913	120	33	1174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1104			
pX, platoon unblocked	0.43	0.43			0.43	
vC, conflicting volume	2625	1016			2033	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2132	0			760	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			91	
cM capacity (veh/h)	17	468			366	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	1275	757	33	587	587
Volume Left	0	0	0	33	0	0
Volume Right	33	0	120	0	0	0
cSH	468	1700	1700	366	1700	1700
Volume to Capacity	0.07	0.75	0.45	0.09	0.35	0.35
Queue Length 95th (ft)	6	0	0	7	0	0
Control Delay (s)	13.3	0.0	0.0	15.8	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	13.3	0.0		0.4		
Approach LOS	B					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	600	40	20	170	20	0	0	30	0	0	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	652	43	22	185	22	0	0	33	0	0	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		560										
pX, platoon unblocked												
vC, conflicting volume	207			696			978	924	674	946	935	196
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			696			978	924	674	946	935	196
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	93	100	100	91
cM capacity (veh/h)	1365			900			205	263	455	220	259	846

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	696	22	207	33	76
Volume Left	0	22	0	0	0
Volume Right	43	0	22	33	76
cSH	1700	900	1700	455	846
Volume to Capacity	0.41	0.02	0.12	0.07	0.09
Queue Length 95th (ft)	0	2	0	6	7
Control Delay (s)	0.0	9.1	0.0	13.5	9.7
Lane LOS		A		B	A
Approach Delay (s)	0.0	0.9		13.5	9.7
Approach LOS				B	A

Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		44.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	210	250	30	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	228	272	33	22	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			884			
pX, platoon unblocked						
vC, conflicting volume	304				424	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304				424	152
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	99
cM capacity (veh/h)	1253				553	867

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	114	114	181	123	33
Volume Left	11	0	0	0	0	22
Volume Right	0	0	0	0	33	11
cSH	1253	1700	1700	1700	1700	629
Volume to Capacity	0.01	0.07	0.07	0.11	0.07	0.05
Queue Length 95th (ft)	1	0	0	0	0	4
Control Delay (s)	7.9	0.0	0.0	0.0	0.0	11.0
Lane LOS	A					B
Approach Delay (s)	0.4			0.0		11.0
Approach LOS						B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 25 **Silva Valley Pkwy/US-50 WB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1200	1516	126.3%	15.2	1.0	B
	Right Turn	40	35	88.5%	2.0	0.2	A
	Subtotal	**1240**	**1551**	**125.1%**	**14.9**	**1.0**	**B**
SB	Left Turn						
	Through	700	642	91.7%	9.3	0.7	A
	Right Turn	380	500	131.6%	4.2	0.2	A
	Subtotal	**1080**	**1142**	**105.7%**	**7.1**	**0.5**	**A**
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	580	523	90.1%	46.4	2.2	D
	Through	10	0	0.0%	0.0	0.0	A
	Right Turn	420	365	86.9%	48.6	6.5	D
	Subtotal	**1010**	**888**	**87.9%**	**47.4**	**2.9**	**D**
Total		**3330**	**3581**	**107.5%**	**20.5**	**1.0**	**C**

Intersection 26 **Silva Valley Pkwy/US-50 EB Ramps** **Signalized**

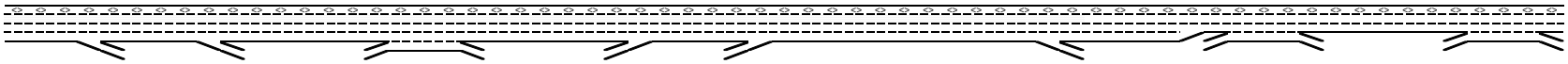
		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	700	905	129.3%	9.2	0.5	A
	Right Turn	730	588	80.5%	4.3	0.2	A
	Subtotal	**1430**	**1492**	**104.4%**	**7.3**	**0.3**	**A**
SB	Left Turn						
	Through	960	962	100.2%	8.4	0.7	A
	Right Turn	320	193	60.4%	2.9	0.2	A
	Subtotal	**1280**	**1155**	**90.2%**	**7.5**	**0.6**	**A**
EB	Left Turn	540	660	122.2%	20.3	0.5	C
	Through						
	Right Turn	40	42	105.8%	10.2	1.3	B
	Subtotal	**580**	**702**	**121.0%**	**19.7**	**0.5**	**B**
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		**3290**	**3349**	**101.8%**	**10.0**	**0.4**	**A**

Cumulative No Project Roadway Segments Analysis		Peak Hour Volume		LOS Thresholds			V/ C Ratio		LOS	
Central El Dorado	**Number of Lanes**	**AM**	**PM**	**LOS C**	**LOS D**	**LOS E**	**AM**	**PM**	**AM**	**PM**
El Dorado Hills Blvd - Green Valley to US 50 (5 segments)										
Green Valley to Francisco	2A	450	460	850	1540	1650	0.27	0.28	C or better	C or better
Francisco to Governor	2A	1515	1564	850	1540	1650	0.92	0.95	D	E
Governor to Wilson	4AD	2260	2290	1850	3220	3290	0.69	0.70	D	D
Wilson to Serrano	4AD	2640	2790	1850	3220	3290	0.80	0.85	D	D
Serrano to Saratoga	**5AD**	3170	3400	2350	4060	4110	0.77	0.83	D	D
Saratoga to US 50	**7AD**	2700	2900	3215	5410	5420	0.50	0.54	C or better	C or better
Latrobe Road - US 50 to S. Shingle Rd (5 Segemtns)										
US 50 to Town Center	**7AD**	4360	5080	3215	5410	5420	0.80	0.94	D	D
Town Center to White Rock Rd	6AD	3090	3340	2760	4680	4710	0.66	0.71	D	D
White Rock to Golden Foothill Pkwy	**6AD**	2270	2660	2760	4680	4710	0.48	0.56	C or better	C or better
Golden Foothill Pkwy to Sun Ridge Meadow Rd	**4AU**	1600	1590	1760	3070	3130	0.51	0.51	C or better	C or better
Sun Ridge Meadow Rd to S. Shingle Rd	2A	590	610	850	1540	1650	0.36	0.37	C or better	C or better
White Rock Road - Scott Road to US 50 (5 Segments)										
Scott Rd to Four Seasons Dr.	**4AD**	1570	2010	1850	3220	3290	0.48	0.61	C or better	D
Four Seasons Dr to Latrobe Rd	4AD	1650	1980	1850	3220	3290	0.50	0.60	C or better	D
Latrobe Rd to Vine St	**6AD**	1480	1730	2760	4680	4710	0.31	0.37	C or better	C or better
Vine St to US 50	**6AD**	1740	2240	2760	4680	4710	0.37	0.48	C or better	C or better
Silva Valley Pkwy - Green Valley Rd to US 50 (4 Segments)										
Green Valley to Glenwood Way	2A	930	900	850	1540	1650	0.56	0.55	D	D
Glenwood Way to Appian Way	2A	780	900	850	1540	1650	0.47	0.55	C or better	D
Appian Way to Harvard Way	2A	1090	1030	850	1540	1650	0.66	0.62	D	D
Harvard Way to Serrano Pkwy	4AD	2130	1880	1850	3220	3290	0.65	0.57	D	D
Serrano Pkwy to US 50	**4AD**	2650	2590	1850	3220	3290	0.81	0.79	D	D
Serrano Pkwy - EDH Blvd to Bass Lake Rd - 3 segments										
EDH Blvd to Silva Valley Pkwy	2A	1010	920	850	1540	1650	0.61	0.56	D	D
Silva Valley to Villagio Dr	4AD	1830	1720	1850	3220	3290	0.56	0.52	C or better	C or better
Villagio Dr to Bass Lake Rd	2A	1010	1100	850	1540	1650	0.61	0.67	D	D
Saratoga Way - west of EDH Blvd (2 segments)										
EDH to Arrowhead	2A	1050	1550	850	1540	1650	0.64	0.94	D	E
Wilson Way - west of EDH Blvd (2 segments)										
EDH Blvd to Ridgeview Dr	4AU	550	510	1760	3070	3130	0.18	0.16	C or better	C or better
Olson Ln/Gillette Dr - west of EDH Blvd (2 segemtns)										
EDH Blvd to Gillete	2A	310	300	850	1540	1650	0.19	0.18	C or better	C or better
Harvard Way - EDH Blvd to Silva Valley Pkwy (1 segments)										
EDH Blvd to Silva Valley Pkwy	4AU	1370	830	1760	3070	3130	0.44	0.27	C or better	C or better

Cumulative Plus Project Roadway Segments Analysis		Peak Hour Volume		LOS Thresholds			V/ C Ratio		LOS	
Central El Dorado	**Number of Lanes**	**AM**	**PM**	**LOS C**	**LOS D**	**LOS E**	**AM**	**PM**	**AM**	**PM**
El Dorado Hills Blvd - Green Valley to US 50 (5 segments)										
Green Valley to Francisco	2A	460	440	850	1540	1650	0.28	0.27	C or better	C or better
Francisco to Governor	2A	1535	1554	850	1540	1650	0.93	0.94	D	E
Governor to Wilson	4AD	2300	2290	1850	3220	3290	0.70	0.70	D	D
Wilson to Serrano	4AD	2740	2840	1850	3220	3290	0.83	0.86	D	D
Serrano to Saratoga	**5AD**	3310	3520	2350	4060	4110	0.81	0.86	D	D
Saratoga to US 50	**7AD**	2700	3050	3215	5410	5420	0.50	0.56	C or better	C or better
Latrobe Road - US 50 to S. Shingle Rd (5 Segemtns)										
US 50 to Town Center	**7AD**	4380	5110	3215	5410	5420	0.81	0.94	D	D
Town Center to White Rock Rd	6AD	3110	3340	2760	4680	4710	0.66	0.71	D	D
White Rock to Golden Foothill Pkwy	**6AD**	2300	2670	2760	4680	4710	0.49	0.57	C or better	C or better
Golden Foothill Pkwy to Sun Ridge Meadow Rd	**4AU**	1600	1590	1760	3070	3130	0.51	0.51	C or better	C or better
Sun Ridge Meadow Rd to S. Shingle Rd	2A	590	600	850	1540	1650	0.36	0.36	C or better	C or better
White Rock Road - Scott Road to US 50 (5 Segments)										
Scott Rd to Four Seasons Dr.	**4AD**	1560	2040	1850	3220	3290	0.47	0.62	C or better	D
Four Seasons Dr to Latrobe Rd	4AD	1640	2000	1850	3220	3290	0.50	0.61	C or better	D
Latrobe Rd to Vine St	**6AD**	1490	1780	2760	4680	4710	0.32	0.38	C or better	C or better
Vine St to US 50	**6AD**	1730	2260	2760	4680	4710	0.37	0.48	C or better	C or better
Silva Valley Pkwy - Green Valley Rd to US 50 (4 Segments)										
Green Valley to Glenwood Way	2A	920	910	850	1540	1650	0.56	0.55	D	D
Glenwood Way to Appian Way	2A	770	900	850	1540	1650	0.47	0.55	C or better	D
Appian Way to Harvard Way	2A	1110	1010	850	1540	1650	0.67	0.61	D	D
Harvard Way to Serrano Pkwy	4AD	2160	1900	1850	3220	3290	0.66	0.58	D	D
Serrano Pkwy to US 50	**4AD**	2660	2610	1850	3220	3290	0.81	0.79	D	D
Serrano Pkwy - EDH Blvd to Bass Lake Rd - 3 segments										
EDH Blvd to Silva Valley Pkwy	2A	1000	920	850	1540	1650	0.61	0.56	D	D
Silva Valley to Villagio Dr	4AD	1800	1750	1850	3220	3290	0.55	0.53	C or better	C or better
Villagio Dr to Bass Lake Rd	2A	1010	1100	850	1540	1650	0.61	0.67	D	D
Saratoga Way - west of EDH Blvd (2 segments)										
EDH to Arrowhead	2A	1110	1560	850	1540	1650	0.67	0.95	D	E
Wilson Way - west of EDH Blvd (2 segments)										
EDH Blvd to Ridgeview Dr	4AU	550	510	1760	3070	3130	0.18	0.16	C or better	C or better
Olson Ln/Gillette Dr - west of EDH Blvd (2 segemtns)										
EDH Blvd to Gillete	2A	310	300	850	1540	1650	0.19	0.18	C or better	C or better
Harvard Way - EDH Blvd to Silva Valley Pkwy (1 segments)										
EDH Blvd to Silva Valley Pkwy	4AU	1380	840	1760	3070	3130	0.44	0.27	C or better	C or better

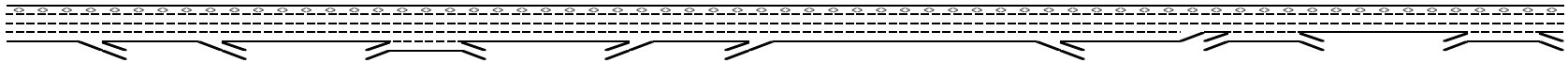
Project: Serrano/Pedregal
Freeway Corridor: Eastbound US 50
Alternative: Cumulative No Project
Time Period: AM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	5,725	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	4,020	2,930	2,740	2,740	3,220	3,220	3,500	3,710	3,710	2,800	2,800	2,910	2,910
On Ramp Volume				770		280	210				430		1,160
Off Ramp Volume	1,090	190		290					910		320		1,130
Express Lane Volume	442	322	301	301	451	451	490	519	519	392	364	378	378
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	3,578	2,608	2,439	3,209	2,769	3,049	3,220	3,191	3,191	2,408	2,866	2,532	3,692
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,967	2,891	2,704	3,557	3,070	3,381	3,570	4,023	3,537	2,670	3,178	2,807	4,093
GP Flow (pcphpl)	1,322	964	901	889	1,023	1,127	1,190	1,341	1,179	890	1,059	1,403	1,364
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.56	0.41	0.38	0.38	0.44	0.48	0.51	0.57	0.50	0.38	0.45	0.60	0.58
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	20.3	14.8	13.9	13.7	15.7	17.3	18.3	20.6	18.1	13.7	16.3	21.6	21.0
LOS	C	B	B	B	B	B	C	C	C	B	B	C	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				2,712		3,073	3,339				2,566		2,813
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.38		0.44	0.47				0.55		0.60
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	2,770	2,683		3,248					2,295	2,670	2,836		2,839
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.39	0.38		0.46					0.33	0.57	0.60		0.60
Calculate Flow Rate in Express Lanes (EL)													

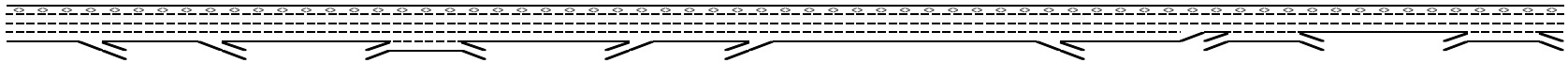


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
EL Volume (vph)	442	322	301	301	451	451	490	519	519	392	364	378	378
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	525	383	358	358	536	536	582	666	617	466	433	450	450
EL Flow (pcphpl)	525	383	358	358	536	536	582	666	617	466	433	450	450
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.30	0.22	0.20	0.20	0.31	0.31	0.33	0.38	0.35	0.27	0.25	0.26	0.26
Calculate On Ramp Flow Rate													
On Volume (vph)				770		280	210				430		1,160
PHF				0.92		0.92	0.92				0.71		0.92
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				845		307	231				612		1,280
On Flow (pcphpl)				845		307	231				612		1,280
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		Right
On Ramp Speed (mph)				45		25	45				45		45
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		2,100
On Ramp v/c ratio				0.40		0.16	0.11				0.29		0.61
Calculate Off Ramp Flow Rate													
Off Volume (vph)	1,090	190		290					910		320		1,130
PHF	0.92	0.92		0.95					0.74		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%

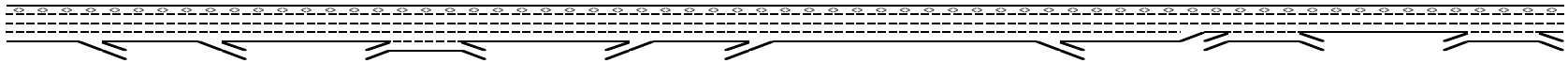


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	1,197	209		310					1,242		342		1,254
Off Flow (pcphpl)	1,197	209		310					1,242		342		1,254
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right		Right		Right
Off Ramp Speed	45	25		45					45		45		45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100		2,100		2,100
Off Ramp v/c ratio	0.57	0.11		0.15					0.59		0.16		0.60
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		Off
Up Distance		2,350				1,575	800		4,900		2,100		1,350
Up Flow (pcph)		1,197				310	307		310		1,242		342
Down Type	Off	On				On	On		On		On		No
Down Distance	850	1,975				2,900	3,400		2,100		1,350		
Down Flow (pcph)	209	845				612	612		612		1,280		
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						3,073	3,339						
Up Ramp L_{EQ}						-127	937						
Down Ramp L_{EQ}						3,631	3,750						
P_{FM} (Eqn 13-3)						0.593	0.592						
P_{FM} (Eqn 13-4)		#VALUE!				0.700			#VALUE!		#VALUE!		#VALUE!
P_{FM} (Eqn 13-5)	0.613												
P_{FM}						0.593	0.592						
v_{12} (pcph)						1,822	1,975						
v_3 (pcph)						1,251	1,364						
v_{34} (pcph)													
v_{12a} (pcph)						1,822	1,975						
v_{R12a} (pcph)						2,130	2,206						
Merge Speed Index						0.33	0.31						
Merge Area Speed						57.5	57.8						
Outer Lanes Volume						1,251	1,364						
Outer Lanes Speed						62.3	61.9						
Segment Speed						59.2	59.3						
Merge v/c ratio						0.46	0.48						
Merge Density						18.5	19.4						
Merge LOS						B	B						
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	3,967	2,891							3,537				
Up Ramp L_{EQ}		9,837							5,345				
Down Ramp L_{EQ}	359	862							1,057				
P_{FD} (Eqn 13-9)	0.606	0.678							0.614				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.563												
P_{FD}	0.606	0.678							0.614				
v_{12} (pcph)	2,875	2,028							2,652				
v_3 (pcph)	1,092	863							885				



Key

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No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
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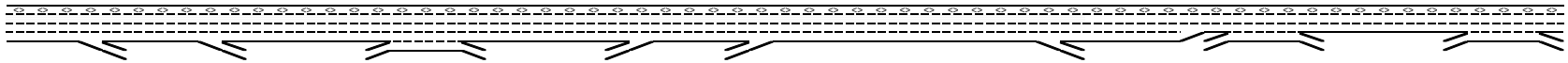
v_{34} (pcph)													
v_{12a} (pcph)	2,875	2,028							2,652				
Diverge Speed Index	0.41	0.58							0.41				
Diverge Area Speed	55.7	51.7							55.6				
Outer Lanes Volume	1,092	863							885				
Outer Lanes Speed	70.9	71.3							71.3				
Segment Speed	59.2	56.4							58.8				
Diverge v/c ratio	0.65	0.46							0.60				
Diverge Density	27.6	20.3							25.7				
Diverge LOS	C	C							C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				50							10		460
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				55							11		505
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				720							420		700
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				794							461		768
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				240							310		670
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				260							344		743
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				2,199							2,126		1,862
PHF				0.95							0.92		0.92

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key

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No Trucks

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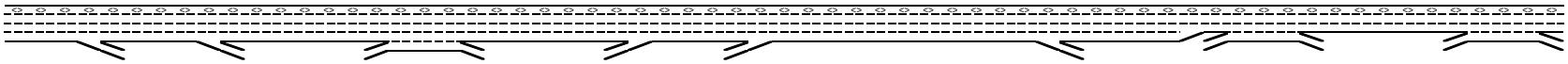
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				2,384							2,357		2,064
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							4,725		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				1,055							805		1,511
Non-Weave Flow				2,439							2,368		2,569
Segment Flow				3,493							3,173		4,080
Max Weave Length				4,038							5,092		6,351
Length Check				OK							OK		Not a Weave
Ideal Weave Capacity				2,194							2,322		2,419
f_{HV}				0.974							0.982		0.983
f_P				0.997							0.999		0.998
Capacity Condition 1				6,392							4,553		4,748
Capacity Condition 2				11,259							9,277		6,360
Weave v/c ratio				0.53							0.68		0.84
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				1,055							805		1,511
Weave LC Rate				1,650							2,534		4,274
Non-Weave LC Rate 1				1,009							2,664		4,074
Non-Weave LC Rate 2				2,233							2,217		2,262
Non-Weave LC Rate 3				1,316							-286		-2,686
Segment LC Rate				2,967							4,751		6,536
Weave Intensity Factor				0.308							0.227		0.208
Weave Speed				53.2							55.8		56.4
Non-Weave Speed				51.8							51.6		44.3
Segment Speed				52.2							52.6		48.1
Weave Density				22.3							30.2		-
Weave LOS				C							D		Basic
Summarize Segment Operations													
Segment v/c ratio	0.65	0.46	0.38	0.53	0.44	0.46	0.48	0.57	0.60	0.38	0.68	0.60	0.58
Segment Density	27.6	20.3	13.9	22.3	15.7	18.5	19.4	20.6	25.7	13.7	30.2	21.6	21.0
Segment LOS	C	C	B	C	B	B	B	C	C	B	D	C	C
Over Capacity													

Project: Serrano/Pedregal
Freeway Corridor: Eastbound US 50
Alternative: Cumulative No Project
Time Period: PM Peak Hour

Data Entry Value
Calculated Value



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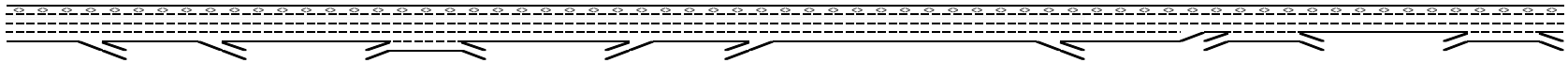
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	6,510	5,750	5,220	5,220	5,220	5,220	5,580	6,350	6,350	4,650	4,650	4,200	4,200
On Ramp Volume				700		360	770				260		1,130
Off Ramp Volume	760	530		700					1,700		710		1,660
Express Lane Volume	977	863	783	679	679	679	725	953	953	698	698	630	588
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	5,534	4,888	4,437	5,241	4,541	4,901	5,625	5,398	5,398	3,953	4,213	3,570	4,742
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,733	5,064	4,597	5,431	4,705	5,078	5,828	5,843	5,592	4,095	4,364	3,699	4,913
GP Flow (pcphpl)	1,911	1,688	1,532	1,358	1,568	1,693	1,943	1,948	1,864	1,365	1,455	1,849	1,638
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.81	0.72	0.65	0.58	0.67	0.72	0.83	0.83	0.79	0.58	0.62	0.79	0.70
Speed (mph)	61.3	63.8	64.8	65.0	64.6	63.8	60.8	60.7	61.9	65.0	65.0	62.1	64.2
Density (pcphpl)	31.2	26.4	23.7	20.9	24.3	26.5	31.9	32.1	30.1	21.0	22.4	29.8	25.5
LOS	D	D	C	C	C	D	D	D	D	C	C	D	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				4,662		4,683	4,982				3,995		3,706
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.66		0.66	0.71				0.85		0.79
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	4,899	4,482		4,658					3,822	4,095	3,606		3,071
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.69	0.64		0.66					0.54	0.87	0.77		0.65
Calculate Flow Rate in Express Lanes (EL)													

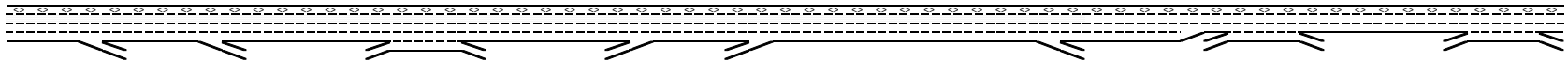


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
EL Volume (vph)	977	863	783	679	679	679	725	953	953	698	698	630	588
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	1,096	968	879	762	762	762	814	1,154	1,069	783	783	707	660
EL Flow (pcphpl)	1,096	968	879	762	762	762	814	1,154	1,069	783	783	707	660
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.63	0.55	0.50	0.44	0.44	0.44	0.47	0.66	0.61	0.45	0.45	0.40	0.38
Calculate On Ramp Flow Rate													
On Volume (vph)				700		360	770				260		1,130
PHF				0.92		0.92	0.92				0.71		0.95
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				768		395	845				370		1,207
On Flow (pcphpl)				768		395	845				370		1,207
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		
On Ramp Speed (mph)				45		25	45				45		
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		
On Ramp v/c ratio				0.37		0.21	0.40				0.18		
Calculate Off Ramp Flow Rate													
Off Volume (vph)	760	530		700					1,700		710		1,660
PHF	0.92	0.92		0.92					0.97		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%

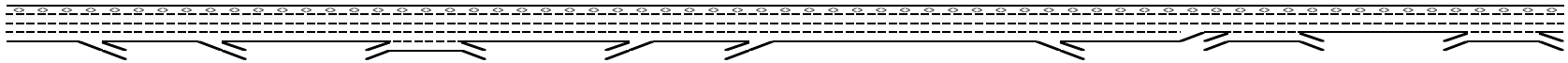


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	834	582		772					1,770		759		1,842
Off Flow (pcphpl)	834	582		772					1,770		759		1,842
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right				Right
Off Ramp Speed	45	25		45					45				45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100				2,100
Off Ramp v/c ratio	0.40	0.31		0.37					0.84				0.88
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Calculate Merge Influence Area Operations													
Calculate Diverge Influence Area Operations													
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				419							162		551
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				460							178		605
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				281							98		579
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				308							108		636
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				281							548		1,109
PHF				0.97							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5



Key

<> Express Lane (HOV)

No Trucks

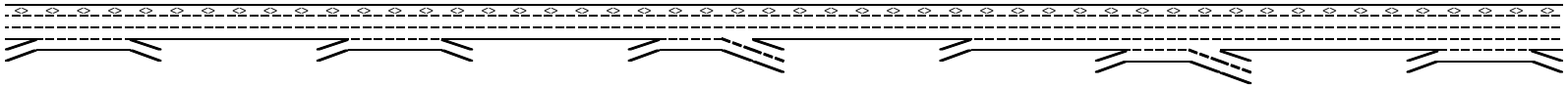
Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				291							568		1,149
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				4,260							3,405		2,503
PHF				0.92							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				4,654							3,527		2,593
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							5,625		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				600							675		1,785
Non-Weave Flow				5,114							3,705		3,198
Segment Flow				5,714							4,381		4,983
Max Weave Length				2,022							4,073		6,216
Length Check				OK							Not a Weave		Not a Weave
Ideal Weave Capacity				2,348							2,469		2,429
f_{HV}				0.994							0.995		0.994
f_P				0.999							1.000		0.999
Capacity Condition 1				7,002							4,910		4,822
Capacity Condition 2				33,144							15,481		6,651
Weave v/c ratio				0.81							0.89		1.03
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				600							675		1,785
Weave LC Rate				1,195							2,756		4,547
Non-Weave LC Rate 1				1,560							3,427		4,203
Non-Weave LC Rate 2				2,829							2,515		2,402
Non-Weave LC Rate 3				5,014							-9,364		-5,044
Segment LC Rate				4,025							5,271		6,949
Weave Intensity Factor				0.392							0.215		0.219
Weave Speed				50.9							56.2		56.0
Non-Weave Speed				51.5							49.6		40.2
Segment Speed				51.5							50.5		44.7
Weave Density				37.0							-		-
Weave LOS				E							Basic		Basic
Summarize Segment Operations													
Segment v/c ratio	0.84	0.75	0.65	0.81	0.67	0.69	0.82	0.83	0.87	0.58	0.62	0.79	0.70
Segment Density	34.6	31.3	23.7	37.0	24.3	26.6	31.5	32.1	35.8	21.0	22.4	29.8	25.5
Segment LOS	D	D	C	E	C	C	D	D	E	C	C	D	C

Project: Serrano/Pedregal
Freeway Corridor: Westbound US 50

Alternative: Cumulative No Project
Time Period: AM Peak Hour

Data Entry Value
Calculated Value

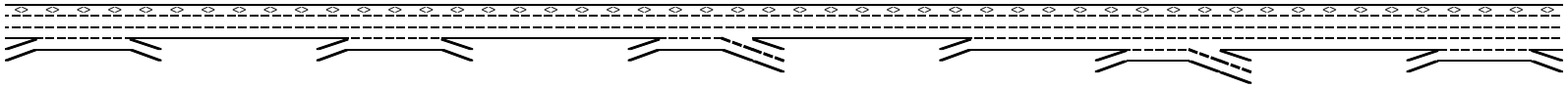
Location	1	2	3	4	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	3,300	3,340	3,340	3,810	3,810	4,450	4,450	4,480	4,600	4,600
On Ramp Volume	950		640		1,880		30	1,010		1,620
Off Ramp Volume	910		170		1,240			890		1,890
Express Lane Volume	495	501	534	610	610	712	712	672	828	828
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	3,755	2,839	3,446	3,200	5,080	3,738	3,768	4,818	3,772	5,392
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,015	3,035	3,684	3,422	5,432	3,996	4,029	5,151	4,033	5,765
GP Flow (pcphpl)	1,338	1,518	1,228	1,711	1,811	1,998	1,007	1,288	1,344	1,441
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.57	0.65	0.52	0.73	0.77	0.85	0.43	0.55	0.57	0.61
Speed (mph)	65.0	64.8	65.0	63.6	62.6	59.9	65.0	65.0	65.0	65.0

Location	1	2	3	4	5	6	7	8	9	10



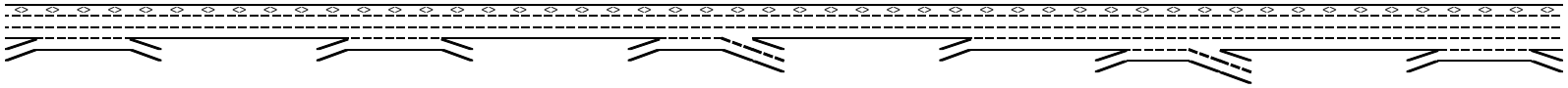
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Density (pcphpl)	20.6	23.4	18.9	26.9	28.9	33.3	15.5	19.8	20.7	22.2
LOS	C	C	C	D	D	D	B	C	C	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	2,972		3,011		3,423		3,995	4,005		3,926
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.63		0.64		0.73		0.85	0.57		0.56
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,622		3,502		3,379			4,200		3,746
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.56		0.75		0.72			0.60		0.53
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	495	501	534	610	610	712	712	672	828	828
PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	562	569	606	692	692	808	808	763	940	940
EL Flow (pcphpl)	562	569	606	692	692	808	808	763	940	940
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.32	0.32	0.35	0.40	0.40	0.46	0.46	0.44	0.54	0.54
Calculate On Ramp Flow Rate										
On Volume (vph)	950		640		1,880		30	1,010		1,620
PHF	0.92		0.96		0.95		0.89	0.89		0.89
Total Lanes	1		1		1		1	1		1

Location	1	2	3	4	5	6	7	8	9	10



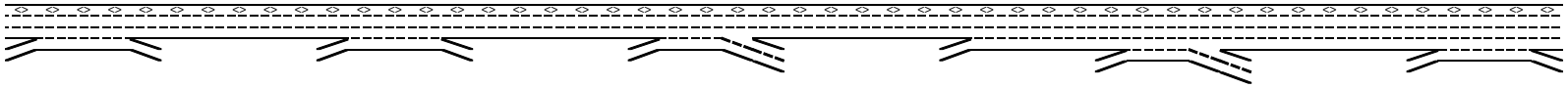
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,043		673		2,009		34	1,146		1,838
On Flow (pcphpl)	1,043		673		2,009		34	1,146		1,838
Calculate On Ramp Roadway Operations										
On Ramp Type	Right		Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)	2,100		1,900				2,100	2,100		2,100
On Ramp v/c ratio	0.50		0.35				0.02	0.55		0.88
Calculate Off Ramp Flow Rate										
Off Volume (vph)	910		170		1,240			890		1,890
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	1,393		182		2,053			951		2,019
Off Flow (pcphpl)	1,393		182		1,027			475		2,019
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	0.66		0.09		0.49			0.25		0.96
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			1,393		182					

Location	1	2	3	4	5	6	7	8	9	10



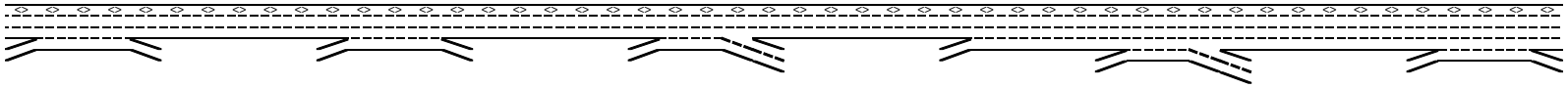
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	673				34					
Calculate Merge Influence Area Operations										
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	228		112		785			164		830
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	250		123		862			180		911
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	722		528		1,095			846		790
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	789		579		1,202			928		867
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	682		58		455			726		1,060
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2

Location	1	2	3	4	5	6	7	8	9	10



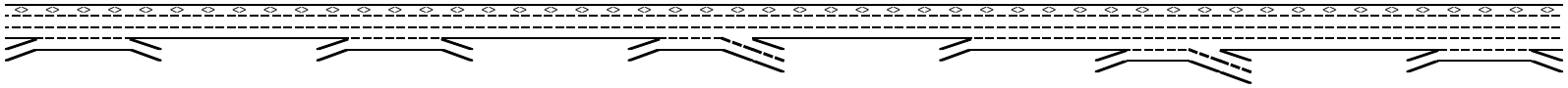
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	729		62		486			776		1,133
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,123		2,748		2,745			3,082		2,712
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,270		2,938		2,935			3,296		2,900
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,518		641		1,689			1,704		2,001
Non-Weave Flow	2,520		3,061		3,797			3,476		3,811
Segment Flow	4,038		3,702		5,486			5,180		5,811
Max Weave Length	6,412		4,264		4,102			4,331		4,497
Length Check	OK		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,343		2,578		2,457			2,281		2,295
f_{HV}	0.995		0.994		0.993			0.994		0.994
f_P	0.999		0.998		0.998			0.998		0.999
Capacity Condition 1	4,657		5,118		4,870			6,789		6,829
Capacity Condition 2	6,345		13,753		11,268			10,556		10,086
Weave v/c ratio	0.86		0.72		1.12			0.76		0.84
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,518		641		1,689			1,704		2,001
Weave LC Rate	3,903		3,355		3,720			2,820		3,289
Non-Weave LC Rate 1	3,562		4,175		3,378			1,995		2,253
Non-Weave LC Rate 2	2,251		2,372		2,536			2,464		2,539
Non-Weave LC Rate 3	-3,461		-23,002		-8,468			4,496		3,578
Segment LC Rate	6,154		5,727		6,256			5,284		5,827

Location	1	2	3	4	5	6	7	8	9	10



Key

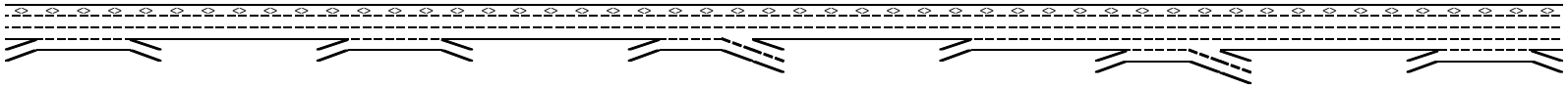
<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Weave Intensity Factor	0.221		0.188		0.250			0.318		0.318
Weave Speed	55.9		57.1		55.0			52.9		52.9
Non-Weave Speed	44.4		51.5		39.7			44.4		41.3
Segment Speed	48.1		52.4		43.4			46.9		44.7
Weave Density	42.0		-		-			36.8		43.4
Weave LOS	E		Basic		Basic			E		E
Summarize Segment Operations										
Segment v/c ratio	0.86	0.65	0.52	0.73	0.77	0.85	0.43	0.76	0.57	0.84
Segment Density	42.0	23.4	18.9	26.9	28.9	33.3	15.5	36.8	20.7	43.4
Segment LOS	E	C	C	D	D	D	B	E	C	E
Over Capacity										

Project: **Serrano/Pedregal** **Alternative:** **Cumulative No Project**
Freeway Corridor: **Westbound US 50** **Time Period:** **PM Peak Hour**

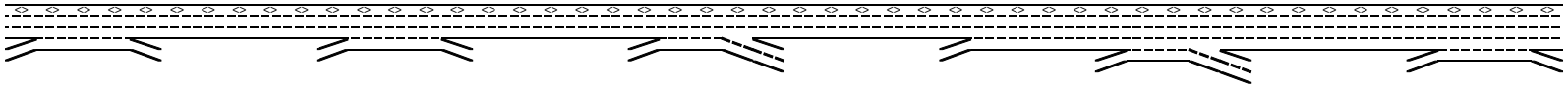
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	3,880	3,810	3,810	3,690	3,690	3,940	3,940	3,980	3,550	3,550
On Ramp Volume	1,010		470		1,230		40	390		1,480
Off Ramp Volume	1,080		590		980			820		1,725
Express Lane Volume	582	572	648	627	554	591	552	557	497	497
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	4,308	3,239	3,632	3,063	4,367	3,349	3,428	3,813	3,053	4,533
PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,510	3,390	3,803	3,206	4,571	3,506	3,589	3,992	3,196	4,745
GP Flow (pcphpl)	1,503	1,695	1,268	1,603	1,524	1,753	897	998	1,065	1,186
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.64	0.72	0.54	0.68	0.65	0.75	0.38	0.42	0.45	0.50
Speed (mph)	64.8	63.8	65.0	64.4	64.8	63.2	65.0	65.0	65.0	65.0

Location	1	2	3	4	5	6	7	8	9	10



Key

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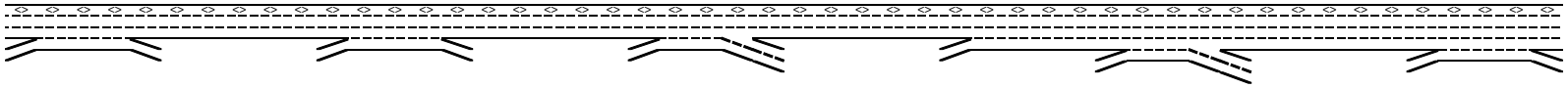
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Density (pcphpl)	23.2	26.6	19.5	24.9	23.5	27.7	13.8	15.4	16.4	18.3
LOS	C	D	C	C	C	D	B	B	B	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	3,364		3,308		3,257		3,545	3,549		3,066
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.72		0.70		0.69		0.75	0.50		0.43
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,857		3,172		2,949			3,115		2,902
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.61		0.67		0.63			0.44		0.41
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	582	572	648	627	554	591	552	557	497	497
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	653	641	727	704	621	663	619	625	558	558
EL Flow (pcphpl)	653	641	727	704	621	663	619	625	558	558
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.37	0.37	0.42	0.40	0.35	0.38	0.35	0.36	0.32	0.32
Calculate On Ramp Flow Rate										
On Volume (vph)	1,010		470		1,230		40	390		1,480
PHF	0.89		0.96		0.95		0.92	0.89		0.89
Total Lanes	1		1		1		1	1		1

Location	1	2	3	4	5	6	7	8	9	10



Key

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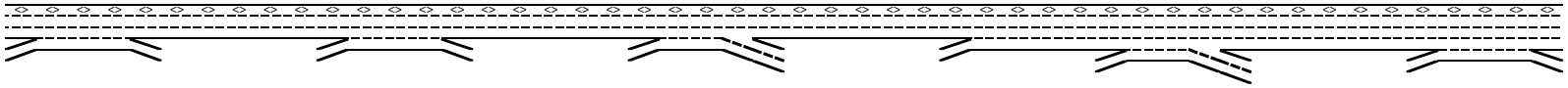
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,146		494		1,314		44	443		1,680
On Flow (pcphpl)	1,146		494		1,314		44	443		1,680
Calculate On Ramp Roadway Operations										
On Ramp Type			Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)			1,900				2,100	2,100		2,100
On Ramp v/c ratio			0.26				0.02	0.21		0.80
Calculate Off Ramp Flow Rate										
Off Volume (vph)	1,080		590		980			820		1,725
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	1,653		630		1,623			876		1,843
Off Flow (pcphpl)	1,653		630		811			438		1,843
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	0.79		0.30		0.39			0.23		0.88
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			1,653		630					

Location	1	2	3	4	5	6	7	8	9	10



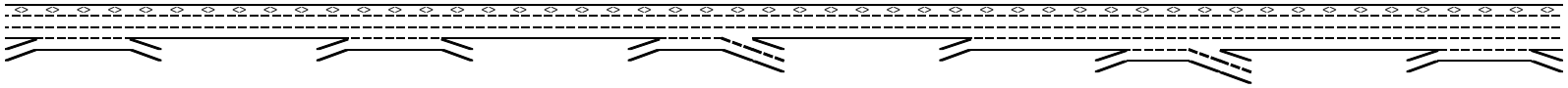
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	494				44					
Calculate Merge Influence Area Operations										
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	434		150		400			83		686
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	477		165		439			91		753
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	576		320		830			307		794
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	603		335		869			321		831
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	646		440		580			737		1,039
PHF	0.96		0.96		0.95			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2

Location	1	2	3	4	5	6	7	8	9	10



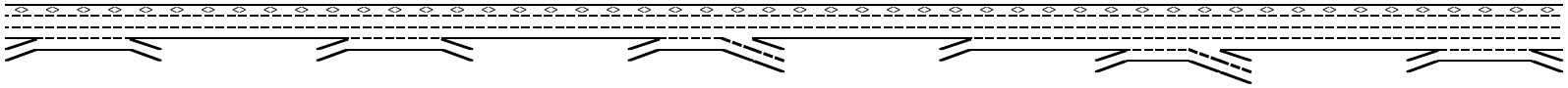
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	676		461		614			771		1,087
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,652		2,722		2,556			2,686		2,014
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,777		2,850		2,676			2,812		2,109
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,279		796		1,483			1,092		1,919
Non-Weave Flow	3,253		3,015		3,115			2,903		2,862
Segment Flow	4,532		3,810		4,598			3,996		4,780
Max Weave Length	5,393		4,627		4,262			3,734		5,130
Length Check	Not a Weave		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,421		2,551		2,445			2,326		2,246
f_{HV}	0.995		0.995		0.995			0.995		0.994
f_P	0.999		1.000		0.999			1.000		0.999
Capacity Condition 1	4,813		5,073		4,858			6,941		6,694
Capacity Condition 2	8,454		11,429		10,780			12,733		8,663
Weave v/c ratio	0.94		0.75		0.94			0.57		0.71
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,279		796		1,483			1,092		1,919
Weave LC Rate	3,663		3,510		3,515			2,208		3,206
Non-Weave LC Rate 1	3,713		4,165		3,237			1,877		2,058
Non-Weave LC Rate 2	2,415		2,361		2,384			2,336		2,327
Non-Weave LC Rate 3	-6,023		-22,556		-6,306			3,771		2,862
Segment LC Rate	6,078		5,871		5,899			4,544		5,534

Location	1	2	3	4	5	6	7	8	9	10



Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Weave Intensity Factor	0.219		0.191		0.239			0.282		0.306
Weave Speed	56.0		57.0		55.4			54.0		53.3
Non-Weave Speed	44.9		50.1		43.3			50.7		43.5
Segment Speed	47.6		51.4		46.6			51.6		47.0
Weave Density	-		-		-			25.8		33.9
Weave LOS	Basic		Basic		Basic			C		D
Summarize Segment Operations										
Segment v/c ratio	0.64	0.72	0.54	0.68	0.65	0.75	0.38	0.57	0.45	0.71
Segment Density	23.2	26.6	19.5	24.9	23.5	27.7	13.8	25.8	16.4	33.9
Segment LOS	C	D	C	C	C	D	B	C	B	D
Over Capacity										

Leisch Method for Weaving Analysis

Data Input

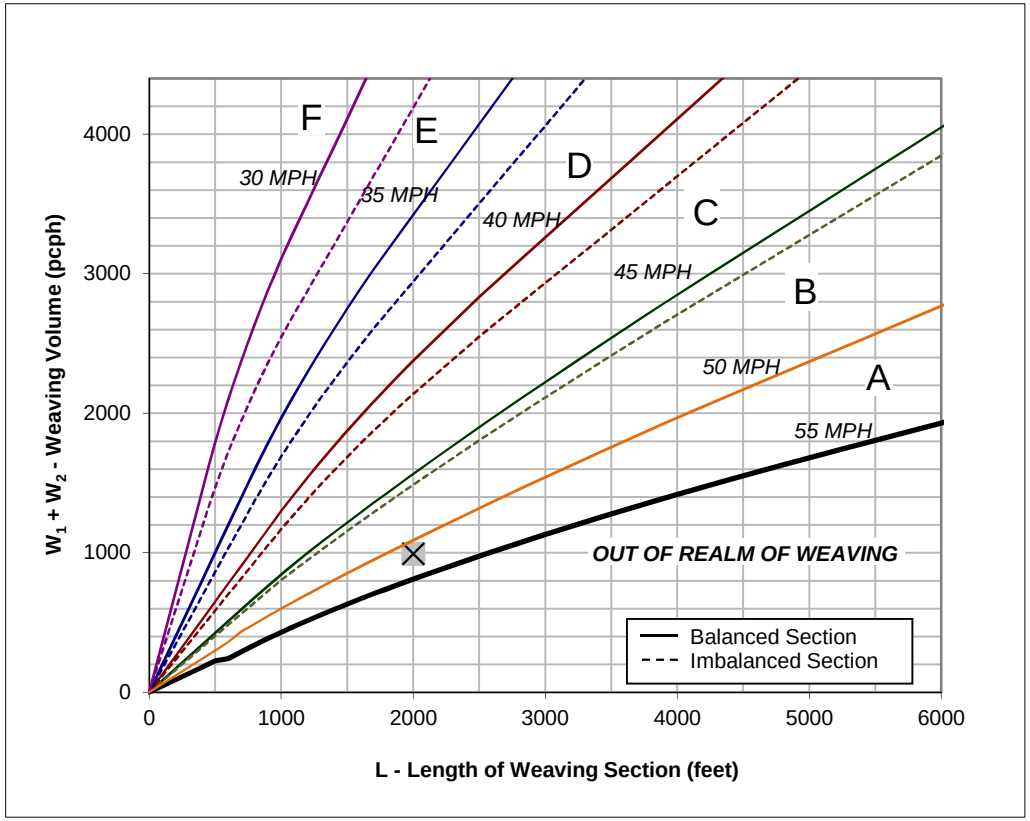
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,209	Volume (vph)*	732	Volume (vph)*	252
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,273	Volume (pcph)	739	Volume (pcph)	255

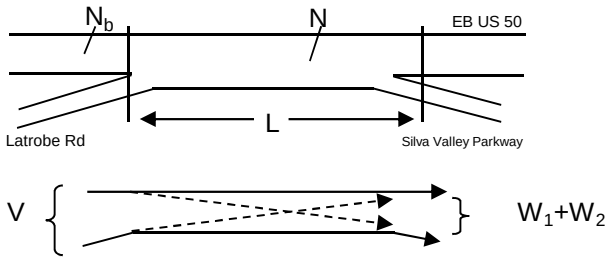
Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.8**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **818**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

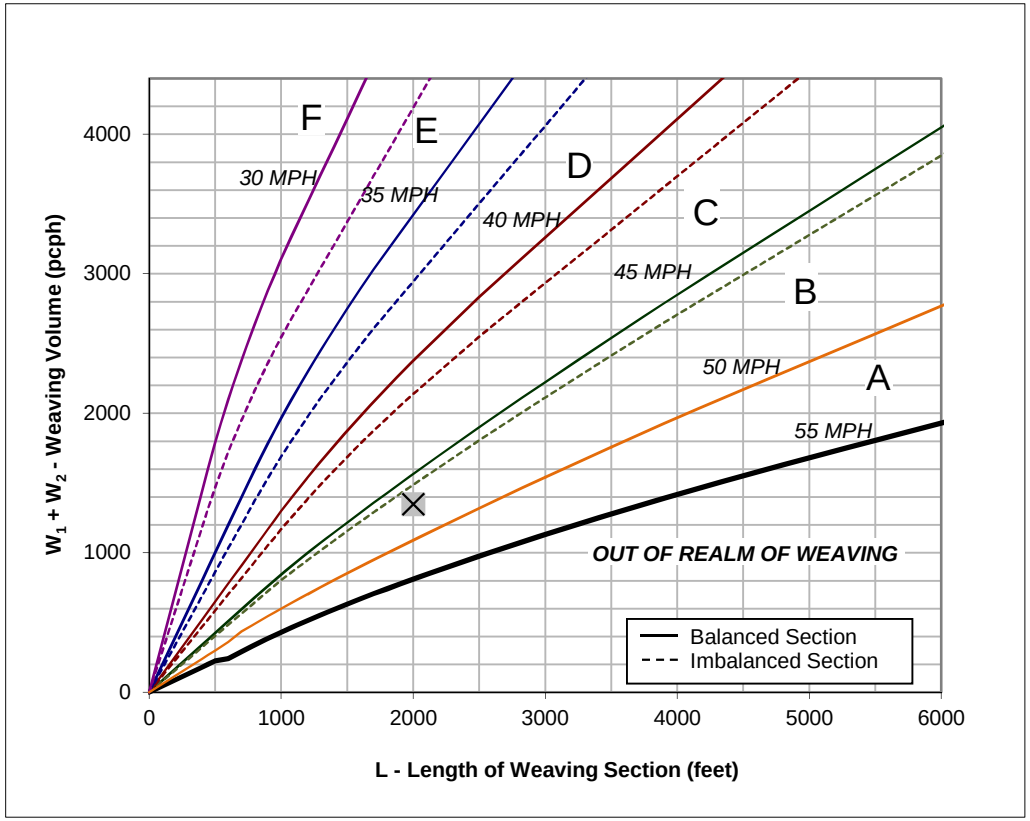
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,241	Volume (vph)*	623	Volume (vph)*	713
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,267	Volume (pcph)	629	Volume (pcph)	720

Project Information

Project	Serrano Westside Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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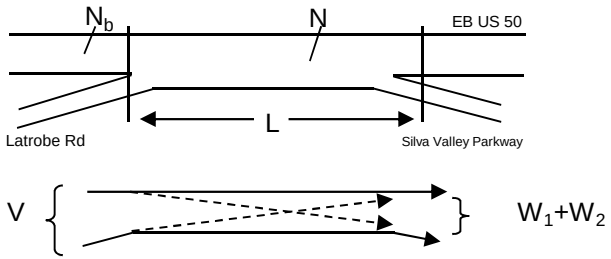


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.3**
4. Weaving Intensity Factor (k) **1.63**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,416**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

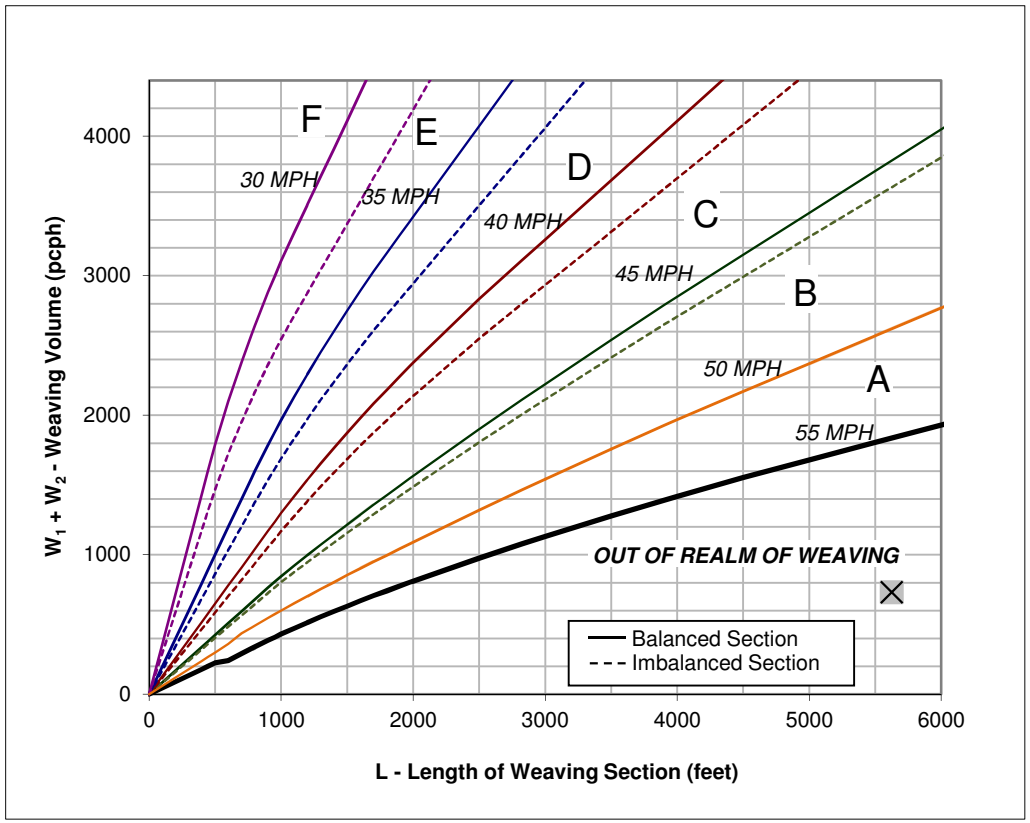
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,625

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,882	Volume (vph)*	412	Volume (vph)*	312
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,940	Volume (pcph)	416	Volume (pcph)	315

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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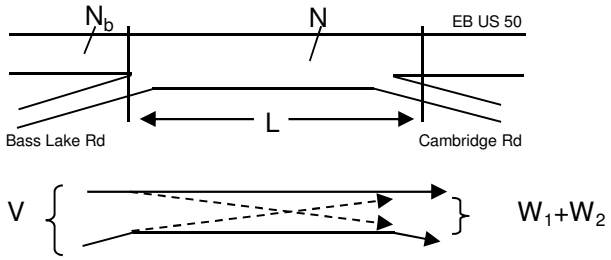


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **62.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **980**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

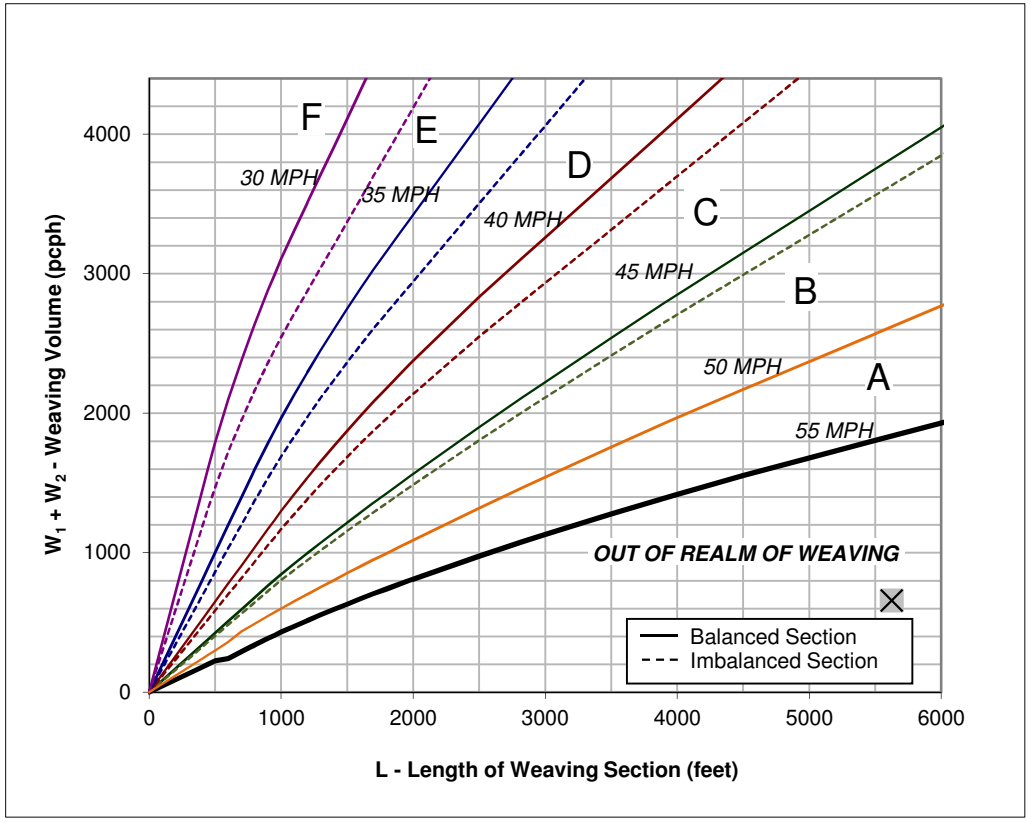
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	5,625

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,080	Volume (vph)*	155	Volume (vph)*	495
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,100	Volume (pcph)	157	Volume (pcph)	500

Project Information

Project	Serrano Westside Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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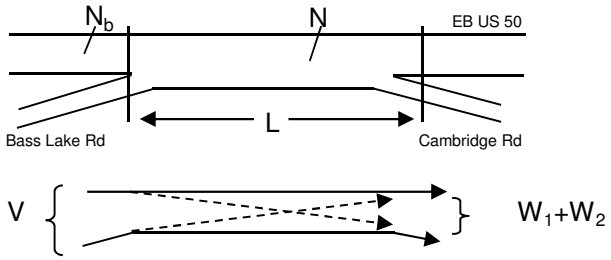


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **62.5**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,025**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

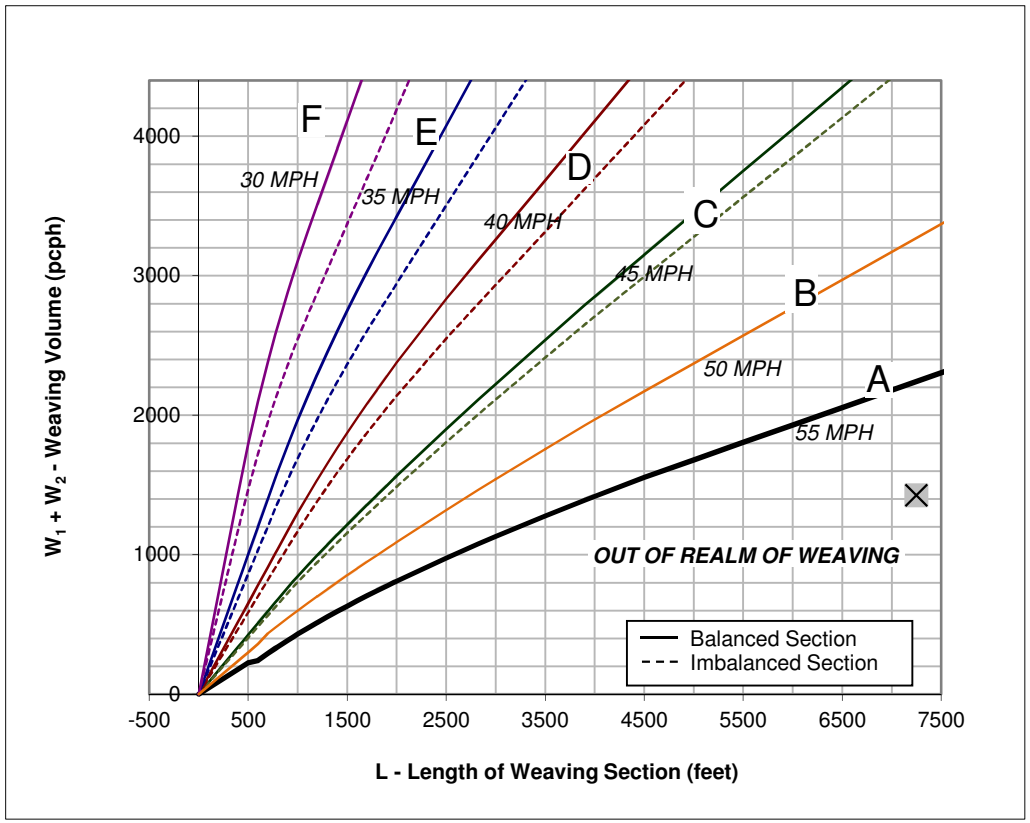
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,709	Volume (vph)*	719	Volume (vph)*	689
Truck Percentage	4%	Truck Percentage	3%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,783	Volume (pcph)	730	Volume (pcph)	696

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Cambridge Rd
Off-ramp	Cameron Park Dr

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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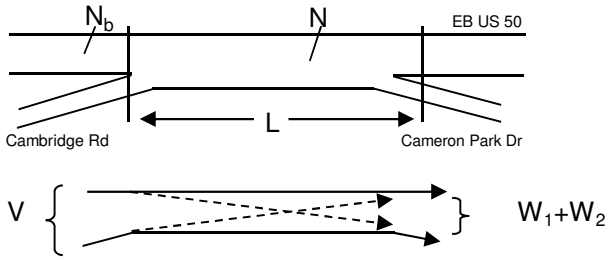


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **59.0**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,261**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

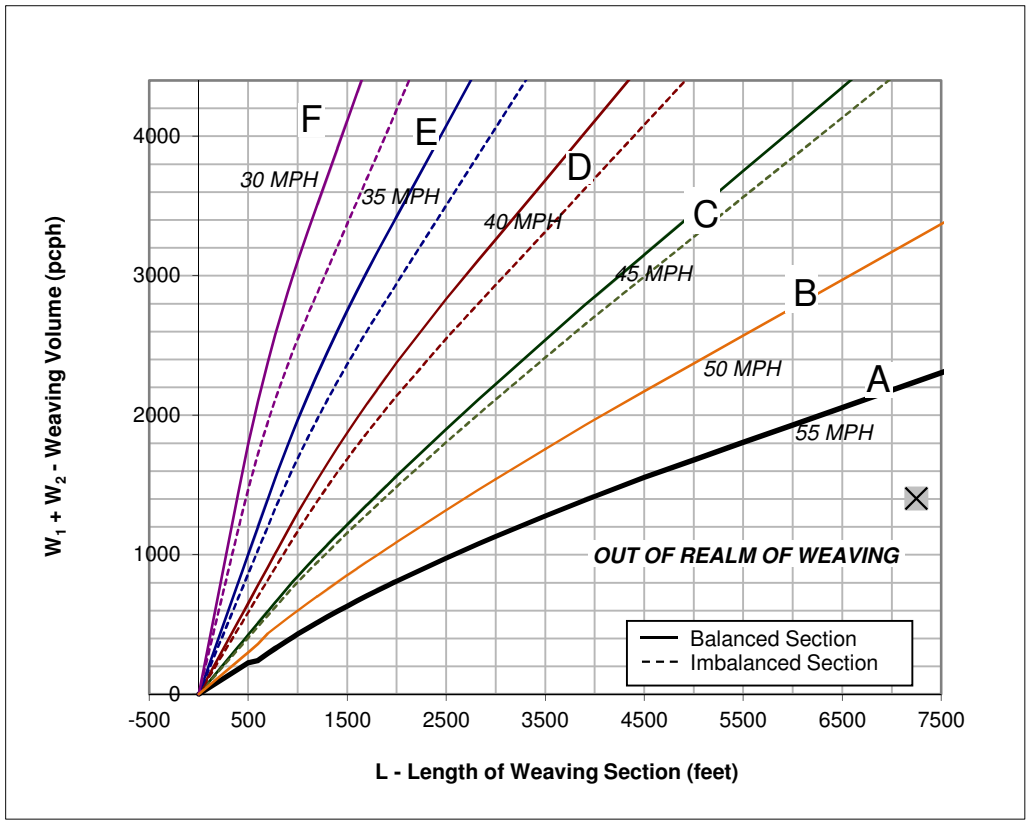
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,639	Volume (vph)*	429	Volume (vph)*	959
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,662	Volume (pcph)	434	Volume (pcph)	969

Project Information

Project	Serrano Westside Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Cambridge Rd
Off-ramp	Cameron Park Dr

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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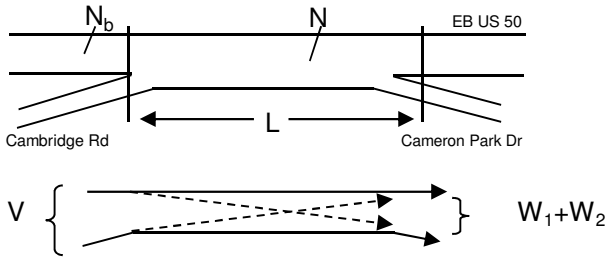


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **59.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,166**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

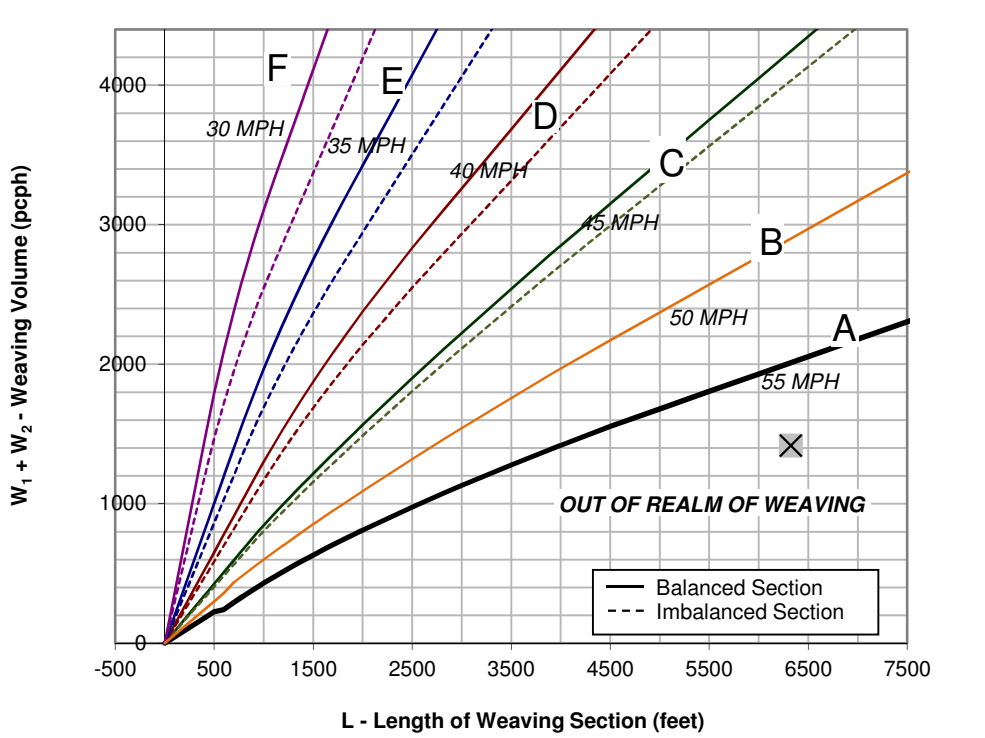
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,738	Volume (vph)*	722	Volume (vph)*	682
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,757	Volume (pcph)	729	Volume (pcph)	689

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Cameron Park Dr
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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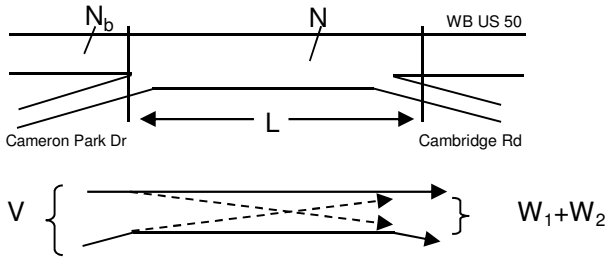


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.3**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,252**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

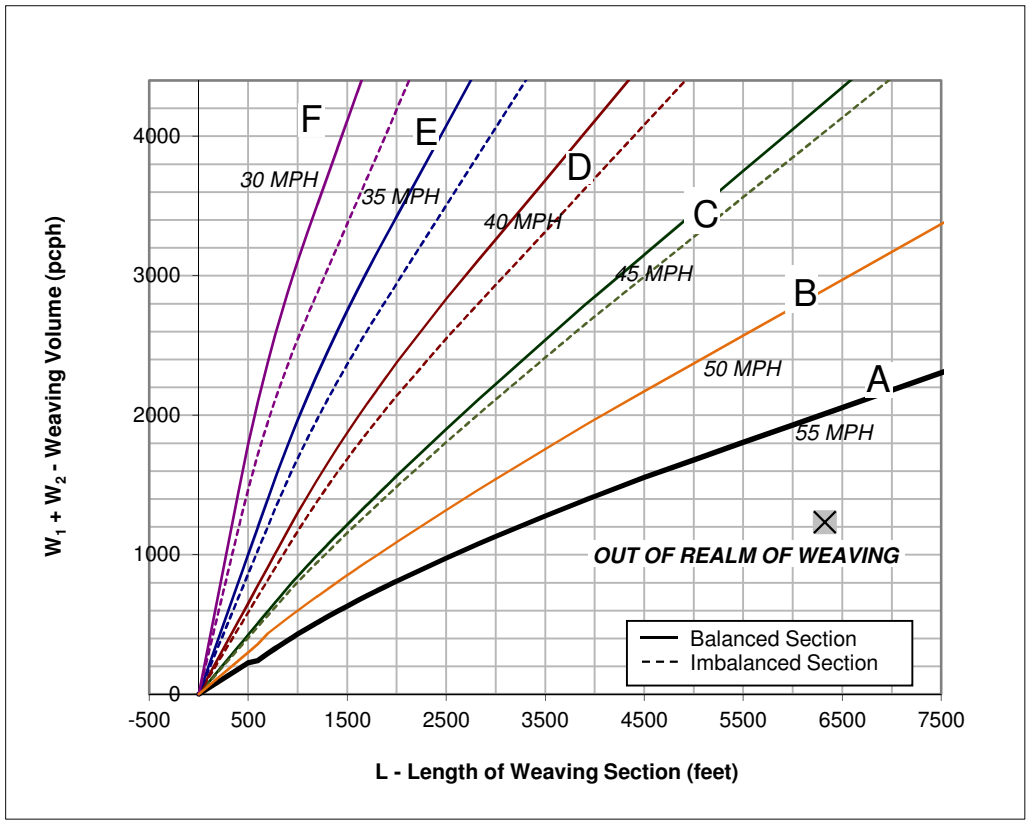
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,367	Volume (vph)*	576	Volume (vph)*	646
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,389	Volume (pcph)	581	Volume (pcph)	652

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Cameron Park Dr
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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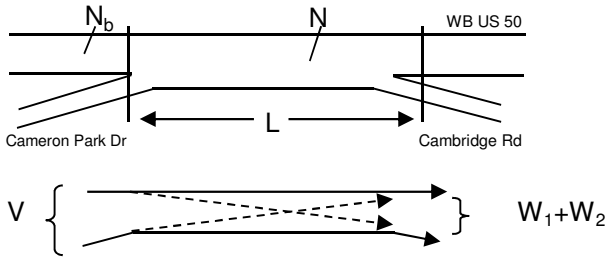


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **59.4**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,463**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

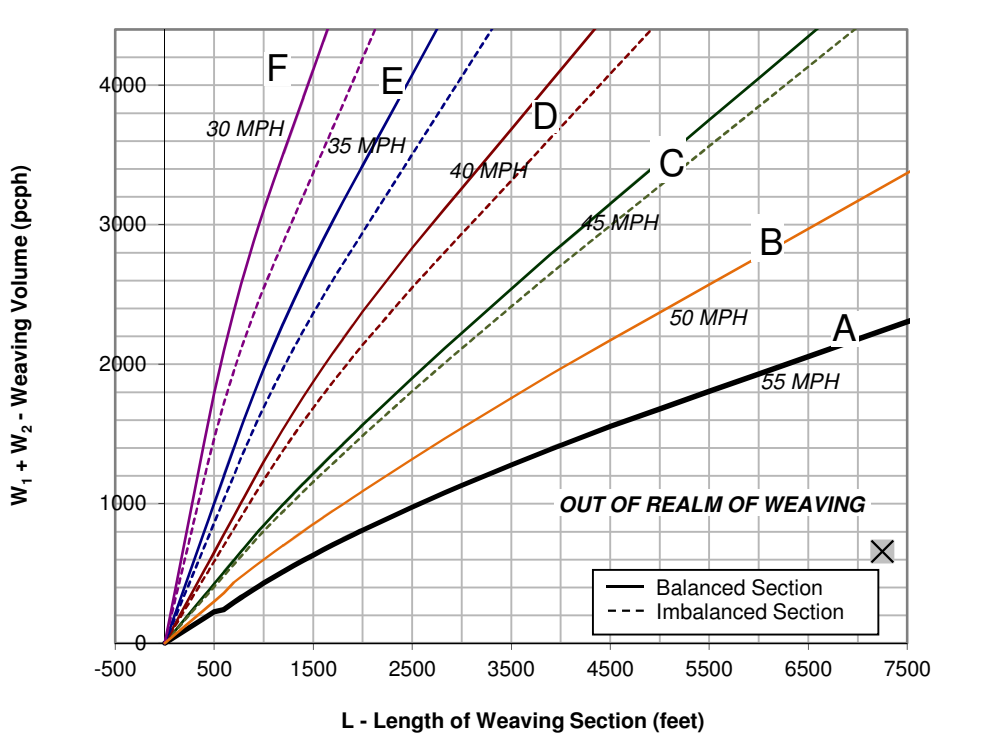
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,429	Volume (vph)*	531	Volume (vph)*	121
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,446	Volume (pcph)	537	Volume (pcph)	122

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Cambridge Rd
Off-ramp	Bass Lake Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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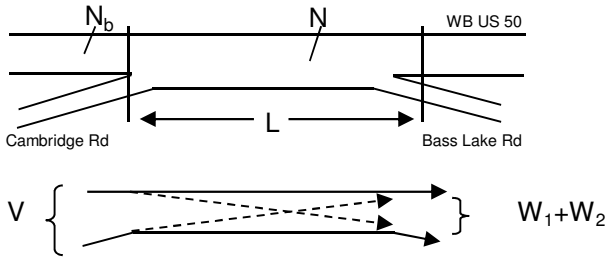


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **62.7**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,149**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

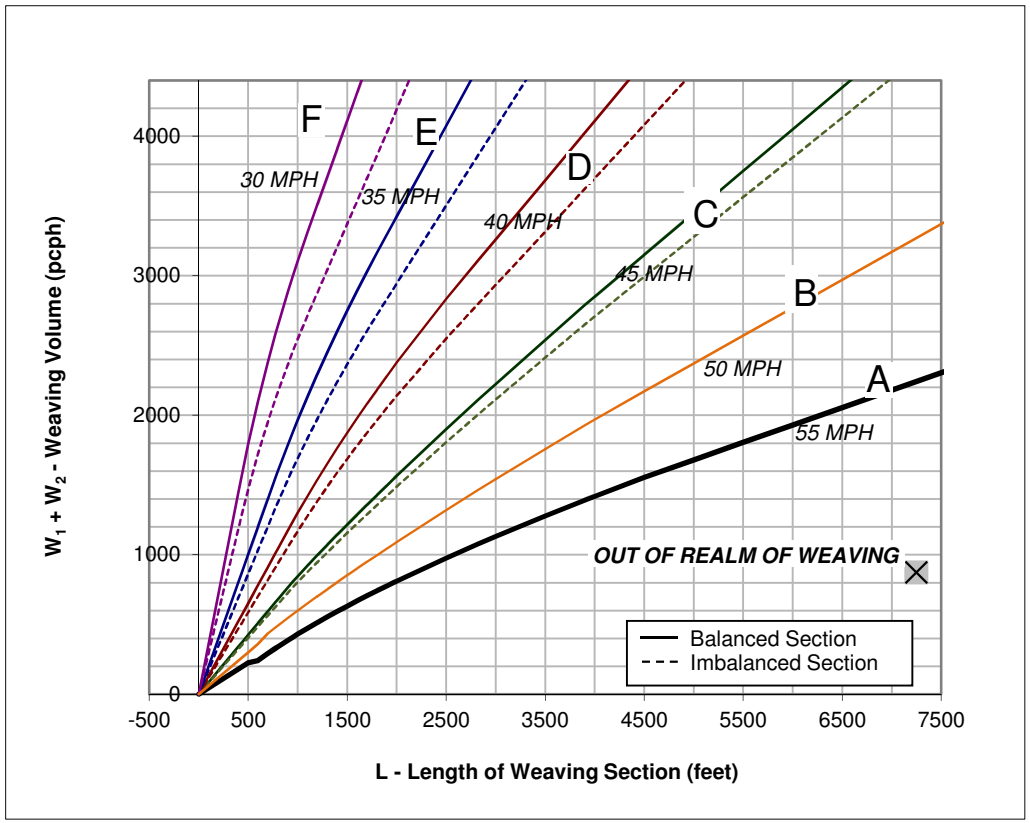
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,690	Volume (vph)*	353	Volume (vph)*	513
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,708	Volume (pcph)	356	Volume (pcph)	518

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Cambridge Rd
Off-ramp	Bass Lake Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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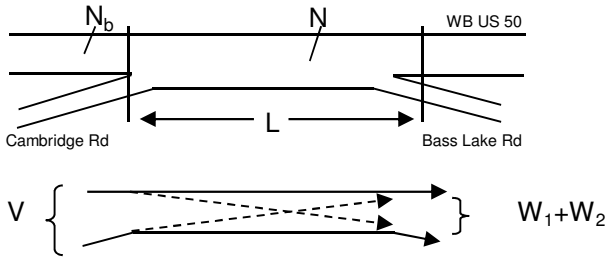


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **61.7**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,236**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

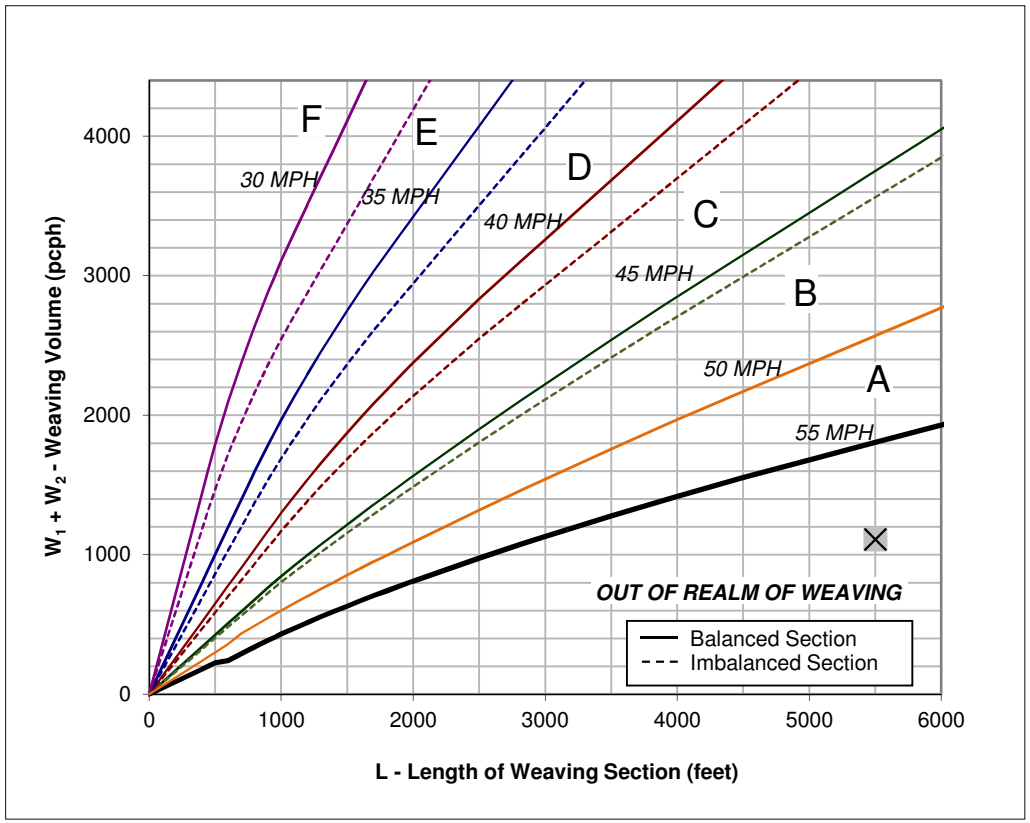
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,663	Volume (vph)*	765	Volume (vph)*	335
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,686	Volume (pcph)	773	Volume (pcph)	338

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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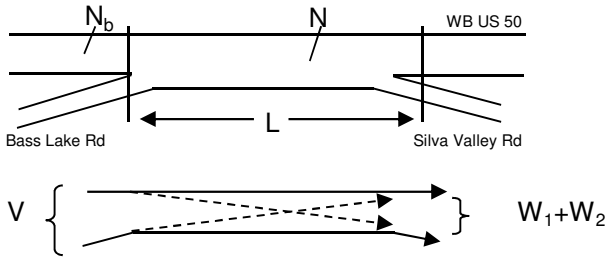


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **59.5**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,562**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

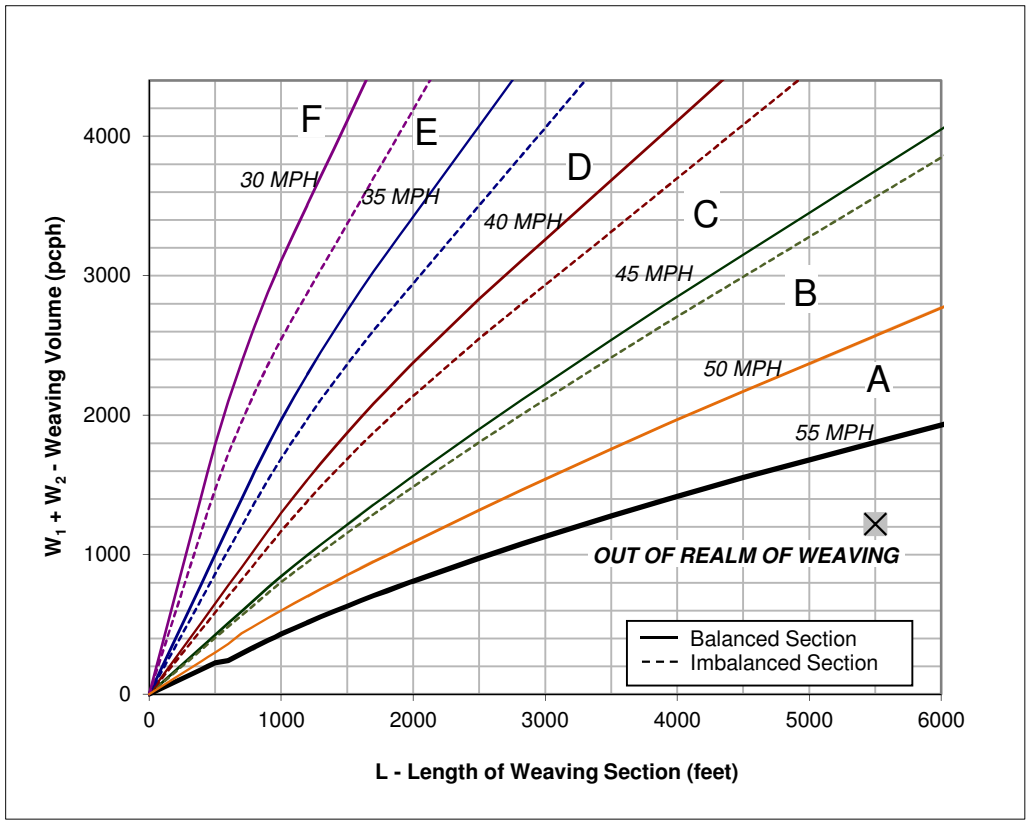
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,262	Volume (vph)*	704	Volume (vph)*	504
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,283	Volume (pcph)	711	Volume (pcph)	509

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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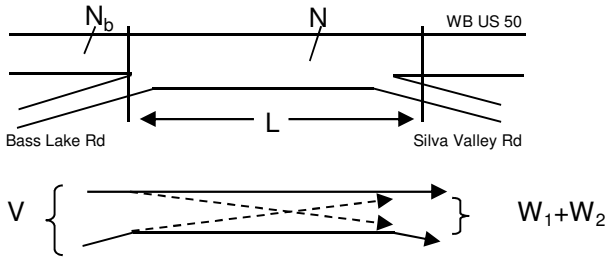


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.8**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,428**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

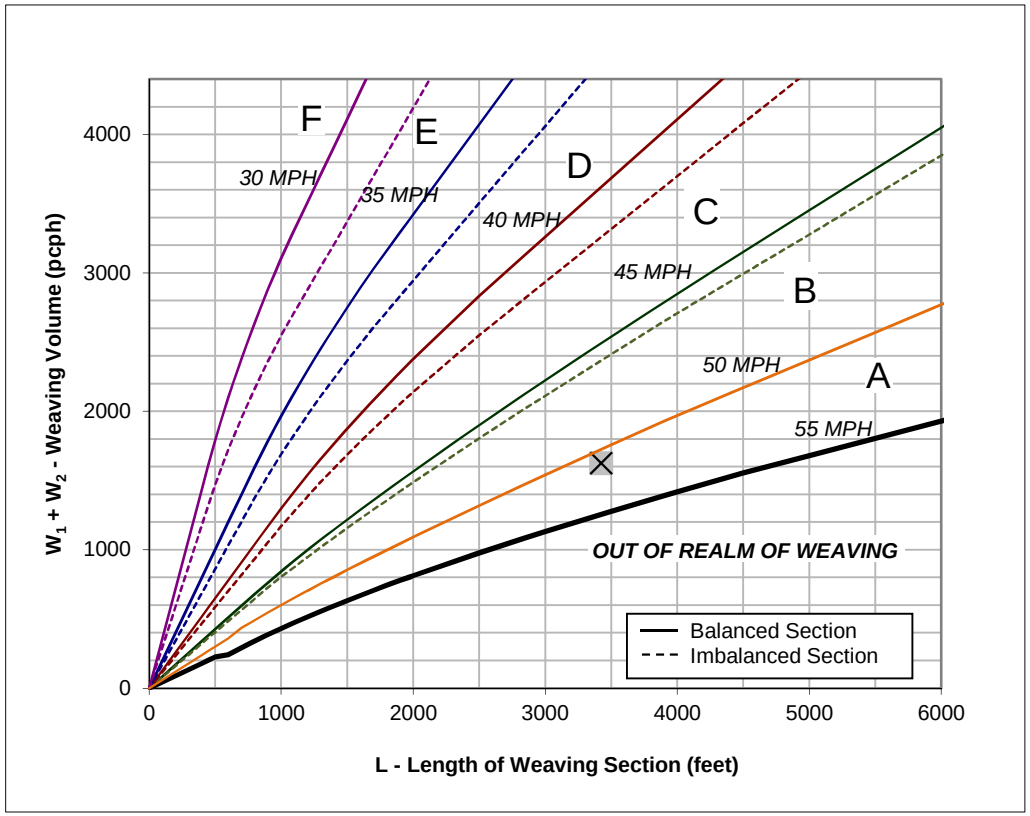
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,818	Volume (vph)*	889	Volume (vph)*	721
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,842	Volume (pcph)	898	Volume (pcph)	728

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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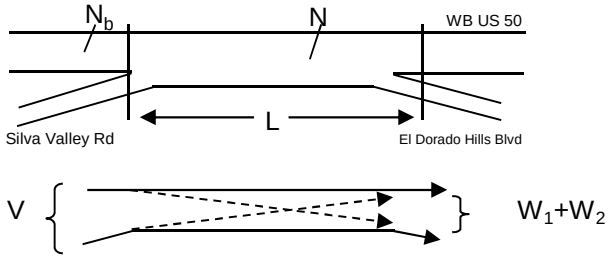


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,211**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

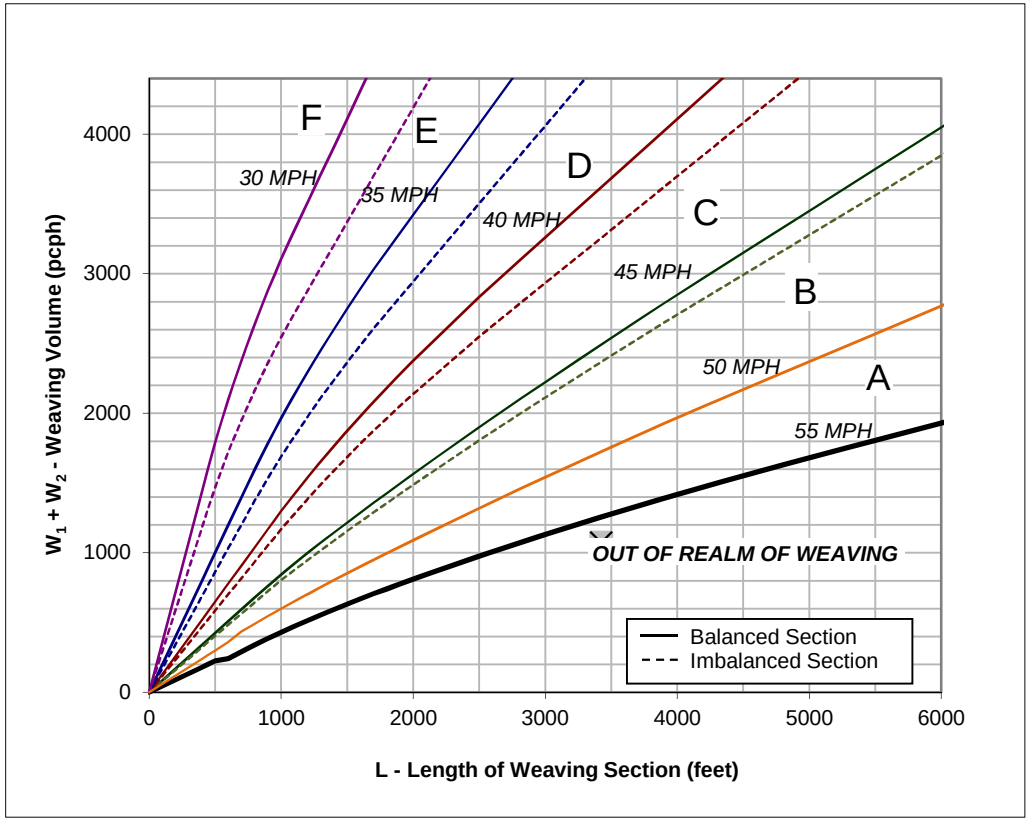
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,813	Volume (vph)*	324	Volume (vph)*	738
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,832	Volume (pcph)	327	Volume (pcph)	746

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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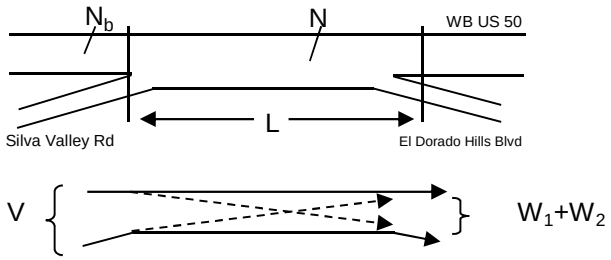


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   MPH and **MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **#N/A**
4. Weaving Intensity Factor (k) **#N/A**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **#N/A**
6. Level of Service (LOS) **#N/A**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

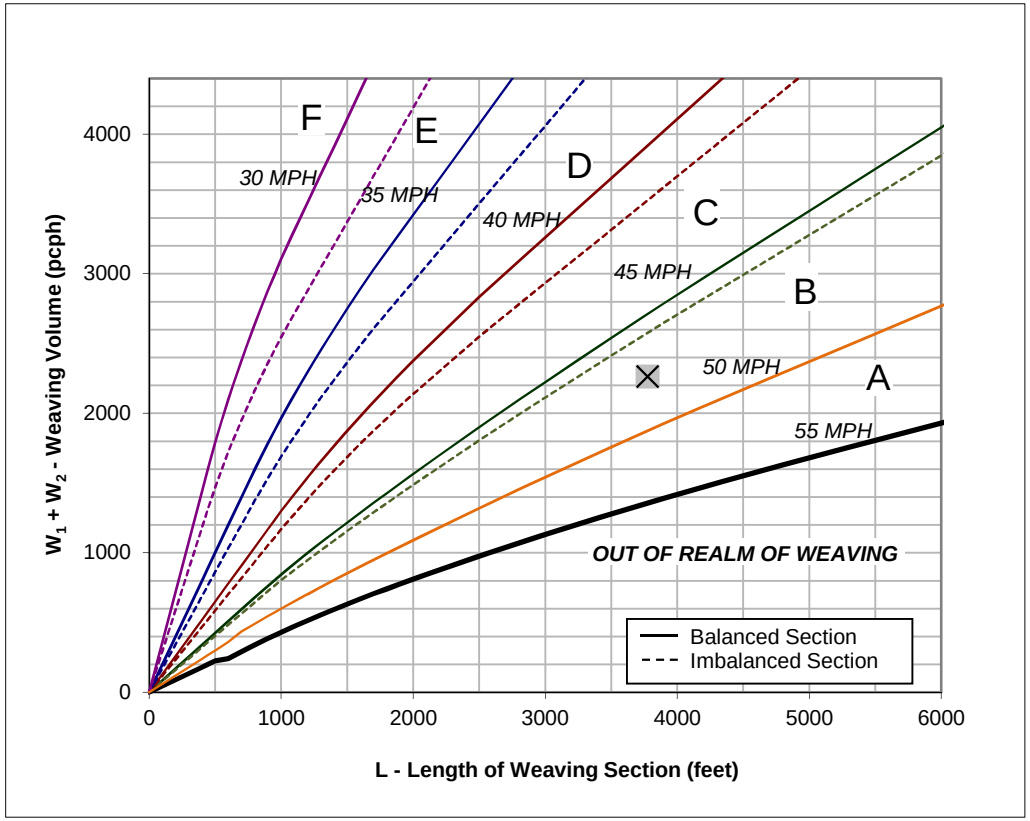
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,392	Volume (vph)*	956	Volume (vph)*	1,286
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,419	Volume (pcph)	965	Volume (pcph)	1,299

Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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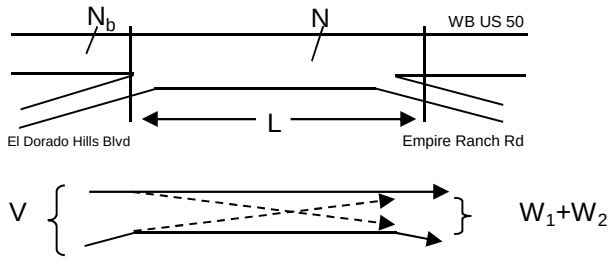


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.7**
4. Weaving Intensity Factor (k) **1.57**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,492**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

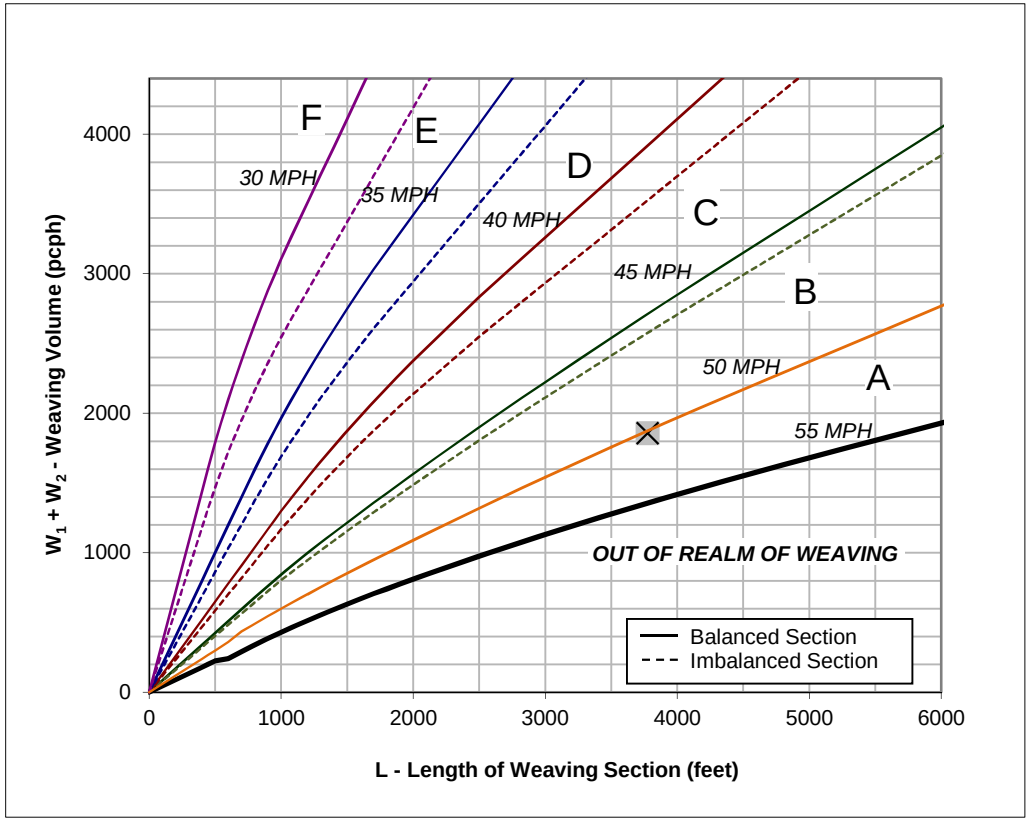
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,533	Volume (vph)*	784	Volume (vph)*	1,054
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,556	Volume (pcph)	792	Volume (pcph)	1,065

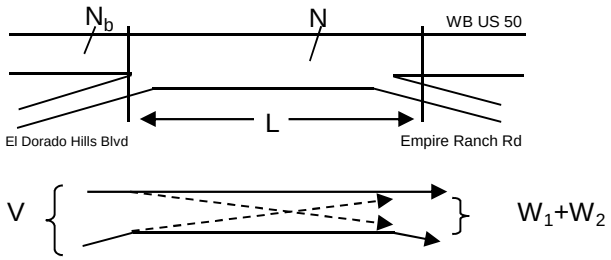
Project Information

Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **50.2**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,139**
6. Level of Service (LOS) **C**

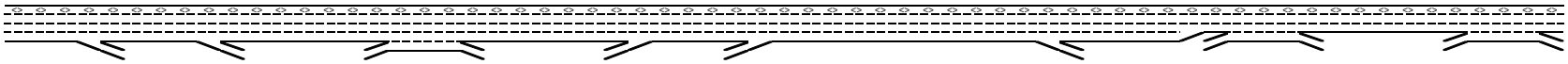
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

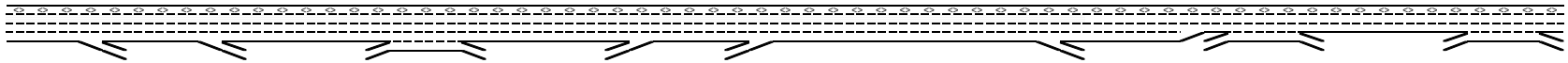
Project: Serrano/Pedregal/Marble Valley/Lime Rock **Alternative:** Cumulative Plus Project
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	5,725	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	4,030	2,950	2,740	2,740	3,260	3,260	3,540	3,750	3,750	2,810	2,810	2,900	2,900
On Ramp Volume				810		280	210				450		1,220
Off Ramp Volume	1,080	210		290					940		360		1,140
Express Lane Volume	443	325	301	301	456	456	496	525	525	393	365	377	377
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	3,587	2,626	2,439	3,249	2,804	3,084	3,254	3,225	3,225	2,417	2,895	2,523	3,743
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,977	2,911	2,704	3,602	3,108	3,419	3,608	4,066	3,576	2,679	3,209	2,797	4,150
GP Flow (pcphpl)	1,326	970	901	900	1,036	1,140	1,203	1,355	1,192	893	1,070	1,399	1,383
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.56	0.41	0.38	0.38	0.44	0.48	0.51	0.58	0.51	0.38	0.46	0.60	0.59
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	20.4	14.9	13.9	13.9	15.9	17.5	18.5	20.9	18.3	13.7	16.5	21.5	21.3
LOS	C	B	B	B	B	B	C	C	C	B	B	C	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				2,712		3,111	3,378				2,569		2,804
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.38		0.44	0.48				0.55		0.60
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	2,791	2,680		3,292					2,293	2,679	2,825		2,885
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.40	0.38		0.47					0.33	0.57	0.60		0.61
Calculate Flow Rate in Express Lanes (EL)													

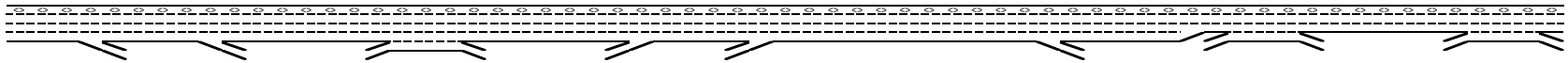


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
EL Volume (vph)	443	325	301	301	456	456	496	525	525	393	365	377	377
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	527	386	358	358	542	542	589	673	624	467	434	448	448
EL Flow (pcphpl)	527	386	358	358	542	542	589	673	624	467	434	448	448
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.30	0.22	0.20	0.20	0.31	0.31	0.34	0.38	0.36	0.27	0.25	0.26	0.26
Calculate On Ramp Flow Rate													
On Volume (vph)				810		280	210				450		1,220
PHF				0.92		0.92	0.92				0.71		0.92
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				889		307	231				640		1,346
On Flow (pcphpl)				889		307	231				640		1,346
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		Right
On Ramp Speed (mph)				45		25	45				45		45
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		2,100
On Ramp v/c ratio				0.42		0.16	0.11				0.30		0.64
Calculate Off Ramp Flow Rate													
Off Volume (vph)	1,080	210		290					940		360		1,140
PHF	0.92	0.92		0.95					0.74		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%



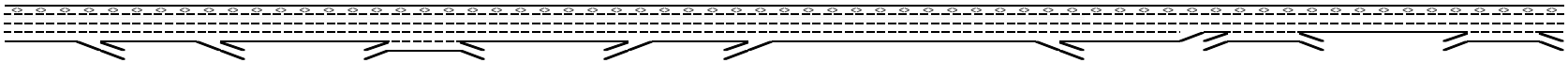
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	1,186	231		310					1,283		385		1,265
Off Flow (pcphpl)	1,186	231		310					1,283		385		1,265
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right		Right		Right
Off Ramp Speed	45	25		45					45		45		45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100		2,100		2,100
Off Ramp v/c ratio	0.56	0.12		0.15					0.61		0.18		0.60
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		Off
Up Distance		2,350				1,575	800		4,900		2,100		1,350
Up Flow (pcph)		1,186				310	307		310		1,283		385
Down Type	Off	On				On	On		On		On		No
Down Distance	850	1,975				2,900	3,400		2,100		1,350		
Down Flow (pcph)	231	889				640	640		640		1,346		
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						3,111	3,378						
Up Ramp L_{EQ}						-119	946						
Down Ramp L_{EQ}						3,800	3,925						
P_{FM} (Eqn 13-3)						0.593	0.592						
P_{FM} (Eqn 13-4)		#VALUE!				0.700			#VALUE!		#VALUE!		#VALUE!
P_{FM} (Eqn 13-5)	0.620												
P_{FM}						0.593	0.592						
v_{12} (pcph)						1,845	1,998						
v_3 (pcph)						1,267	1,380						
v_{34} (pcph)													
v_{12a} (pcph)						1,845	1,998						
v_{R12a} (pcph)						2,152	2,228						
Merge Speed Index						0.33	0.31						
Merge Area Speed						57.5	57.8						
Outer Lanes Volume						1,267	1,380						
Outer Lanes Speed						62.2	61.8						
Segment Speed						59.2	59.3						
Merge v/c ratio						0.47	0.48						
Merge Density						18.7	19.6						
Merge LOS						B	B						
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	3,977	2,911							3,576				
Up Ramp L_{EQ}		9,845							5,560				
Down Ramp L_{EQ}	394	915							1,139				
P_{FD} (Eqn 13-9)	0.606	0.677							0.612				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.566												
P_{FD}	0.606	0.677							0.612				
v_{12} (pcph)	2,877	2,044							2,685				
v_3 (pcph)	1,099	867							890				

Location	1	2	3	4	5	6	7	8	9	10	11	12	13

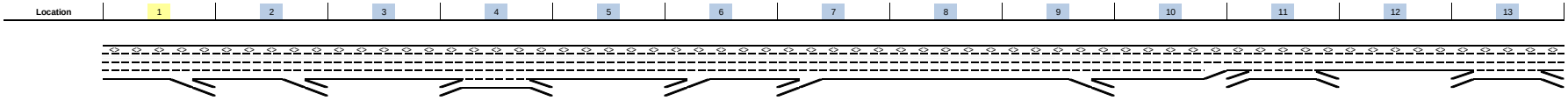


Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
v_{34} (pcph)													
v_{12a} (pcph)	2,877	2,044							2,685				
Diverge Speed Index	0.40	0.58							0.41				
Diverge Area Speed	55.7	51.7							55.5				
Outer Lanes Volume	1,099	867							890				
Outer Lanes Speed	70.9	71.3							71.3				
Segment Speed	59.2	56.3							58.7				
Diverge v/c ratio	0.65	0.46							0.61				
Diverge Density	27.6	20.5							26.0				
Diverge LOS	C	C							C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				50							10		460
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				55							11		505
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				760							440		760
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				838							483		834
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				240							350		680
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				260							388		754
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				2,199							2,095		1,843
PHF				0.95							0.92		0.92



Key

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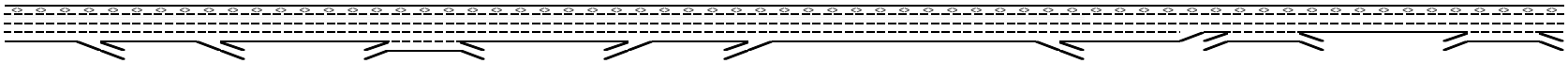
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				2,384							2,322		2,043
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							4,725		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				1,099							871		1,588
Non-Weave Flow				2,439							2,333		2,548
Segment Flow				3,538							3,204		4,137
Max Weave Length				4,132							5,284		6,502
Length Check				OK							OK		Not a Weave
Ideal Weave Capacity				2,187							2,307		2,407
f_{HV}				0.974							0.982		0.984
f_P				0.996							0.999		0.998
Capacity Condition 1				6,371							4,524		4,726
Capacity Condition 2				10,944							8,656		6,136
Weave v/c ratio				0.54							0.69		0.86
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				1,099							871		1,588
Weave LC Rate				1,694							2,601		4,351
Non-Weave LC Rate 1				1,009							2,656		4,069
Non-Weave LC Rate 2				2,233							2,209		2,257
Non-Weave LC Rate 3				1,316							-241		-2,607
Segment LC Rate				3,011							4,810		6,608
Weave Intensity Factor				0.312							0.229		0.210
Weave Speed				53.1							55.7		56.3
Non-Weave Speed				51.4							51.0		43.6
Segment Speed				51.9							52.2		47.8
Weave Density				22.7							30.7		-
Weave LOS				C							D		Basic
Summarize Segment Operations													
Segment v/c ratio	0.65	0.46	0.38	0.54	0.44	0.47	0.48	0.58	0.61	0.38	0.69	0.60	0.59
Segment Density	27.6	20.5	13.9	22.7	15.9	18.7	19.6	20.9	26.0	13.7	30.7	21.5	21.3
Segment LOS	C	C	B	C	B	B	B	C	C	B	D	C	C
Over Capacity													

Project: Serrano/Pedregal/Marble Valley/Lime Rock **Alternative:** Cumulative Plus Project
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
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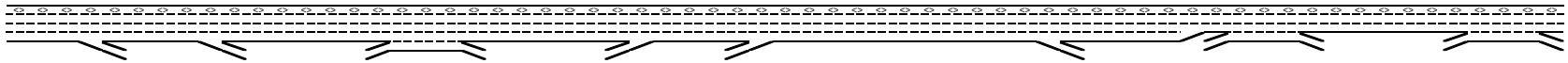
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	6,570	5,800	5,270	5,270	5,490	5,490	5,810	6,540	6,540	4,810	4,810	4,370	4,370
On Ramp Volume				800		320	730				280		1,120
Off Ramp Volume	770	530		580					1,730		720		1,690
Express Lane Volume	986	870	791	685	714	714	755	981	981	722	722	656	612
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	5,585	4,930	4,480	5,385	4,776	5,096	5,785	5,559	5,559	4,089	4,369	3,715	4,878
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,786	5,108	4,641	5,579	4,949	5,280	5,993	6,017	5,760	4,236	4,526	3,849	5,054
GP Flow (pcphpl)	1,929	1,703	1,547	1,395	1,650	1,760	1,998	2,006	1,920	1,412	1,509	1,924	1,685
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.82	0.72	0.66	0.59	0.70	0.75	0.85	0.85	0.82	0.60	0.64	0.82	0.72
Speed (mph)	61.0	63.7	64.7	65.0	64.1	63.2	59.9	59.8	61.2	65.0	64.8	61.1	63.9
Density (pcphpl)	31.6	26.7	23.9	21.5	25.7	27.9	33.3	33.5	31.4	21.7	23.3	31.5	26.4
LOS	D	D	C	C	C	D	D	D	D	C	C	D	D
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				4,701		4,929	5,192				4,128		3,858
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.67		0.70	0.74				0.88		0.82
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	4,941	4,526		4,939					3,958	4,236	3,757		3,179
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.70	0.64		0.70					0.56	0.90	0.80		0.68
Calculate Flow Rate in Express Lanes (EL)													



Key

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No Trucks

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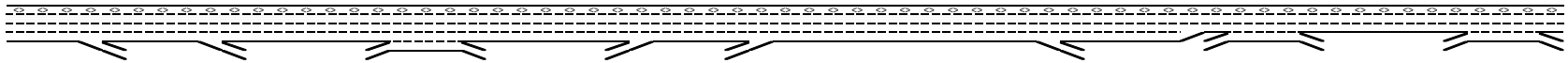
EL Volume (vph)	986	870	791	685	714	714	755	981	981	722	722	656	612
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	1,106	976	887	769	801	801	848	1,188	1,101	810	810	736	687
EL Flow (pcphpl)	1,106	976	887	769	801	801	848	1,188	1,101	810	810	736	687
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.63	0.56	0.51	0.44	0.46	0.46	0.48	0.68	0.63	0.46	0.46	0.42	0.39
Calculate On Ramp Flow Rate													
On Volume (vph)				800		320	730				280		1,120
PHF				0.92		0.92	0.92				0.71		0.95
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				878		351	801				398		1,197
On Flow (pcphpl)				878		351	801				398		1,197
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		
On Ramp Speed (mph)				45		25	45				45		
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		
On Ramp v/c ratio				0.42		0.18	0.38				0.19		
Calculate Off Ramp Flow Rate													
Off Volume (vph)	770	530		580					1,730		720		1,690
PHF	0.92	0.92		0.92					0.97		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%



Key

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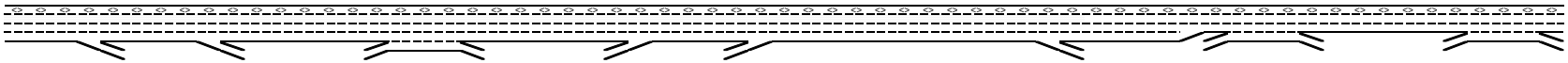
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_p	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	845	582		640					1,801		769		1,876
Off Flow (pcphpl)	845	582		640					1,801		769		1,876
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right				Right
Off Ramp Speed	45	25		45					45				45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100				2,100
Off Ramp v/c ratio	0.40	0.31		0.30					0.86				0.89
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		No
Up Distance		2,350				1,575	800		4,900		2,100		
Up Flow (pcph)		845				640	351		640		1,801		
Down Type	Off	On				On	On		On		No		#REF!
Down Distance	850	1,975				2,900	3,400		2,100				#REF!
Down Flow (pcph)	582	878				398	398		398				#REF!
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						4,929	5,192						
Up Ramp L_{EQ}						279	1,456						
Down Ramp L_{EQ}						2,365	2,442						
P_{FM} (Eqn 13-3)						0.593	0.592						
P_{FM} (Eqn 13-4)		#VALUE!				0.674			#VALUE!		#VALUE!		
P_{FM} (Eqn 13-5)	0.729												#REF!
P_{FM}						0.593	0.592						
v_{12} (pcph)						2,922	3,071						
v_3 (pcph)						2,007	2,121						
v_{34} (pcph)													
v_{12a} (pcph)						2,922	3,071						
v_{R12a} (pcph)						3,274	3,872						
Merge Speed Index						0.40	0.46						
Merge Area Speed						55.9	54.3						
Outer Lanes Volume						2,007	2,121						
Outer Lanes Speed						59.6	59.2						
Segment Speed						57.2	56.0						
Merge v/c ratio						0.71	0.84						
Merge Density						27.4	32.2						
Merge LOS						C	D						
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	5,786	5,108							5,760				
Up Ramp L_{EQ}		5,860							9,613				
Down Ramp L_{EQ}	891	1,138							1,323				
P_{FD} (Eqn 13-9)	0.576	0.606							0.533				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.580												#REF!
P_{FD}	0.580	0.606							0.533				
v_{12} (pcph)	3,711	3,323							3,912				
v_3 (pcph)	2,075	1,785							1,848				

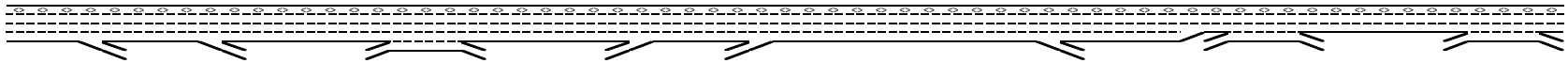


Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
v_{34} (pcph)													
v_{12a} (pcph)	3,711	3,323							3,912				
Diverge Speed Index	0.37	0.61							0.46				
Diverge Area Speed	56.4	51.0							54.4				
Outer Lanes Volume	2,075	1,785							1,848				
Outer Lanes Speed	67.1	68.2							68.0				
Segment Speed	59.8	55.9							58.1				
Diverge v/c ratio	0.84	0.76							0.89				
Diverge Density	34.8	31.5							36.5				
Diverge LOS	D	D							E				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				419							162		551
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				460							178		605
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				381							118		569
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				418							130		625
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				161							558		1,139
PHF				0.97							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				167							578		1,180
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				4,424							3,531		2,619
PHF				0.92							0.97		0.97



Key

<> Express Lane (HOV)

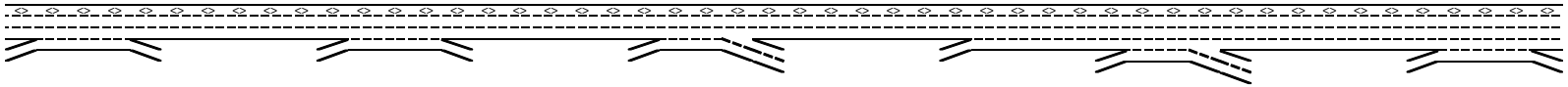
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				4,833							3,658		2,714
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							5,625		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				585							708		1,805
Non-Weave Flow				5,293							3,836		3,319
Segment Flow				5,878							4,543		5,123
Max Weave Length				1,969							4,089		6,151
Length Check				Not a Weave							Not a Weave		Not a Weave
Ideal Weave Capacity				2,352							2,468		2,434
f_{HV}				0.994							0.995		0.994
f_P				0.999							1.000		0.999
Capacity Condition 1				7,012							4,907		4,832
Capacity Condition 2				34,935							15,322		6,763
Weave v/c ratio				0.83							0.92		1.05
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				585							708		1,805
Weave LC Rate				1,181							2,788		4,567
Non-Weave LC Rate 1				1,596							3,454		4,228
Non-Weave LC Rate 2				2,869							2,544		2,429
Non-Weave LC Rate 3				5,269							-9,820		-5,492
Segment LC Rate				4,050							5,333		6,996
Weave Intensity Factor				0.394							0.217		0.220
Weave Speed				50.9							56.1		56.0
Non-Weave Speed				51.4							49.0		39.7
Segment Speed				51.3							50.0		44.2
Weave Density				-							-		-
Weave LOS				Basic							Basic		Basic
Summarize Segment Operations													
Segment v/c ratio	0.84	0.76	0.66	0.59	0.70	0.71	0.84	0.85	0.89	0.60	0.64	0.82	0.72
Segment Density	34.8	31.5	23.9	21.5	25.7	27.4	32.2	33.5	36.5	21.7	23.3	31.5	26.4
Segment LOS	D	D	C	C	C	C	D	D	E	C	C	D	D
Over Capacity													Weave

Project: Serrano Pedregal/Marble Valley/Lime Rock/SW/Ped
Freeway Corridor: Westbound US 50
Alternative: Cumulative Plus Project
Time Period: AM Peak Hour

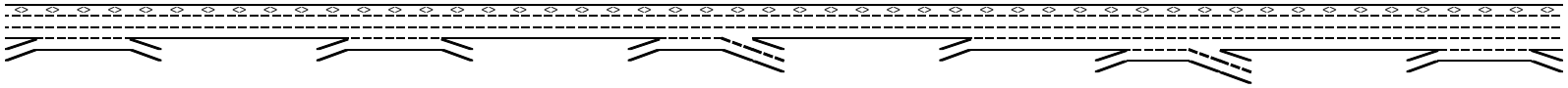
Data Entry Value
Calculated Value

Location	1	2	3	4	5	6	7	8	9	10



Key
<> Express Lane (HOV)
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	3,350	3,360	3,360	3,820	3,820	4,440	4,440	4,470	4,650	4,650
On Ramp Volume	950		660		1,900		30	1,040		1,660
Off Ramp Volume	940		200		1,280			860		1,890
Express Lane Volume	503	504	538	611	611	710	710	671	837	837
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	3,798	2,856	3,482	3,209	5,109	3,730	3,760	4,840	3,813	5,473
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,060	3,053	3,723	3,431	5,462	3,987	4,020	5,174	4,077	5,851
GP Flow (pcphpl)	1,353	1,527	1,241	1,715	1,821	1,994	1,005	1,294	1,359	1,463
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.58	0.65	0.53	0.73	0.77	0.85	0.43	0.55	0.58	0.62
Speed (mph)	65.0	64.8	65.0	63.6	62.5	60.0	65.0	65.0	65.0	64.9



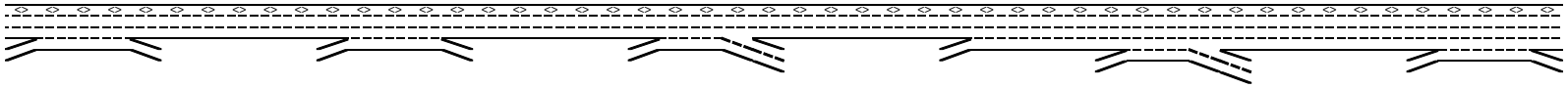
Key

<> Express Lane (HOV)

No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Density (pcphpl)	20.8	23.6	19.1	27.0	29.1	33.2	15.5	19.9	20.9	22.5
LOS	C	C	C	D	D	D	B	C	C	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	3,017		3,029		3,432		3,986	3,994		3,968
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.64		0.64		0.73		0.85	0.57		0.56
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,622		3,510		3,343			4,255		3,832
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.56		0.75		0.71			0.60		0.54
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	503	504	538	611	611	710	710	671	837	837
PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	570	572	610	694	694	806	806	761	950	950
EL Flow (pcphpl)	570	572	610	694	694	806	806	761	950	950
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.33	0.33	0.35	0.40	0.40	0.46	0.46	0.43	0.54	0.54
Calculate On Ramp Flow Rate										
On Volume (vph)	950		660		1,900		30	1,040		1,660
PHF	0.92		0.96		0.95		0.89	0.89		0.89
Total Lanes	1		1		1		1	1		1

Location	1	2	3	4	5	6	7	8	9	10



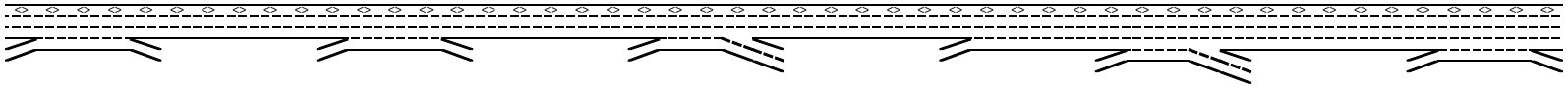
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,043		694		2,030		34	1,180		1,884
On Flow (pcphpl)	1,043		694		2,030		34	1,180		1,884
Calculate On Ramp Roadway Operations										
On Ramp Type	Right		Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)	2,100		1,900				2,100	2,100		2,100
On Ramp v/c ratio	0.50		0.37				0.02	0.56		0.90
Calculate Off Ramp Flow Rate										
Off Volume (vph)	940		200		1,280			860		1,890
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	1,438		214		2,119			919		2,019
Off Flow (pcphpl)	1,438		214		1,060			459		2,019
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	0.68		0.10		0.50			0.24		0.96
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			1,438		214					

Location	1	2	3	4	5	6	7	8	9	10



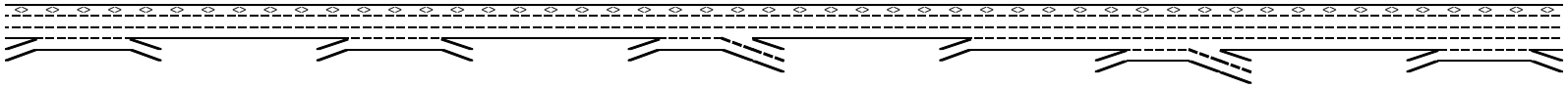
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	694				34					
Calculate Merge Influence Area Operations										
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	228		112		785			164		830
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	250		123		862			180		911
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	722		548		1,115			876		830
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	789		601		1,224			961		911
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	712		88		495			696		1,060
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2

Location	1	2	3	4	5	6	7	8	9	10



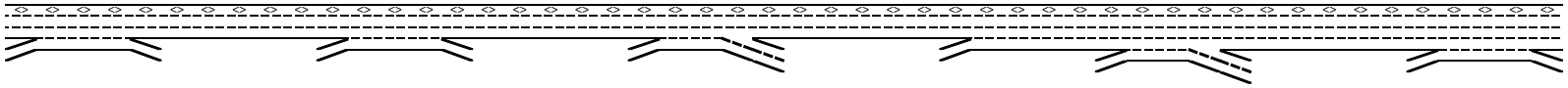
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	761		94		529			744		1,133
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,136		2,735		2,714			3,104		2,753
PHF	0.94		0.94		0.94			0.94		0.94
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,283		2,924		2,901			3,319		2,943
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,550		695		1,753			1,705		2,044
Non-Weave Flow	2,533		3,047		3,763			3,499		3,855
Segment Flow	4,083		3,742		5,517			5,204		5,899
Max Weave Length	6,453		4,391		4,210			4,316		4,523
Length Check	OK		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,340		2,569		2,449			2,282		2,293
f_{HV}	0.995		0.994		0.993			0.994		0.994
f_P	0.999		0.998		0.998			0.998		0.998
Capacity Condition 1	4,651		5,099		4,853			6,792		6,823
Capacity Condition 2	6,284		12,821		10,913			10,599		10,018
Weave v/c ratio	0.87		0.73		1.13			0.76		0.86
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,550		695		1,753			1,705		2,044
Weave LC Rate	3,935		3,409		3,785			2,820		3,332
Non-Weave LC Rate 1	3,565		4,172		3,371			1,999		2,262
Non-Weave LC Rate 2	2,254		2,368		2,528			2,469		2,549
Non-Weave LC Rate 3	-3,508		-22,866		-8,362			4,525		3,612
Segment LC Rate	6,189		5,778		6,313			5,290		5,881

Location	1	2	3	4	5	6	7	8	9	10



Key

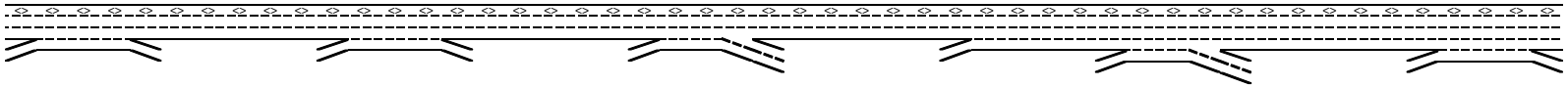
<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Weave Intensity Factor	0.222		0.189		0.252			0.318		0.321
Weave Speed	55.9		57.1		54.9			52.9		52.9
Non-Weave Speed	44.0		51.0		39.1			44.4		40.8
Segment Speed	47.9		52.0		43.1			46.9		44.3
Weave Density	42.6		-		-			37.0		44.4
Weave LOS	E		Basic		Basic			E		E
Summarize Segment Operations										
Segment v/c ratio	0.87	0.65	0.53	0.73	0.77	0.85	0.43	0.76	0.58	0.86
Segment Density	42.6	23.6	19.1	27.0	29.1	33.2	15.5	37.0	20.9	44.4
Segment LOS	E	C	C	D	D	D	B	E	C	E
Over Capacity										

Project: **Serrano Pedregal/Marble Valley/Lime Rock/SW/Ped** **Alternative:** **Cumulative Plus Project**
Freeway Corridor: **Westbound US 50** **Time Period:** **PM Peak Hour**

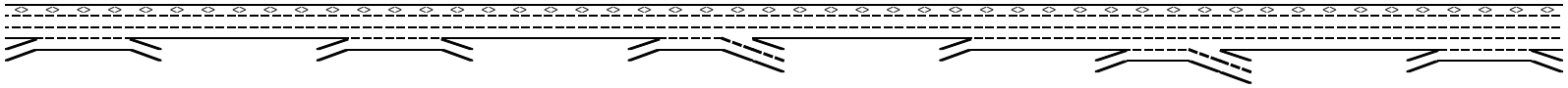
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	4,200	3,780	3,780	3,770	3,770	4,020	4,020	4,060	3,570	3,570
On Ramp Volume	1,010		600		1,260		40	380		1,460
Off Ramp Volume	1,430		610		1,010			870		1,720
Express Lane Volume	630	567	643	641	566	603	563	568	500	500
EL On Ramp Volume										
EL Off Ramp Volume										
Calculate Flow Rate in General Purpose Lanes (GP)										
GP Volume (vph)	4,580	3,213	3,737	3,129	4,465	3,417	3,497	3,872	3,070	4,530
PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
GP Lanes	3	2	3	2	3	2	4	4	3	4
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,795	3,364	3,913	3,276	4,674	3,577	3,661	4,053	3,214	4,743
GP Flow (pcphpl)	1,598	1,682	1,304	1,638	1,558	1,789	915	1,013	1,071	1,186
Calculate Speed in General Purpose Lanes										
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes										
v/c ratio	0.68	0.72	0.55	0.70	0.66	0.76	0.39	0.43	0.46	0.50
Speed (mph)	64.4	63.9	65.0	64.2	64.6	62.9	65.0	65.0	65.0	65.0

Location	1	2	3	4	5	6	7	8	9	10



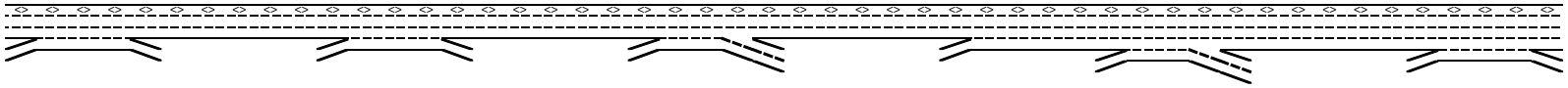
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Density (pcphpl)	24.8	26.3	20.1	25.5	24.1	28.5	14.1	15.6	16.5	18.2
LOS	C	D	C	C	C	D	B	B	B	C
Calculate Operations for Entering GP Lanes										
GP_{IN} Vol (pcph)	3,649		3,281		3,328		3,617	3,622		3,086
GP_{IN} Cap (pcph)	4,700		4,700		4,700		4,700	7,050		7,050
GP_{IN} v/c ratio	0.78		0.70		0.71		0.77	0.51		0.44
Calculate Operations for Exiting GP Lanes										
GP_{OUT} Vol (pcph)	2,606		3,261		3,001			3,124		2,905
GP_{OUT} Cap (pcph)	4,700		4,700		4,700			7,050		7,050
GP_{OUT} v/c ratio	0.55		0.69		0.64			0.44		0.41
Calculate Flow Rate in Express Lanes (EL)										
EL Volume (vph)	630	567	643	641	566	603	563	568	500	500
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	707	636	721	719	635	677	632	638	561	561
EL Flow (pcphpl)	707	636	721	719	635	677	632	638	561	561
Calculate Speed in Express Lanes										
Lane Width (ft)										
Shoulder Width										
TRD										
f_{LW}										
f_{LC}										
Calc'd FFS										
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes										
EL_{IN} v/c ratio	0.40	0.36	0.41	0.41	0.36	0.39	0.36	0.36	0.32	0.32
Calculate On Ramp Flow Rate										
On Volume (vph)	1,010		600		1,260		40	380		1,460
PHF	0.89		0.96		0.95		0.92	0.89		0.89
Total Lanes	1		1		1		1	1		1

Location	1	2	3	4	5	6	7	8	9	10



Key

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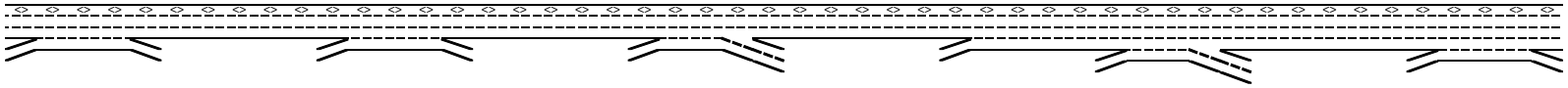
No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Terrain	Level		Level		Level		Level	Level		Level
Grade %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00		0.00	0.00		0.00
Truck & Bus %	2.0%		2.0%		3.0%		2.0%	2.0%		2.0%
RV %	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%
E_T	1.5		1.5		1.5		1.5	1.5		1.5
E_R	1.2		1.2		1.2		1.2	1.2		1.2
f_{HV}	0.990		0.990		0.985		0.990	0.990		0.990
f_P	1.00		1.00		1.00		1.00	1.00		1.00
On Flow (pcph)	1,146		631		1,346		44	431		1,657
On Flow (pcphpl)	1,146		631		1,346		44	431		1,657
Calculate On Ramp Roadway Operations										
On Ramp Type			Right				Right	Right		Right
On Ramp Speed (mph)	45		25				45	45		45
On Ramp Cap (pcph)			1,900				2,100	2,100		2,100
On Ramp v/c ratio			0.33				0.02	0.21		0.79
Calculate Off Ramp Flow Rate										
Off Volume (vph)	1,430		610		1,010			870		1,720
PHF	0.66		0.95		0.61			0.95		0.95
Total Lanes	1		1		2			2		1
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		3.0%		2.0%			3.0%		3.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.985		0.990			0.985		0.985
f_P	1.00		1.00		1.00			1.00		1.00
Off Flow (pcph)	2,188		652		1,672			930		1,838
Off Flow (pcphpl)	2,188		652		836			465		1,838
Calculate Off Ramp Roadway Operations										
Off Ramp Type	Right		Right		Right			Right		Right
Off Ramp Speed	45		45		45			25		45
Off Ramp Cap (pcph)	2,100		2,100		4,200			3,800		2,100
Off Ramp v/c ratio	1.04		0.31		0.40			0.24		0.88
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps										
Up Type			Off		Off					
Up Distance			1,250		2,350					
Up Flow (pcph)			2,188		652					



Key

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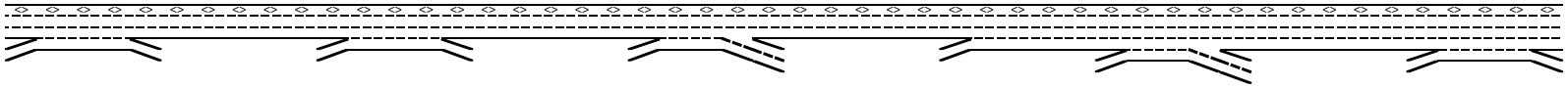
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Down Type	On		No		On					
Down Distance	1,250				8,850					
Down Flow (pcph)	631				44					
Calculate Merge Influence Area Operations										
Calculate Diverge Influence Area Operations										
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments										
On to Off Volume (vph)	434		150		400			83		686
PHF	0.92		0.92		0.92			0.92		0.92
Terrain	Level		Level		Level			Level		Level
Grade %	0.0%		0.0%		0.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	2.0%		2.0%		2.0%			2.0%		2.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.990		0.990		0.990			0.990		0.990
f_P	1.00		1.00		1.00			1.00		1.00
On to Off Flow (pcph)	477		165		439			91		753
Calculate On Ramp to Mainline Flow Rate for Weave Segments										
On to ML Volume (vph)	576		450		860			297		774
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
On to ML Flow (pcph)	603		471		901			311		810
Calculate Mainline to Off Ramp Flow Rate for Weave Segments										
ML to Off Volume (vph)	996		460		610			787		1,034
PHF	0.96		0.96		0.95			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2

Location	1	2	3	4	5	6	7	8	9	10



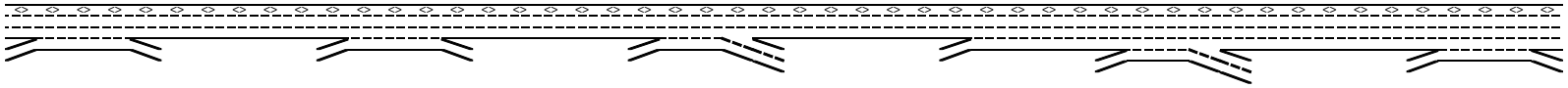
Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
ML to Off Flow (pcph)	1,042		482		646			824		1,082
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments										
GP to GP Volume (vph)	2,574		2,677		2,594			2,705		2,036
PHF	0.96		0.96		0.96			0.96		0.96
Terrain	Level		Level		Grade			Level		Level
Grade %	0.0%		0.0%		-7.0%			0.0%		0.0%
Grade Length (mi)	0.00		0.00		0.00			0.00		0.00
Truck & Bus %	1.0%		1.0%		1.0%			1.0%		1.0%
RV %	0.0%		0.0%		0.0%			0.0%		0.0%
E_T	1.5		1.5		1.5			1.5		1.5
E_R	1.2		1.2		1.2			1.2		1.2
f_{HV}	0.995		0.995		0.995			0.995		0.995
f_P	1.00		1.00		1.00			1.00		1.00
GP to GP Flow (pcph)	2,695		2,803		2,716			2,832		2,132
Calculate Weave Segment Operations										
Weave Type	One-sided		One-sided		One-sided			One-sided		One-sided
Weave Length	6,325		7,250		5,500			3,425		3,775
Segment Lanes	2		2		2			3		3
Weave Lanes	2		2		3			3		3
Weave Flow (pcph)	1,645		953		1,546			1,134		1,892
Non-Weave Flow	3,172		2,968		3,154			2,923		2,885
Segment Flow	4,817		3,920		4,701			4,057		4,778
Max Weave Length	6,034		4,981		4,331			3,799		5,071
Length Check	Not a Weave		Not a Weave		Not a Weave			OK		OK
Ideal Weave Capacity	2,372		2,524		2,439			2,321		2,251
f_{HV}	0.995		0.995		0.995			0.995		0.994
f_P	0.999		0.999		0.999			1.000		0.999
Capacity Condition 1	4,716		5,018		4,848			6,926		6,708
Capacity Condition 2	6,985		9,819		10,571			12,452		8,778
Weave v/c ratio	1.02		0.78		0.96			0.58		0.71
Interchange Density	3		5		5			4		3
Lane Changes On to ML	1		1		1			1		1
Lane Changes ML to Off	1		1		1			1		1
Lane Changes On to Off	0		0		0			0		0
Min Lane Change Rate	1,645		953		1,546			1,134		1,892
Weave LC Rate	4,030		3,667		3,578			2,250		3,180
Non-Weave LC Rate 1	3,696		4,156		3,246			1,881		2,063
Non-Weave LC Rate 2	2,396		2,351		2,392			2,341		2,332
Non-Weave LC Rate 3	-5,741		-22,105		-6,434			3,795		2,879
Segment LC Rate	6,426		6,018		5,971			4,590		5,513

Location	1	2	3	4	5	6	7	8	9	10



Key

<> Express Lane (HOV)

No Trucks

Name	Cameron Park to Cambridge	Cambridge Rd off to on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off to on-ramp	Bass Lake Rd to Silva Valley Pkwy	Silva Valley Pwky off to on-ramp	Silva Valley on-ramp	Silva Valley to El Dorado Hills	El Dorado Hills off to on-ramp	El Dorado Hills to Empire Ranch
Weave Intensity Factor	0.229		0.195		0.241			0.285		0.305
Weave Speed	55.7		56.8		55.3			53.9		53.3
Non-Weave Speed	41.6		48.7		42.6			50.3		43.7
Segment Speed	45.5		50.5		46.1			51.3		47.1
Weave Density	-		-		-			26.4		33.8
Weave LOS	Basic		Basic		Basic			C		D
Summarize Segment Operations										
Segment v/c ratio	0.68	0.72	0.55	0.70	0.66	0.76	0.39	0.58	0.46	0.71
Segment Density	24.8	26.3	20.1	25.5	24.1	28.5	14.1	26.4	16.5	33.8
Segment LOS	C	D	C	C	C	D	B	C	B	D
Over Capacity	Off Ramp Roadway Weave									

Leisch Method for Weaving Analysis

Data Input

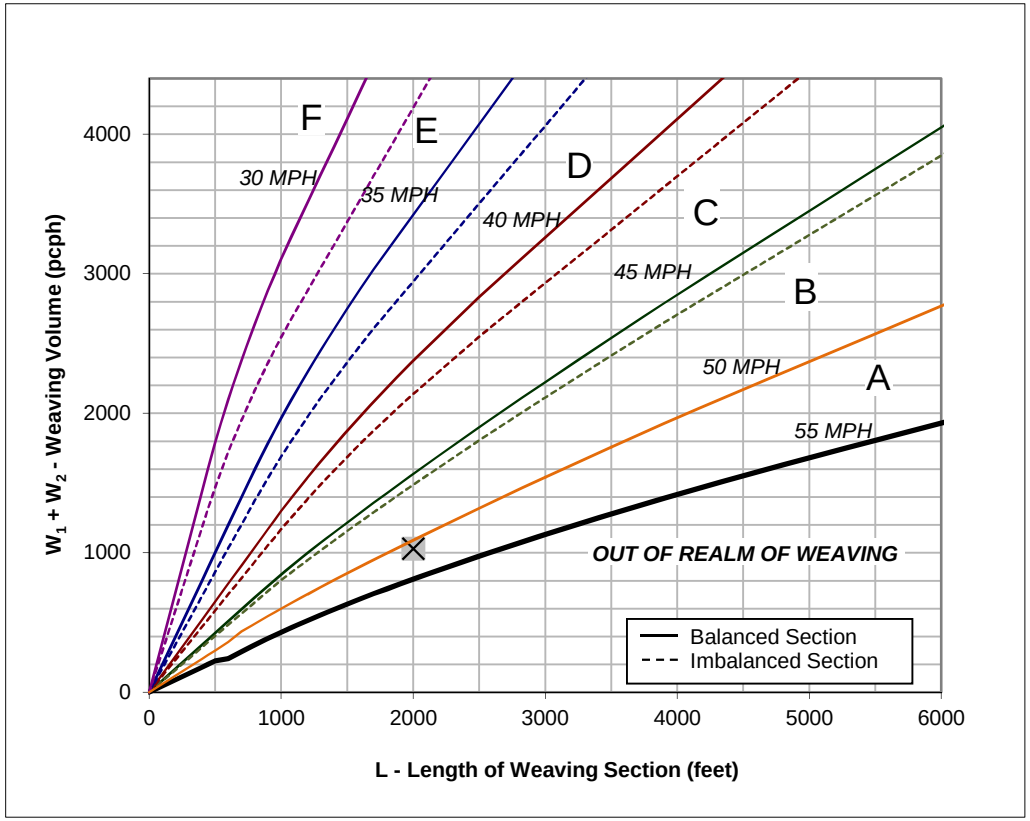
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,249	Volume (vph)*	770	Volume (vph)*	250
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,314	Volume (pcph)	777	Volume (pcph)	253

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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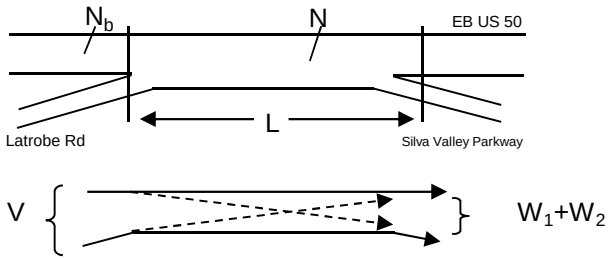


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **828**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

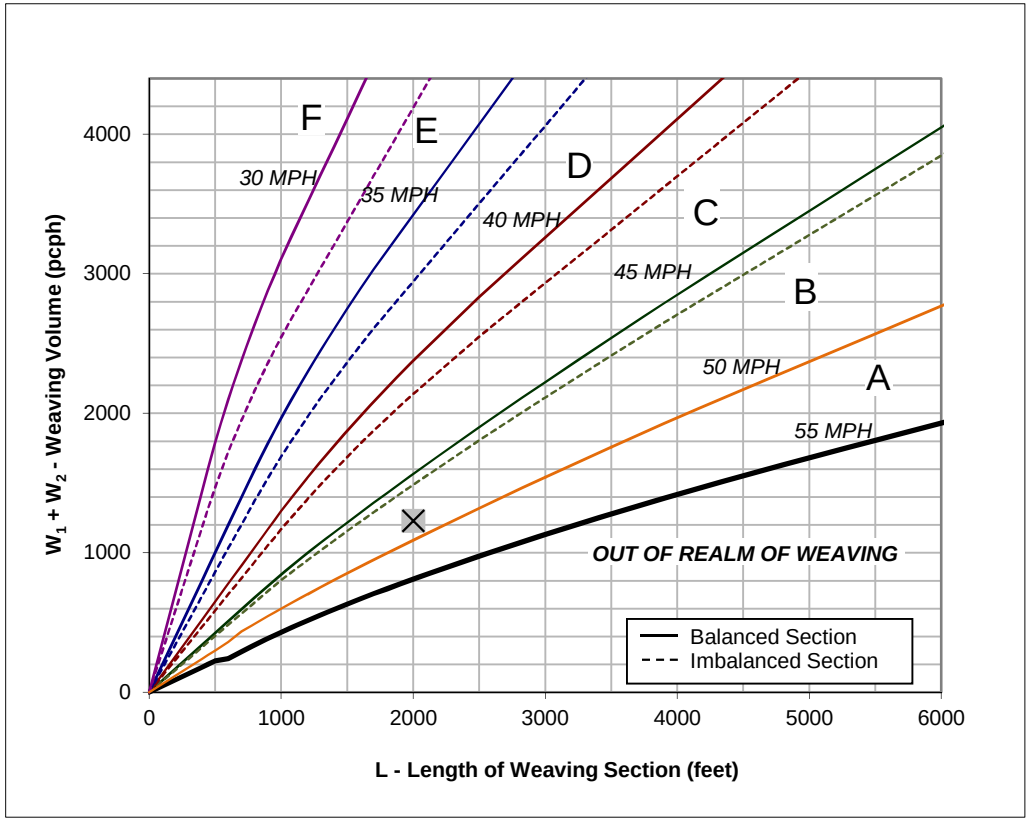
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,385	Volume (vph)*	712	Volume (vph)*	506
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,412	Volume (pcph)	719	Volume (pcph)	511

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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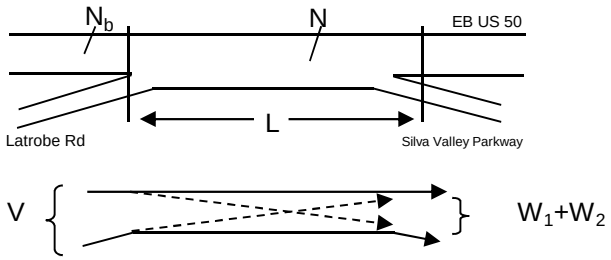


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **48.5**
4. Weaving Intensity Factor (k) **1.44**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,409**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

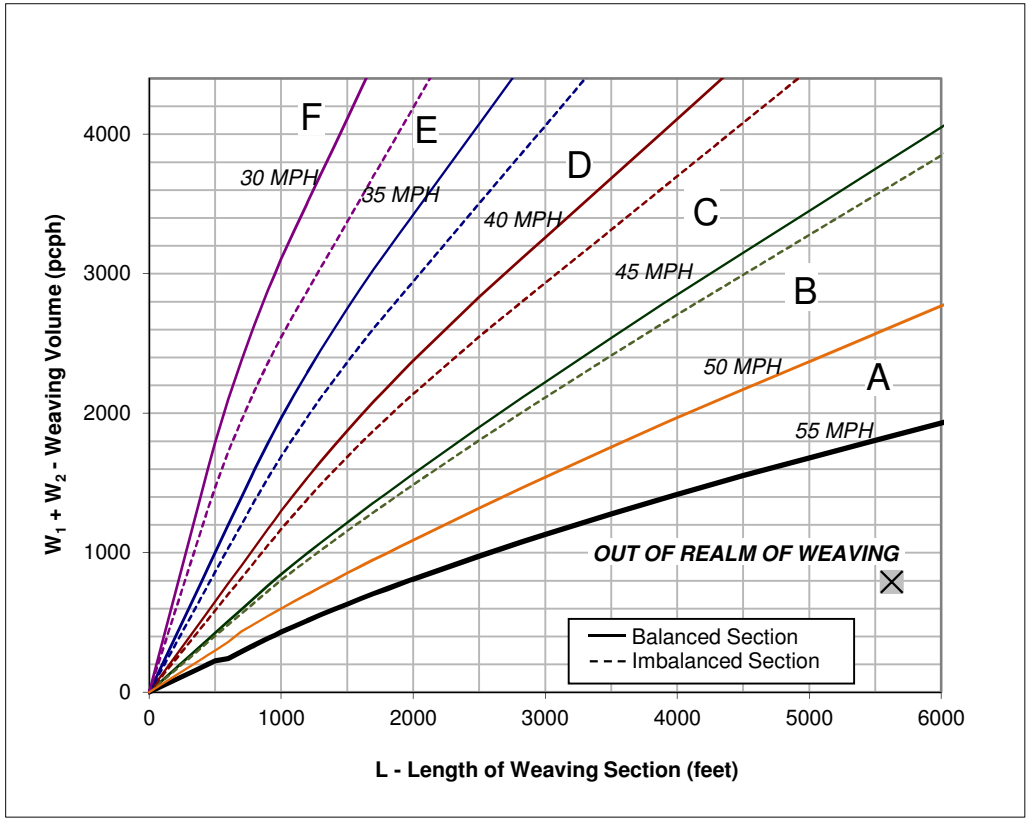
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,625

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,165	Volume (vph)*	431	Volume (vph)*	351
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,228	Volume (pcph)	436	Volume (pcph)	355

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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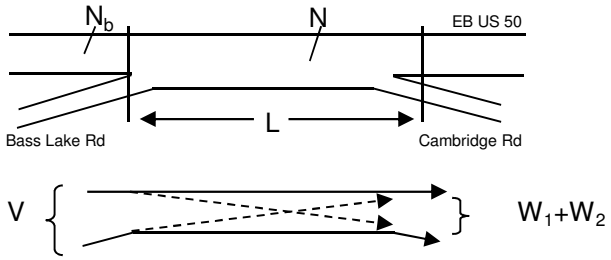


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **61.7**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,076**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

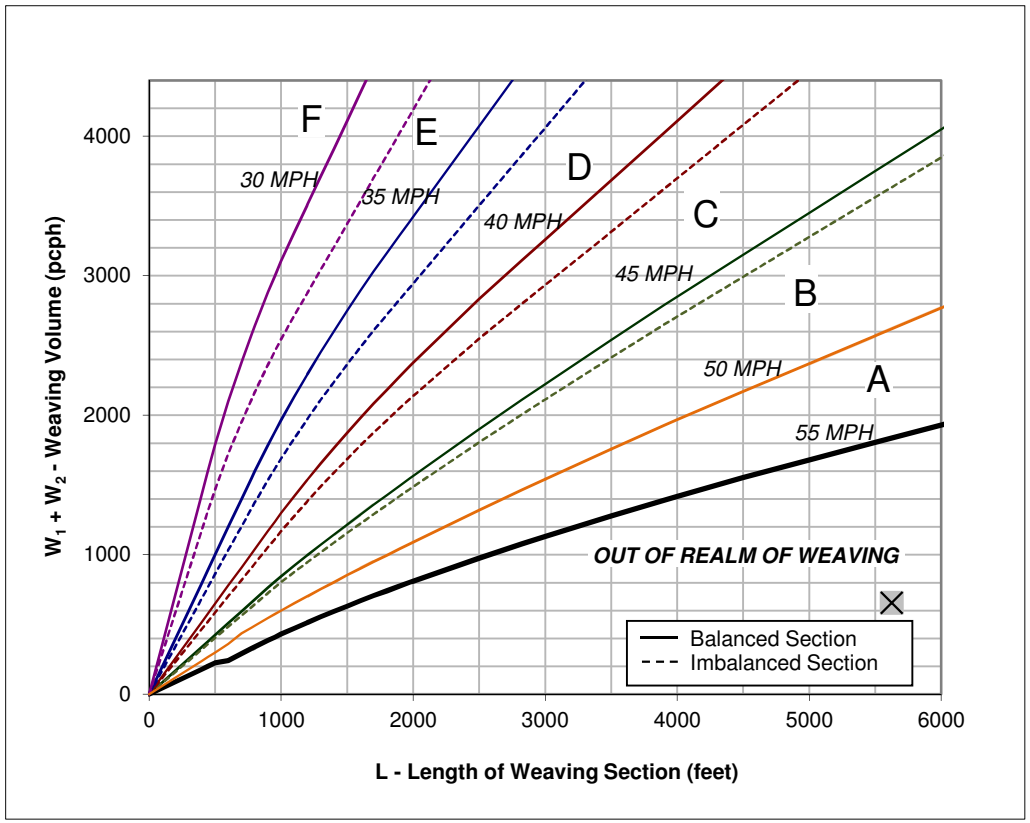
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	5,625

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,239	Volume (vph)*	185	Volume (vph)*	465
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,260	Volume (pcph)	187	Volume (pcph)	469

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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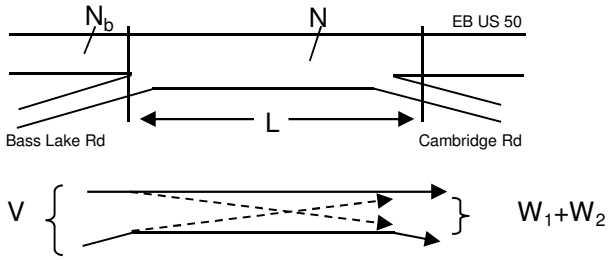


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **62.5**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,065**
6. Level of Service (LOS) **B**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

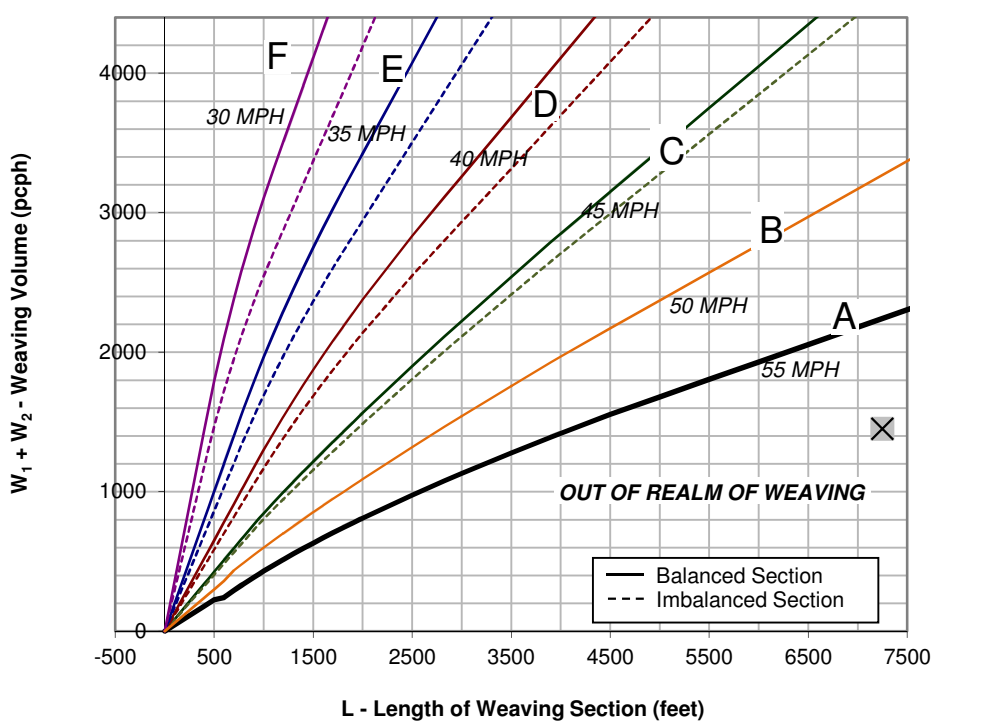
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,752	Volume (vph)*	756	Volume (vph)*	676
Truck Percentage	4%	Truck Percentage	3%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,827	Volume (pcph)	768	Volume (pcph)	683

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Cambridge Rd
Off-ramp	Cameron Park Dr

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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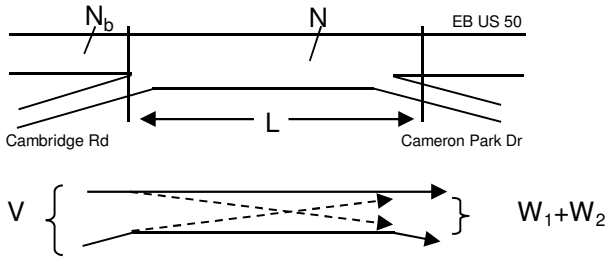


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.9**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,276**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

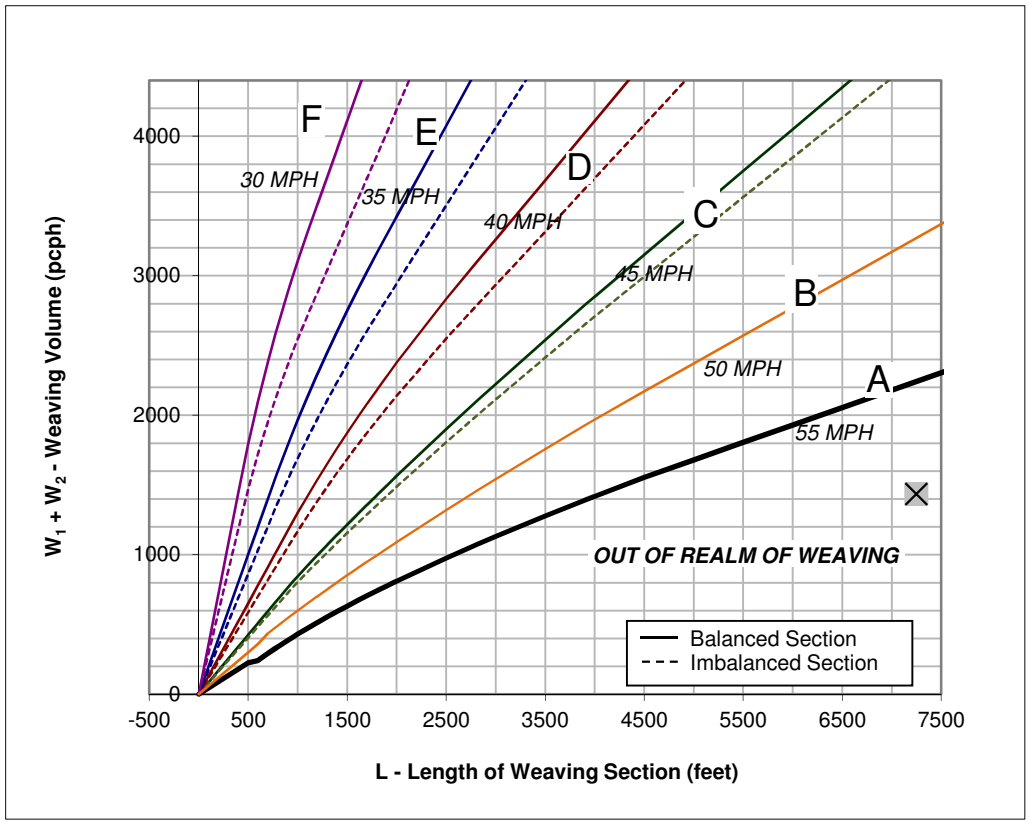
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,723	Volume (vph)*	426	Volume (vph)*	996
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,747	Volume (pcph)	430	Volume (pcph)	1,006

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Cambridge Rd
Off-ramp	Cameron Park Dr

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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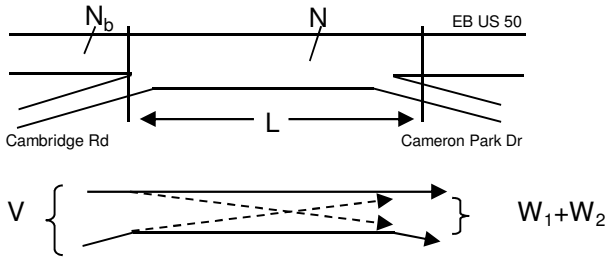


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.9**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,187**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

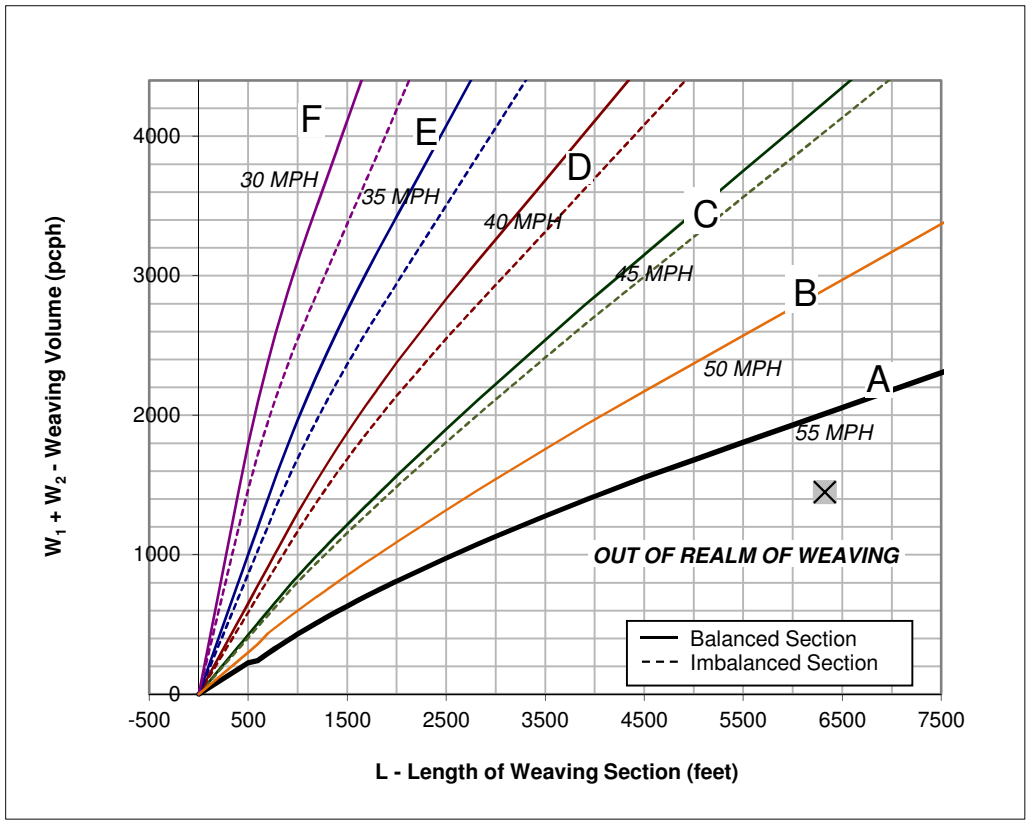
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,746	Volume (vph)*	722	Volume (vph)*	712
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,765	Volume (pcph)	729	Volume (pcph)	719

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Cameron Park Dr
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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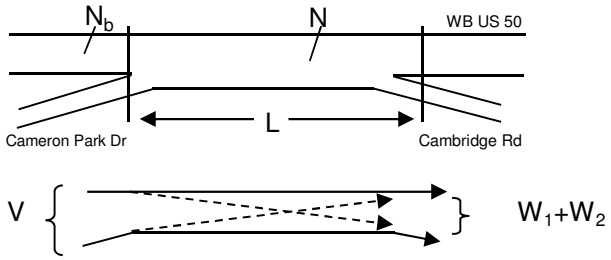


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.2**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,255**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

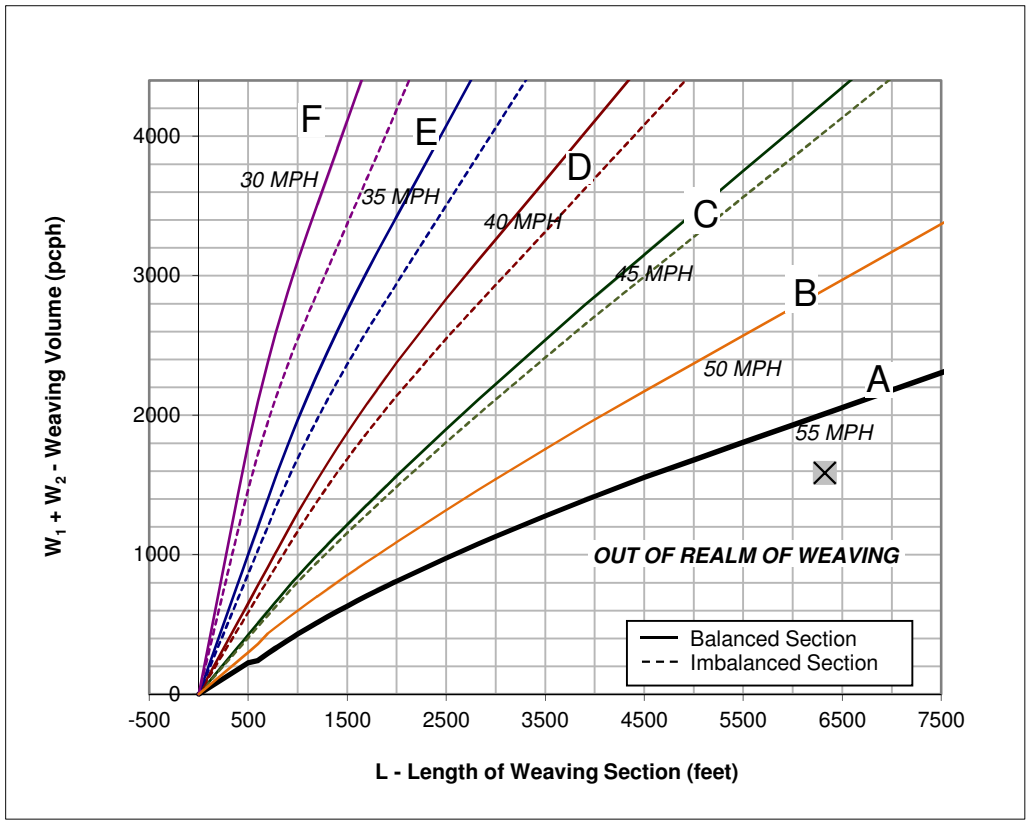
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,563	Volume (vph)*	576	Volume (vph)*	996
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,586	Volume (pcph)	581	Volume (pcph)	1,006

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Cameron Park Dr
Off-ramp	Cambridge Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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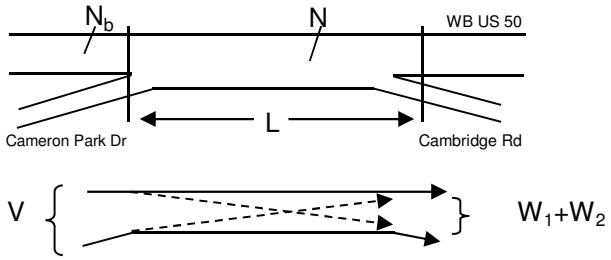


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **57.4**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,529**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

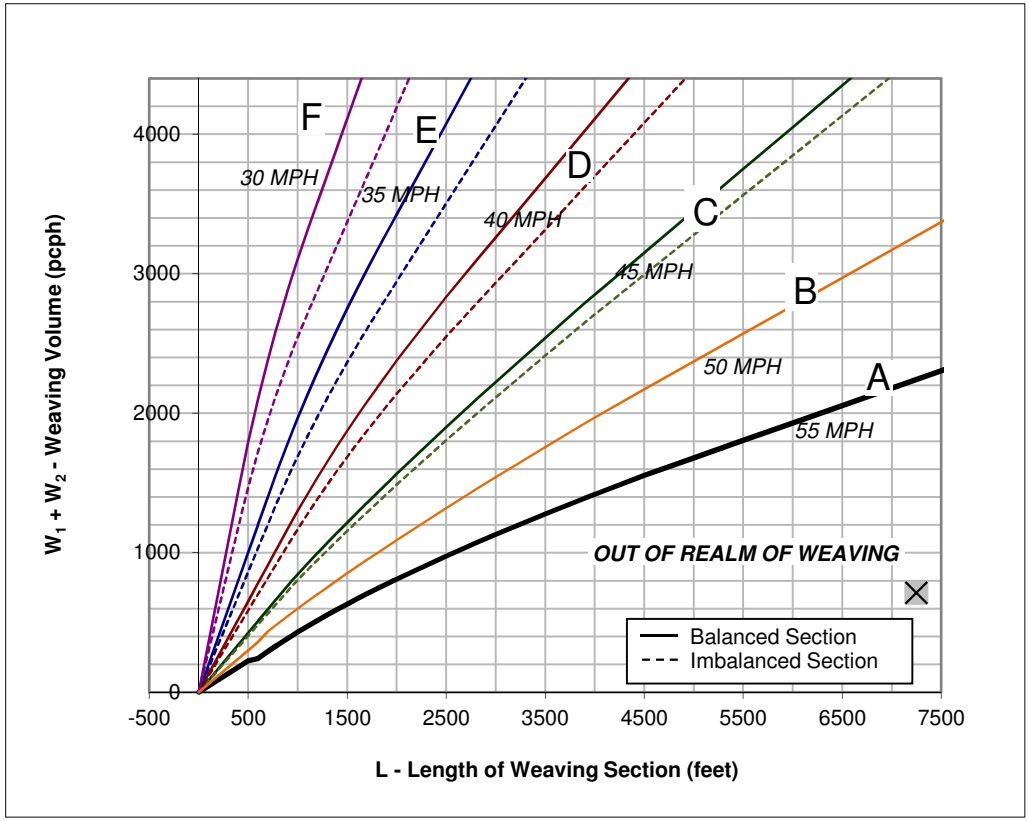
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,432	Volume (vph)*	548	Volume (vph)*	158
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,449	Volume (pcph)	553	Volume (pcph)	159

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Cambridge Rd
Off-ramp	Bass Lake Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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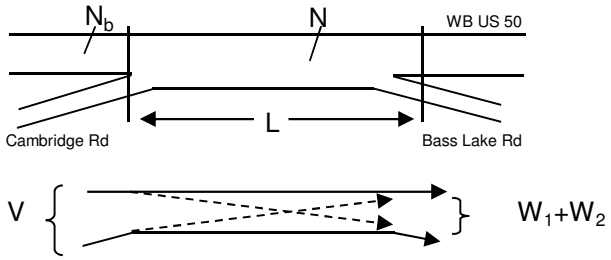


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **62.4**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,150**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

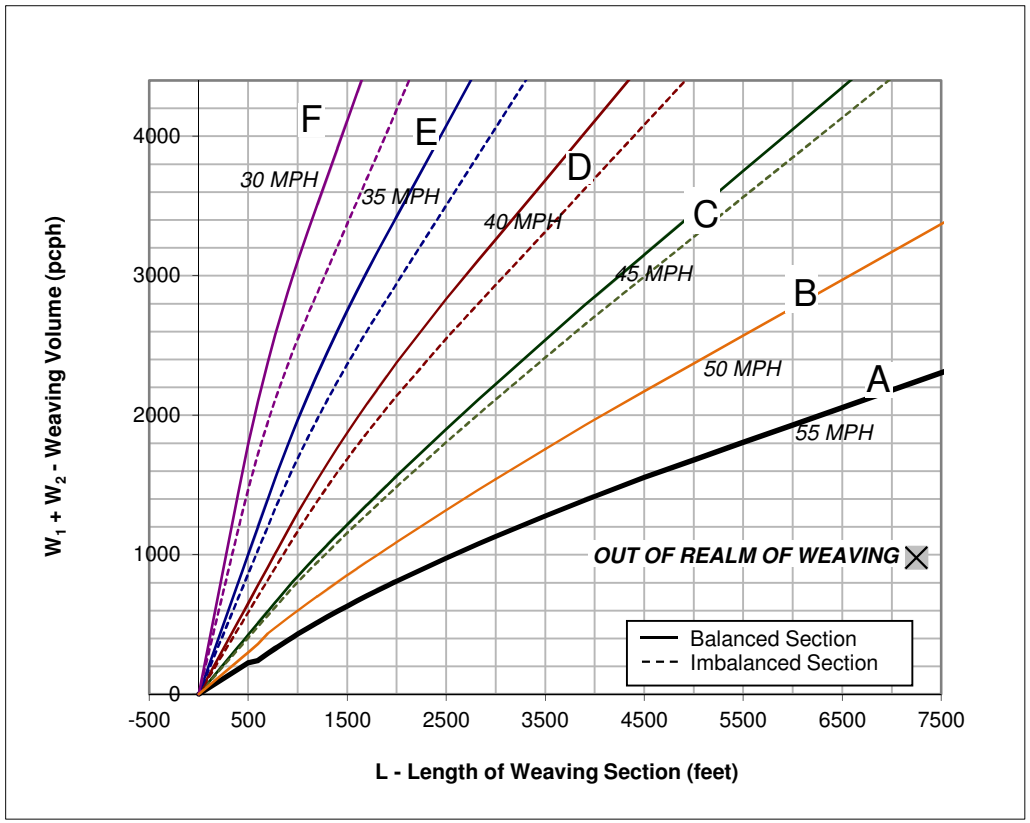
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,991	Volume (vph)*	450	Volume (vph)*	520
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,011	Volume (pcph)	455	Volume (pcph)	525

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Cambridge Rd
Off-ramp	Bass Lake Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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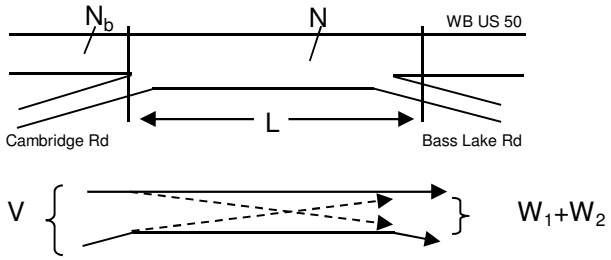


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **61.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,337**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

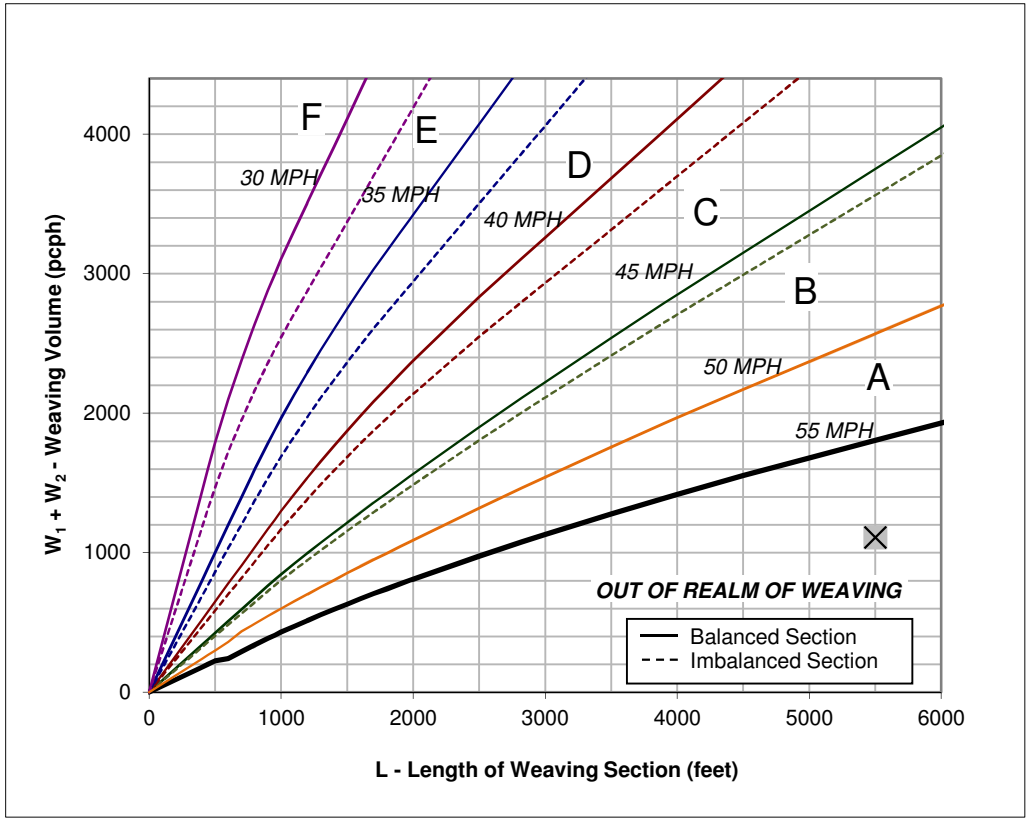
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,670	Volume (vph)*	785	Volume (vph)*	315
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,693	Volume (pcph)	793	Volume (pcph)	318

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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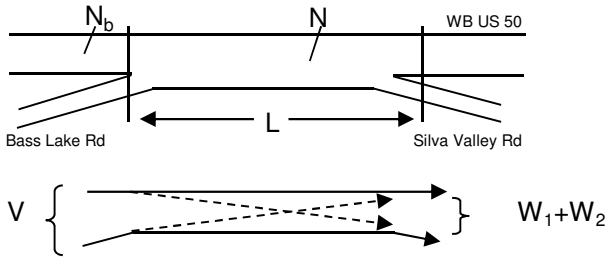


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **59.5**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,564**
6. Level of Service (LOS) **E**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

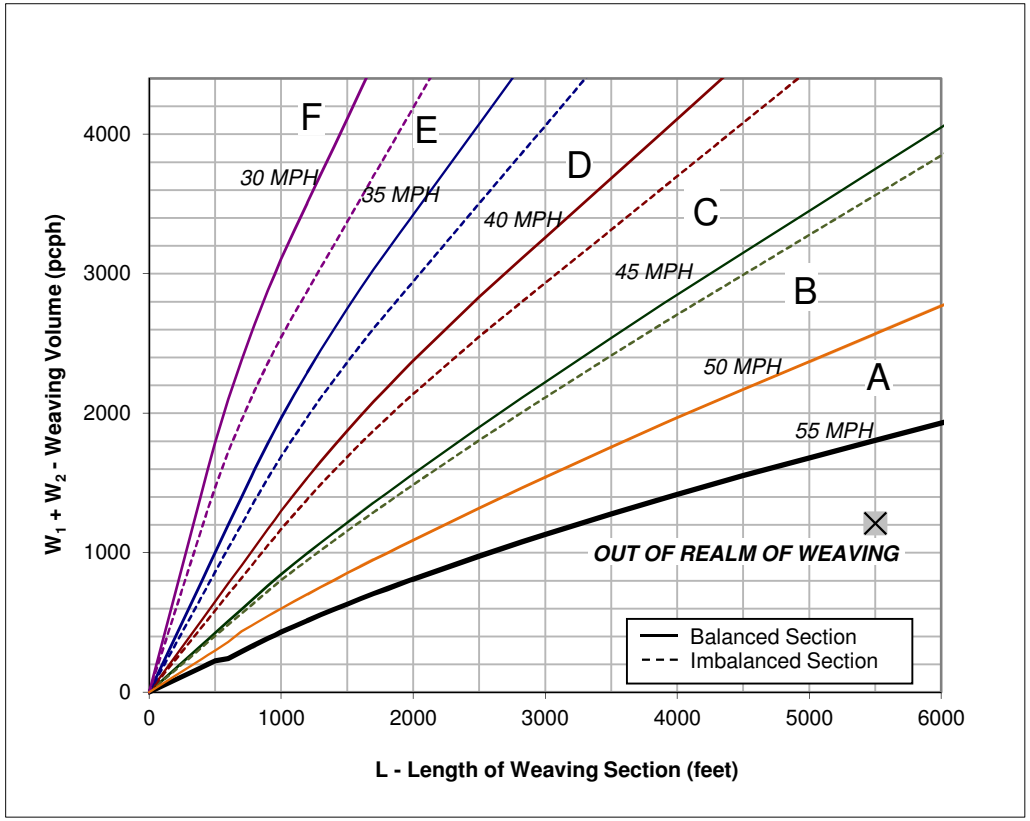
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,246	Volume (vph)*	704	Volume (vph)*	494
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,267	Volume (pcph)	711	Volume (pcph)	499

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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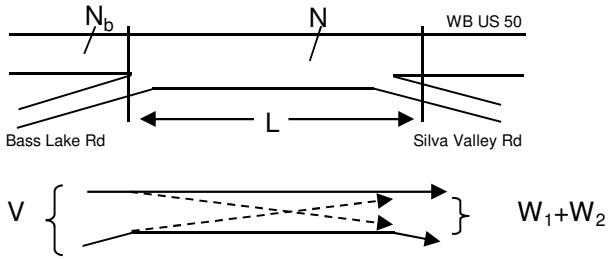


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **58.9**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,422**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

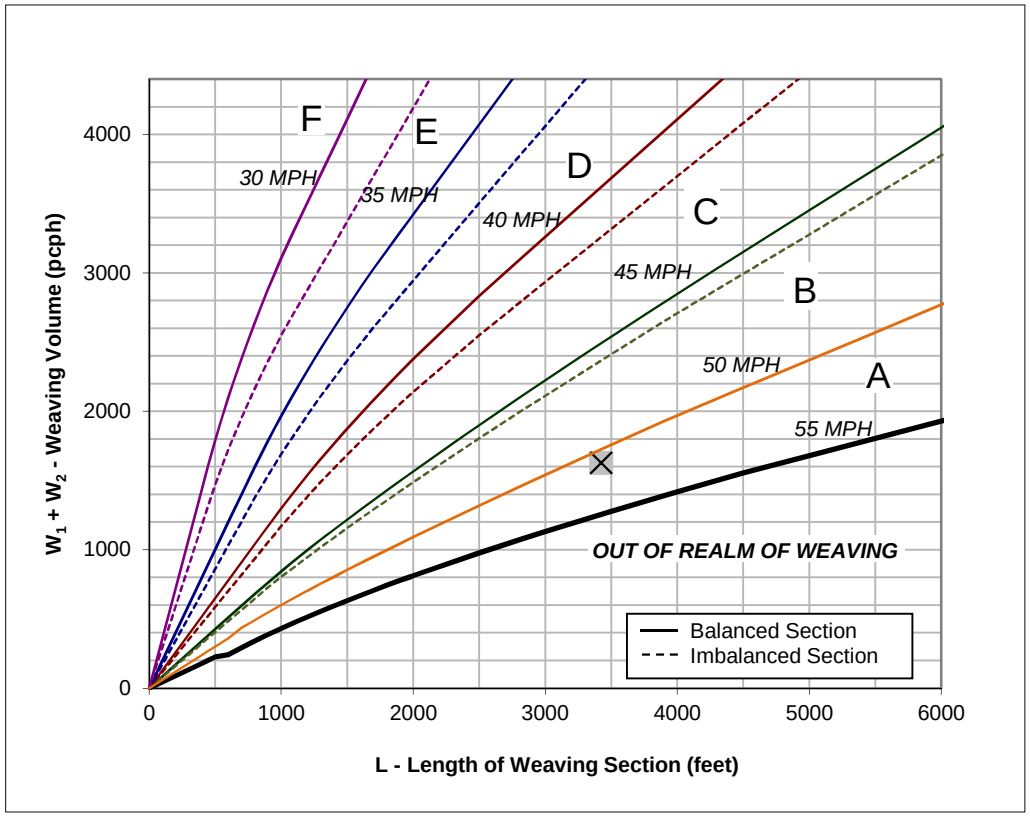
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,839	Volume (vph)*	916	Volume (vph)*	696
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,863	Volume (pcph)	925	Volume (pcph)	703

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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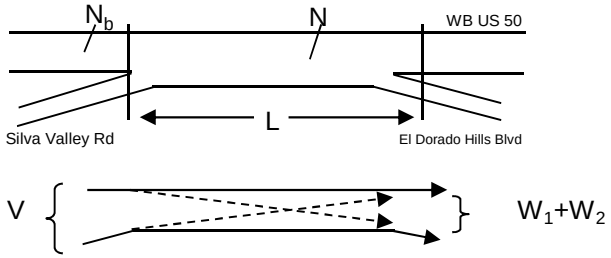


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   50 MPH and **55 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **51.1**
4. Weaving Intensity Factor (k) **1.00**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,216**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

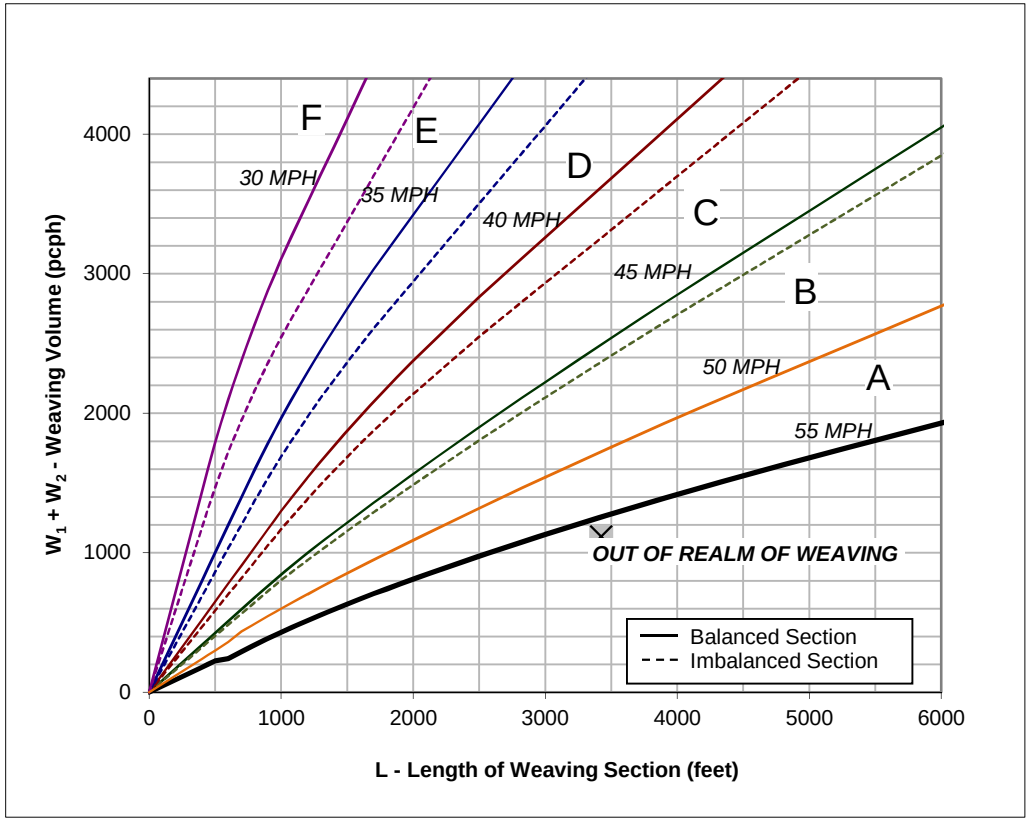
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,872	Volume (vph)*	320	Volume (vph)*	787
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,891	Volume (pcph)	323	Volume (pcph)	795

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	Silva Valley Rd
Off-ramp	El Dorado Hills Blvd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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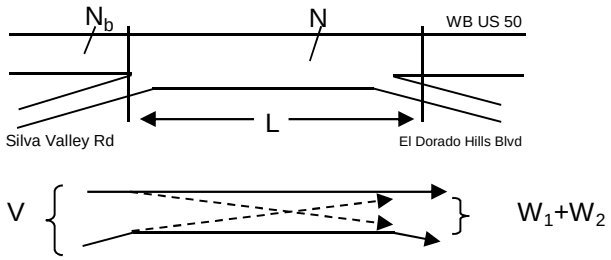


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   MPH and **MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **#N/A**
4. Weaving Intensity Factor (k) **#N/A**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **#N/A**
6. Level of Service (LOS) **#N/A**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

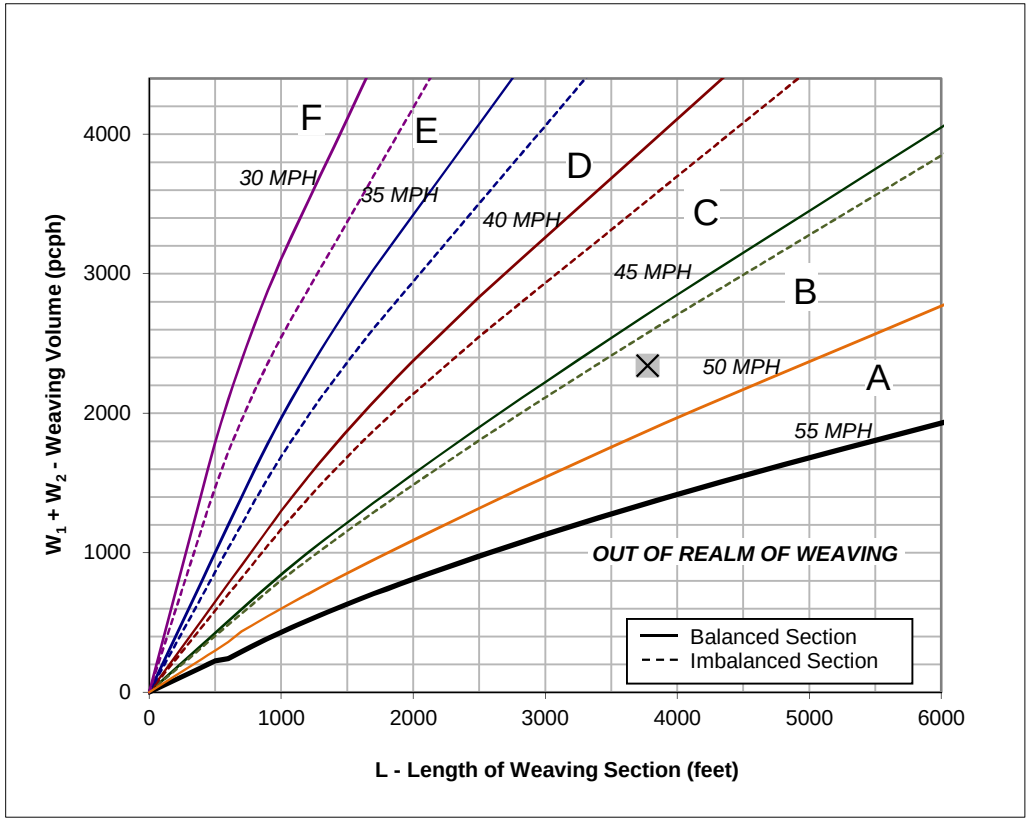
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	5,473	Volume (vph)*	979	Volume (vph)*	1,339
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	5,500	Volume (pcph)	989	Volume (pcph)	1,353

Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - AM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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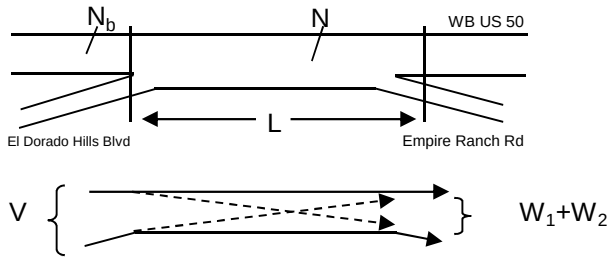


Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **47.2**
4. Weaving Intensity Factor (k) **1.65**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,535**
6. Level of Service (LOS) **D**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

Leisch Method for Weaving Analysis

Data Input

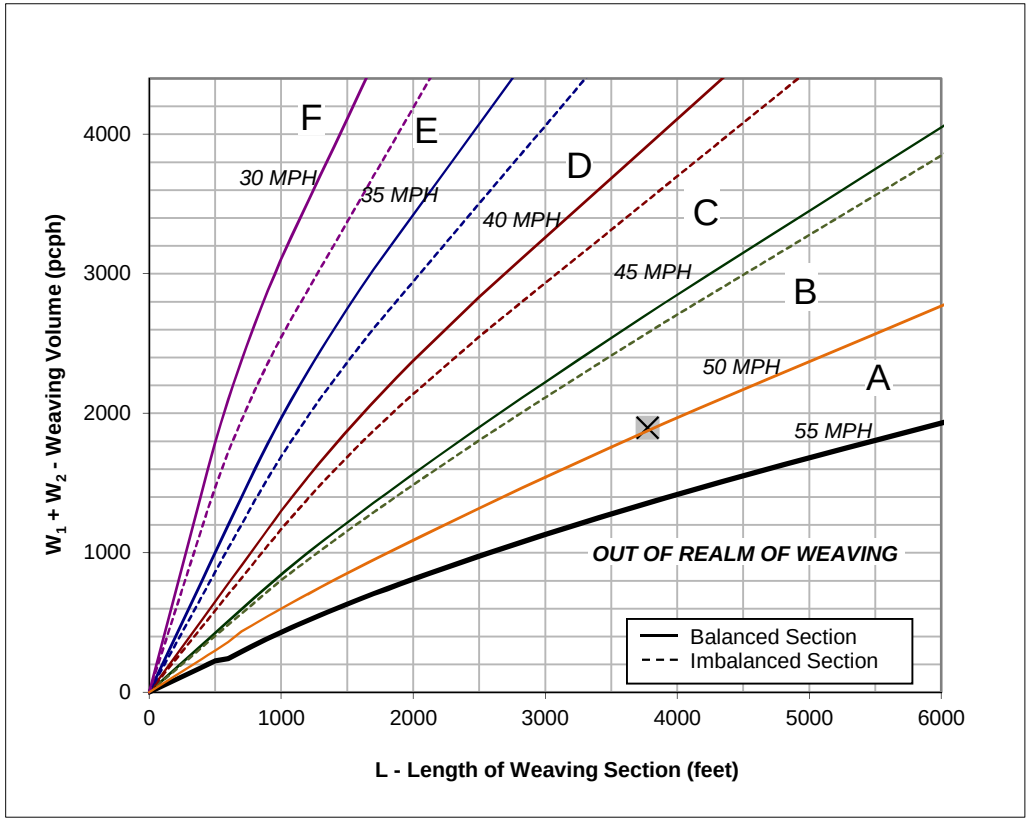
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	4,530	Volume (vph)*	774	Volume (vph)*	1,104
Truck Percentage	1%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,553	Volume (pcph)	782	Volume (pcph)	1,115

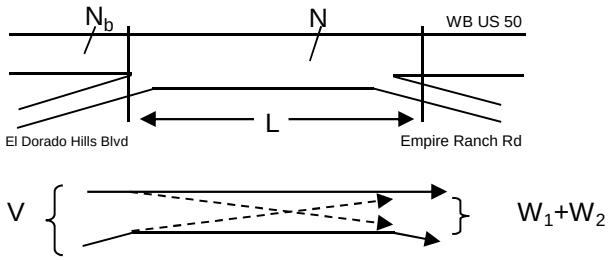
Project Information

Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   [If optional exit lane, then "Y". Otherwise "N".]
2. In the Weaving Speed Chart to the left, which two speed curves is the black "x" between?
   45 MPH and **50 MPH**
   If below the 55 MPH curve, out of the realm of weaving.
   If left of the 30 MPH curve, LOS is F.
3. Interpolated Weaving Speed (S_w, mph) **49.9**
4. Weaving Intensity Factor (k) **1.20**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **1,177**
6. Level of Service (LOS) **C**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, July 24, 2009

APPENDIX A:

Existing and Cumulative Mitigations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	49	475	45	63	42	412	146	37	125	262	3
Peak Hour Factor	0.86	0.86	0.86	0.52	0.52	0.52	0.92	0.92	0.92	0.75	0.75	0.75
Hourly flow rate (vph)	2	57	552	87	121	81	448	159	40	167	349	4

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	59	552	288	448	199	167	353
Volume Left (vph)	2	0	87	448	0	167	0
Volume Right (vph)	0	552	81	0	40	0	4
Hadj (s)	0.04	-0.57	-0.07	0.53	-0.11	0.53	0.03
Departure Headway (s)	7.9	3.2	6.8	7.3	6.6	7.5	7.0
Degree Utilization, x	0.13	0.49	0.55	0.91	0.37	0.35	0.68
Capacity (veh/h)	412	1116	501	483	531	465	499
Control Delay (s)	12.1	9.2	17.8	46.3	12.2	13.2	22.5
Approach Delay (s)	9.5		17.8	35.8		19.5	
Approach LOS	A		C	E		C	

Intersection Summary			
Delay	21.4		
HCM Level of Service	C		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	735	761	103.5%	6.4	0.5	A
	Right Turn	177	173	97.8%	5.3	0.3	A
	Subtotal	**912**	**934**	**102.4%**	**6.2**	**0.4**	**A**
SB	Left Turn	296	299	100.8%	40.4	2.9	D
	Through	1509	1555	103.1%	31.6	3.2	C
	Right Turn						
	Subtotal	**1805**	**1854**	**102.7%**	**33.0**	**2.7**	**C**
EB	Left Turn						
	Through						
	Right Turn	1087	1122	103.3%	18.6	2.2	B
	Subtotal	**1087**	**1122**	**103.3%**	**18.6**	**2.2**	**B**
WB	Left Turn						
	Through						
	Right Turn	384	401	104.5%	3.2	0.3	A
	Subtotal	**384**	**401**	**104.5%**	**3.2**	**0.3**	**A**
Total		**4188**	**4311**	**102.9%**	**20.7**	**1.3**	**C**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	71	74	104.4%	59.1	3.0	E
	Through	653	681	104.3%	19.0	1.6	B
	Right Turn	44	48	108.0%	3.2	0.9	A
	Subtotal	**768**	**803**	**104.5%**	**21.7**	**1.6**	**C**
SB	Left Turn	530	553	104.3%	54.9	3.7	D
	Through	1501	1554	103.6%	18.0	1.1	B
	Right Turn	565	577	102.2%	9.5	0.8	A
	Subtotal	**2596**	**2685**	**103.4%**	**23.8**	**1.2**	**C**
EB	Left Turn	29	30	102.4%	61.4	7.7	E
	Through	7	7	95.7%	63.2	21.1	E
	Right Turn	7	8	117.1%	7.5	3.6	A
	Subtotal	**43**	**45**	**103.7%**	**51.7**	**7.1**	**D**
WB	Left Turn	72	73	101.5%	78.8	18.4	E
	Through	48	47	98.5%	79.8	17.5	E
	Right Turn	230	233	101.5%	36.2	9.3	D
	Subtotal	**350**	**354**	**101.1%**	**50.9**	**12.5**	**D**
Total		**3757**	**3886**	**103.4%**	**26.1**	**1.2**	**C**

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	230	103	11	10	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	250	112	12	11	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	124				390	118
vC1, stage 1 conf vol					118	
vC2, stage 2 conf vol					272	
vCu, unblocked vol	124				390	118
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1463				726	934

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	11	250	124	16
Volume Left	11	0	0	11
Volume Right	0	0	12	5
cSH	1463	1700	1700	784
Volume to Capacity	0.01	0.15	0.07	0.02
Queue Length 95th (ft)	1	0	0	2
Control Delay (s)	7.5	0.0	0.0	9.7
Lane LOS	A			A
Approach Delay (s)	0.3		0.0	9.7
Approach LOS				A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	41	517	26	35	40	546	305	19	9	192	2
Peak Hour Factor	0.89	0.89	0.89	0.60	0.60	0.60	0.94	0.94	0.94	0.84	0.84	0.84
Hourly flow rate (vph)	0	46	581	43	58	67	581	324	20	11	229	2

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	46	581	168	581	345	11	231
Volume Left (vph)	0	0	43	581	0	11	0
Volume Right (vph)	0	581	67	0	20	0	2
Hadj (s)	0.03	-0.57	-0.15	0.53	-0.01	0.53	0.03
Departure Headway (s)	6.8	3.2	6.2	6.1	5.6	7.0	6.5
Degree Utilization, x	0.09	0.52	0.29	0.99	0.53	0.02	0.42
Capacity (veh/h)	498	1116	559	581	639	500	545
Control Delay (s)	10.5	9.6	11.8	56.8	13.5	8.9	12.8
Approach Delay (s)	9.6		11.8	40.7		12.6	
Approach LOS	A		B	E		B	

Intersection Summary			
Delay	24.8		
HCM Level of Service	C		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn						
	Through	1986	1979	99.7%	7.1	0.5	A
	Right Turn	702	696	99.2%	6.6	0.2	A
	Subtotal	**2688**	**2676**	**99.5%**	**7.0**	**0.4**	**A**
SB	Left Turn	243	238	97.9%	46.5	2.2	D
	Through	837	838	100.1%	12.4	1.2	B
	Right Turn						
	Subtotal	**1080**	**1076**	**99.6%**	**20.0**	**1.2**	**B**
EB	Left Turn						
	Through						
	Right Turn	700	696	99.5%	12.5	4.0	B
	Subtotal	**700**	**696**	**99.5%**	**12.5**	**4.0**	**B**
WB	Left Turn						
	Through						
	Right Turn	1172	1163	99.2%	23.5	6.3	C
	Subtotal	**1172**	**1163**	**99.2%**	**23.5**	**6.3**	**C**
Total		**5640**	**5611**	**99.5%**	**13.6**	**1.7**	**B**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	3	3	106.7%	116.0	62.0	F
	Through	1531	1526	99.7%	54.2	12.2	D
	Right Turn	127	125	98.5%	4.8	0.6	A
	Subtotal	**1661**	**1655**	**99.6%**	**50.6**	**11.4**	**D**
SB	Left Turn	571	560	98.1%	118.5	32.1	F
	Through	928	947	102.0%	19.2	2.5	B
	Right Turn	38	36	94.5%	2.2	0.4	A
	Subtotal	**1537**	**1543**	**100.4%**	**54.9**	**12.8**	**D**
EB	Left Turn	377	368	97.5%	55.8	3.9	E
	Through	54	53	97.4%	46.7	5.4	D
	Right Turn	115	112	97.5%	8.2	1.2	A
	Subtotal	**546**	**532**	**97.5%**	**44.9**	**2.8**	**D**
WB	Left Turn	58	59	100.9%	78.3	11.0	E
	Through	9	8	91.1%	78.4	16.9	E
	Right Turn	780	787	100.9%	35.4	6.5	D
	Subtotal	**847**	**853**	**100.8%**	**38.8**	**6.9**	**D**
Total		**4591**	**4583**	**99.8%**	**49.2**	**4.7**	**D**

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	12	165	183	25	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	179	199	27	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	226				418	212
vC1, stage 1 conf vol					212	
vC2, stage 2 conf vol					205	
vCu, unblocked vol	226				418	212
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1342				726	828

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	13	179	226	11
Volume Left	13	0	0	5
Volume Right	0	0	27	5
cSH	1342	1700	1700	773
Volume to Capacity	0.01	0.11	0.13	0.01
Queue Length 95th (ft)	1	0	0	1
Control Delay (s)	7.7	0.0	0.0	9.7
Lane LOS	A			A
Approach Delay (s)	0.5		0.0	9.7
Approach LOS				A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	10	110	240	10	110	40	230	120	70	350	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.91			1.00	0.85	1.00	0.95		1.00	0.99	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1646			1777	1542	1770	1751		1770	1837	
Flt Permitted		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1646			1777	1542	1770	1751		1770	1837	
Peak-hour factor, PHF	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Adj. Flow (vph)	74	15	162	343	14	157	63	365	190	101	507	43
RTOR Reduction (vph)	0	65	0	0	0	113	0	19	0	0	3	0
Lane Group Flow (vph)	0	186	0	0	357	44	63	536	0	101	547	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		13.1			21.8	21.8	4.5	32.6		7.9	36.0	
Effective Green, g (s)		13.1			21.8	21.8	4.5	32.6		7.9	36.0	
Actuated g/C Ratio		0.14			0.24	0.24	0.05	0.36		0.09	0.39	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		236			424	368	87	625		153	724	
v/s Ratio Prot		c0.11			c0.20		0.04	c0.31		c0.06	c0.30	
v/s Ratio Perm						0.03						
v/c Ratio		0.79			0.84	0.12	0.72	0.86		0.66	0.76	
Uniform Delay, d1		37.8			33.2	27.3	42.8	27.2		40.4	23.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.8			14.1	0.1	25.6	11.2		10.2	4.5	
Delay (s)		53.6			47.2	27.4	68.4	38.4		50.6	28.4	
Level of Service		D			D	C	E	D		D	C	
Approach Delay (s)		53.6			41.2			41.5			31.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	39.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	100	410	120	80	20	640	320	50	40	420	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1544	1770	1793		1770	1809		1770	3539	1512
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1544	1770	1793		1770	1809		1770	3539	1512
Peak-hour factor, PHF	0.57	0.57	0.57	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	158	175	719	154	103	26	711	356	56	44	467	311
RTOR Reduction (vph)	0	0	572	0	6	0	0	3	0	0	0	249
Lane Group Flow (vph)	158	175	147	154	123	0	711	409	0	44	467	62
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	20.4	20.4	20.4	18.9	18.9		59.6	76.1		6.4	22.9	22.9
Effective Green, g (s)	20.4	20.4	20.4	18.9	18.9		59.6	76.1		6.4	22.9	22.9
Actuated g/C Ratio	0.15	0.15	0.15	0.14	0.14		0.43	0.54		0.05	0.16	0.16
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	258	272	225	239	243		755	985		81	580	248
v/s Ratio Prot	0.09	0.09		c0.09	0.07		c0.40	0.23		0.02	c0.13	
v/s Ratio Perm			c0.10									0.04
v/c Ratio	0.61	0.64	0.65	0.64	0.51		0.94	0.42		0.54	0.81	0.25
Uniform Delay, d1	55.9	56.2	56.3	57.2	56.1		38.4	18.7		65.2	56.3	50.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	3.9	5.1	5.8	1.7		19.8	0.2		5.8	7.8	0.4
Delay (s)	59.0	60.1	61.4	63.1	57.7		58.2	18.9		71.0	64.0	51.3
Level of Service	E	E	E	E	E		E	B		E	E	D
Approach Delay (s)		60.8			60.6			43.8			59.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	54.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	139.7	Sum of lost time (s)	17.9
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	90	120	580	250	460	240	520	190	300	730	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3207		3433	1863	1559	1770	3539	1559	1770	3428	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3207		3433	1863	1559	1770	3539	1559	1770	3428	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Adj. Flow (vph)	128	115	154	674	291	535	387	839	306	361	880	193
RTOR Reduction (vph)	0	137	0	0	0	384	0	0	138	0	12	0
Lane Group Flow (vph)	128	132	0	674	291	151	387	839	168	361	1061	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	15.7	15.7		29.1	29.1	29.1	33.0	44.6	44.6	32.5	44.1	
Effective Green, g (s)	15.7	15.7		29.1	29.1	29.1	33.0	44.6	44.6	32.5	44.1	
Actuated g/C Ratio	0.11	0.11		0.21	0.21	0.21	0.23	0.31	0.31	0.23	0.31	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	195	355		704	382	319	411	1113	490	405	1066	
v/s Ratio Prot	c0.07	0.04		c0.20	0.16		c0.22	0.24		0.20	c0.31	
v/s Ratio Perm						0.10			0.11			
v/c Ratio	0.66	0.37		0.96	0.76	0.47	0.94	0.75	0.34	0.89	0.99	
Uniform Delay, d1	60.5	58.5		55.7	53.1	49.6	53.5	43.7	37.3	52.9	48.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.9	0.5		23.7	8.3	0.8	29.9	2.8	0.3	21.0	26.2	
Delay (s)	67.4	59.0		79.4	61.4	50.4	83.3	46.5	37.6	73.9	74.9	
Level of Service	E	E		E	E	D	F	D	D	E	E	
Approach Delay (s)		61.7			65.6			54.0			74.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	141.8	Sum of lost time (s)	19.9
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative Plus Project Mitigations**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	80	74	92.4%	70.9	13.6	E
	Through	650	633	97.4%	7.7	0.8	A
	Right Turn	70	74	105.4%	1.5	0.2	A
	Subtotal	**800**	**781**	**97.6%**	**13.2**	**2.1**	**B**
SB	Left Turn	70	75	106.4%	107.0	12.2	F
	Through	1690	1707	101.0%	26.3	1.5	C
	Right Turn	690	693	100.4%	45.2	5.5	D
	Subtotal	**2450**	**2475**	**101.0%**	**34.0**	**2.5**	**C**
EB	Left Turn	160	159	99.3%	72.3	6.0	E
	Through	100	105	105.3%	120.6	40.1	F
	Right Turn	60	60	100.2%	26.8	23.5	C
	Subtotal	**320**	**324**	**101.3%**	**80.1**	**17.8**	**F**
WB	Left Turn	130	124	95.5%	65.6	4.7	E
	Through	120	115	95.5%	71.5	6.4	E
	Right Turn	80	77	96.0%	8.2	1.6	A
	Subtotal	**330**	**316**	**95.6%**	**53.8**	**3.0**	**D**
Total		**3900**	**3895**	**99.9%**	**35.2**	**2.0**	**D**

SimTraffic Post-Processor | **Serrano Westside**
Average Results from 10 Runs | **Cumulative Plus Project Mitigations**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	30	25	83.3%	228.9	77.2	F
	Through	1280	1241	97.0%	89.9	23.8	F
	Right Turn	60	63	104.7%	26.7	4.5	C
	Subtotal	**1370**	**1329**	**97.0%**	**89.4**	**23.2**	**F**
SB	Left Turn	550	560	101.9%	54.5	7.2	D
	Through	1460	1448	99.1%	13.8	1.0	B
	Right Turn	460	455	98.9%	5.7	0.7	A
	Subtotal	**2470**	**2463**	**99.7%**	**21.6**	**2.3**	**C**
EB	Left Turn	60	59	98.7%	66.6	5.3	E
	Through	20	20	98.0%	55.8	9.0	E
	Right Turn	20	20	97.5%	19.8	6.1	B
	Subtotal	**100**	**98**	**98.3%**	**55.4**	**4.7**	**E**
WB	Left Turn	110	110	99.6%	97.8	51.7	F
	Through	50	48	95.2%	107.5	60.0	F
	Right Turn	330	338	102.3%	34.2	22.5	C
	Subtotal	**490**	**495**	**101.0%**	**55.8**	**34.4**	**E**
Total		**4430**	**4385**	**99.0%**	**46.8**	**6.4**	**D**

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	330	130	20	30	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	359	141	22	33	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	163				533	152
vC1, stage 1 conf vol					152	
vC2, stage 2 conf vol					380	
vCu, unblocked vol	163				533	152
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	99
cM capacity (veh/h)	1416				645	894

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	11	359	163	43
Volume Left	11	0	0	33
Volume Right	0	0	22	11
cSH	1416	1700	1700	693
Volume to Capacity	0.01	0.21	0.10	0.06
Queue Length 95th (ft)	1	0	0	5
Control Delay (s)	7.6	0.0	0.0	10.5
Lane LOS	A			B
Approach Delay (s)	0.2		0.0	10.5
Approach LOS				B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	60	150	10	90	100	390	130	100	260	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.92			1.00	0.85	1.00	0.96		1.00	0.96	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1661			1779	1544	1770	1782		1770	1773	
Flt Permitted		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1661			1779	1544	1770	1782		1770	1773	
Peak-hour factor, PHF	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	38	13	76	172	11	103	118	459	153	118	306	118
RTOR Reduction (vph)	0	63	0	0	0	85	0	13	0	0	15	0
Lane Group Flow (vph)	0	64	0	0	183	18	118	599	0	118	409	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		6.6			12.7	12.7	7.7	31.9		6.5	30.7	
Effective Green, g (s)		6.6			12.7	12.7	7.7	31.9		6.5	30.7	
Actuated g/C Ratio		0.09			0.17	0.17	0.10	0.43		0.09	0.42	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		149			307	266	185	771		156	739	
v/s Ratio Prot		c0.04			c0.10		c0.07	c0.34		0.07	0.23	
v/s Ratio Perm						0.01						
v/c Ratio		0.43			0.60	0.07	0.64	0.78		0.76	0.55	
Uniform Delay, d1		31.8			28.1	25.5	31.7	17.9		32.8	16.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0			3.1	0.1	7.0	4.9		18.7	0.9	
Delay (s)		33.8			31.2	25.6	38.7	22.8		51.5	17.2	
Level of Service		C			C	C	D	C		D	B	
Approach Delay (s)		33.8			29.2			25.4			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	20	390	20	20	20	390	510	20	20	370	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.98		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1551	1770	1696		1770	1849		1770	3539	1525
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1551	1770	1696		1770	1849		1770	3539	1525
Peak-hour factor, PHF	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	126	23	448	33	33	33	459	600	24	22	411	78
RTOR Reduction (vph)	0	0	385	0	27	0	0	1	0	0	0	60
Lane Group Flow (vph)	126	23	63	33	39	0	459	623	0	22	411	18
Confl. Peds. (#/hr)			8			8			8			8
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	13.4	13.4	13.4	9.1	9.1		34.0	54.3		1.3	21.6	21.6
Effective Green, g (s)	13.4	13.4	13.4	9.1	9.1		34.0	54.3		1.3	21.6	21.6
Actuated g/C Ratio	0.14	0.14	0.14	0.09	0.09		0.35	0.57		0.01	0.23	0.23
Clearance Time (s)	4.6	4.6	4.6	4.0	4.0		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	247	260	216	168	161		627	1046		24	796	343
v/s Ratio Prot	c0.07	0.01		0.02	c0.02		c0.26	c0.34		0.01	0.12	
v/s Ratio Perm			0.04									0.01
v/c Ratio	0.51	0.09	0.29	0.20	0.24		0.73	0.60		0.92	0.52	0.05
Uniform Delay, d1	38.3	36.0	37.0	40.1	40.3		27.0	13.7		47.3	32.6	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.3	0.6	0.8		4.2	0.8		145.1	0.4	0.0
Delay (s)	39.0	36.0	37.3	40.7	41.0		31.2	14.4		192.4	33.0	29.2
Level of Service	D	D	D	D	D		C	B		F	C	C
Approach Delay (s)		37.6			40.9			21.5			39.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	320	90	220	90	350	90	710	610	230	520	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3411		3433	1863	1559	1770	3539	1559	1770	3476	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3411		3433	1863	1559	1770	3539	1559	1770	3476	
Peak-hour factor, PHF	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Adj. Flow (vph)	169	416	117	256	105	407	148	1164	1000	274	619	71
RTOR Reduction (vph)	0	17	0	0	0	277	0	0	184	0	6	0
Lane Group Flow (vph)	169	516	0	256	105	130	148	1164	816	274	684	0
Confl. Peds. (#/hr)			2			2			2			2
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	13.0	23.9		13.4	24.3	24.3	16.6	59.6	59.6	25.9	68.9	
Effective Green, g (s)	13.0	23.9		13.4	24.3	24.3	16.6	59.6	59.6	25.9	68.9	
Actuated g/C Ratio	0.09	0.17		0.09	0.17	0.17	0.12	0.42	0.42	0.18	0.49	
Clearance Time (s)	4.0	5.3		4.0	5.3	5.3	4.0	5.3	5.3	4.0	5.3	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	162	576		325	320	267	207	1491	657	324	1693	
v/s Ratio Prot	c0.10	c0.15		0.07	0.06		0.08	0.33		c0.15	0.20	
v/s Ratio Perm						0.08			c0.52			
v/c Ratio	1.04	0.90		0.79	0.33	0.49	0.71	0.78	1.24	0.85	0.40	
Uniform Delay, d1	64.2	57.5		62.6	51.4	52.9	60.1	35.3	40.9	55.8	23.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	82.6	16.3		11.5	0.4	1.0	10.4	2.6	121.5	17.7	0.1	
Delay (s)	146.8	73.8		74.1	51.8	54.0	70.5	37.9	162.4	73.6	23.3	
Level of Service	F	E		E	D	D	E	D	F	E	C	
Approach Delay (s)		91.4			60.4			93.8			37.6	
Approach LOS		F			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	76.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative Plus Project Mitigations**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	70	69	98.0%	54.4	8.7	D
	Through	1560	1499	96.1%	20.3	2.4	C
	Right Turn	170	161	94.4%	7.7	2.4	A
	Subtotal	**1800**	**1728**	**96.0%**	**20.5**	**2.1**	**C**
SB	Left Turn	100	96	96.4%	168.8	107.8	F
	Through	880	858	97.5%	57.3	39.9	E
	Right Turn	230	221	95.9%	39.7	15.2	D
	Subtotal	**1210**	**1175**	**97.1%**	**63.3**	**41.0**	**E**
EB	Left Turn	630	643	102.1%	69.6	8.8	E
	Through	130	132	101.3%	52.4	4.0	D
	Right Turn	440	440	100.1%	21.7	4.7	C
	Subtotal	**1200**	**1216**	**101.3%**	**50.4**	**4.8**	**D**
WB	Left Turn	130	130	100.1%	68.9	7.3	E
	Through	120	119	98.9%	68.8	5.7	E
	Right Turn	220	224	101.7%	32.3	2.6	C
	Subtotal	**470**	**473**	**100.5%**	**51.7**	**2.5**	**D**
Total		**4680**	**4591**	**98.1%**	**42.4**	**10.0**	**D**

SimTraffic Post-Processor | **Serrano Westside/Pedregal**
Average Results from 10 Runs | **Cumulative Plus Project Mitigations**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signalized**

		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	**Movement**	**Demand**	**Served**	**% Served**	**Average**	**Std. Dev.**	**LOS**
NB	Left Turn	10	8	83.0%	426.0	170.4	F
	Through	1540	1393	90.4%	159.4	25.0	F
	Right Turn	100	96	95.7%	44.1	5.4	D
	Subtotal	**1650**	**1497**	**90.7%**	**153.5**	**24.1**	**F**
SB	Left Turn	700	709	101.3%	38.3	3.5	D
	Through	1430	1426	99.7%	10.0	1.1	A
	Right Turn	70	76	109.1%	1.5	0.3	A
	Subtotal	**2200**	**2212**	**100.5%**	**18.8**	**0.7**	**B**
EB	Left Turn	340	308	90.7%	235.5	148.4	F
	Through	60	61	101.8%	68.1	20.1	E
	Right Turn	90	93	102.8%	46.2	17.5	D
	Subtotal	**490**	**462**	**94.3%**	**175.1**	**102.6**	**F**
WB	Left Turn	20	18	92.0%	114.0	24.4	F
	Through	20	19	93.0%	104.3	16.6	F
	Right Turn	870	880	101.1%	31.8	6.9	C
	Subtotal	**910**	**917**	**100.7%**	**34.9**	**7.0**	**C**
Total		**5250**	**5087**	**96.9%**	**75.1**	**13.7**	**E**

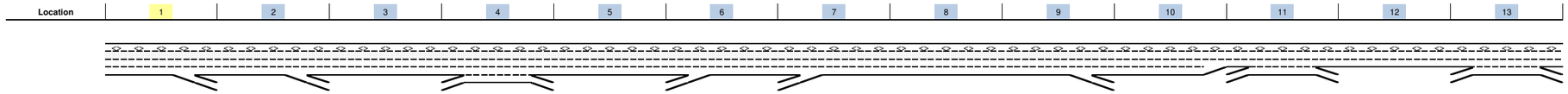
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	210	250	30	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	228	272	33	22	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	304				538	288
vC1, stage 1 conf vol					288	
vC2, stage 2 conf vol					250	
vCu, unblocked vol	304				538	288
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	99
cM capacity (veh/h)	1256				665	751

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	11	228	304	33
Volume Left	11	0	0	22
Volume Right	0	0	33	11
cSH	1256	1700	1700	692
Volume to Capacity	0.01	0.13	0.18	0.05
Queue Length 95th (ft)	1	0	0	4
Control Delay (s)	7.9	0.0	0.0	10.5
Lane LOS	A			B
Approach Delay (s)	0.4		0.0	10.5
Approach LOS				B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

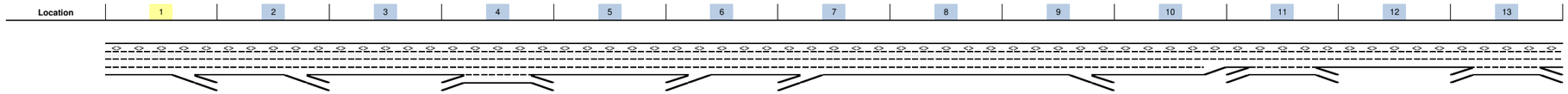
Project: Serrano/Pedregal/Marble Valley/Lime Rock **Alternative:** Cumulative Plus Project Mitigation (Country Club)
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	5,725	1,350	8,250
Accel Length						550							
Decel Length	150	150							150				
Mainline Volume	4,040	2,960	2,750	2,750	3,270	3,270	3,470	3,680	3,680	2,830	2,830	2,910	2,910
On Ramp Volume				810		200	210				440		1,220
Off Ramp Volume	1,080	210		290					850		360		1,140
Express Lane Volume	444	326	303	303	458	458	486	515	515	396	368	378	378
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	3,596	2,634	2,448	3,258	2,812	3,012	2,984	3,165	3,165	2,434	2,902	2,532	3,752
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,986	2,921	2,714	3,612	3,118	3,340	3,309	3,990	3,509	2,698	3,218	2,807	4,159
GP Flow (pcphpl)	1,329	974	905	903	1,039	1,113	1,103	1,330	1,170	899	1,073	1,403	1,386
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.57	0.41	0.38	0.38	0.44	0.47	0.47	0.57	0.50	0.38	0.46	0.60	0.59
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	20.4	15.0	13.9	13.9	16.0	17.1	17.0	20.5	18.0	13.8	16.5	21.6	21.3
LOS	C	B	B	B	B	B	B	C	B	B	B	C	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				2,722		3,120	3,078				2,592		2,814
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.39		0.44	0.44				0.55		0.60
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	2,801	2,690		3,302					2,349	2,698	2,833		2,894
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.40	0.38		0.47					0.33	0.57	0.60		0.62



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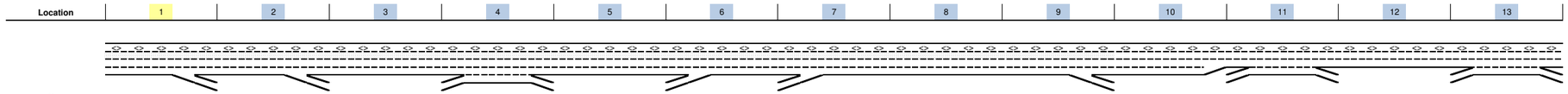
Calculate Flow Rate in Express Lanes (EL)													
EL Volume (vph)	444	326	303	303	458	458	486	515	515	396	368	378	378
PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	528	387	359	359	544	544	577	661	612	471	437	450	450
EL Flow (pcphpl)	528	387	359	359	544	544	577	661	612	471	437	450	450
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.30	0.22	0.21	0.21	0.31	0.31	0.33	0.38	0.35	0.27	0.25	0.26	0.26
Calculate On Ramp Flow Rate													
On Volume (vph)				810		200	210				440		1,220
PHF				0.92		0.92	0.92				0.71		0.92
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				889		220	231				626		1,346
On Flow (pcphpl)				889		220	231				626		1,346
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		Right
On Ramp Speed (mph)				45		25	45				45		45
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		2,100
On Ramp v/c ratio				0.42		0.12	0.11				0.30		0.64



Key

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No Trucks

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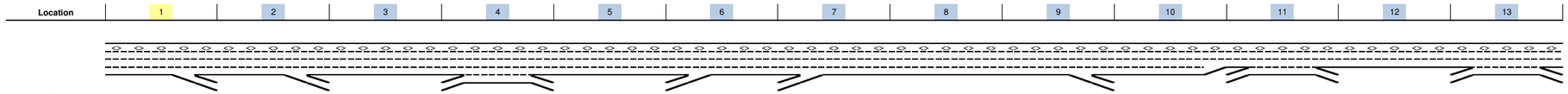
Calculate Off Ramp Flow Rate													
Off Volume (vph)	1,080	210		290					850		360		1,140
PHF	0.92	0.92		0.95					0.74		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	1,186	231		310					1,160		385		1,265
Off Flow (pcphpl)	1,186	231		310					1,160		385		1,265
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right		Right		Right
Off Ramp Speed	45	25		45					45		45		45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100		2,100		2,100
Off Ramp v/c ratio	0.56	0.12		0.15					0.55		0.18		0.60
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		Off
Up Distance		2,350				1,575	800		4,900		2,100		1,350
Up Flow (pcph)		1,186				310	220		310		1,160		385
Down Type	Off	On				On	On		On		On		No
Down Distance	850	1,975				2,900	3,400		2,100		1,350		
Down Flow (pcph)	231	889				626	626		626		1,346		
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						3,120							
Up Ramp L_{EQ}						-136							
Down Ramp L_{EQ}						3,716							
P_{FM} (Eqn 13-3)						0.593							
P_{FM} (Eqn 13-4)		#VALUE!				0.701			#VALUE!		#VALUE!		#VALUE!
P_{FM} (Eqn 13-5)	0.620												
P_{FM}						0.593							
v_{12} (pcph)						1,850							
v_3 (pcph)						1,270							
v_{34} (pcph)													
v_{12a} (pcph)						1,850							
v_{R12a} (pcph)						2,069							
Merge Speed Index						0.32							
Merge Area Speed						57.5							
Outer Lanes Volume						1,270							
Outer Lanes Speed						62.2							
Segment Speed						59.2							
Merge v/c ratio						0.45							
Merge Density						18.1							
Merge LOS						B							



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No Trucks

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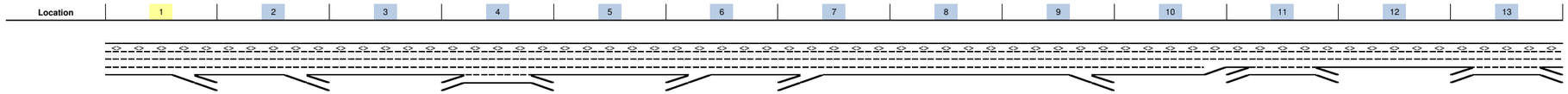
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	3,986	2,921							3,509				
Up Ramp L_{EQ}		9,827							4,877				
Down Ramp L_{EQ}	394	915							1,027				
P_{FD} (Eqn 13-9)	0.606	0.676							0.619				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.566												
P_{FD}	0.606	0.676							0.619				
v_{12} (pcph)	2,882	2,050							2,614				
v_3 (pcph)	1,104	871							895				
v_{34} (pcph)													
v_{12a} (pcph)	2,882	2,050							2,614				
Diverge Speed Index	0.40	0.58							0.40				
Diverge Area Speed	55.7	51.7							55.7				
Outer Lanes Volume	1,104	871							895				
Outer Lanes Speed	70.9	71.3							71.3				
Segment Speed	59.2	56.3							59.0				
Diverge v/c ratio	0.66	0.47							0.59				
Diverge Density	27.7	20.5							25.4				
Diverge LOS	C	C							C				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				50							10		460
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				55							11		505
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				760							430		760
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				3.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.985							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				838							472		834
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				240							350		680
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				260							388		754



Key

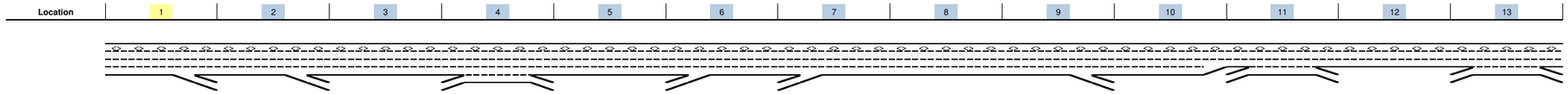
<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				2,208							2,112		1,852
PHF				0.95							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_p				1.00							1.00		1.00
GP to GP Flow (pcph)				2,393							2,342		2,053
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							4,725		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				1,099							860		1,588
Non-Weave Flow				2,449							2,353		2,558
Segment Flow				3,547							3,213		4,146
Max Weave Length				4,123							5,240		6,492
Length Check				OK							OK		Not a Weave
Ideal Weave Capacity				2,188							2,311		2,408
f_{HV}				0.974							0.982		0.984
f_p				0.997							0.999		0.998
Capacity Condition 1				6,373							4,531		4,727
Capacity Condition 2				10,973							8,789		6,150
Weave v/c ratio				0.54							0.70		0.86
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				1,099							860		1,588
Weave LC Rate				1,694							2,590		4,351
Non-Weave LC Rate 1				1,011							2,660		4,071
Non-Weave LC Rate 2				2,235							2,214		2,259
Non-Weave LC Rate 3				1,329							-266		-2,644
Segment LC Rate				3,024							4,803		6,610
Weave Intensity Factor				0.313							0.229		0.210
Weave Speed				53.1							55.7		56.3
Non-Weave Speed				51.4							51.1		43.6
Segment Speed				51.9							52.2		47.7
Weave Density				22.8							30.7		-
Weave LOS				C							D		Basic
Summarize Segment Operations													
Segment v/c ratio	0.66	0.47	0.38	0.54	0.44	0.45	0.47	0.57	0.59	0.38	0.70	0.60	0.59
Segment Density	27.7	20.5	13.9	22.8	16.0	18.1	17.0	20.5	25.4	13.8	30.7	21.6	21.3
Segment LOS	C	C	B	C	B	B	B	C	C	B	D	C	C
Over Capacity													

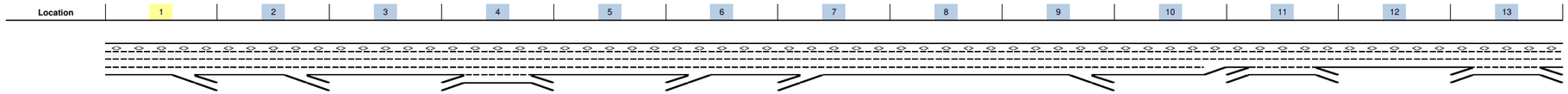
Project: Serrano/Pedregal/Marble Valley/Lime Rock **Alternative:** Cumulative Plus Project Mitigation (Country Club)
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550							
Decel Length	150	150							150				
Mainline Volume	6,440	5,670	5,140	5,140	5,250	5,250	5,450	6,040	6,040	4,470	4,470	4,190	4,190
On Ramp Volume				800		200	590				440		1,120
Off Ramp Volume	770	530		690					1,570		720		1,690
Express Lane Volume	966	851	771	668	683	683	709	906	906	671	671	629	587
EL On Ramp Volume													
EL Off Ramp Volume													
Calculate Flow Rate in General Purpose Lanes (GP)													
GP Volume (vph)	5,474	4,820	4,369	5,272	4,568	4,768	4,742	5,134	5,134	3,800	4,240	3,562	4,723
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	3	3	2	3
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	5,672	4,993	4,527	5,462	4,732	4,940	4,913	5,557	5,319	3,937	4,392	3,690	4,894
GP Flow (pcphpl)	1,891	1,664	1,509	1,366	1,577	1,647	1,638	1,852	1,773	1,312	1,464	1,845	1,631
Calculate Speed in General Purpose Lanes													
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes													
v/c ratio	0.80	0.71	0.64	0.58	0.67	0.70	0.70	0.79	0.75	0.56	0.62	0.79	0.69
Speed (mph)	61.6	64.0	64.8	65.0	64.6	64.1	64.2	62.1	63.0	65.0	64.9	62.2	64.2
Density (pcphpl)	30.7	26.0	23.3	21.0	24.4	25.7	25.5	29.8	28.1	20.2	22.5	29.7	25.4
LOS	D	D	C	C	C	C	C	D	D	C	C	D	C
Calculate Operations for Entering GP Lanes													
GP_{IN} Vol (pcph)				4,584		4,720	4,265				3,767		3,697
GP_{IN} Cap (pcph)				7,050		7,050	7,050				4,700		4,700
GP_{IN} v/c ratio				0.65		0.67	0.60				0.80		0.79
Calculate Operations for Exiting GP Lanes													
GP_{OUT} Vol (pcph)	4,826	4,412		4,701					3,685	3,937	3,623		3,018
GP_{OUT} Cap (pcph)	7,050	7,050		7,050					7,050	4,700	4,700		4,700
GP_{OUT} v/c ratio	0.68	0.63		0.67					0.52	0.84	0.77		0.64



Key

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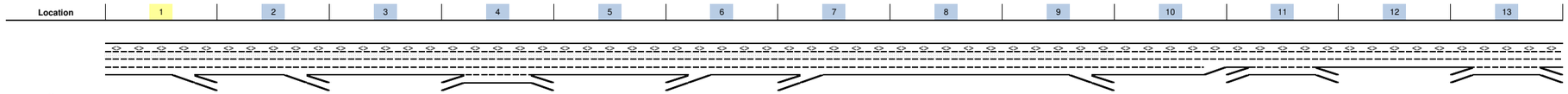
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Flow Rate in Express Lanes (EL)													
EL Volume (vph)	966	851	771	668	683	683	709	906	906	671	671	629	587
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990
f_P	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	1,084	954	865	750	766	766	795	1,097	1,017	752	752	705	658
EL Flow (pcphpl)	1,084	954	865	750	766	766	795	1,097	1,017	752	752	705	658
Calculate Speed in Express Lanes													
Lane Width (ft)													
Shoulder Width													
TRD													
f_{LW}													
f_{LC}													
Calc'd FFS													
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes													
EL_{IN} v/c ratio	0.62	0.55	0.49	0.43	0.44	0.44	0.45	0.63	0.58	0.43	0.43	0.40	0.38
Calculate On Ramp Flow Rate													
On Volume (vph)				800		200	590				440		1,120
PHF				0.92		0.92	0.92				0.71		0.95
Total Lanes				1		1	1				1		1
Terrain				Level		Level	Level				Level		Level
Grade %				0.0%		0.0%	0.0%				0.0%		0.0%
Grade Length (mi)				0.00		0.00	0.00				0.00		0.00
Truck & Bus %				2.0%		2.0%	2.0%				2.0%		3.0%
RV %				0.0%		0.0%	0.0%				0.0%		0.0%
E_T				1.5		1.5	1.5				1.5		1.5
E_R				1.2		1.2	1.2				1.2		1.2
f_{HV}				0.990		0.990	0.990				0.990		0.985
f_P				1.00		1.00	1.00				1.00		1.00
On Flow (pcph)				878		220	648				626		1,197
On Flow (pcphpl)				878		220	648				626		1,197
Calculate On Ramp Roadway Operations													
On Ramp Type				Right		Right	Right				Right		
On Ramp Speed (mph)				45		25	45				45		
On Ramp Cap (pcph)				2,100		1,900	2,100				2,100		
On Ramp v/c ratio				0.42		0.12	0.31				0.30		



Key

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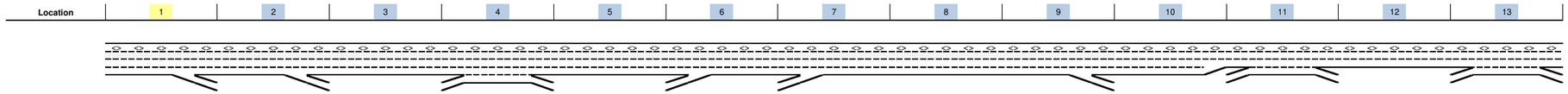
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Off Ramp Flow Rate													
Off Volume (vph)	770	530		690					1,570		720		1,690
PHF	0.92	0.92		0.92					0.97		0.95		0.91
Total Lanes	1	1		1					1		1		1
Terrain	Level	Level		Level					Level		Level		Level
Grade %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
Grade Length (mi)	0.00	0.00		0.00					0.00		0.00		0.00
Truck & Bus %	2.0%	2.0%		3.0%					2.0%		3.0%		2.0%
RV %	0.0%	0.0%		0.0%					0.0%		0.0%		0.0%
E_T	1.5	1.5		1.5					1.5		1.5		1.5
E_R	1.2	1.2		1.2					1.2		1.2		1.2
f_{HV}	0.990	0.990		0.985					0.990		0.985		0.990
f_P	1.00	1.00		1.00					1.00		1.00		1.00
Off Flow (pcph)	845	582		761					1,635		769		1,876
Off Flow (pcphpl)	845	582		761					1,635		769		1,876
Calculate Off Ramp Roadway Operations													
Off Ramp Type	Right	Right		Right					Right				Right
Off Ramp Speed	45	25		45					45				45
Off Ramp Cap (pcph)	2,100	1,900		2,100					2,100				2,100
Off Ramp v/c ratio	0.40	0.31		0.36					0.78				0.89
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps													
Up Type		Off				Off	On		Off		Off		No
Up Distance		2,350				1,575	800		4,900		2,100		
Up Flow (pcph)		845				761	220		761		1,635		
Down Type	Off	On				On	On		On		No		#REF!
Down Distance	850	1,975				2,900	3,400		2,100				#REF!
Down Flow (pcph)	582	878				626	626		626				#REF!
Calculate Merge Influence Area Operations													
Effective v_P (pcph)						4,720							
Up Ramp L_{EQ}						206							
Down Ramp L_{EQ}						3,716							
P_{FM} (Eqn 13-3)						0.593							
P_{FM} (Eqn 13-4)		#VALUE!				0.679			#VALUE!		#VALUE!		
P_{FM} (Eqn 13-5)	0.729												#REF!
P_{FM}						0.593							
v_{12} (pcph)						2,798							
v_3 (pcph)						1,921							
v_{34} (pcph)													
v_{12a} (pcph)						2,798							
v_{R12a} (pcph)						3,018							
Merge Speed Index						0.37							
Merge Area Speed						56.4							
Outer Lanes Volume						1,921							
Outer Lanes Speed						59.9							
Segment Speed						57.7							
Merge v/c ratio						0.66							
Merge Density						25.5							
Merge LOS						C							



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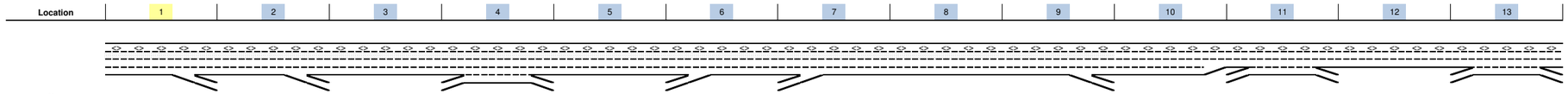
No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate Diverge Influence Area Operations													
Effective v_P (pcph)	5,672	4,993							5,319				
Up Ramp L_{EQ}		5,969							11,016				
Down Ramp L_{EQ}	886	1,132							1,662				
P_{FD} (Eqn 13-9)	0.579	0.608							0.552				
P_{FD} (Eqn 13-10)													
P_{FD} (Eqn 13-11)	0.582												#REF!
P_{FD}	0.582	0.608							0.552				
v_{12} (pcph)	3,656	3,266							3,668				
v_3 (pcph)	2,016	1,728							1,651				
v_{34} (pcph)													
v_{12a} (pcph)	3,656	3,266							3,668				
Diverge Speed Index	0.37	0.61							0.45				
Diverge Area Speed	56.4	51.0							54.8				
Outer Lanes Volume	2,016	1,728							1,651				
Outer Lanes Speed	67.3	68.5							68.8				
Segment Speed	59.9	55.9							58.5				
Diverge v/c ratio	0.83	0.74							0.83				
Diverge Density	34.3	31.0							34.4				
Diverge LOS	D	D							D				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments													
On to Off Volume (vph)				419							162		551
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to Off Flow (pcph)				460							178		605
Calculate On Ramp to Mainline Flow Rate for Weave Segments													
On to ML Volume (vph)				381							278		569
PHF				0.92							0.92		0.92
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				2.0%							2.0%		2.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.990							0.990		0.990
f_P				1.00							1.00		1.00
On to ML Flow (pcph)				418							305		625
Calculate Mainline to Off Ramp Flow Rate for Weave Segments													
ML to Off Volume (vph)				271							558		1,139
PHF				0.97							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_P				1.00							1.00		1.00
ML to Off Flow (pcph)				281							578		1,180



Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments													
GP to GP Volume (vph)				4,201							3,242		2,464
PHF				0.92							0.97		0.97
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				1.0%							1.0%		1.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.995							0.995		0.995
f_p				1.00							1.00		1.00
GP to GP Flow (pcph)				4,589							3,358		2,553
Calculate Weave Segment Operations													
Weave Type				One-sided							One-sided		One-sided
Weave Length				2,000							5,625		7,250
Segment Lanes				3							2		2
Weave Lanes				3					3		2		2
Weave Flow (pcph)				699							883		1,805
Non-Weave Flow				5,049							3,536		3,158
Segment Flow				5,748							4,420		4,963
Max Weave Length				2,185							4,535		6,277
Length Check				OK							Not a Weave		Not a Weave
Ideal Weave Capacity				2,336							2,433		2,424
f_{HV}				0.994							0.994		0.994
f_p				0.999							0.999		0.999
Capacity Condition 1				6,962							4,837		4,813
Capacity Condition 2				28,593							11,934		6,551
Weave v/c ratio				0.82							0.91		1.02
Interchange Density				3							5		2
Lane Changes On to ML				1							1		1
Lane Changes ML to Off				1							1		1
Lane Changes On to Off				0							0		0
Min Lane Change Rate				699							883		1,805
Weave LC Rate				1,295							2,964		4,567
Non-Weave LC Rate 1				1,546							3,392		4,195
Non-Weave LC Rate 2				2,815							2,478		2,393
Non-Weave LC Rate 3				4,922							-8,771		-4,895
Segment LC Rate				4,110							5,441		6,960
Weave Intensity Factor				0.399							0.220		0.219
Weave Speed				50.7							56.0		56.0
Non-Weave Speed				50.8							48.0		40.1
Segment Speed				50.8							49.4		44.7
Weave Density				37.7							-		-
Weave LOS				E							Basic		Basic
Summarize Segment Operations													
Segment v/c ratio	0.83	0.74	0.64	0.82	0.67	0.66	0.70	0.79	0.83	0.56	0.62	0.79	0.69
Segment Density	34.3	31.0	23.3	37.7	24.4	25.5	25.5	29.8	34.4	20.2	22.5	29.7	25.4
Segment LOS	D	D	C	E	C	C	C	D	D	C	C	D	C
Over Capacity													

APPENDIX A:

Existing and Cumulative Signal Warrants

FEHR PEERS

Sheet No	1	of	4

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	AM

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

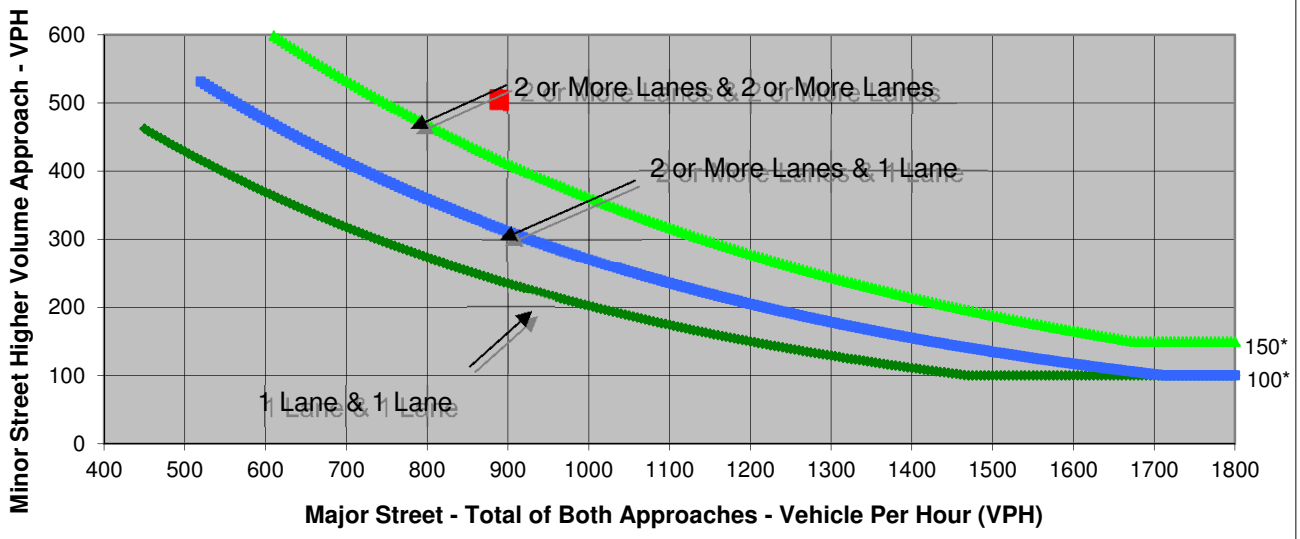
Turn Movement Volumes

	NB	SB	EB	WB
Left	361	125	2	45
Through	115	248	49	63
Right	37	3	453	42
Total	513	376	504	150

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	El Dorado Hills Blvd	Francisco Dr	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**889**	**504**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	2	of	4

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	PM

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

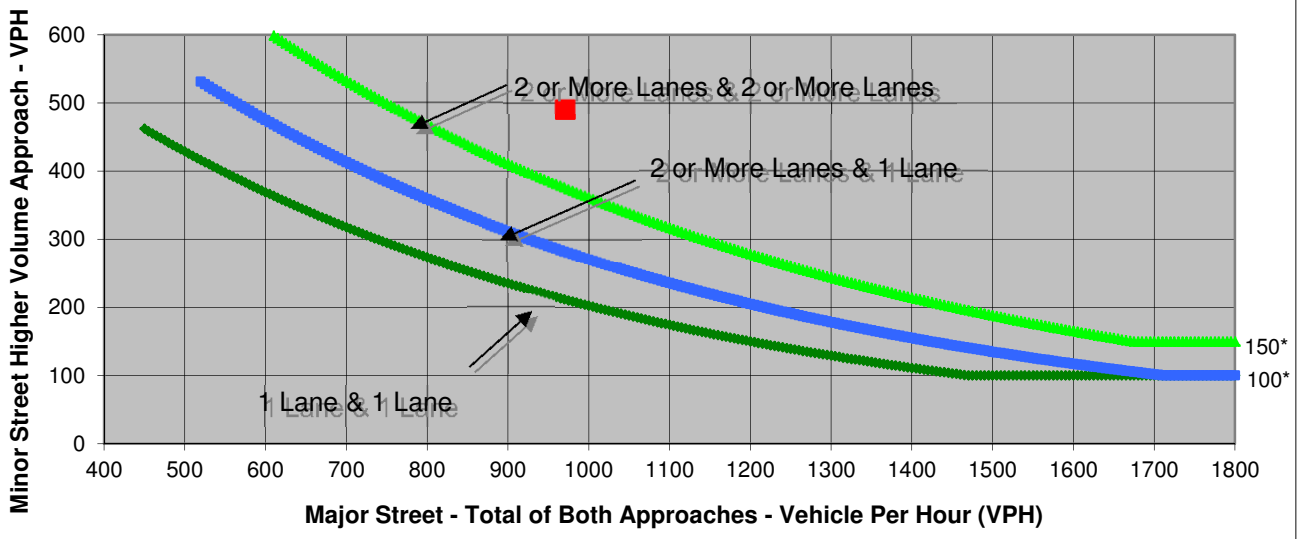
Turn Movement Volumes

	NB	SB	EB	WB
Left	504	9	0	26
Through	281	156	41	35
Right	19	2	449	40
Total	804	167	490	101

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	El Dorado Hills Blvd	Francisco Dr	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**971**	**490**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	3	of	4

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	AM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

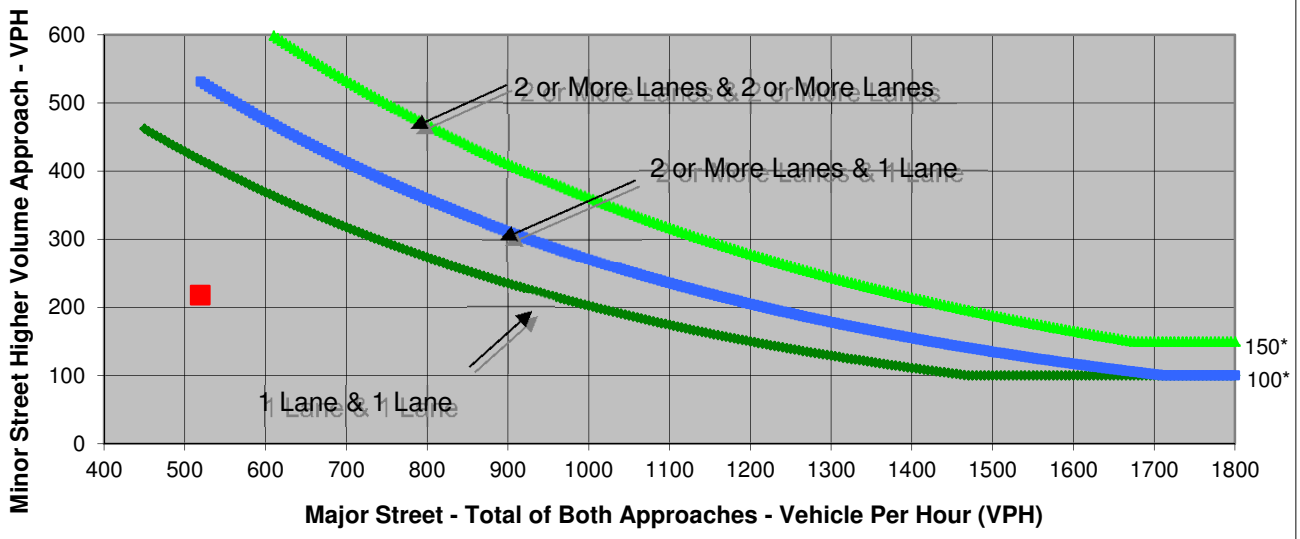
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	23	35	154
Through	190	226	1	2
Right	41	19	83	62
Total	251	268	119	218

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Silva Valley Pkwy	Charter Way/Appian Way	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**519**	**218**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	4	of	4

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	PM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

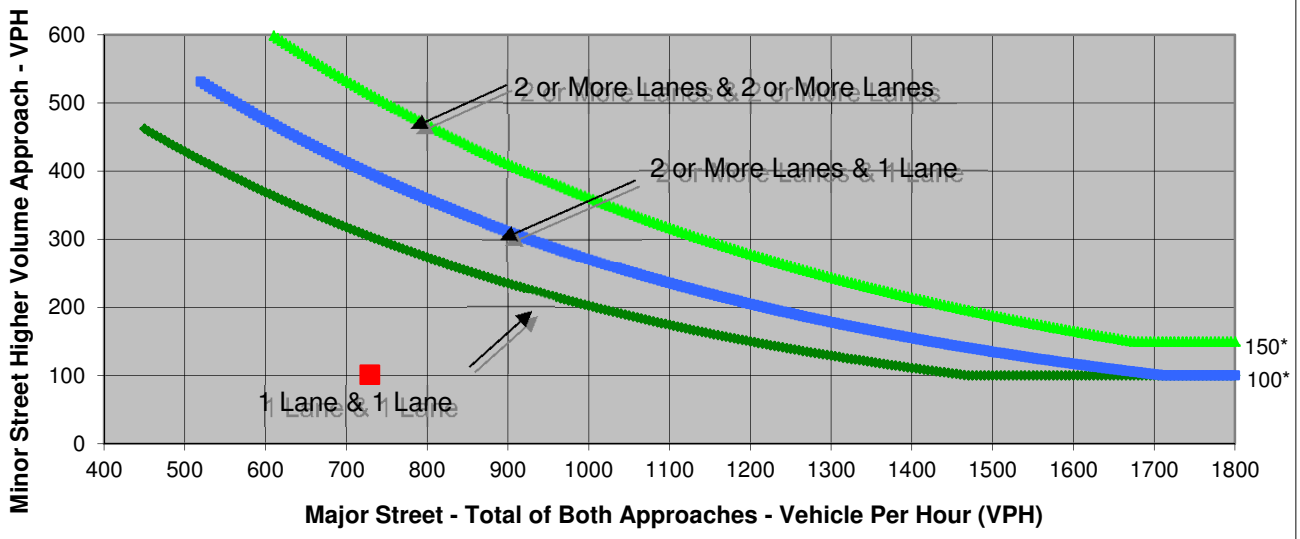
Turn Movement Volumes

	NB	SB	EB	WB
Left	70	47	17	56
Through	243	191	4	2
Right	89	89	39	43
Total	402	327	60	101

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Silva Valley Pkwy	Charter Way/Appian Way	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**729**	**101**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

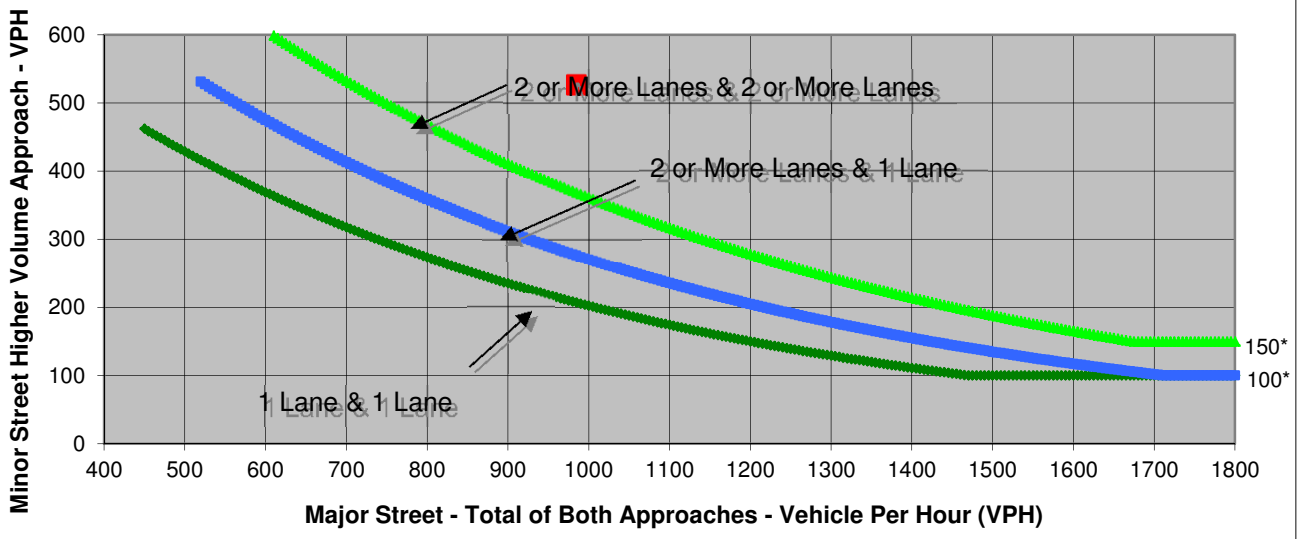
Turn Movement Volumes

	NB	SB	EB	WB
Left	412	125	2	45
Through	146	262	49	63
Right	37	3	475	42
Total	595	390	526	150

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	El Dorado Hills Blvd	Francisco Dr	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**985**	**526**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	2	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

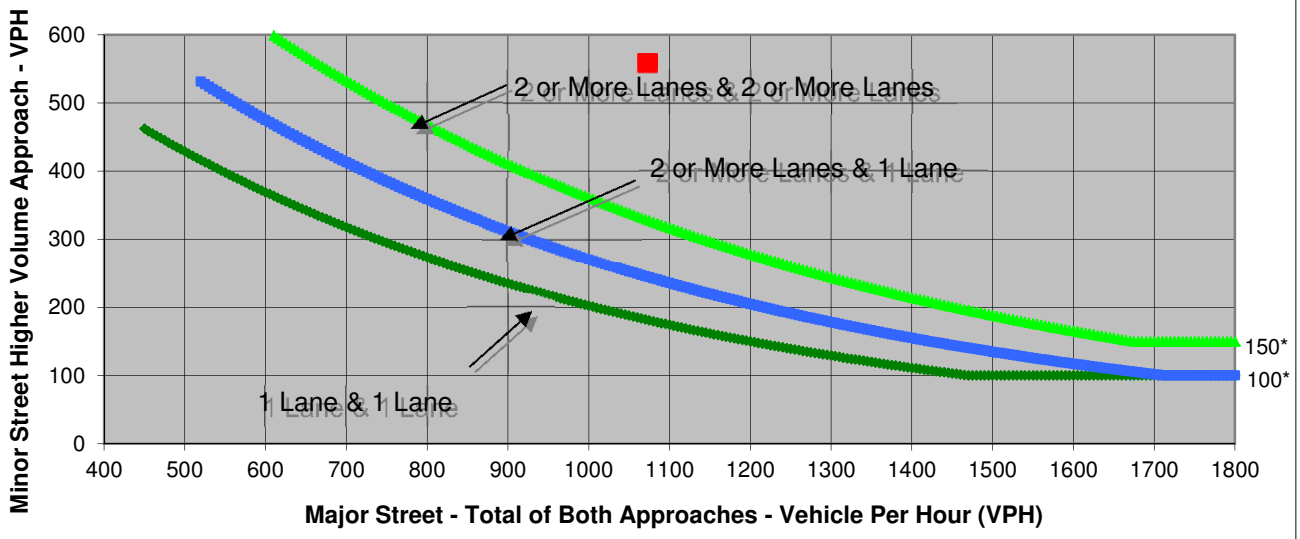
Turn Movement Volumes

	NB	SB	EB	WB
Left	546	9	0	26
Through	305	192	41	35
Right	19	2	517	40
Total	870	203	558	101

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	El Dorado Hills Blvd	Francisco Dr	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,073**	**558**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	3	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

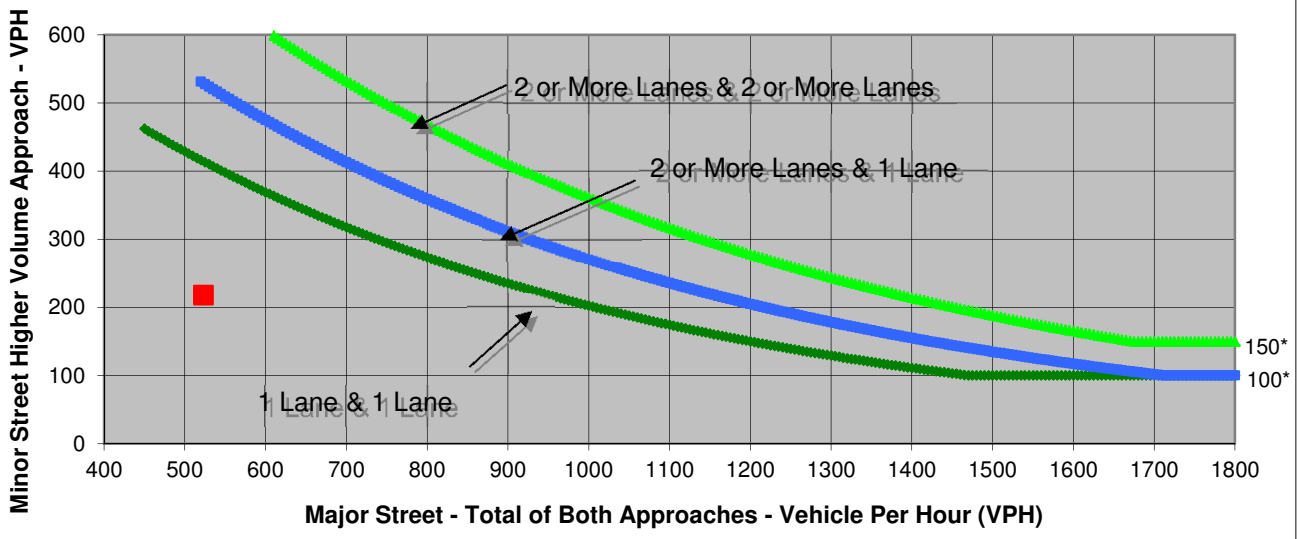
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	23	35	154
Through	193	227	1	2
Right	41	19	83	62
Total	254	269	119	218

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Silva Valley Pkwy	Charter Way/Appian Way	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**523**	**218**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	4	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

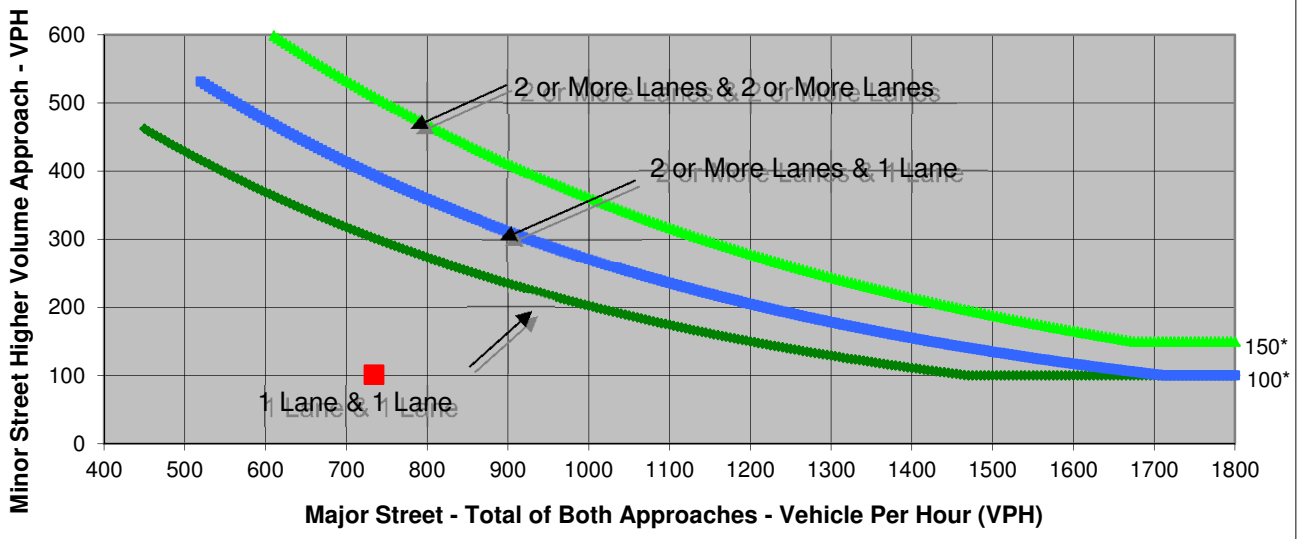
Turn Movement Volumes

	NB	SB	EB	WB
Left	70	47	17	56
Through	246	193	4	2
Right	89	89	39	43
Total	405	329	60	101

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Silva Valley Pkwy	Charter Way/Appian Way	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**734**	**101**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	5	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy

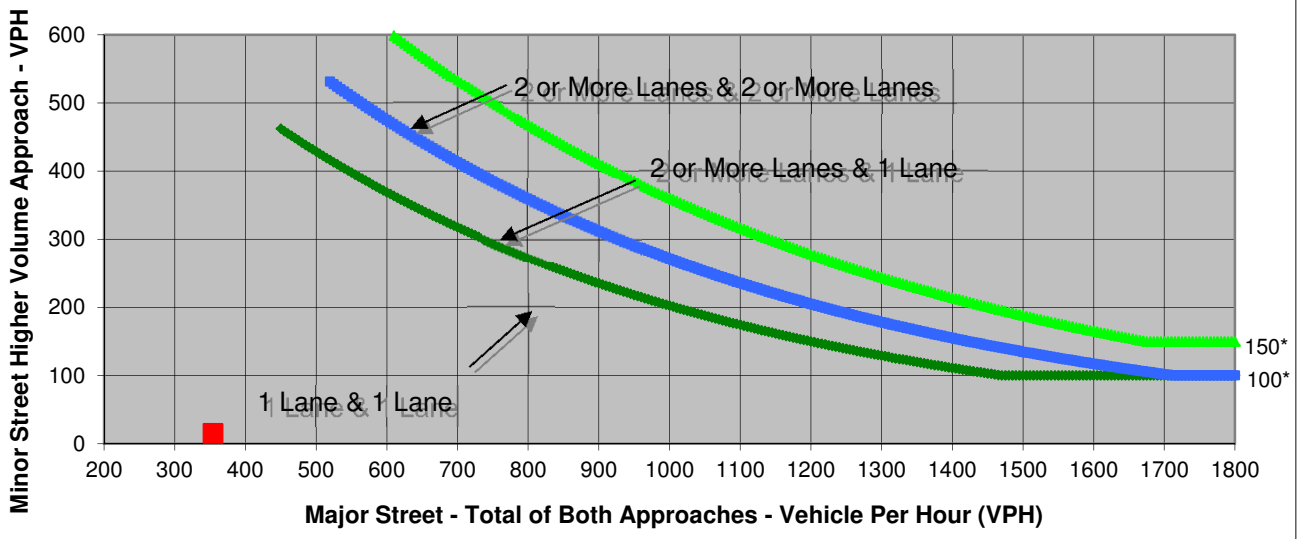
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	10	0
Through	0	0	230	103
Right	0	5	0	11
Total	0	15	240	114

Major Street Direction

	North/South
X	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Wilson Blvd	Pedregal Drwy	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**354**	**15**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	6	of	6

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy

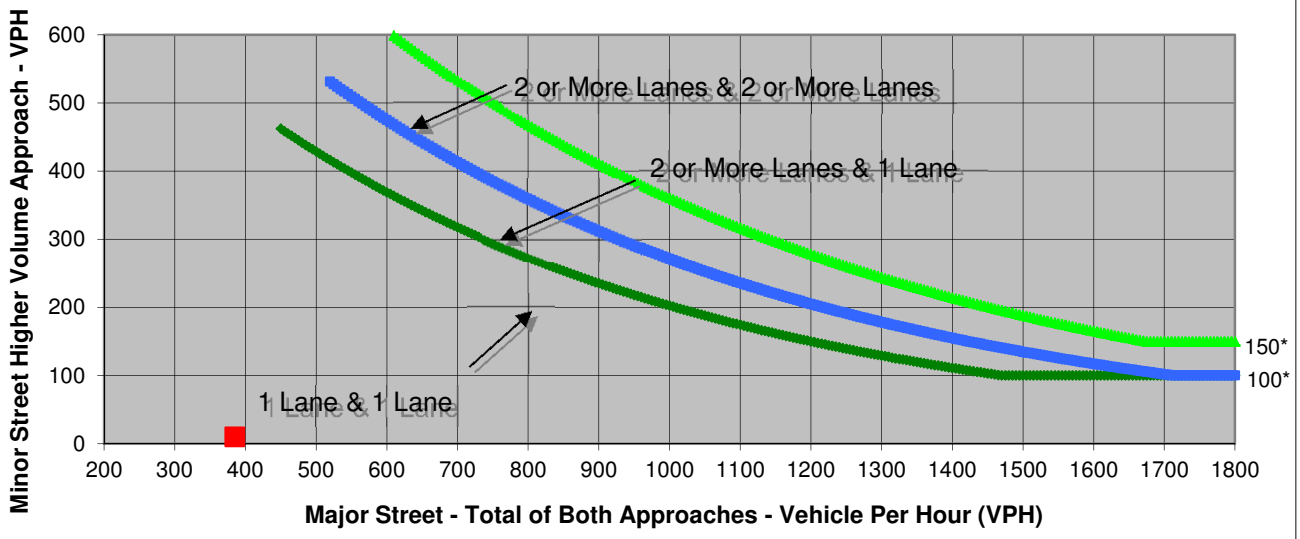
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	5	12	0
Through	0	0	165	183
Right	0	5	0	25
Total	0	10	177	208

Major Street Direction

	North/South
X	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Wilson Blvd	Pedregal Drwy	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**385**	**10**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	2

Project	Central El Dorado
Scenario	Cumulative No Project
Peak Hour	AM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

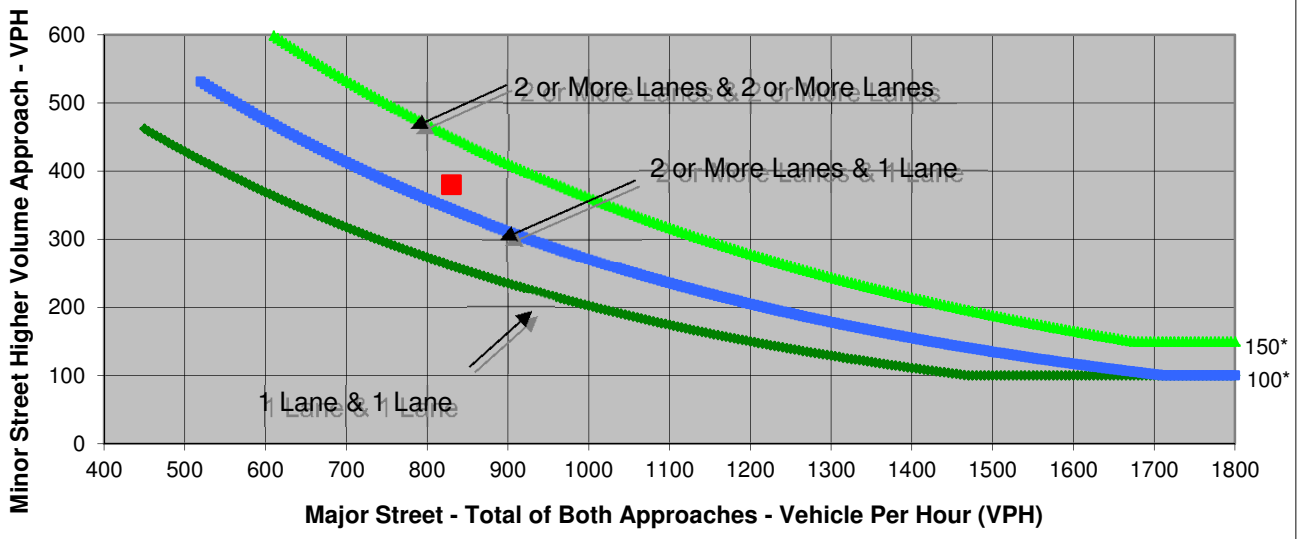
Turn Movement Volumes

	NB	SB	EB	WB
Left	40	70	50	240
Through	230	340	10	10
Right	120	30	110	130
Total	390	440	170	380

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**830**	**380**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	2	of	2

Project	Central El Dorado
Scenario	Cumulative No Project
Peak Hour	PM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

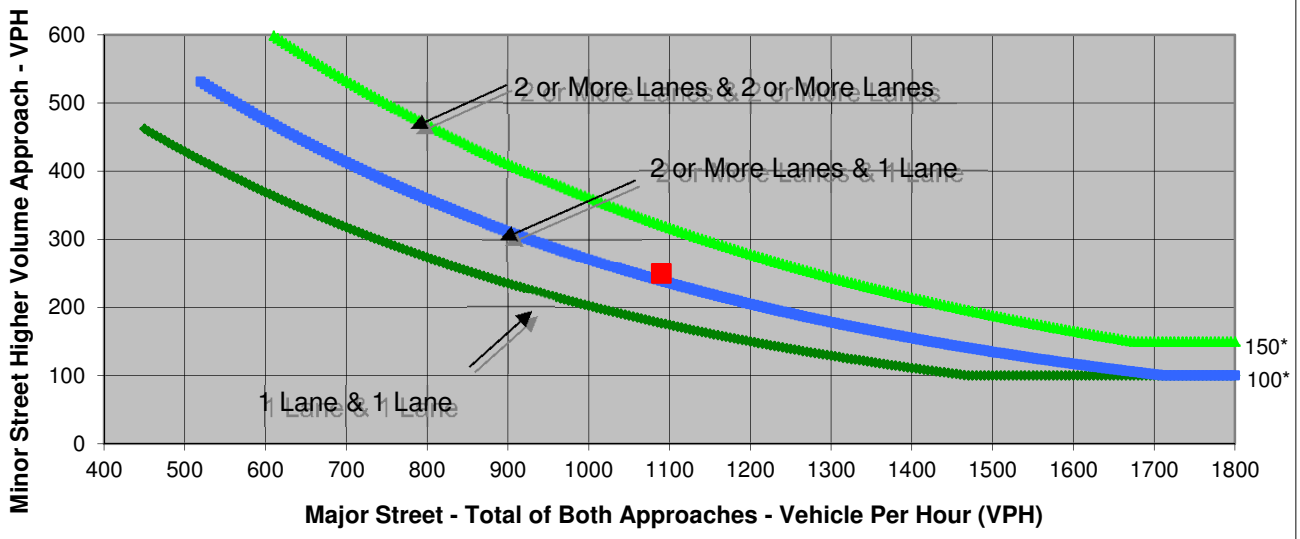
Turn Movement Volumes

	NB	SB	EB	WB
Left	100	100	30	150
Through	410	260	10	10
Right	120	100	60	90
Total	630	460	100	250

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,090**	**250**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	1	of	4

Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	AM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

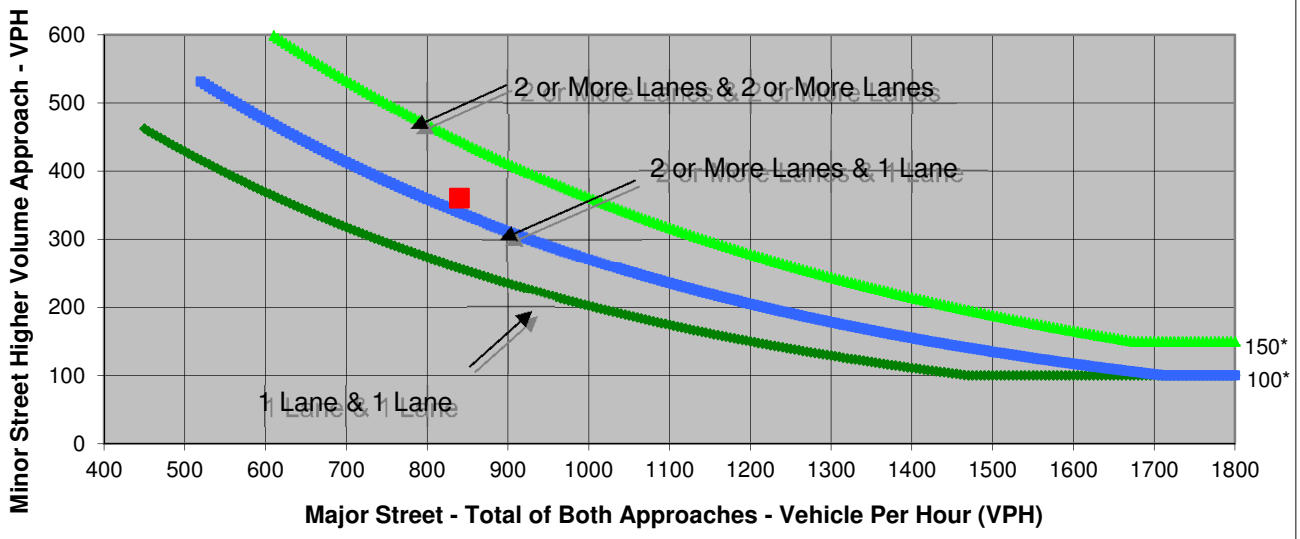
Turn Movement Volumes

	NB	SB	EB	WB
Left	40	70	50	240
Through	230	350	10	10
Right	120	30	110	110
Total	390	450	170	360

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Silva Valley Pkwy	Charter Way/Appian Way	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**840**	**360**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	2	of	4

Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	PM

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

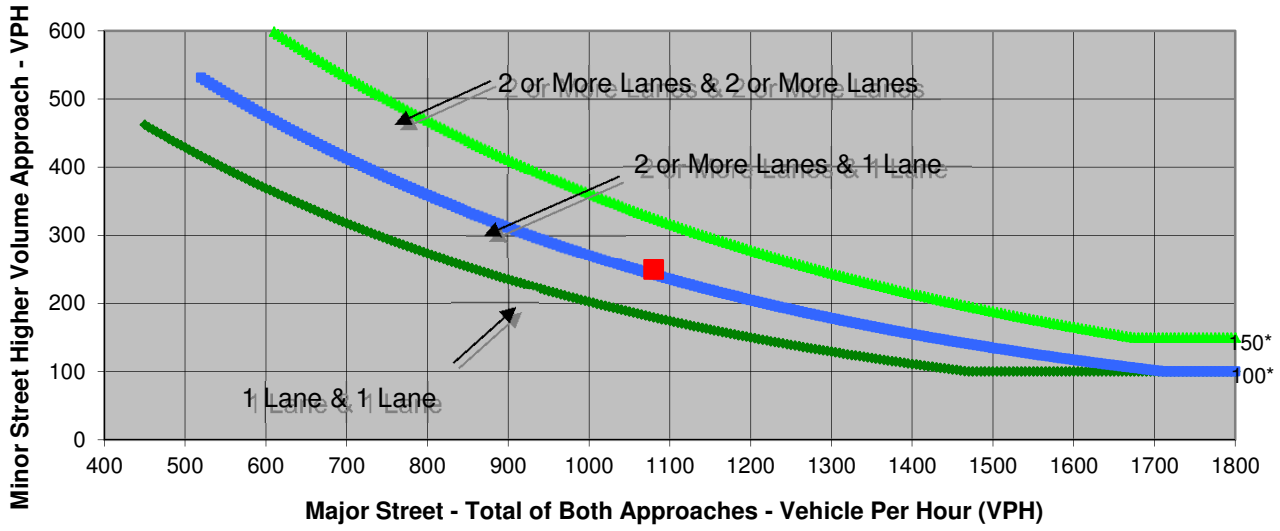
Turn Movement Volumes

	NB	SB	EB	WB
Left	100	100	30	150
Through	390	260	10	10
Right	130	100	60	90
Total	620	460	100	250

Major Street Direction

X	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,080**	**250**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	5	of	4

Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	AM

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy

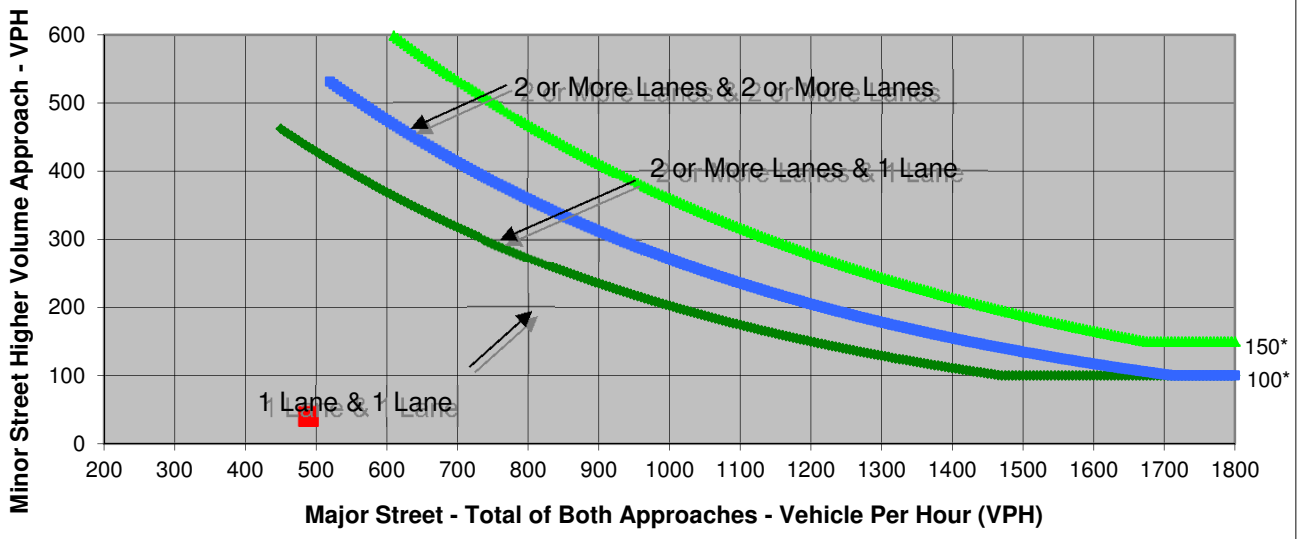
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	30	10	0
Through	0	0	330	130
Right	0	10	0	20
Total	0	40	340	150

Major Street Direction

	North/South
X	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Wilson Blvd	Pedregal Drwy	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**490**	**40**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No	6	of	4

Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	PM

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy

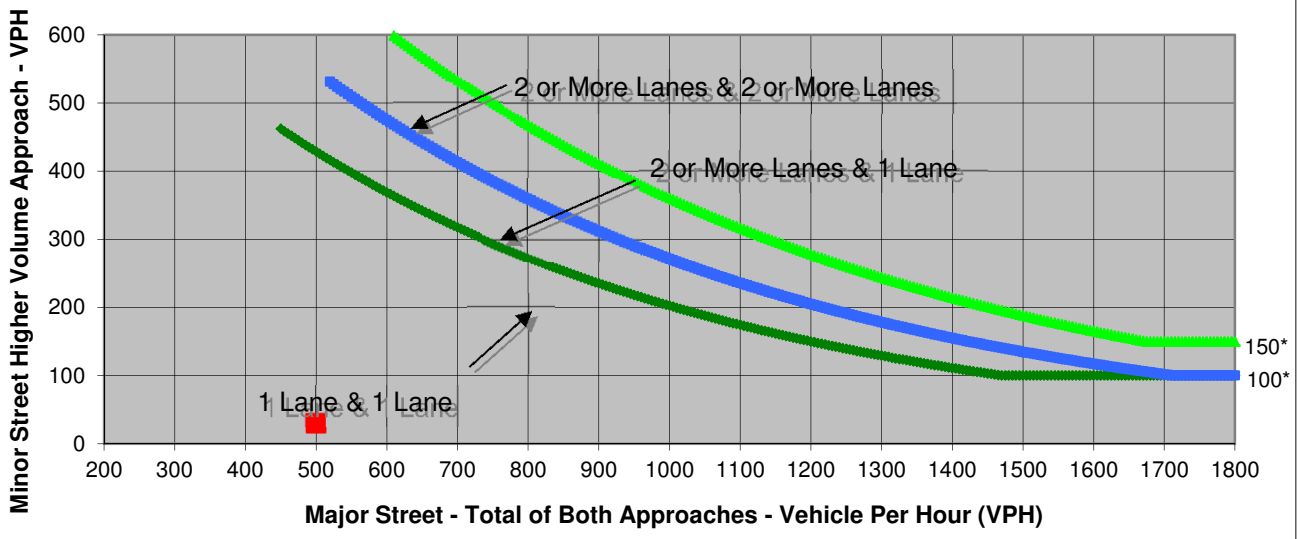
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	20	10	0
Through	0	0	210	250
Right	0	10	0	30
Total	0	30	220	280

Major Street Direction

	North/South
X	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Wilson Blvd	Pedregal Drwy	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**500**	**30**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

APPENDIX A:

Intersection Vehicle Queuing

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	LT	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	723	944	315	86	134	255	123	468	742	610	203	224
Average Queue (ft)	294	370	78	31	39	85	17	400	563	111	71	92
95th Queue (ft)	769	993	319	73	98	183	65	531	878	388	170	196
Link Distance (ft)	3222	3222				975			656	656	656	656
Upstream Blk Time (%)									12	0		0
Queuing Penalty (veh)									38	1		0
Storage Bay Dist (ft)			300	150	150		150	550				
Storage Blk Time (%)		13	0		0	3	0		16			
Queuing Penalty (veh)		75	0		0	4	0		72			

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	NB	SB	SB	SB	SB	SB	B73	B73	B73
Directions Served	TR	L	T	T	TR	R	T	T	T
Maximum Queue (ft)	79	262	378	337	317	224	159	44	24
Average Queue (ft)	34	79	226	132	155	27	16	2	1
95th Queue (ft)	66	187	397	273	282	137	92	26	17
Link Distance (ft)	656		304	304	304	304	574	574	574
Upstream Blk Time (%)			3	1	0	0			
Queuing Penalty (veh)			15	3	1	0			
Storage Bay Dist (ft)		250							
Storage Blk Time (%)		0	5						
Queuing Penalty (veh)		0	4						

Intersection: 16: US 50 EB Ramps &

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	801	783	200	730	601	183	227	198	234	220	270	458
Average Queue (ft)	380	289	178	404	55	47	14	50	54	29	43	77
95th Queue (ft)	760	714	256	852	322	132	121	129	144	193	221	288
Link Distance (ft)	2974	2974		712	712	712	712			656	656	656
Upstream Blk Time (%)				3	0					0	0	1
Queuing Penalty (veh)				15	1					2	2	3
Storage Bay Dist (ft)			175					575	575			
Storage Blk Time (%)			23	2								
Queuing Penalty (veh)			77	5								

Intersection: 16: US 50 EB Ramps &

Movement	SB
Directions Served	T
Maximum Queue (ft)	316
Average Queue (ft)	82
95th Queue (ft)	255
Link Distance (ft)	656
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Town Center Blvd & Latrobe Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	83	90	61	51	124	772	466	56	229	1552	1484	1450
Average Queue (ft)	32	32	20	13	89	352	92	13	44	946	870	783
95th Queue (ft)	72	73	52	38	156	709	282	43	180	1614	1521	1478
Link Distance (ft)			3400	3400		1314	1314			2246	2246	2246
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					13	49			0	63		
Queuing Penalty (veh)					27	54			0	18		

Intersection: 17: Town Center Blvd & Latrobe Road

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	1145	399	421	624	621	713	439
Average Queue (ft)	285	318	343	329	301	316	75
95th Queue (ft)	1149	441	475	747	659	646	286
Link Distance (ft)	2246			712	712	712	712
Upstream Blk Time (%)				5	2	2	0
Queuing Penalty (veh)				32	15	10	0
Storage Bay Dist (ft)		375	375				
Storage Blk Time (%)		10	18	0			
Queuing Penalty (veh)		53	94	0			

Intersection: 25: US-50 WB Ramps & Silva Valley Pkwy

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	T	T	R
Maximum Queue (ft)	258	287	98	85	91	317	869	337
Average Queue (ft)	146	159	53	36	47	33	102	141
95th Queue (ft)	229	246	89	67	77	275	507	290
Link Distance (ft)	1335	1335		587	587	2466	2466	
Upstream Blk Time (%)						0	0	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			400					400
Storage Blk Time (%)								0
Queuing Penalty (veh)								1

Intersection: 26: US-50 EB Ramps & Silva Valley Pkwy

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	T	T	T	T
Maximum Queue (ft)	79	92	62	47	60	55	85
Average Queue (ft)	35	53	22	12	21	12	27
95th Queue (ft)	65	85	49	38	48	39	65
Link Distance (ft)	1620	1620		1401	1401	587	587
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 1

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	LT	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	664	798	209	78	88	190	102	470	730	294	330	381
Average Queue (ft)	204	263	47	25	23	70	21	431	609	115	152	188
95th Queue (ft)	749	867	239	62	62	142	67	499	835	230	278	319
Link Distance (ft)	3222	3222				975			656	656	656	656
Upstream Blk Time (%)									12			
Queuing Penalty (veh)									68			
Storage Bay Dist (ft)			300	150	150		150	550				
Storage Blk Time (%)		3	5		0	1	0		16			
Queuing Penalty (veh)		16	8		0	1	0		103			

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	NB	SB	SB	SB	SB	SB	B73	B73	B73
Directions Served	TR	L	T	T	TR	R	T	T	T
Maximum Queue (ft)	232	239	377	324	305	25	269	204	61
Average Queue (ft)	39	64	234	149	158	1	44	25	13
95th Queue (ft)	131	161	385	286	279	19	252	197	131
Link Distance (ft)	656		304	304	304	304	574	574	574
Upstream Blk Time (%)			10	2	2		1	0	0
Queuing Penalty (veh)			32	6	6		3	1	0
Storage Bay Dist (ft)		250							
Storage Blk Time (%)		0	16						
Queuing Penalty (veh)		0	11						

Intersection: 16: US 50 EB Ramps &

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	810	721	200	624	96	114	66	125	385	617	606	606
Average Queue (ft)	327	197	167	217	19	40	2	38	81	297	261	281
95th Queue (ft)	861	738	262	569	62	96	40	94	324	717	662	678
Link Distance (ft)	2974	2974		712	712	712	712			656	656	656
Upstream Blk Time (%)				2						6	4	6
Queuing Penalty (veh)				11						26	17	25
Storage Bay Dist (ft)			175					575	575			
Storage Blk Time (%)			16	0						7		
Queuing Penalty (veh)			93	0						15		

Intersection: 16: US 50 EB Ramps &

Movement	SB
Directions Served	T
Maximum Queue (ft)	654
Average Queue (ft)	227
95th Queue (ft)	664
Link Distance (ft)	656
Upstream Blk Time (%)	7
Queuing Penalty (veh)	30
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 25: US-50 WB Ramps & Silva Valley Pkwy

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T			R
Maximum Queue (ft)	158	171	277	188	198	113	172	59
Average Queue (ft)	86	94	138	66	73	46	81	27
95th Queue (ft)	137	144	234	137	149	90	138	45
Link Distance (ft)	1335	1335		587	587	1281	1281	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			400					400
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 26: US-50 EB Ramps & Silva Valley Pkwy

Movement	EB	EB	EB	NB	NB	B28	B28	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (ft)	171	196	71	91	98	4	36	105	128
Average Queue (ft)	91	116	21	40	48	0	2	40	57
95th Queue (ft)	147	173	54	77	88	4	24	79	100
Link Distance (ft)	1620	1620		1373	1373	154	154	587	587
Upstream Blk Time (%)							0		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)			300						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	LT	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	701	837	279	96	148	280	163	466	750	589	180	169
Average Queue (ft)	300	379	83	33	34	93	20	417	613	90	68	89
95th Queue (ft)	870	1046	329	77	91	201	82	523	881	336	142	153
Link Distance (ft)	3222	3222				975			656	656	656	656
Upstream Blk Time (%)									14	0		
Queuing Penalty (veh)									43	1		
Storage Bay Dist (ft)			300	150	150		150	550				
Storage Blk Time (%)		15	0		0	4	0		18			
Queuing Penalty (veh)		82	0		0	6	0		83			

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	NB	SB	SB	SB	SB	SB	B73	B73	B73
Directions Served	TR	L	T	T	TR	R	T	T	T
Maximum Queue (ft)	92	229	380	302	308	232	197	121	15
Average Queue (ft)	32	69	216	117	149	24	17	7	1
95th Queue (ft)	65	160	383	249	272	131	98	106	14
Link Distance (ft)	656		304	304	304	304	574	574	574
Upstream Blk Time (%)			3	0	0			0	
Queuing Penalty (veh)			13	1	1			0	
Storage Bay Dist (ft)		250							
Storage Blk Time (%)			4						
Queuing Penalty (veh)			3						

Intersection: 16: US 50 EB Ramps &

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	575	463	200	777	557	185	343	204	216	163	316	399
Average Queue (ft)	232	142	190	479	65	50	32	61	62	25	64	105
95th Queue (ft)	465	382	235	907	367	135	193	138	144	141	243	294
Link Distance (ft)	2974	2974		712	712	712	712			656	656	656
Upstream Blk Time (%)				4	1							0
Queuing Penalty (veh)				20	3							1
Storage Bay Dist (ft)			175					575	575			
Storage Blk Time (%)			29	3								
Queuing Penalty (veh)			95	9								

Intersection: 16: US 50 EB Ramps &

Movement	SB
Directions Served	T
Maximum Queue (ft)	346
Average Queue (ft)	101
95th Queue (ft)	279
Link Distance (ft)	656
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 21: Project Drwy (North) & El Dorado Hills Blvd

Movement	EB	NB
Directions Served	R	L
Maximum Queue (ft)	76	31
Average Queue (ft)	45	14
95th Queue (ft)	84	41
Link Distance (ft)	962	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		2

Intersection: 22: Project Drwy (South) & El Dorado Hills Blvd

Movement	WB	SB
Directions Served	R	L
Maximum Queue (ft)	38	27
Average Queue (ft)	19	9
95th Queue (ft)	47	30
Link Distance (ft)	367	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 2

Intersection: 25: US-50 WB Ramps & Silva Valley Pkwy

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	T	T	R
Maximum Queue (ft)	390	400	256	100	103	73	408	328
Average Queue (ft)	206	220	75	48	59	25	82	154
95th Queue (ft)	362	373	212	79	89	60	250	297
Link Distance (ft)	1335	1335		587	587	2452	2452	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			400					400
Storage Blk Time (%)		1	0					0
Queuing Penalty (veh)		4	0					1

Intersection: 26: US-50 EB Ramps & Silva Valley Pkwy

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	T	T	T	T
Maximum Queue (ft)	88	101	75	55	56	56	68
Average Queue (ft)	37	56	24	14	20	10	24
95th Queue (ft)	70	89	57	39	47	36	56
Link Distance (ft)	1620	1620		1401	1401	587	587
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 5

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	EB	EB	EB	B109	B109	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	LT	R	T	T	L	L	T	R	L	L	T
Maximum Queue (ft)	599	784	306	13	14	79	119	217	123	464	712	269
Average Queue (ft)	280	330	44	0	1	28	25	79	22	399	498	122
95th Queue (ft)	1033	1111	227	13	14	66	73	168	74	493	750	234
Link Distance (ft)	3222	3222		129	129			975			656	656
Upstream Blk Time (%)					0						6	
Queuing Penalty (veh)					0						37	
Storage Bay Dist (ft)			300			150	150		150	550		
Storage Blk Time (%)		7	1					2	0		8	
Queuing Penalty (veh)		39	3					4	0		49	

Intersection: 15: Saratoga Way & El Dorado Hills Blvd

Movement	NB	NB	NB	SB	SB	SB	SB	SB	B73	B73	B73
Directions Served	T	T	TR	L	T	T	TR	R	T	T	T
Maximum Queue (ft)	360	500	340	260	379	348	301	72	516	356	194
Average Queue (ft)	167	207	46	65	282	159	161	3	91	46	13
95th Queue (ft)	298	380	157	173	427	290	263	39	365	264	141
Link Distance (ft)	656	656	656		304	304	304	304	574	574	574
Upstream Blk Time (%)		0			21	2	1		1	0	0
Queuing Penalty (veh)		0			74	6	2		4	1	0
Storage Bay Dist (ft)				250							
Storage Blk Time (%)				0	28						
Queuing Penalty (veh)				0	20						

Intersection: 16: US 50 EB Ramps &

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	889	833	200	510	190	142	82	145	420	643	623	633
Average Queue (ft)	390	270	163	179	36	58	4	47	96	299	251	273
95th Queue (ft)	1087	1004	265	493	135	125	48	108	352	716	635	653
Link Distance (ft)	2974	2974		712	712	712	712			656	656	656
Upstream Blk Time (%)				2	0					6	2	4
Queuing Penalty (veh)				11	1					26	9	19
Storage Bay Dist (ft)			175					575	575			
Storage Blk Time (%)			13	0						7		
Queuing Penalty (veh)			73	1						18		

Intersection: 16: US 50 EB Ramps &

Movement	SB
Directions Served	T
Maximum Queue (ft)	639
Average Queue (ft)	193
95th Queue (ft)	547
Link Distance (ft)	656
Upstream Blk Time (%)	1
Queuing Penalty (veh)	4
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 21: Project Drwy (North) & El Dorado Hills Blvd

Movement	EB	NB
Directions Served	R	L
Maximum Queue (ft)	72	56
Average Queue (ft)	30	25
95th Queue (ft)	58	49
Link Distance (ft)	963	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		3

Intersection: 22: Project Drwy (South) & El Dorado Hills Blvd

Movement	WB	NB	SB
Directions Served	R	TR	L
Maximum Queue (ft)	59	25	86
Average Queue (ft)	22	2	23
95th Queue (ft)	51	14	60
Link Distance (ft)	367	3182	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)			0
Queuing Penalty (veh)			2

Network Summary

Network wide Queuing Penalty: 5

Intersection: 25: US-50 WB Ramps & Silva Valley Pkwy

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	T	T	R
Maximum Queue (ft)	167	178	252	184	190	102	166	73
Average Queue (ft)	93	104	129	77	82	39	76	34
95th Queue (ft)	143	158	213	144	157	80	129	60
Link Distance (ft)	1335	1335		587	587	2467	2467	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			400					400
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 26: US-50 EB Ramps & Silva Valley Pkwy

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	T	T	T	T
Maximum Queue (ft)	144	162	57	98	114	106	124
Average Queue (ft)	74	96	19	44	55	29	47
95th Queue (ft)	119	141	49	86	96	72	94
Link Distance (ft)	1620	1620		1401	1401	587	587
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

Appendix L-3

Memorandum: US Highway 50 (US 50) Traffic Volumes and Level of Service (LOS) Meetings Summary

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-4337
FAX (530) 741-5346
TTY 711

Serious drought.
Help save water!

EL DORADO COUNTY
RECEIVED
OCT 17 2016
TRANSPORTATION

October 11, 2016

Mr. Steve Pedretti
Community Development Agency
County of El Dorado
2850 Fairlane Court
Placerville, CA 95667

US Highway 50 (US 50) Traffic Volumes and Level of Service (LOS) Meetings Summary

Dear Mr. Pedretti:

Thank you for meeting with us on September 1, 2016 and September 14, 2016 to discuss traffic volumes and LOS on US 50.

In the meeting on September 1, Caltrans provided the County peak hour traffic volumes for Westbound (WB) US 50 from the Caltrans Performance Measurement System (PeMS) to show the differences between current volumes and volumes used by both the County and Caltrans in planning documents. The goal was to come to a consensus on how US 50 is currently operating in El Dorado County. Caltrans provided Tuesday – Thursday 7:00 am mixed flow volumes for the WB US 50 segment between El Dorado Hills Blvd/Latrobe Rd and Scott Rd from the spring of 2015 (Attachment 1). The PeMS data provided by Caltrans was supplied by mainline detector #316993 – east of Scott Rd. The data showed peak hour mixed average traffic volumes of about 3,800 vehicles per hour (vph) and 85th percentile volumes of about 4,000 vph. Data from the upstream mainline detector, west of Latrobe Rd #316653, was not used because Caltrans speculated that the detector location was not counting vehicles merging from the El Dorado Hills Blvd onramp to WB US 50, thus providing lower than expected volumes.

In a subsequent meeting on September 14, the County provided an updated LOS Analysis using the current volumes provided by Caltrans (Attachment 2). The analysis showed that the current LOS on WB US 50 between El Dorado Hills Blvd/Latrobe Rd and Scott Rd is LOS E using both the average and 85th percentile volumes. Caltrans accepted and agreed with the results of the updated LOS analysis. The County also confirmed that the west of Latrobe detector (#316653) is excluding vehicles merging from the El Dorado Hills Blvd onramp to WB US 50 because of an extension of the acceleration lane in 2011, allowing vehicles to bypass the detectors.

Caltrans and the County agreed to use the average volume for this particular dataset because of the limited data availability. Caltrans is also working on improving PeMS detector health throughout the District, including in El Dorado County, in order to have more robust data sets available.

Please note that in response to Senate Bill 743, Caltrans is shifting its focus for our Local Development-Intergovernmental Review program from auto delay based metrics to those focused on reducing Vehicle Miles Traveled (VMT). While we may still provide technical comments related to LOS on the State Highway System for documents shared with us for our review, our primary focus of letters and requested mitigation will be to reduce project generated VMT.

Again, we appreciate meeting with you and coming to consensus on the process and data used for this section of US 50. If you have any questions regarding this memo comments or require additional information, please contact me or Eric Fredericks at 916-274-0635 or by email at: eric.fredericks@dot.ca.gov.

Sincerely,

MARLON FLOURNOY
Deputy District Director
Division of Planning and Local Assistance

Attachments

Mainline VDS 316993 - E of Scott Rd
Spring 2015
Tuesday - Thursday 7:00AM
Good Detection days only
Sorted Highest to Lowest

Hour	Flow (Veh/Hour)	# Lane Points	% Observed
5/26/2015 7:00	4,107	24	100
3/5/2015 7:00	4,100	24	100
3/4/2015 7:00	4,039	24	100
5/19/2015 7:00	4,032	24	100
3/12/2015 7:00	4,026	24	100
3/18/2015 7:00	3,959	24	100
3/10/2015 7:00	3,958	24	100
3/17/2015 7:00	3,955	24	100
3/19/2015 7:00	3,947	24	100
3/25/2015 7:00	3,885	24	100
3/26/2015 7:00	3,784	24	92
3/24/2015 7:00	3,749	24	100
4/1/2015 7:00	3,597	24	92
4/7/2015 7:00	3,551	24	92
4/2/2015 7:00	3,459	24	100
3/11/2015 7:00	3,302	24	92
3/31/2015 7:00	3,252	24	100

VDS 316993	Average	85th Percentile
Tue- Thurs 7AM	3,806	4,032

HCS 2010: Basic Freeway Segments Release 6.50

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KAJ
Agency or Company:	CDA
Date Performed:	08/11/16
Analysis Time Period:	AM Peak Hr
Freeway/Direction:	US 50 WB
From/To:	EDH-Latrobe/Countyline
Jurisdiction:	EDC
Analysis Year:	2015

Description: Average of Spring 2015 PeMS data from VDS 316993

Flow Inputs and Adjustments

Volume, V	3806	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1012	v
Trucks and buses	4	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2146	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2146	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	2	
Density, D	36.0	pc/mi/ln
Level of service, LOS	E	

HCS 2010: Basic Freeway Segments Release 6.50

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KAJ
Agency or Company:	CDA
Date Performed:	08/11/16
Analysis Time Period:	AM Peak Hr
Freeway/Direction:	US 50 WB
From/To:	EDH-Latrobe/Countyline
Jurisdiction:	EDC
Analysis Year:	2015

Description: 85th Percentile of Spring 2015 PeMS data from VDS 316993

Flow Inputs and Adjustments

Volume, V	4032	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1072	v
Trucks and buses	4	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, fp	1.00	
Flow rate, vp	2273	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2273	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	56.6	mi/h
Number of lanes, N	2	
Density, D	40.1	pc/mi/ln
Level of service, LOS	E	

Appendix L-4

Memorandum: Central El Dorado Hills Specific Plan Transportation Impact Analysis Update

FEHR PEERS

MEMORANDUM

Date: May 26, 2017

To: Kirk Bone, Parker Development

From: David B. Robinson, Fehr & Peers

Subject: Central El Dorado Hills Specific Plan Transportation Impact Analysis Update

RS12-3017

INTRODUCTION

Fehr & Peers completed the update of the transportation impact analyses for the Central El Dorado Hills Specific Plan (CEDHSP). The update was necessary to account for circulation changes due completion of the US 50/El Dorado Hills Boulevard interchange improvements, the opening of the US 50/Silva Valley Parkway interchange, and the update to the El Dorado County Capital Improvements Program (CIP). This memorandum summarizes traffic operations under existing and cumulative conditions with the addition of trips from the CEDHSP.

DATA COLLECTION

We collected new AM and PM peak period intersection turning movement traffic counts in early December 2016 (i.e., when schools were in session) to capture the changes in study-area travel from the US 50/El Dorado Hills Boulevard and US 50/Silva Valley Parkway Interchange improvements.

EXISTING CONDITIONS UPDATED RESULTS

The following summarizes intersection, roadway segment, and freeway operations under existing conditions.

Intersections

Table 1 shows existing AM and PM peak hour intersection operations based on the existing lane configurations and AM and PM peak hour turning movement counts shown on Figure 1. As shown in Table 1, all study intersection operate acceptably, at LOS E or better.

TABLE 1: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (INTERSECTIONS)

Intersection	Traffic Control	LOS / Delay (seconds)	
		AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 46
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 17	C / 19
5. Silva Valley Pkwy / Apian Wy	AWSC	C / 23	B / 15
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22
8. El Dorado Hills Blvd / Olson Ln	Signal	B / 12	A / 9
9. El Dorado Hills Blvd / Wilson Blvd	Signal	B / 20	B / 16
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 49	C / 21
11. Serrano Pkwy / Penela Wy	SSSC	D / 32	C / 23
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 40	C / 30
13. El Dorado Hills Blvd / Park Dr / Saratoga Wy	Signal	B / 19	C / 20
15. El Dorado Hills Blvd / Saratoga Wy / US 50 WB Ramps	Signal	C / 31	C / 33
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 33	C / 20
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27
19. White Rock Rd / Post St	Signal	C / 24	C / 31
20. White Rock Rd / Valley View Dr / Vine St	Signal	C / 21	C / 27
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	B / 11	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 13

TABLE 1: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (INTERSECTIONS)

Intersection	Traffic Control	LOS / Delay (seconds)	
		AM	PM

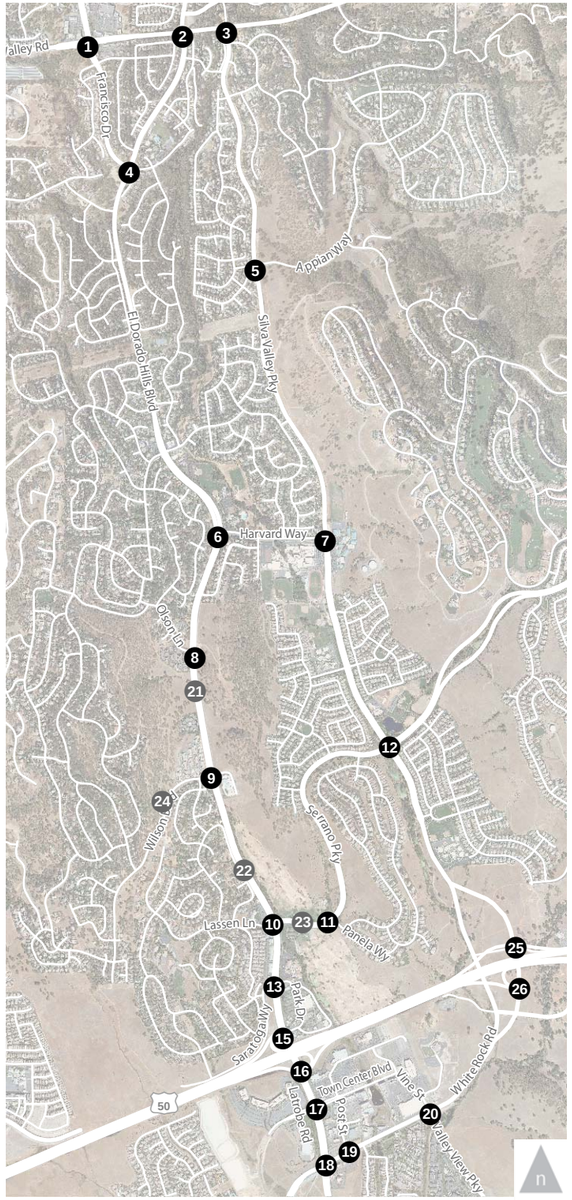
Notes: SSSC = side-street stop-control, AWSC = all-way stop control

Highlighted text indicates a level of service change from the 2015 TIA.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM* (TRB, 2000). Intersections 1-12 and 19-26 are analyzed in Synchro. Intersections 13-18 are analyzed in SimTraffic.

Source: Fehr & Peers, 2017



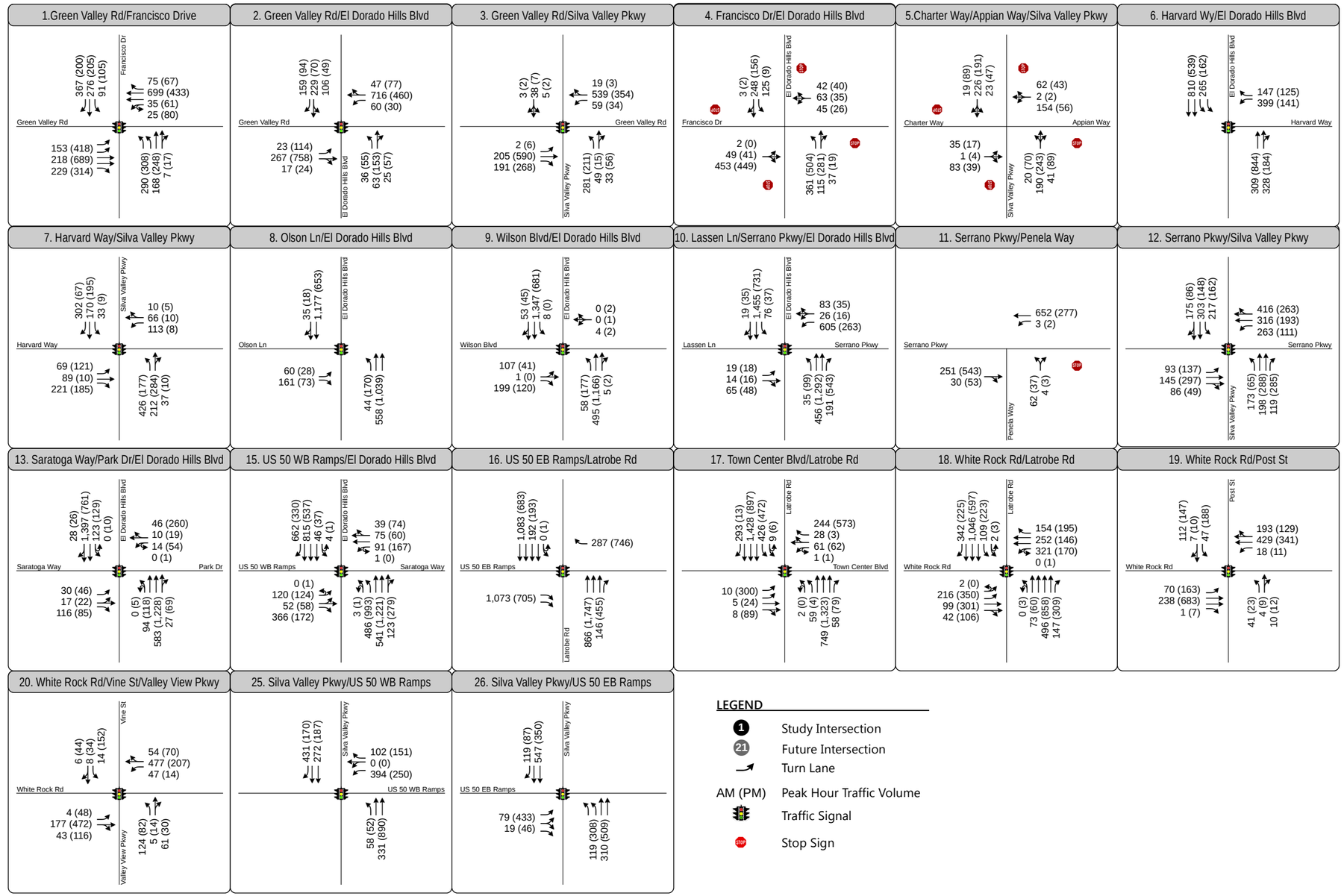


Figure 1

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

FEHR PEERS

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Roadway Segments

Table 2 summarizes Existing Conditions AM and PM peak hour LOS for the study roadways. All roadways operate acceptably, at LOS E or better.

TABLE 2: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	430 / 0.26 / C[1]	389 / 0.24 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,259 / 0.76 / D	1,435 / 0.87 / D
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,010 / 0.61 / D	1,935 / 0.59 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,108 / 0.64 / D	2,148 / 0.65 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	2,207 / 0.55 / C[1]	2,470 / 0.62 / D
	Saratoga Way to US 50	6 lane divided arterial	2,231 / 0.47 / C[1]	2,325 / 0.49 / C[1]
Latrobe Rd	US 50 to Town Center Blvd	6 lane divided arterial	3,169 / 0.67 / D	3,590 / 0.76 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	2,367 / 0.50 / C[1]	2,454 / 0.52 / C[1]
	White Rock Rd to Golden Foothill Pkwy	4 lane divided arterial	2,125 / 0.65 / C[1]	2,106 / 0.64 / D
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	2 lane arterial	1,225 / 0.74 / D	1,246 / 0.76 / D
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	256 / 0.16 / C[1]	295 / 0.18 / C[1]
White Rock Rd	Scott Rd to Four Seasons Dr	2 lane arterial	603 / 0.37 / C[1]	863 / 0.52 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	893 / 0.27 / C[1]	1,040 / 0.32 / C[1]
	Latrobe Rd to Vine St	2 lane arterial	1,082 / 0.66 / D	1,346 / 0.82 / D
	Vine St to US 50	2 lane arterial	995 / 0.60 / D	1,213 / 0.74 / D

TABLE 2: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	651 / 0.39 / C[1]	591 / 0.36 / C[1]
	Glenwood Wy to Appian Wy	2 lane arterial	555 / 0.34 / C[1]	630 / 0.38 / C[1]
	Appian Wy to Harvard Wy	2 lane arterial	796 / 0.48 / C[1]	681 / 0.41 / C[1]
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	1,402 / 0.43 / C[1]	1,084 / 0.33 / C[1]
	Serrano Pkwy to US 50	4 lane divided arterial	1,136 / 0.35 / C[1]	1,398 / 0.42 / C[1]
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	995 / 0.6 / D	910 / 0.55 / D
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,476 / 0.45 / C[1]	1,311 / 0.40 / C[1]
	Villagio Dr to Bass Lake Rd	2 lane arterial	453 / 0.27 / C[1]	417 / 0.25 / C[1]
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	295 / 0.18 / C[1]	316 / 0.19 / C[1]
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	418 / 0.13 / C[1]	384 / 0.12 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	300 / 0.18 / C[1]	289 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,139 / 0.36 / C[1]	612 / 0.20 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the peak hour level of service thresholds contained in Table 5.4-1 of the *El Dorado County General Plan DEIR* (EDAW, 2003)
[1] LOS at this location is C or better
Highlighted text indicates a level of service change from 2015 TIA
Source: Fehr & Peers, 2017

Freeway Facilities

Table 3 shows existing AM and PM peak hour freeway operations for eastbound and westbound US 50, including operations with the new US 50/Silva Valley Parkway interchange. Figure 2 shows the corresponding AM and PM peak hour volumes on US 50. As shown, all freeway facilities operate acceptably, at LOS E or better.

TABLE 3: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Existing Density[1] / LOS	
			AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	30 / D
	El Dorado Hills Blvd off-ramp	Diverge	14 / B	26 / C
	Latrobe Rd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)	10 / A	23 / C
		Basic[2]	7 / A	15 / B
	Silva Valley Pkwy on-ramp (loop)	Merge	11 / B	21 / C
	Silva Valley Pkwy on-ramp to Bass Lake Rd	Basic	11 / A	20 / C
	Bass Lake Rd off-ramp	Diverge	15 / B	25 / C
	Bass Lake Rd on-ramp	Merge	16 / B	27 / C
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Basic	14 / B	25 / C
	Cambridge Rd off-ramp	Diverge	18 / B	30 / D
	Cambridge Rd on-ramp	Merge	19 / B	26 / C
US 50 WB	Cambridge Rd off-ramp	Diverge	28 / C	23 / C
	Cambridge Rd on-ramp	Merge	20 / B	13 / B
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic	23 / C	17 / B
	Bass Lake Rd off-ramp	Diverge	29 / D	21 / C
	Bass Lake Rd on-ramp	Merge	32 / D	21 / C
	Bass Lake Rd on-ramp to lane add	Basic	29 / D	17 / B
	Lane add to Silva Valley Pkwy off-ramp	Basic	19 / C	12 / B
	Silva Valley Pkwy off-ramp	Diverge	13 / B	5 / A

TABLE 3: PEAK HOUR LEVEL OF SERVICE - EXISTING CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Existing Density[1] / LOS	
			AM	PM
	Silva Valley Pkwy on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	34 / D	18 / B
		Basic[2]	19 / C	11 / A
	El Dorado Hills Blvd on-ramp	Merge	34 / D	24 / C

Notes: [1]Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations. Analysis based on HCM 2010.
[2]Out of realm of weaving for Leisch analysis; analyzed as a basic segment

Source: Fehr & Peers, 2017

Figure 2

Freeway Mainline and Ramp Peak Hour Traffic Volumes - Existing Conditions

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EXISTING PLUS PROJECT CONDITIONS

The following summarizes intersection, roadway segment, and freeway operations under existing plus project conditions.

Intersections

Table 4 shows AM and PM peak hour intersection operations based on the lane configuration and AM and PM peak hour turning movement counts shown on Figure 3 with the addition of project traffic to existing conditions. As shown in Table 4, most study intersections will operate acceptably, at LOS E or better, except for the following:

- Latrobe Road/Town Center Boulevard (Intersection 17) – This intersection operates acceptably at LOS D without the project during the PM peak hour. The addition of the project results in unacceptable LOS F conditions.
- Latrobe Road/White Rock Road (Intersection 18) – This intersection operates acceptably at LOS C during the PM peak hour without the project. The addition of the project results in unacceptable LOS F conditions during the PM peak hour due to queue spillback along the northbound approach of Latrobe Road/Town Center Boulevard that results from poor utilization of the northbound through movements, since only one of the three through lanes continues through the interchange.

TABLE 4: PEAK HOUR LEVEL OF SERVICE - EXISTING PLUS PROJECT CONDITIONS (INTERSECTIONS)

Intersection	Control	Existing (LOS / Delay)		Existing Plus Project (LOS / Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46	D / 41	D / 46
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 46	E / 73	D / 54
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20	C / 32	B / 20
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 17	C / 19	C / 22	C / 25
5. Silva Valley Pkwy / Apian Wy	AWSC	C / 23	B / 15	C / 23	B / 15
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17	C / 33	B / 18
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22	D / 39	C / 22
8. El Dorado Hills Blvd / Olson Ln	Signal	B / 12	A / 9	B / 12	B / 10

TABLE 4: PEAK HOUR LEVEL OF SERVICE - EXISTING PLUS PROJECT CONDITIONS (INTERSECTIONS)

Intersection	Control	Existing (LOS / Delay)		Existing Plus Project (LOS / Delay)	
		AM	PM	AM	PM
9. El Dorado Hills Blvd / Wilson Blvd	Signal	B / 20	B / 16	C / 30	C / 30
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 49	C / 21	E / 70	C / 35
11. Serrano Pkwy / Penela Wy	SSSC	D / 32	C / 23	D / 34	C / 24
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 40	C / 30	D / 41	C / 30
13. El Dorado Hills Blvd / Park Dr / Saratoga Wy	Signal	B / 19	C / 20	D / 49	C 26
15. El Dorado Hills Blvd / Saratoga Wy / US 50 WB Ramps	Signal	C / 31	C / 33	D / 40	C / 34
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 33	C / 20	D / 42	C / 31
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50	B / 18	***F / 93***
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27	C / 31	***F / >180***
19. White Rock Rd / Post St	Signal	C / 24	C / 31	C / 24	C / 31
20. White Rock Rd / Valley View Dr / Vine St	Signal	C / 21	C / 27	C / 21	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	B / 12	A / 10
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	A / 9	B / 14
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 20	B / 13
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	A / 10	A / 10
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	B / 11	A / 10	B / 11	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 13	B / 10	B / 13

TABLE 4: PEAK HOUR LEVEL OF SERVICE - EXISTING PLUS PROJECT CONDITIONS (INTERSECTIONS)

Intersection	Control	Existing (LOS / Delay)		Existing Plus Project (LOS / Delay)	
		AM	PM	AM	PM

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

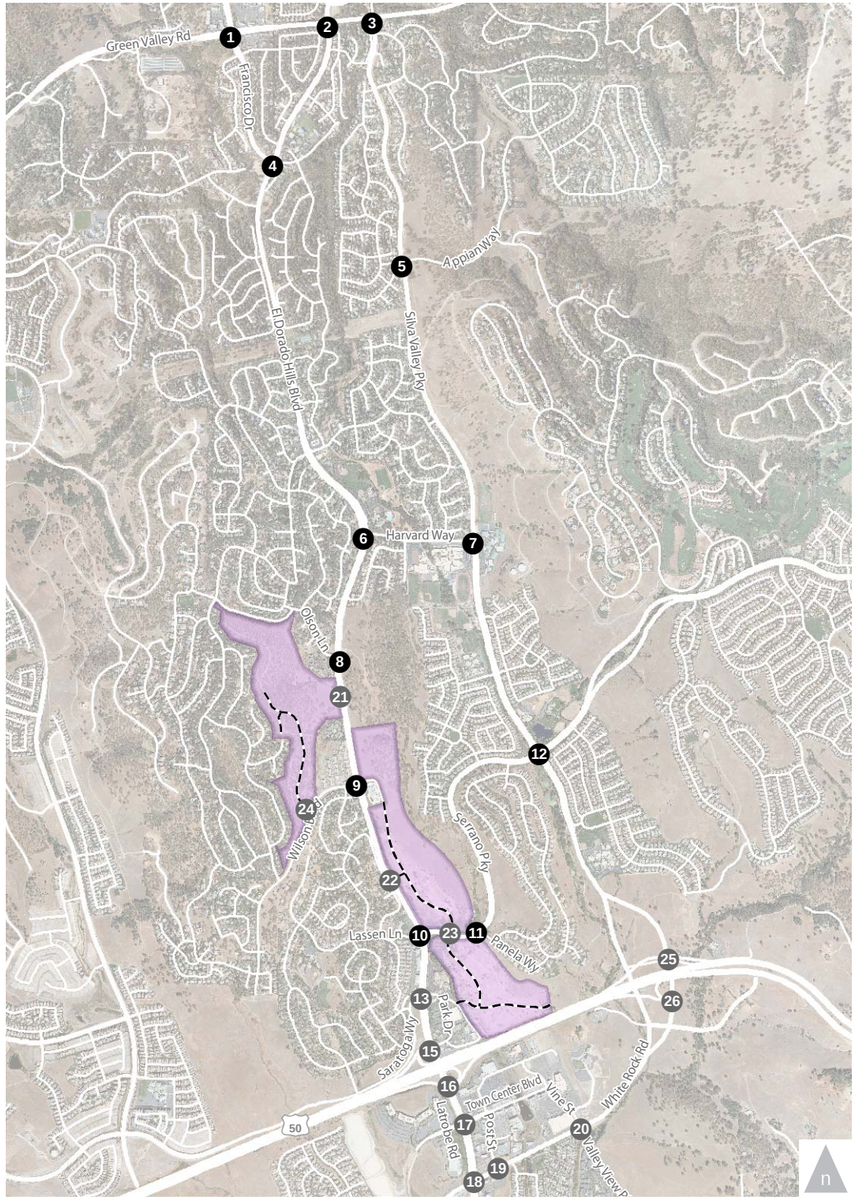
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

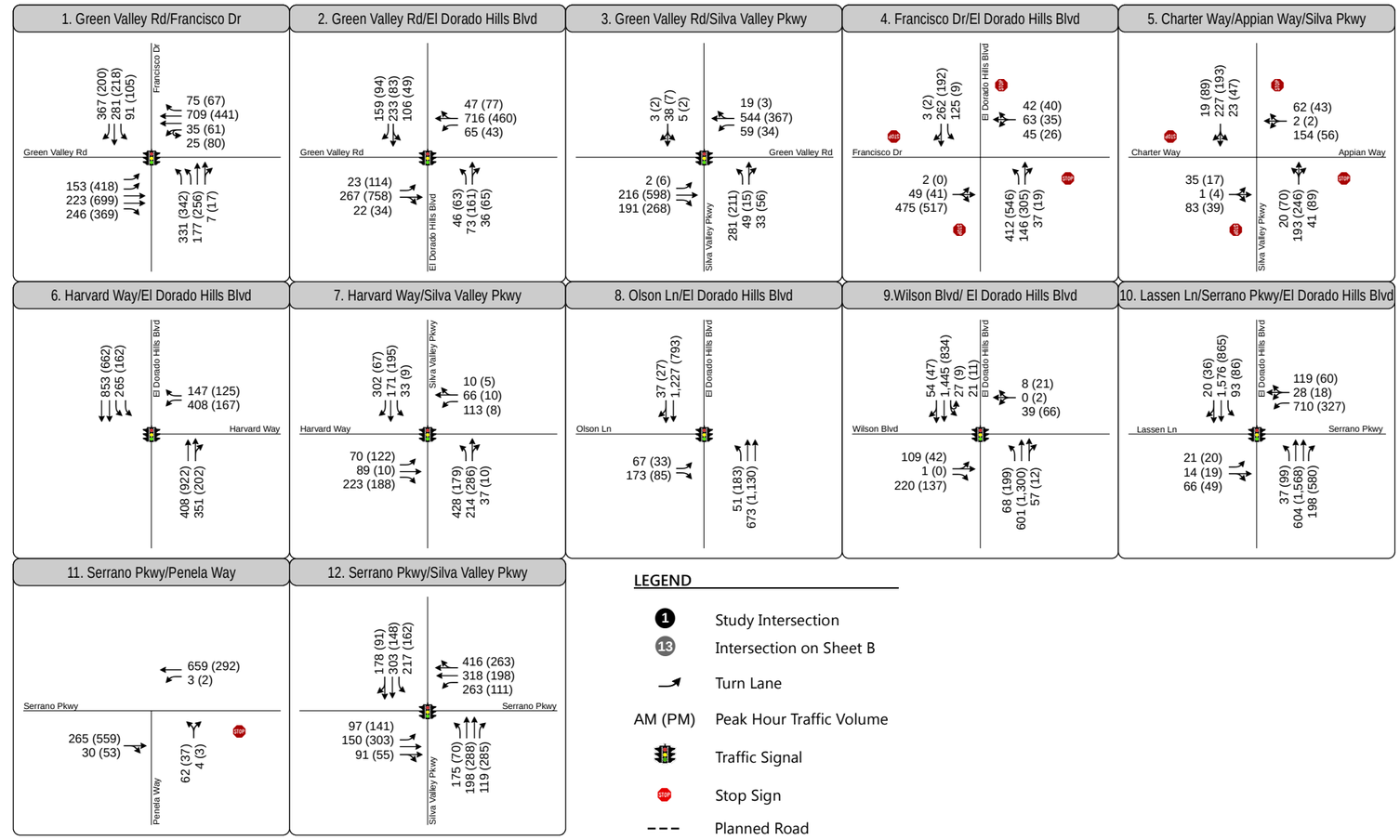
Highlighted text indicates a level of service change from 2015 TIA

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM*. Intersections 1-12 and 19-26 are analyzed in Synchro. Intersections 13-18 are analyzed in SimTraffic.

Source: Fehr & Peers, 2017





LEGEND

- 1 Study Intersection
- 13 Intersection on Sheet B
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 3A

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

FEHR PEERS

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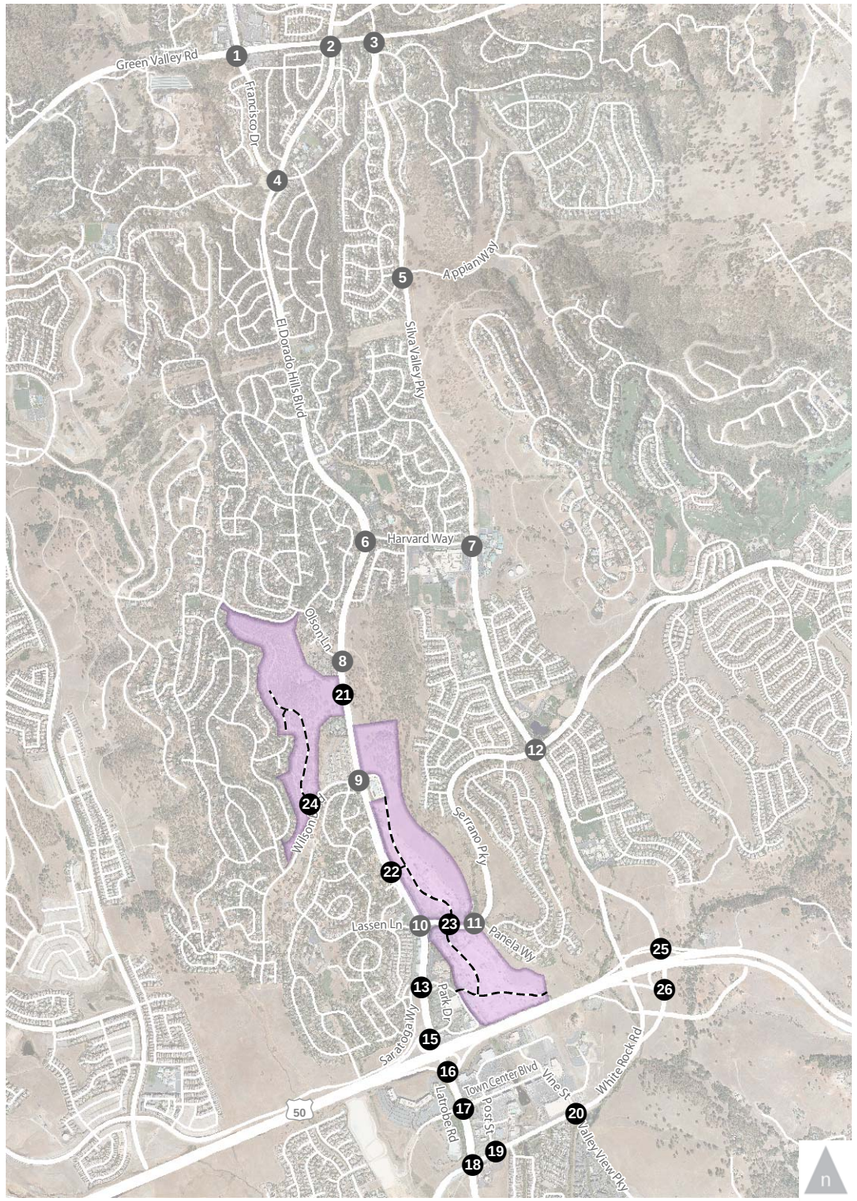

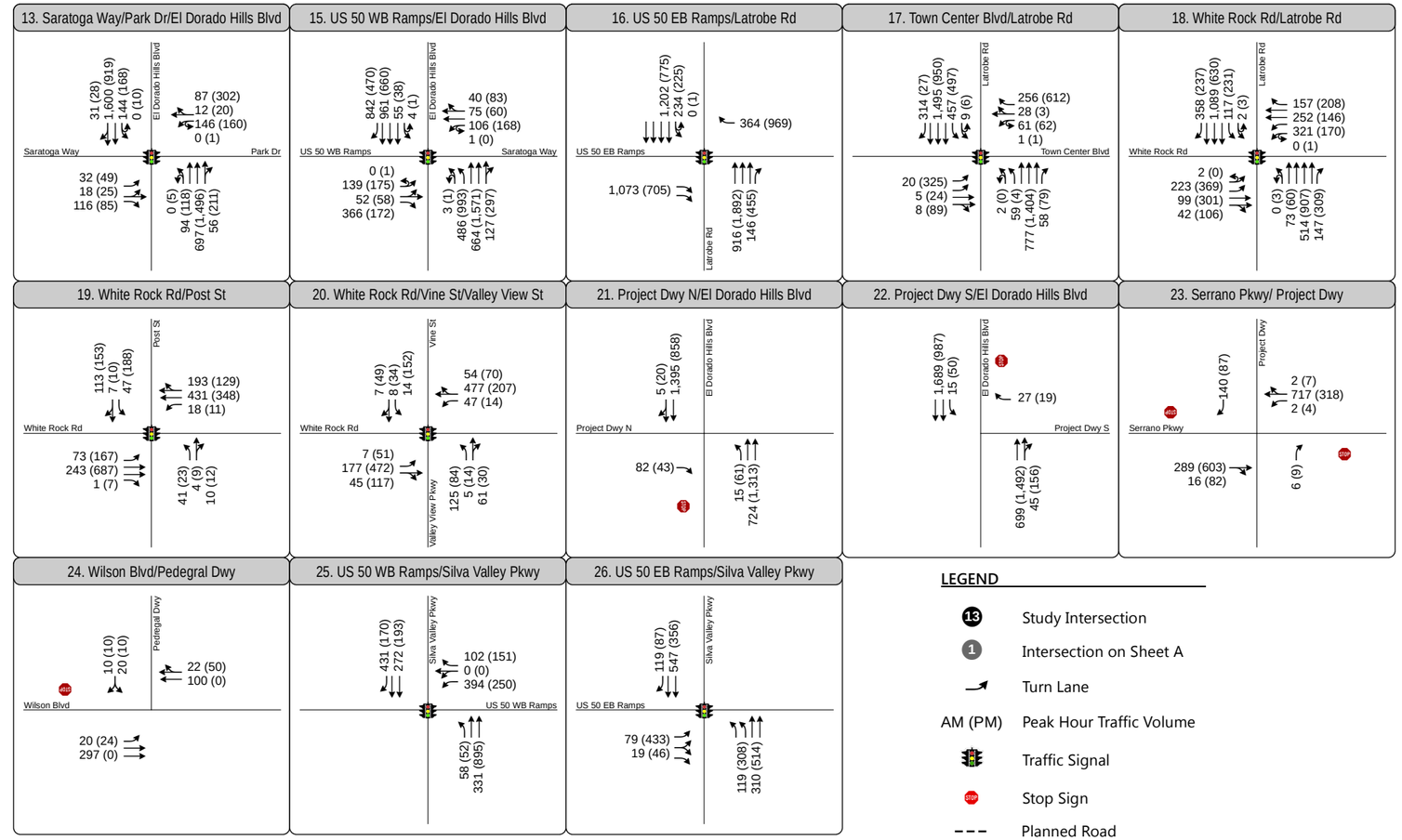

LEGEND

- 13 Study Intersection
- 1 Intersection on Sheet A
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 3B

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

FEHR PEERS

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Roadway Segments

Table 5 summarizes AM and PM peak hour LOS for the study roadways with the addition of project trips added to existing conditions. All roadways will operate acceptably, at LOS D or better, with the addition of project trips.

TABLE 5: PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	430 / 0.26 / C[1]	389 / 0.24 / C[1]	458 / 0.28 / C[1]	428 / 0.26 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,324 / 0.80 / D	1,319 / 0.80 / D	1,391 / 0.84 / D	1,621 / 0.98 / E
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,010 / 0.61 / D	1,935 / 0.59 / D	2,177 / 0.66 / D	2,170 / 0.66 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,108 / 0.64 / D	2,148 / 0.65 / D	2,629 / 0.80 / D	2,882 / 0.88 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	2,207 / 0.55 / C[1]	2,470 / 0.62 / D	2,591 / 0.65 / D	2,982 / 0.75 / D
	Saratoga Way to US 50	6 lane divided arterial	2,231 / 0.47 / C[1]	2,325 / 0.49 / C[1]	2,709 / 0.58 / C[1]	2,999 / 0.64 / D
Latrobe Rd	US 50 to Town Center Blvd	6 lane divided arterial	3,169 / 0.67 / D	3,590 / 0.76 / D	3,337 / 0.71 / D	3,827 / 0.81 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	2,367 / 0.50 / C[1]	2,454 / 0.52 / C[1]	2,462 / 0.52 / C[1]	2,588 / 0.55 / C[1]
	White Rock Rd to Golden Foothill Pkwy	4 lane divided arterial	2,125 / 0.65 / C[1]	2,106 / 0.64 / D	2,188 / 0.67 / D	2,186 / 0.66 / D
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	2 lane arterial	1,225 / 0.74 / D	1,246 / 0.76 / D	1,239 / 0.75 / D	1,266 / 0.77 / D

TABLE 5: PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

(ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	256 / 0.16 / C[1]	295 / 0.18 / C[1]	263 / 0.16 / C[1]	305 / 0.18 / C[1]
White Rock Rd	Scott Rd to Four Seasons Dr	2 lane arterial	603 / 0.37 / C[1]	863 / 0.52 / D	624 / 0.38 / C[1]	892 / 0.54 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	893 / 0.27 / C[1]	1,040 / 0.32 / C[1]	914 / 0.28 / C[1]	1,069 / 0.32 / C[1]
	Latrobe Rd to Vine St	2 lane arterial	1,082 / 0.66 / D	1,346 / 0.82 / D	1,093 / 0.66 / D	1,367 / 0.83 / D
	Vine St to US 50	2 lane arterial	995 / 0.60 / D	,213 / 0.74 / D	995 / 0.60 / D	1,224 / 0.74 / D
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	651 / 0.39 / C[1]	591 / 0.36 / C[1]	654 / 0.40 / C[1]	596 / 0.36 / C[1]
	Glenwood Wy to Appian Wy	2 lane arterial	555 / 0.34 / C[1]	630 / 0.38 / C[1]	558 / 0.34 / C[1]	635 / 0.38 / C[1]
	Appian Wy to Harvard Wy	2 lane arterial	796 / 0.48 / C[1]	681 / 0.41 / C[1]	799 / 0.48 / C[1]	686 / 0.42 / C[1]
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	1,402 / 0.43 / C[1]	1,084 / 0.33 / C[1]	1,409 / 0.43 / C[1]	1,094 / 0.33 / C[1]
	Serrano Pkwy to US 50	4 lane divided arterial	1,136 / 0.35 / C[1]	1,398 / 0.42 / C[1]	1,136 / 0.35 / C[1]	1,409 / 0.43 / C[1]
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	995 / 0.6 / D	910 / 0.55 / D	1,016 / 0.62 / D	939 / 0.57 / D
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,476 / 0.45 / C[1]	1,311 / 0.4 / C[1]	1,483 / 0.45 / C[1]	1,321 / 0.40 / C[1]
	Villagio Dr to Bass Lake Rd	2 lane arterial	453 / 0.27 / C[1]	417 / 0.25 / C[1]	455 / 0.28 / C[1]	420 / 0.25 / C[1]

TABLE 5: PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

(ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Existing Volume / Volume – Capacity (V/C) Ratio / LOS		Existing Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	295 / 0.18 / C[1]	316 / 0.19 / C[1]	303 / 0.18 / C[1]	325 / 0.20 / C[1]
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	418 / 0.13 / C[1]	384 / 0.12 / C[1]	425 / 0.14 / C[1]	394 / 0.13 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	300 / 0.18 / C[1]	289 / 0.18 / C[1]	307 / 0.19 / C[1]	299 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,139 / 0.36 / C[1]	612 / 0.20 / C[1]	1,170 / 0.37 / C[1]	656 / 0.21 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the peak hour level of service thresholds contained in Table 5.4-1 of the *El Dorado County General Plan DEIR* (EDAW, 2003)
[1] LOS at this location is C or better
Highlighted text indicates a level of service change from 2015 TIA

Source: Fehr & Peers, 2017

Freeway Facilities

Table 6 shows AM and PM peak hour freeway operations for eastbound and westbound US 50, including operations the operations of the new US 50/Silva Valley Parkway interchange, with the addition of project trips. Figure 2 shows the corresponding AM and PM peak hour volumes on US 50. As shown, all freeway facilities will operate acceptably, at LOS E or better, with the addition of project trips.

TABLE 6: PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing Plus Project Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	30 / D	23 / C	33 / D
	El Dorado Hills Blvd off-ramp	Diverge	14 / B	26 / C	14 / B	30 / D
	Latrobe Rd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)	10 / A	23 / C	10 / A	31 / D
		Basic[2]	7 / A	15 / B	7 / A	19 / C
	Silva Valley Pkwy on-ramp	Merge	11 / B	21 / C	12 / B	26 / C
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	11 / A	20 / C	11 / B	26 / C
	Bass Lake Rd off-ramp	Diverge	15 / B	25 / C	15 / B	32 / D
	Bass Lake Rd on-ramp	Merge	16 / B	27 / C	17 / B	31 / D
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Basic	14 / B	25 / C	14 / B	29 / D
	Cambridge Rd off-ramp	Diverge	18 / B	30 / D	19 / B	34 / D
	Cambridge Rd on-ramp	Merge	19 / B	26 / C	19 / B	29 / D
US 50 WB	Cambridge Rd off-ramp	Diverge	28 / C	23 / C	28 / D	24 / C
	Cambridge Rd on-ramp	Merge	20 / B	13 / B	20 / B	13 / B
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic	23 / C	17 / B	23 / C	17 / B
	Bass Lake Rd off-ramp	Diverge	29 / D	21 / C	29 / D	22 / C
	Bass Lake Rd on-ramp	Merge	32 / D	21 / C	32 / D	21 / C
	Bass Lake Rd on-ramp to lane add	Basic	29 / D	17 / B	29 / D	18 / B
	Lane add to Silva Valley Pkwy off-ramp	Basic	19 / C	12 / B	19 / C	12 / B
	Silva Valley Pkwy off-ramp	Diverge	13 / B	5 / A	13 / B	6 / A
	Silva Valley Pkwy on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	35 / D	18 / B	35 / D	19 / B
		Basic[2]	19 / C	11 / A	19 / C	11 / B

TABLE 6: PEAK HOUR LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Existing Plus Project Density[1] / LOS	
			AM	PM	AM	PM
	El Dorado Hills Blvd on-ramp	Merge	34 / D	24 / C	35 / E	25 / C

Notes: [1]Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations. Analysis based on HCM 2010.

[2]Out of realm of weaving; analyzed as a basic segment

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Highlighted text indicates a level of service change from the 2015 TIA.

Source: Fehr & Peers, 2017

2016 CAPITAL IMPROVEMENT PROGRAM UPDATES

Table 7 describes capacity-enhancing improvements to roadway facilities in the project study area that are planned to occur prior to year 2035 and are included in the cumulative analysis. This information is primarily based on El Dorado County's CIP (Section 8.1 – West Slope Road/Bridge Individual Project Summaries).

For the cumulative scenarios, the Wilson Boulevard extension to Saratoga Way was not included in the model.

TABLE 7: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
Country Club Drive – El Dorado Hills Boulevard to Silva Valley Parkway	Construct new 2-lane road of Country Club Drive from El Dorado Hills Blvd. to Silva Valley Pkwy. Work includes curb, gutter, and sidewalk on both sides of the roadway. CIP#72377	By 2035
Country Club Drive – Silva Valley Parkway to Tong Road	Construct new 2-lane road of Country Club Drive from Silva Valley Parkway to Tong Road. Work includes curb, gutter, and sidewalk on both sides of the roadway. CIP#71362	By 2027
Country Club Drive Extension – Tong Road to Bass Lake Road	Construct 2-lane extension of Country Club Drive from Tong Road to Bass Lake Road, with 8-foot paved shoulder, curb and gutter, and new intersection at Bass Lake Road. CIP#71361	By 2035
Country Club Drive Realignment - Bass Lake Road to Tierra De Dios Drive	Realign Country Club Drive from Bass Lake Road/Old Bass Lake Road to Tierra de Dios Drive. Work includes constructing a two-lane road with 8-foot paved shoulders, sidewalk, curb and gutter. CIP#71360	By 2019
Green Valley Rd Widening - Francisco to Salmon Falls	Widen Green Valley Rd from Francisco Dr to Salmon Falls Rd to 4-lanes divided with curb, gutter, and sidewalk. CIP#GP178	By 2035
Green Valley Road Widening - County Line to Sophia Parkway	Widen Green Valley Rd from County line to Sophia Parkway from two to four lanes.	By 2018
Latrobe Connection	The project consists of intersection improvements at Golden Foothill Pkwy (south) and Carson Crossing Dr. CIP#66116	By 2027
Saratoga Way Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd. CIP#71324 (Phase 2 CIP#GP147 - See ELD19234 in MTP.)	By 2035

TABLE 7: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
Saratoga Way (Phase 2)	Widen: 4 lanes from the Sacramento/El Dorado County line to El Dorado Hills Blvd. Includes: full curb, gutter, and sidewalk. (See ELD16010 for Phase 1) CIP#GP147	By 2035
Silva Valley Parkway/Serrano Parkway Traffic Circulation Improvement	Project includes traffic signal modification and lane re-striping at the Silva Valley Parkway/Serrano Parkway intersection, installation of an all-way stop at Serrano Parkway/Village Green intersection, and installation of left-turn prohibition signs at Silva Valley Parkway/Entrada intersection and Oak Meadow School driveway at Silva Valley Parkway. This project will be coordinated with the US 50/Silva Valley Parkway Freeway Interchange (CIP#71328). CIP#72141	Completed
Silver Springs Parkway to Bass Lake Road (South Segment)	Realign Bass Lake Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. Silver Springs Parkway will be a two-lane standard divided roadway with shoulders. CIP#76108	By 2020
US 50 Aux Lane WB - El Dorado Hills Boulevard to Sacramento County Line	Widen US 50 and add auxiliary lane to westbound US 50 connecting the El Dorado Hills Blvd/Latrobe Rd Interchange to the future Empire Ranch Rd Interchange located in the City of Folsom; (City of Folsom will construct the EB aux lane.) CIP#53115	By 2035
US 50 50 Auxiliary Lane Westbound - Ponderosa Road to Cameron Park Drive	Widen US 50 and add an auxiliary lane to westbound US 50, connecting Cameron Park Drive Interchange to Ponderosa Road Interchange. CIP#53128	By 2035
US 50 Auxiliary Lane Westbound – Bass Lake Road to Silva Valley Parkway	Widen US 50 to add an auxiliary lane to westbound US 50 connecting the Bass Lake Road Interchange and Silva Valley Parkway Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvement (71330). CIP#53117	By 2027
US 50 Auxiliary Lane Westbound – Cambridge Road to Bass Lake Road	Widen US 50 to add an auxiliary lane to westbound US 50 connecting the Cambridge Road Interchange to Bass Lake Road Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvement (71330). GP149	By 2035

TABLE 7: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
US 50 Auxiliary Lane Eastbound – Bass Lake Road to Cambridge Road	Widen US 50 and add eastbound auxiliary lane between Bass Lake Road Interchange and Cambridge Road Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvements.	By 2035
US 50 Auxiliary Lane Eastbound – Cambridge Road to Cameron Park Drive	Widen US 50 and add eastbound auxiliary lane between Cambridge Road Interchange and Cameron Park Drive Interchange. Timing of construction to be concurrent with or after the Cambridge Road Interchange improvements.	By 2035
US 50 Auxiliary Lane Eastbound – Sacramento County Line to El Dorado Hills Boulevard/Latrobe Road Interchange	Widen US 50 and add eastbound auxiliary lane between planned US 50/Empire Ranch Road Interchange and US 50 El Dorado Hills Boulevard/Latrobe Road Interchange. Timing of construction to be concurrent with El Dorado Hills Boulevard Interchange or Empire Ranch Interchange.	By 2035
US 50 / Bass Lake Rd Interchange Improvements	Phase 1 of a larger project for the complete reconstruction of the Bass Lake Road interchange. Phase 1 of the project includes a detailed study to determine the complete improvements needed. Phase 1 is assumed to include ramp widenings, road widening, signals, and bridge replacement. CIP#71330	By 2035
US 50 / Cambridge Rd. Interchange Improvements	Phase 1 improvements to Cambridge Road interchange consists of widening the existing EB and WB off-ramps; addition of new WB on-ramp from SB Cambridge Road; reconstruction of the local intersections to provide for additional capacity, both turning and through lanes; and the installation of traffic signals at the EB ramp-terminal intersection. Also preliminary engineering for Phase 2 improvements to the Cambridge Interchange. CIP#71332	By 2035
US 50 / Cameron Park Dr. Interchange Improvements	Interchange Improvements: this project includes detailed study to identify capacity improvement alternatives and selection of preferred alternative; assumes reconstruction of US 50 bridges to widen Cameron Park Dr. to 8 lanes under the overcrossing; road and ramp widening. CIP#72361	By 2035
US 50 / El Dorado Hills Blvd Interchange Improvements – (Phase 2B)	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2035

TABLE 7: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (ASSUMED COMPLETION BY 2035)

Project Name	Project Description	Estimated Completion
US 50 / Silva Valley Pkwy Interchange - Phase 1	New Interchange: Phase 1 includes US 50 on-/off-ramps, overcrossing, and US 50 aux lanes. (See ELD19291/CIP#71345 for Phase 2). CIP#71328	Completed
US 50 / Silva Valley Pkwy Interchange - Phase 2 – On-Ramps and Auxiliary Lanes on US 50 (Connector Segment)	Final phase of new interchange: construction of eastbound diagonal and westbound loop on-ramps to US 50. (See ELD15610/CIP#71328 for Phases 1). CIP#71345	By 2035
White Rock Rd Widening - Manchester to Sacramento County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr west to Sacramento County Line. CIP#GP137	By 2027
White Rock Rd Widening – Monte Verde to US 50 / Silva Valley Parkway Interchange (Connector Segment)	Widen White Rock Rd from 2-lanes undivided to 4 lanes divided, from Monte Verde Dr east to new future US 50/Silva Valley Pkwy Interchange (ELD15610/CIP71328); includes curb, gutter, sidewalk, and Class II bike lanes. CIP#72374	By 2035

CUMULATIVE CONDITIONS

The following summarizes planned intersection, roadway segment, and freeway operations under cumulative conditions without and with the project.

Intersections

Table 8 shows AM and PM peak hour intersection operations under Cumulative conditions. Figures 4 and 5 show intersection traffic control, lane configurations, and AM and PM peak hour turning movement forecasts at study intersections under cumulative conditions without and with the project, respectively. As shown, the following intersection will operate unacceptably:

- Silva Valley Parkway / Apian Way (Intersection 5) – This intersection is projected to operate at LOS F without the project. According to established significance criteria, the addition of the project would "significantly worsen" conditions, since it would add more than 10 trips to the intersection during the AM and PM peak hours.

As documented in Table 7, the Saratoga Way extension into City of Folsom and the Country Club Drive extension from Silva Valley Parkway to El Dorado Hills Boulevard will be constructed before 2035, the

year of the Cumulative scenarios. This extension will parallel US 50 and provide more connectivity from El Dorado Hills to City of Folsom. The construction of the extension will also bring improvements to the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersection. These intersection is assumed to operate with protected left-turns for all approaches, and lane configuration improvements are based on the magnitude of the Cumulative volumes. They are as follows:

- One left-turn lane, three thru lanes, and one right-turn lane for the northbound approach;
- One left-turn lane, three thru lanes, and one right-turn lane for the southbound approach;
- Two left-turn lanes, one thru lane, and one right-turn lane for the eastbound approach;
- One left-turn lane, one thru lane, and one right-turn lane for the westbound approach.

These improvements are assumed to be in place for all Cumulative intersection operations analyses.

TABLE 8: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (INTERSECTIONS)

Intersection	Control	Cumulative No Project (LOS / Delay)		Cumulative Plus Project (LOS / Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 41	D / 41	D / 41	D / 42
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	D / 40	C / 33	D / 47	C / 34
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 20	B / 17	C / 20	B / 17
4. Francisco Dr / El Dorado Hills Blvd	Signal	E / 56	D / 47	E / 62	D / 48
5. Silva Valley Pkwy / Apian Wy	AWSC	**F / >180**	**F / 86**	***F / >180***	***F / 86***
6. El Dorado Hills Blvd / Harvard Wy	Signal	D / 42	C / 32	D / 49	C / 33
7. Silva Valley Pkwy / Harvard Wy	Signal	E / 64	C / 27	E / 70	C / 27
8. El Dorado Hills Blvd / Olson Ln	Signal	A / 6	A / 6	A / 6	A / 6
9. El Dorado Hills Blvd / Wilson Blvd	Signal	C / 25	B / 18	E / 63	D / 48
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 52	C / 21	E / 62	C / 28
11. Serrano Pkwy / Penela Wy	SSSC	E / 44	D / 26	E / 49	D / 26

TABLE 8: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (INTERSECTIONS)

Intersection	Control	Cumulative No Project (LOS / Delay)		Cumulative Plus Project (LOS / Delay)	
		AM	PM	AM	PM
12. Serrano Pkwy / Silva Valley Pkwy	Signal	E / 70	D / 36	E / 71	D / 36
13. El Dorado Hills Blvd / Park Dr / Saratoga Wy	Signal	C / 31	D / 45	D / 37	D / 50
15. El Dorado Hills Blvd / Saratoga Wy / US 50 WB Ramps	Signal	D / 45	D / 51	D / 47	D / 49
16. Latrobe Rd / US 50 EB Ramps	Signal	D / 46	C / 29	D / 54	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	D / 38	E / 68	D / 42	E / 76
18. Latrobe Rd / White Rock Rd	Signal	E / 75	D / 52	E / 67	E / 80
19. White Rock Rd / Post St	Signal	B / 15	B / 18	B / 15	B / 18
20. White Rock Rd / Valley View Dr / Vine St	Signal	B / 19	C / 31	B / 19	C / 31
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	C / 21	B / 12
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	B / 12	C / 23
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 18	B / 15
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	B / 11	A / 9
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	A / 10	B / 20	A / 10	C / 20
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	A / 3	A / 7	A / 3	B / 11

Notes: SSSC = side-street stop-control, AWSC = all-way stop control

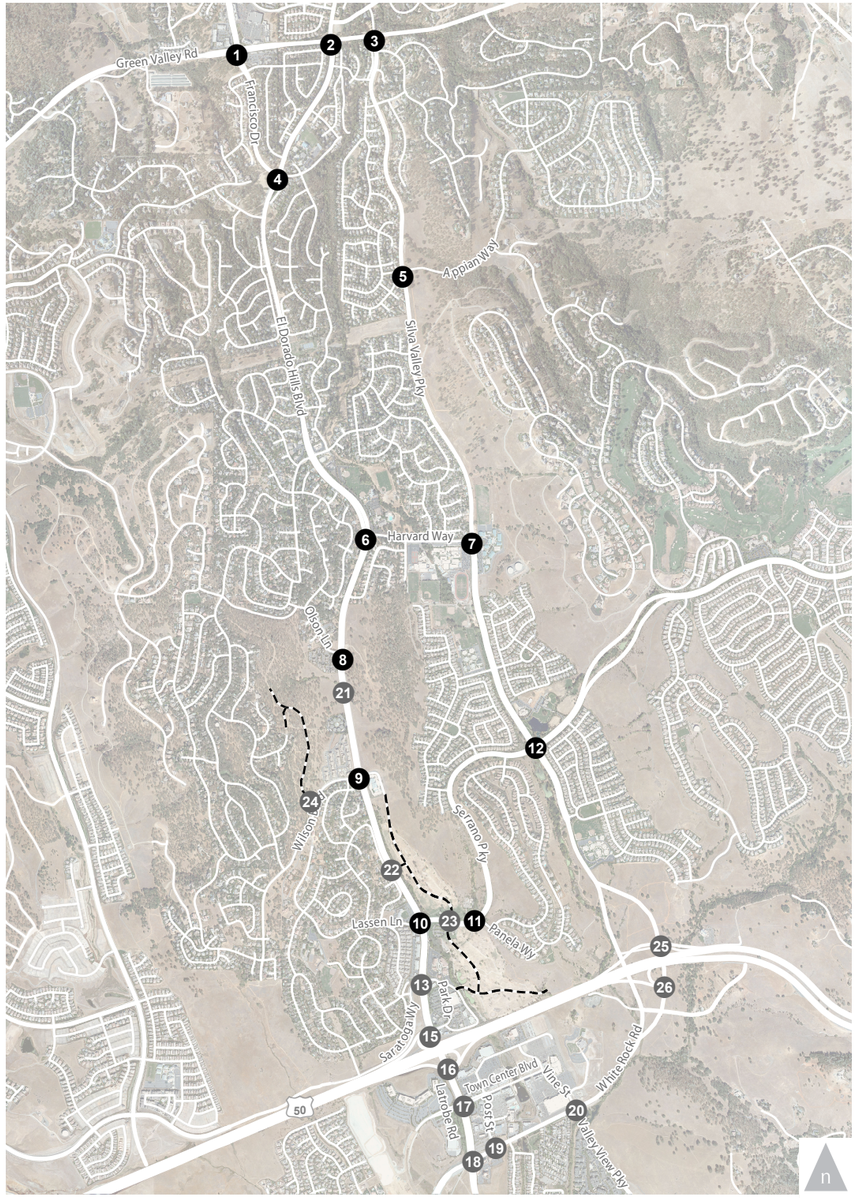
Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

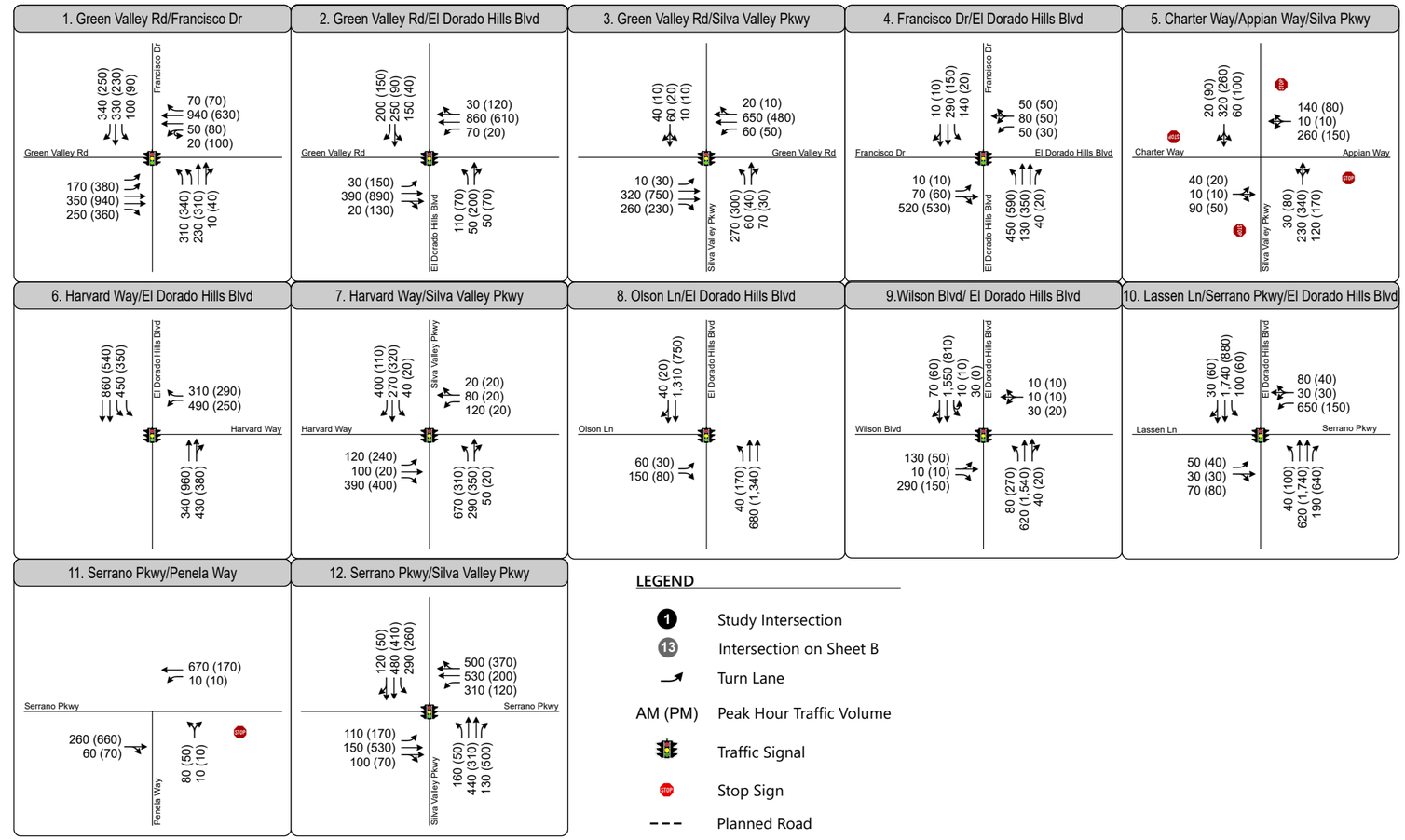
Highlighted text indicates a level of service change from the 2015 TIA.

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For SSSC intersections, the LOS and control delay for the worst movement is shown.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM*. Intersections 1-12 and 19-26 are analyzed in Synchro. Intersections 13-18 are analyzed in SimTraffic.

Source: Fehr & Peers, 2017





LEGEND

- 1 Study Intersection
- 13 Intersection on Sheet B
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road

Figure 4A.

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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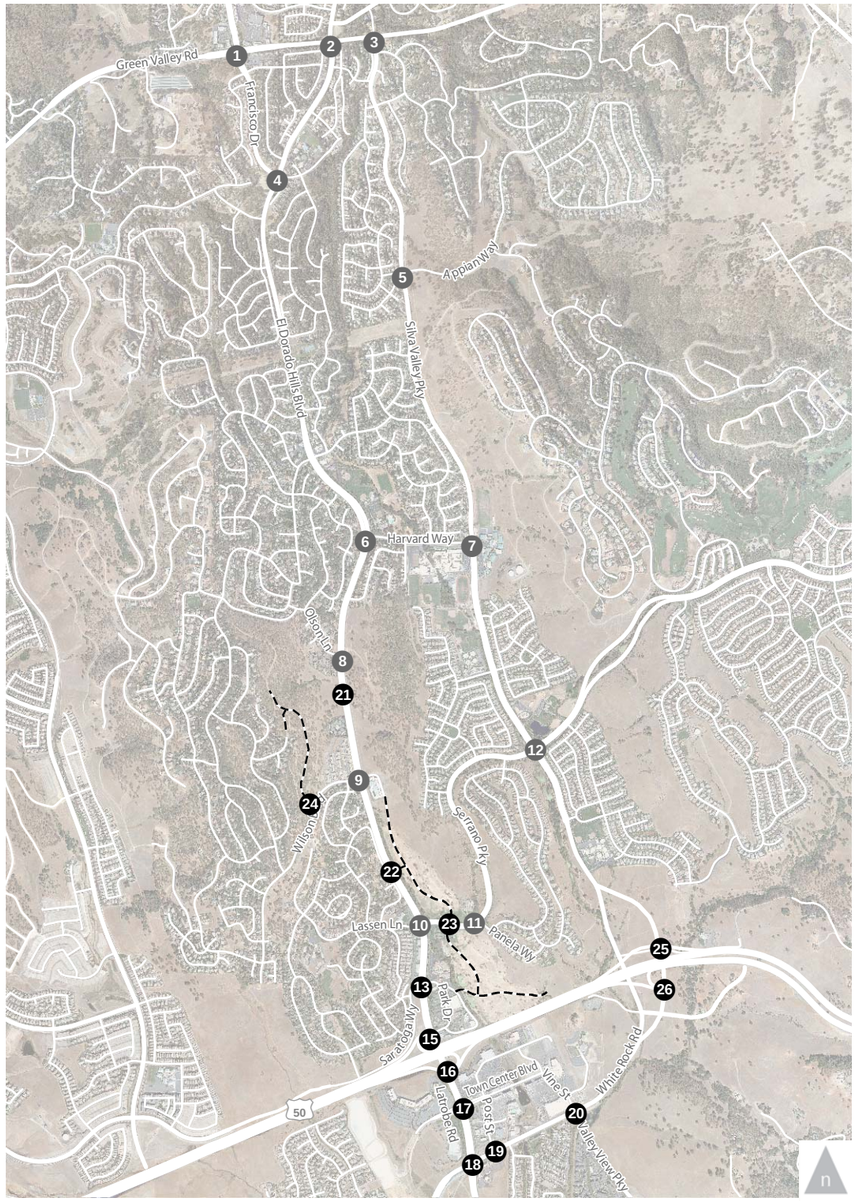

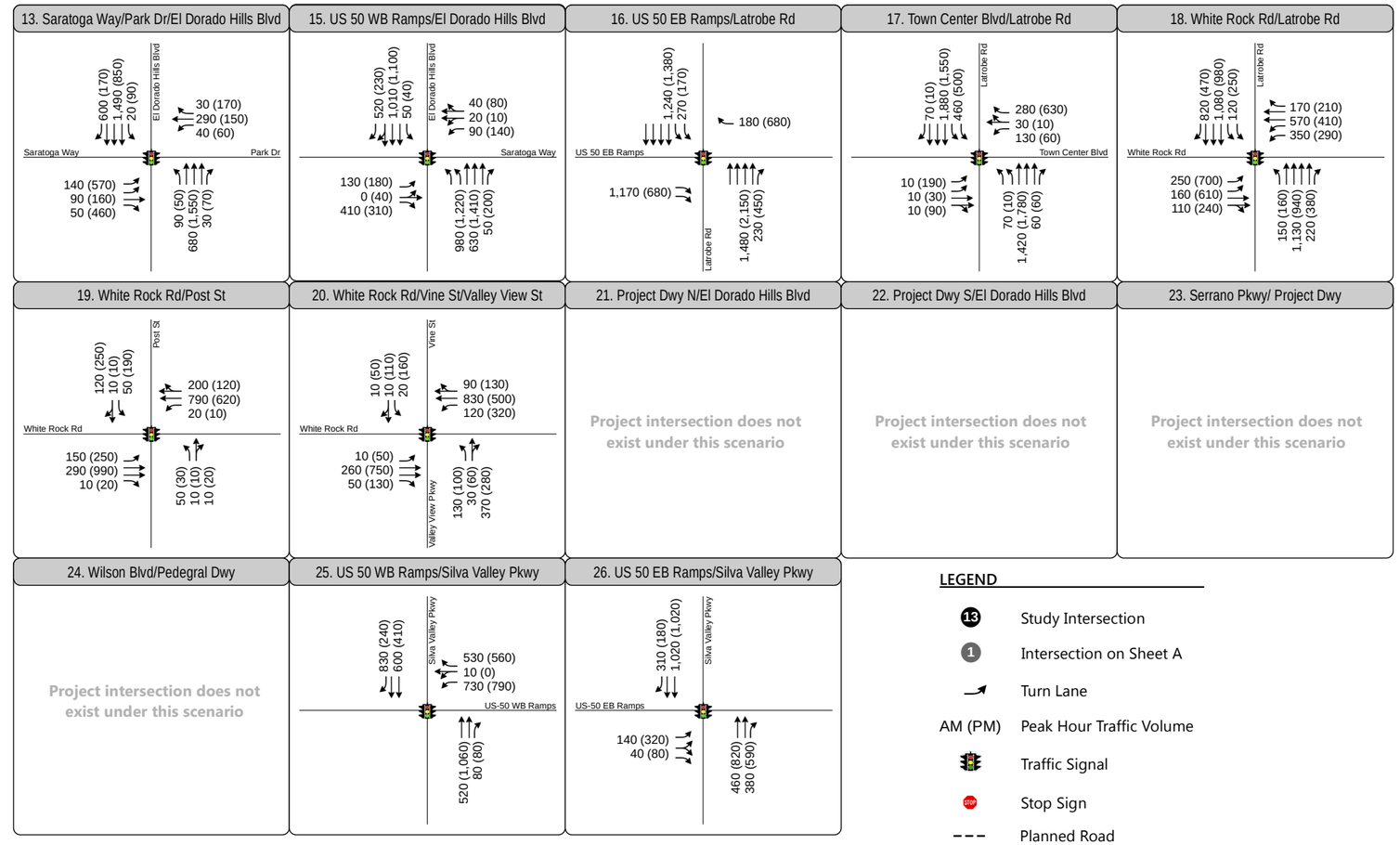

LEGEND

- 13 Study Intersection
- 1 Intersection on Sheet A
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road

Figure 4B

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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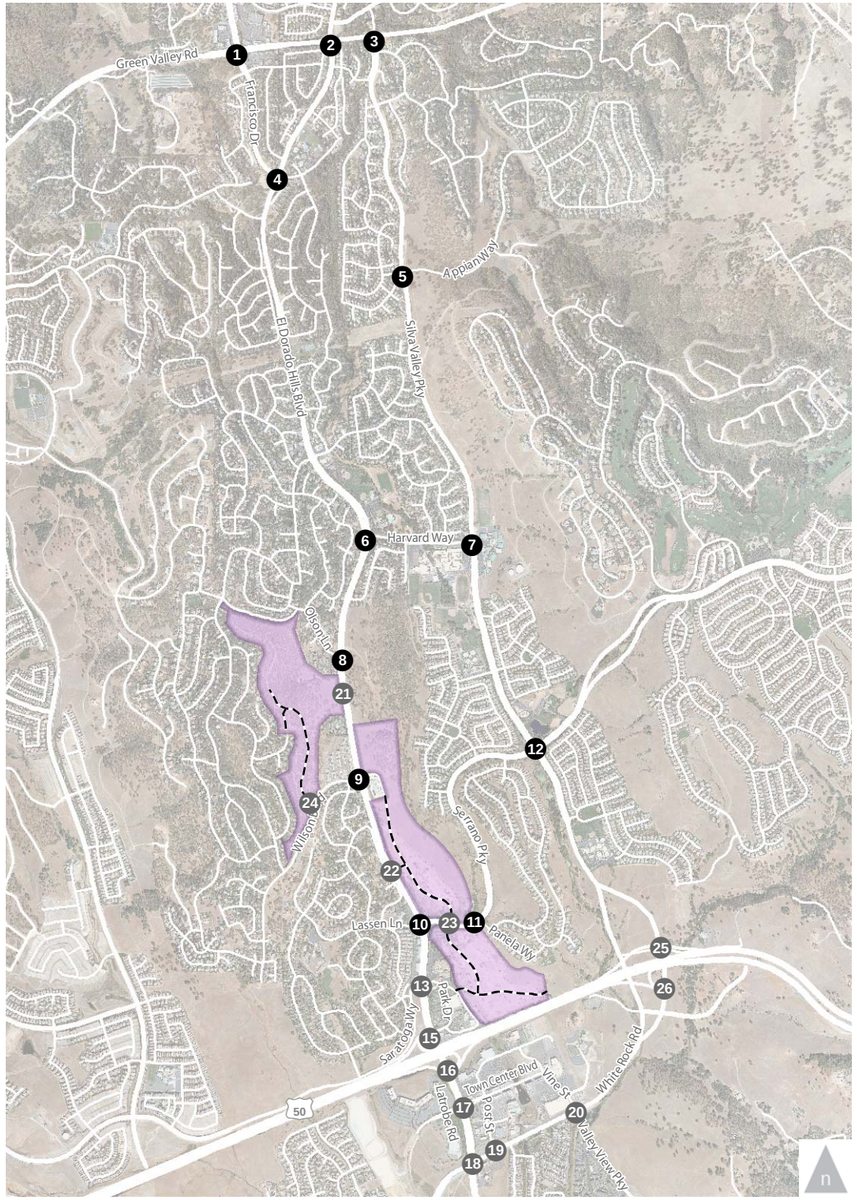

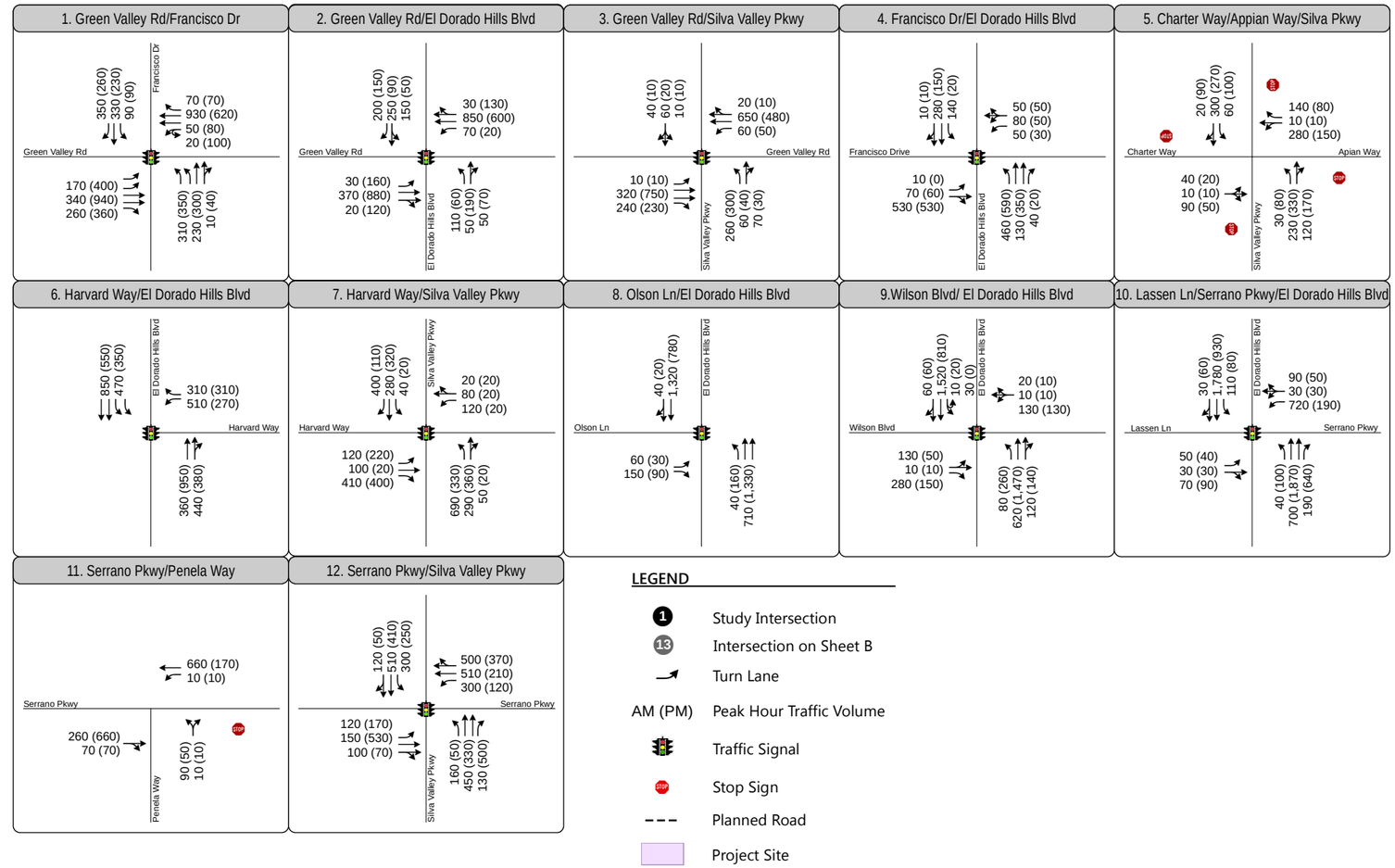

LEGEND

- 1 Study Intersection
- 13 Intersection on Sheet B
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 5A

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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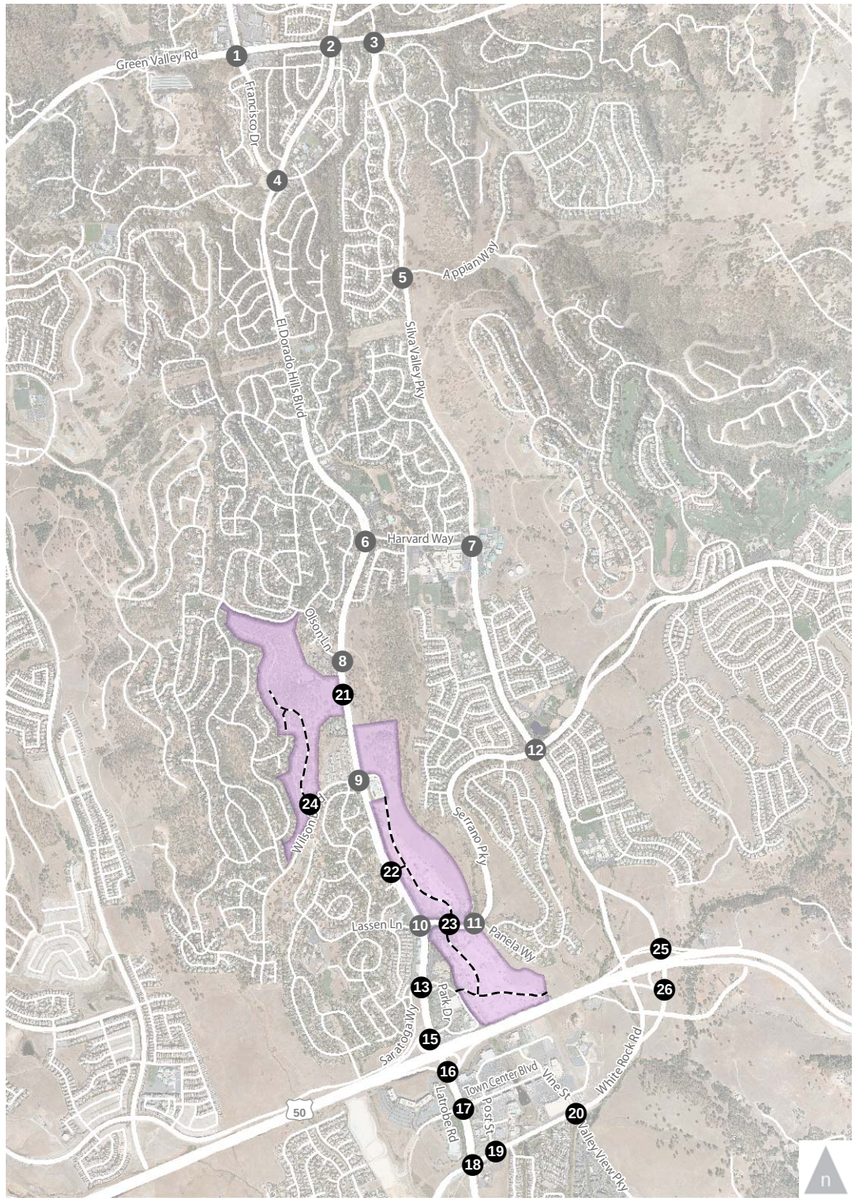

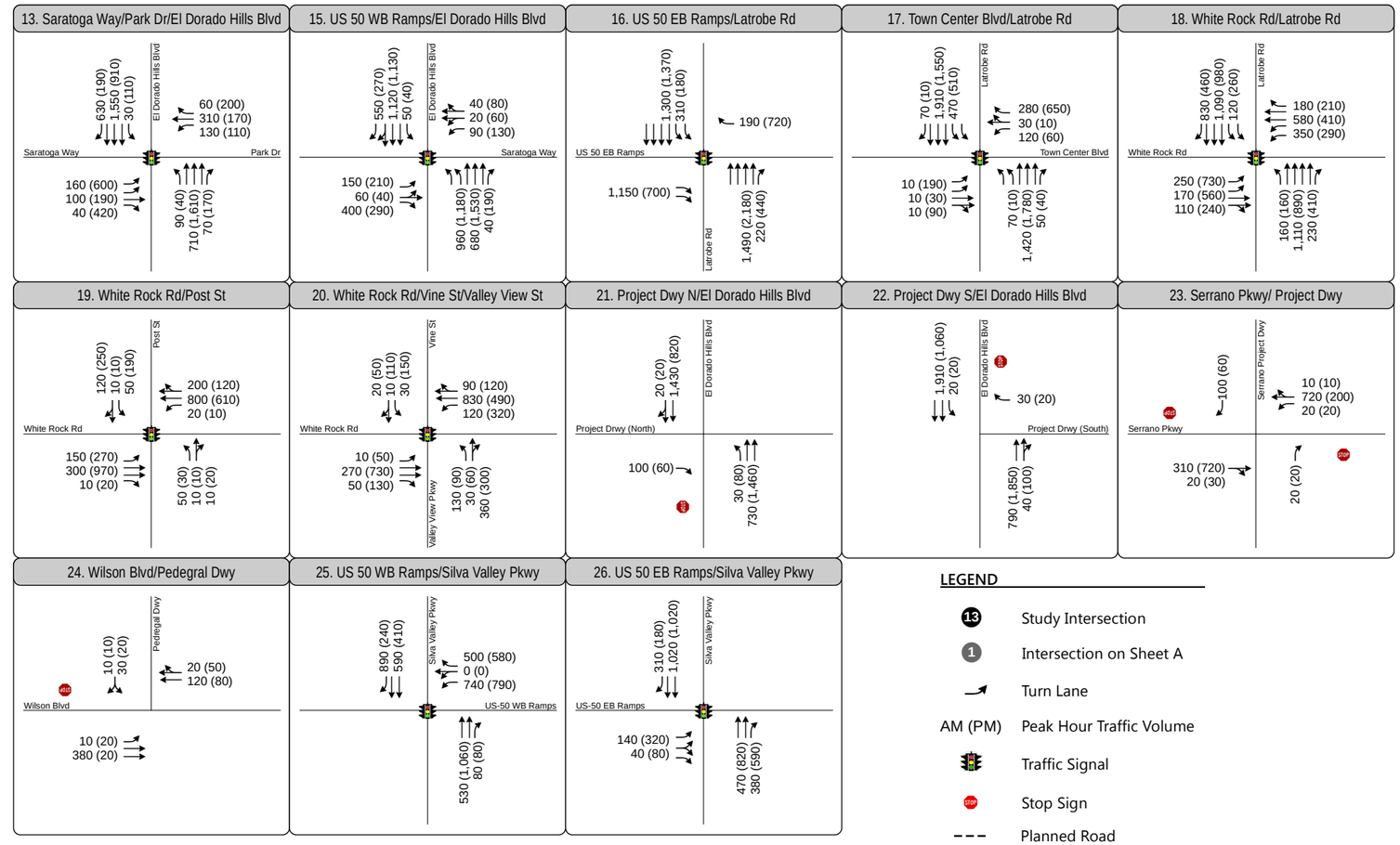

LEGEND

- 13 Study Intersection
- 1 Intersection on Sheet A
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 5B

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

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Roadway Segments

Table 9 summarizes AM and PM peak hour roadway segment analysis for cumulative conditions without and with the project. As shown, all of the study roadway segments will operate acceptably, LOS E or better, under No Project and Plus Project conditions.

TABLE 9: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Cumulative No Project Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
El Dorado Hills Blvd	Green Valley Rd to Francisco Dr	2 lane arterial	510 / 0.31 / C[1]	540 / 0.33 / C[1]	530 / 0.32 / C[1]	530 / 0.32 / C[1]
	Francisco Dr to Governor Dr	2 lane arterial	1,540 / 0.93 / D	1,570 / 0.95 / E	1,560 / 0.94 / E	1,570 / 0.95 / E
	Governor Dr to Wilson Blvd	4 lane divided arterial	2,250 / 0.68 / D	2,340 / 0.71 / D	2,300 / 0.70 / D	2,350 / 0.71 / D
	Wilson Blvd to Serrano Pkwy	4 lane divided arterial	2,470 / 0.75 / D	2,700 / 0.82 / D	2730 / 0.83 / D	2,940 / 0.89 / D
	Serrano Pkwy to Saratoga Way	5 lane divided arterial	2,830 / 0.69 / D	3,310 / 0.81 / D	3,110 / 0.76 / D	3,620 / 0.88 / D
	Saratoga Way to US 50	7 lane divided arterial	2,320 / 0.43 / C[1]	3,030 / 0.56 / C[1]	2,560 / 0.47 / C[1]	3,240 / 0.60 / D
Latrobe Rd	US 50 to Town Center Blvd	7 lane arterial	4,100 / 0.76 / D	4,610 / 0.85 / D	4,130 / 0.76 / D	4,670 / 0.86 / D
	Town Center Blvd to White Rock Rd	6 lane divided arterial	3,500 / 0.74 / D	3,490 / 0.74 / D	3,530 / 0.75 / D	3,500 / 0.74 / D
	White Rock Rd to Golden Foothill Pkwy	6 lane divided arterial	2,990 / 0.63 / D	2,950 / 0.63 / D	2,980 / 0.63 / D	2,950 / 0.63 / D
	Golden Foothill Pkwy to Sun Ridge Meadow Rd	4 lane arterial undivided	1,580 / 0.50 / C[1]	1,570 / 0.50 / C[1]	1,580 / 0.50 / C[1]	1,560 / 0.50 / D

TABLE 9: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Cumulative No Project Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Sun Ridge Meadow Rd to S. Shingle Rd	2 lane arterial	570 / 0.35 / C[1]	590 / 0.36 / C[1]	570 / 0.35 / C[1]	580 / 0.35 / C[1]
White Rock Rd	Scott Rd to Four Seasons Dr	4 lane divided arterial	1,990 / 0.60 / D	2,660 / 0.81 / D	1,980 / 0.60 / D	2,640 / 0.80 / D
	Four Seasons Dr to Latrobe Rd	4 lane divided arterial	2,100 / 0.64 / D	2,700 / 0.82 / D	2,110 / 0.64 / D	2,700 / 0.82 / D
	Latrobe Rd to Vine St	6 lane divided arterial	1,480 / 0.31 / C[1]	1,890 / 0.40 / C[1]	1,500 / 0.32 / C[1]	1,880 / 0.40 / C[1]
	Vine St to US 50	6 lane divided arterial	1,810 / 0.38 / C[1]	2,390 / 0.51 / C[1]	1,840 / 0.39 / C[1]	2,370 / 0.50 / C[1]
Silva Valley Pkwy	Green Valley Rd to Glenwood Wy	2 lane arterial	760 / 0.46 / C[1]	650 / 0.39 / C[1]	730 / 0.44 / C[1]	640 / 0.39 / C[1]
	Glenwood Wy to Appian Wy	2 lane arterial	760 / 0.46 / C[1]	870 / 0.53 / D	760 / 0.46 / C[1]	870 / 0.53 / D
	Appian Wy to Harvard Wy	2 lane arterial	1,100 / 0.67 / D	1,010 / 0.61 / D	1,100 / 0.67 / D	1,010 / 0.61 / D
	Harvard Wy to Serrano Pkwy	4 lane divided arterial	2,000 / 0.61 / D	1,540 / 0.47 / C[1]	2,040 / 0.62 / D	1,580 / 0.48 / C[1]
	Serrano Pkwy to US 50	4 lane divided arterial	1,890 / 0.57 / D	2,260 / 0.69 / D	1,920 / 0.58 / D	2,290 / 0.70 / D
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	2 lane arterial	1,080 / 0.65 / D	950 / 0.58 / D	1,070 / 0.71 / D	1,020 / 0.62 / D
	Silva Valley Pkwy to Villagio Dr	4 lane divided arterial	1,860 / 0.57 / D	1,940 / 0.59 / D	1,870 / 0.57 / D	1,960 / 0.60 / D
	Villagio Dr to Bass Lake Rd	2 lane arterial	1,030 / 0.62 / D	1,230 / 0.75 / D	1,040 / 0.63 / D	1,240 / 0.75 / D
Saratoga Wy	EDH Blvd to Arrowhead Dr	2 lane arterial	1,240 / 0.75 / D	1,550 / 0.94 / E	1,300 / 0.79 / D	1,580 / 0.96 / E

TABLE 9: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (ROADWAY SEGMENTS)

Roadway	Segment	Facility Type	Cumulative No Project Volume / Volume – Capacity (V/C) Ratio / LOS		Cumulative Plus Project Volume / Volume – Capacity (V/C) Ratio / LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Wilson Wy	EDH Blvd to Ridgeview Dr	4 lane undivided arterial	560 / 0.18 / C[1]	510 / 0.16 / C[1]	550 / 0.18 / C[1]	510 / 0.16 / C[1]
Olson Ln/Gillette Dr	EDH Blvd to Gillette Dr	2 lane arterial	310 / 0.19 / C[1]	300 / 0.18 / C[1]	310 / 0.19 / C[1]	300 / 0.18 / C[1]
Harvard Wy	EDH Blvd to Silva Valley Pkwy	4 lane undivided arterial	1,720 / 0.55 / C[1]	1,290 / 0.41 / C[1]	1,700 / 0.54 / C[1]	1,280 / 0.41 / C[1]

Notes: Volume-to-Capacity ratio and LOS is based on the peak hour level of service thresholds contained in Table 5.4-1 of the *El Dorado County General Plan DEIR* (EDAW, 2003)
[1] LOS at this location is C or better
Highlighted text indicates a level of service change from 2015 TIA
Source: Fehr & Peers, 2017

Freeway Facilities

Table 10 shows AM and PM peak hour freeway operations for eastbound and westbound US 50 under cumulative conditions without and with the project. Figure 6 shows the corresponding AM and PM peak hour volumes on US 50. As shown, all freeway facilities will operate acceptably, at LOS E or better, with the addition of project trips.

TABLE 10: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Cumulative No Project Density[1] / LOS		Cumulative Plus Project Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	28 / D	33 / D	28 / D	34 / D
	El Dorado Hills Blvd off-ramp	Diverge	21 / C	30 / D	21 / C	30 / D
	Latrobe Rd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)	20 / B	29 / D	20 / B	29 / D

TABLE 10: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Cumulative No Project Density[1] / LOS		Cumulative Plus Project Density[1] / LOS	
			AM	PM	AM	PM
		Basic[2]	13 / B	18 / B	13 / B	19 / B
	Silva Valley Pkwy (loop) on-ramp	Merge	18 / B	24 / C	18 / B	24 / C
	Silva Valley Pkwy (slip) on-ramp	Merge	23 / C	30 / D	23 / C	30 / D
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	21 / C	27 / C	21 / C	27 / D
	Bass Lake Rd off-ramp	Diverge	25 / C	33 / D	26 / C	33 / D
	Bass Lake Rd on-ramp to Cambridge Rd off-ramp	Basic[1]	17 / B	21 / C	17 / B	21 / C
	Cambridge Rd on-ramp to Cameron Park Drive off-ramp	Basic[1]	21 / C	23 / C	21 / C	23 / C
US 50 WB	Cameron Park Drive on-ramp to Cambridge Rd off-ramp	Weave (HCM)	47 / E	-[2]	48 / E	-[2]
		Basic[1]	21 / C	25 / C	21 / C	24 / C
	Cambridge Rd on-ramp to Bass Lake Rd off-ramp	Basic[1]	20 / C	20 / C	20 / C	20 / C
	Bass Lake Rd on-ramp to Silva Valley Pkwy off-ramp	Basic[1]	27 / D	24 / C	27 / D	24 / C
	Silva Valley Pkwy (loop) on-ramp	Diverge	15 / B	13 / B	15 / B	13 / B
	Silva Valley Pkwy (slip) on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	32 / D	23 / C	33 / D	22 / C
		Weave (Leisch)	-[1]	-[1]	- / C	-[1]
		Basic	18 / B	14 / B	-	14 / B
	El Dorado Hills Blvd on-ramp to Empire Ranch off-ramp	Weave (HCM)	41 / E	34 / D	41 / E	33 / D
		Weave (Leisch)	- / D	- / C	- / D	- / C

TABLE 10: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE CONDITIONS (FREEWAY FACILITIES)

Freeway	Segment	Facility Type	Cumulative No Project Density[1] / LOS		Cumulative Plus Project Density[1] / LOS	
			AM	PM	AM	PM

Notes:

[1] Out of realm of weaving for Leisch analysis; analyzed as a basic segment
[2] Out of realm of weaving for HCM analysis; analyzed as a basic segment

Bold text indicates LOS worse than established threshold. *Italic and underlined* text identifies a potential impact.

Highlighted text indicates a level of service change from 2015 TIA

Source: Fehr & Peers, 2017

Figure 6

Freeway Mainline and Ramp Peak Hour Traffic Volumes - Cumulative Conditions

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IMPACTS AND MITIGATIONS

Project impacts were determined by comparing conditions with the project to conditions without the project in accordance to established significance criteria.

Existing Plus Project Conditions

The following outline mitigation for the identified impacts outlined above.

Intersections

The addition of project trips would impact operations at the following intersections under existing conditions:

- Latrobe Road / Town Center Boulevard
- Latrobe Road / White Rock Road

The Latrobe Road / Town Center Boulevard intersection was found to be significantly impacted by the project in the 2015 TIA during the PM peak hour. This is also the case for the updated study. However, the mitigations recommended in the 2015 TIA, which involve improving the US 50 / El Dorado Hills Boulevard interchange and opening the US 50 / Silva Valley Parkway interchange, have already been implemented. Implementing the following would result in acceptable LOS E conditions at Latrobe Road / Town Center Boulevard during the PM peak hour:

- Modify the northbound approach to provide two left-turn lanes, three through lanes, and a shared through / right-turn lane
- Modify the westbound approach to provide a shared through / left-turn lane, and two right-turn lanes
- Provide right-turn overlap phasing for the westbound approach
- Provide split phasing east and westbound
- Optimize signal timings to accommodate the revised intersection lane configurations

The improvements would also result in LOS C at the Latrobe Road/White Rock Road intersection, since the queueing along the northbound approach of Latrobe Road/Town Center Boulevard would be reduced and not spill back to White Rock Road.

Table 11 shows LOS analysis results with the proposed mitigation.

TABLE 11: PEAK HOUR LEVEL OF SERVICE - EXISTING PLUS PROJECT (MITIGATED) CONDITIONS (INTERSECTIONS)

Intersection	Control	Existing		Existing Plus Project		Existing Plus Project (Mitigated)	
		AM	PM	AM	PM	AM	PM
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50	B / 18	***F / 93***	B / 17	E / 78
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27	C / 31	***F / >180***	C / 31	C / 29

Notes: **Bold** text indicates LOS worse than established threshold. Italic and underlined text identifies a potential impact. Highlighted text indicates a level of service change from the 2015 TIA.

The average delay is measured in seconds per vehicle. Intersections are analyzed in SimTraffic.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM*.

Source: Fehr & Peers, 2017

Cumulative Plus Project Conditions

The following outline mitigation for the identified impacts outlined above.

Intersections

The addition of the project results in one intersection impact at the Silva Valley Parkway/Apian Way intersection under cumulative conditions. The following improvements are recommended to reduce the impact to a less than significant level and provide acceptable LOS D and C operation during the AM and PM peak hours, respectively:

- Install traffic signal control with protected left-turn phasing north and southbound and split phasing east and westbound
- Provide one left-turn lane and a shared through/right-turn lane on the north- and southbound approaches
- Provide a shared through/left-turn lane and a separate right-turn lane on the westbound approach

Table 12 shows AM and PM peak hour operations with the proposed mitigation.

TABLE 12: PEAK HOUR LEVEL OF SERVICE - CUMULATIVE PLUS PROJECT (MITIGATED) CONDITIONS (INTERSECTIONS)

Intersection	Control	Cumulative No Project Conditions		Cumulative Plus Project Conditions		Cumulative Plus Project Conditions (Mitigated)	
		AM	PM	AM	PM	AM	PM
5. Silva Valley Pkwy / Apian Wy	AWSC / Signal	**F / >180**	**F / 86**	***F / >180***	***F / 86***	D / 48	C / 24

Notes: AWSC = all-way stop control

Bold text indicates LOS worse than established threshold. Italic and underlined text identifies a potential impact.

The average delay is measured in seconds per vehicle. Intersections are analyzed in Synchro.

Intersection LOS and delay is calculated based on the procedures and methodology contained in the *HCM*.

Source: Fehr & Peers, 2017

Appendix L-5

Memorandum: Central El Dorado Hills Specific Plan Measure E Analysis

FEHR PEERS

MEMORANDUM

Date: June 22, 2017

To: Kirk Bone, Parker Development

From: David B. Robinson, Fehr & Peers

Subject: Central El Dorado Hills Specific Plan Measure E Analysis

RS12-3017

INTRODUCTION

Fehr & Peers completed the near-term transportation impact analyses for the Central El Dorado Hills Specific Plan to support compliance with Measure E. The near-term analysis scenario represents conditions 10 years beyond the existing baseline. This memorandum summarizes traffic operations for intersections and freeway facilities under near-term conditions without and with the addition of trips from the full buildout of the Central El Dorado Hills project.

NEAR-TERM CONDITIONS FORECAST DEVELOPMENT

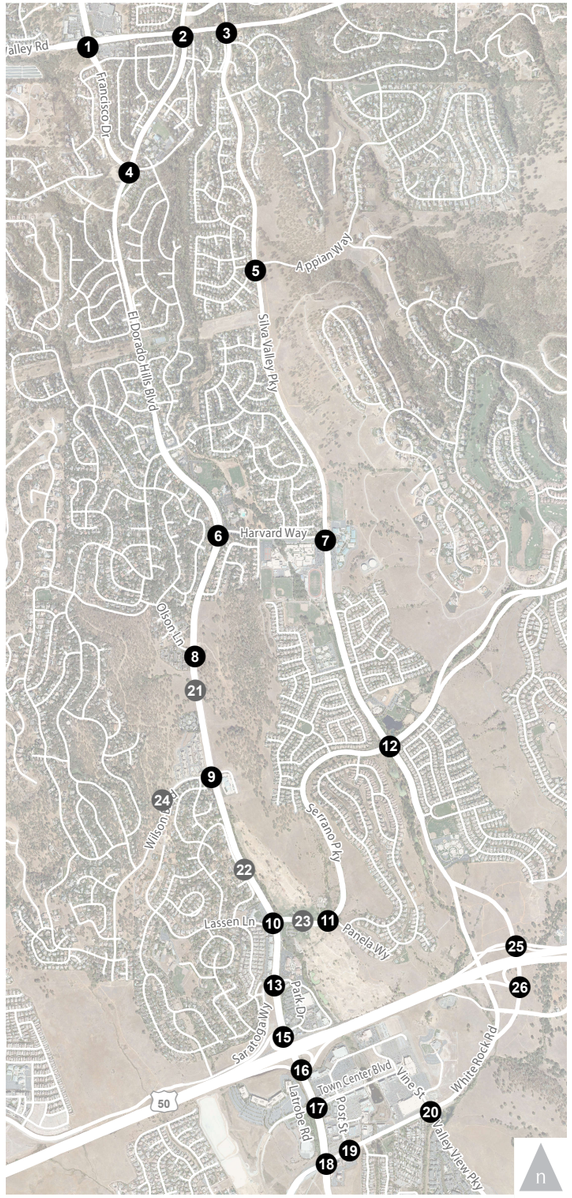
The El Dorado County travel demand forecasting model was used to develop, traffic volume forecasts for Near-Term conditions. The following steps, developed based on coordination with El Dorado County Community Development Agency staff, to develop the land use and roadway network inputs for the Near-Term (2027) analysis scenario forecasting model:

1. Land Use Growth – Used linear interpolation between the base year and future year models to develop 10-year land use growth projections.
2. 10-Year Land Use Forecasts – Add land use growth from Step 1 to the base year model land use inputs.
3. Capital Improvement Program Projects – Identified roadway improvement projects from the Adopted 2016 Capital Improvement Program with construction planned by 2027. Table 1 summarizes roadway improvement projects identified in the El Dorado County 2016 Capital Improvement Program that are planned to be under construction by 2027.
4. Near-Term Transportation Network – Added roadway improvement project from Step 3 to the base year model transportation network.
5. Near-Term No Project Forecasts – Developed AM and PM peak hour traffic volume forecasts for study intersections and freeway facilities using the inputs from Steps 1 through 4.
6. Near-Term Plus Project Forecasts – Added buildout land use for the Central El Dorado Hills Specific Plan to the El Dorado County travel demand forecasting model, and developed AM and PM peak hour traffic volume forecasts for study intersections and freeway facilities using the inputs from Steps 1 through 4.

TABLE 1: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (CONSTRUCTION WITHIN 10 YEARS)		
Project Name	**Project Description**	**Begin Construction**
Country Club Drive – Silva Valley Parkway to Tong Road	Construct new 2-lane road Country Club Drive from Silva Valley Parkway to Tong Road. Work includes curb, gutter, and sidewalk on both sides of the roadway. CIP#71362	By 2026
Country Club Drive Extension – Tong Road to Bass Lake Road	Construct 2-lane extension of Country Club Drive from Tong Road to Bass Lake Road, with 8-foot paved shoulder, curb and gutter, and new intersection at Bass Lake Road. CIP#71361	By 2026
Country Club Drive Realignment - Bass Lake Road to Tierra De Dios Drive	Realign Country Club Drive from Bass Lake Road/Old Bass Lake Road to Tierra de Dios Drive. Work includes constructing a 2-lane road with 8-foot paved shoulders, sidewalk, curb and gutter. CIP#71360	By 2018
Green Valley Road Widening – County Line to Sophia Parkway	Widen Green Valley Rd from County line to Sophia Parkway from two to four lanes. CIP#72376	By 2017
Saratoga Way Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy. from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd. CIP#71324	By 2018
Silver Springs Parkway to Bass Lake Road (South Segment)	Realign Bass Lake Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. Silver Springs Parkway will be a 2-lane standard divided roadway with shoulders. CIP#76108	By 2018
US 50 Auxiliary Lane Westbound – Bass Lake Road to Silva Valley Parkway	Widen US 50 to add an auxiliary lane to westbound US 50 connecting the Bass Lake Road Interchange and Silva Valley Parkway Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvement. CIP#53117	By 2026
US 50 / El Dorado Hills Blvd Interchange Improvements – (Phase 2B)	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2026
White Rock Rd Widening - Manchester to Sacramento County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr. west to Sacramento County Line. CIP#GP137	By 2026
Source: El Dorado County's Adopted 2016 Capital Improvement Program, December 6, 2016. (Section 4.1 – West Slope Road/Bridge Individual Project Summaries)		

The following figures show AM and PM peak hour traffic volume forecasts used for the analysis of Near-Term conditions:

- Figure 1 – Peak Hour Traffic Volumes and Lane Configurations – Near-Term No Project
- Figure 2 (A & B) – Peak Hour Traffic Volumes and Lane Configurations – Near-Term Plus Project



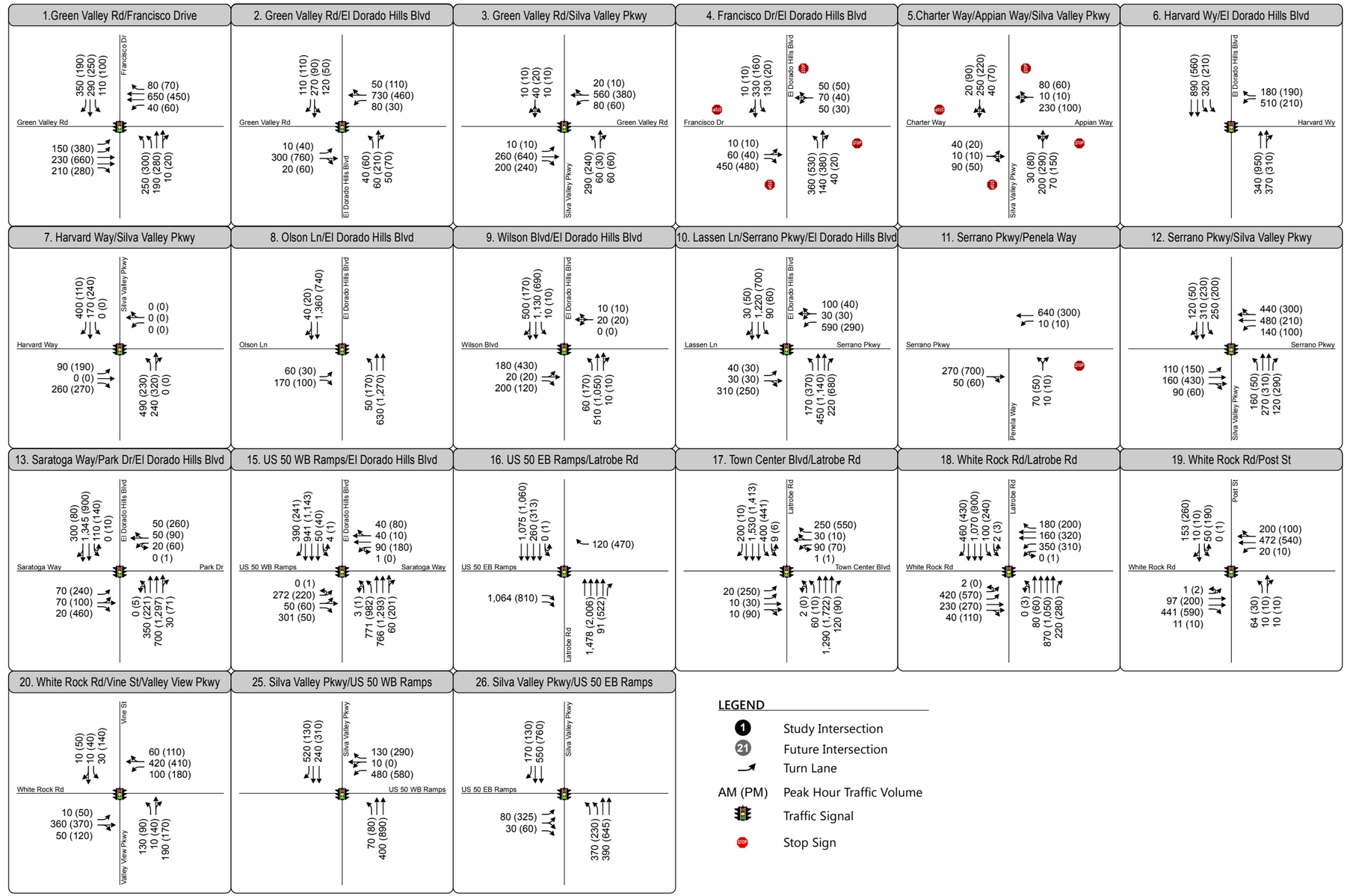


Figure 1

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Conditions

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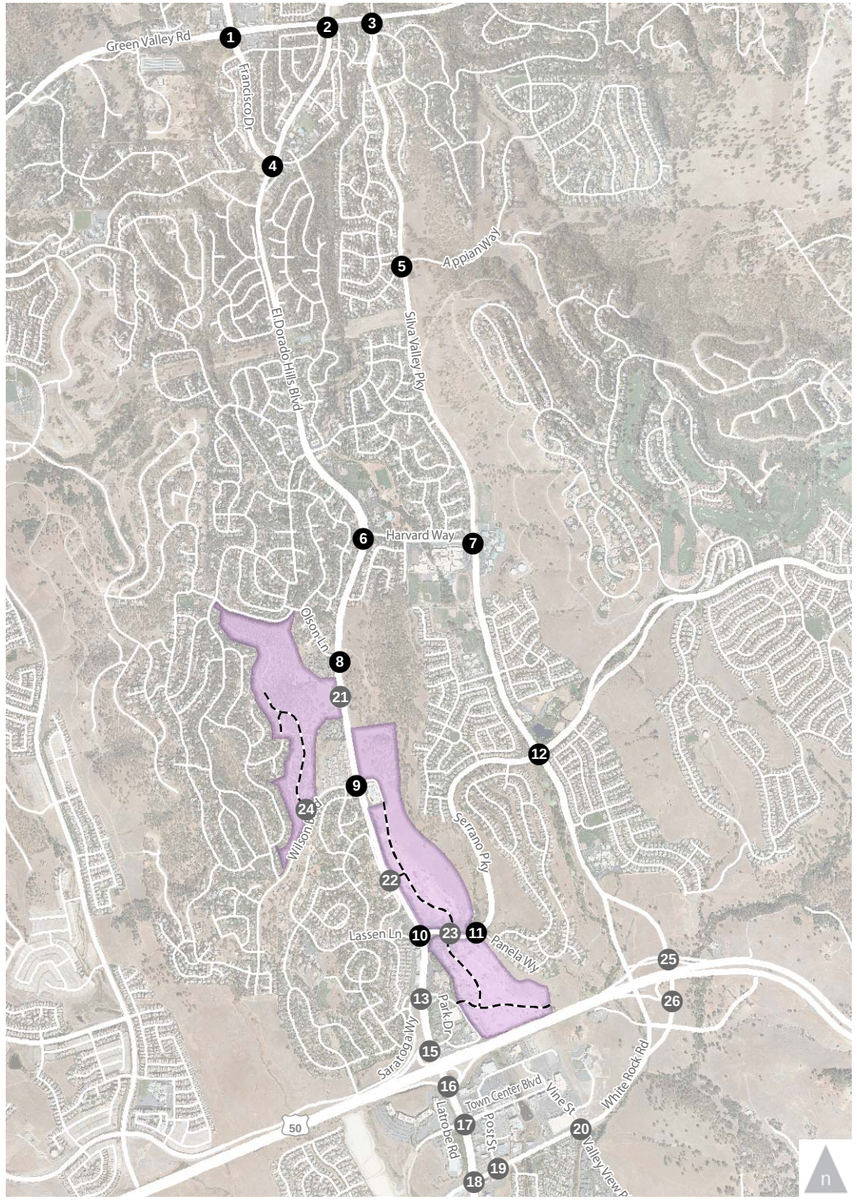

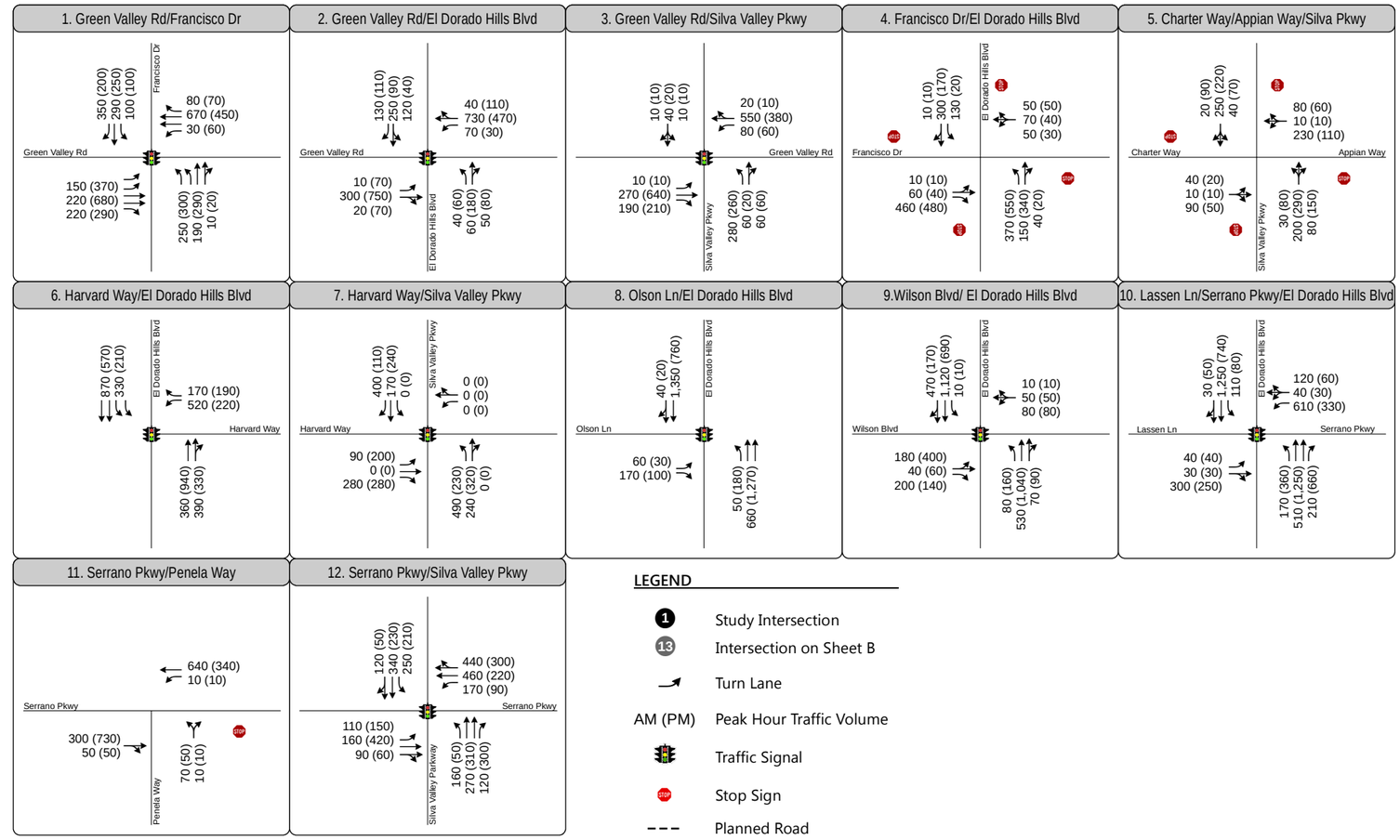

LEGEND

- 1 Study Intersection
- 13 Intersection on Sheet B
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 2A

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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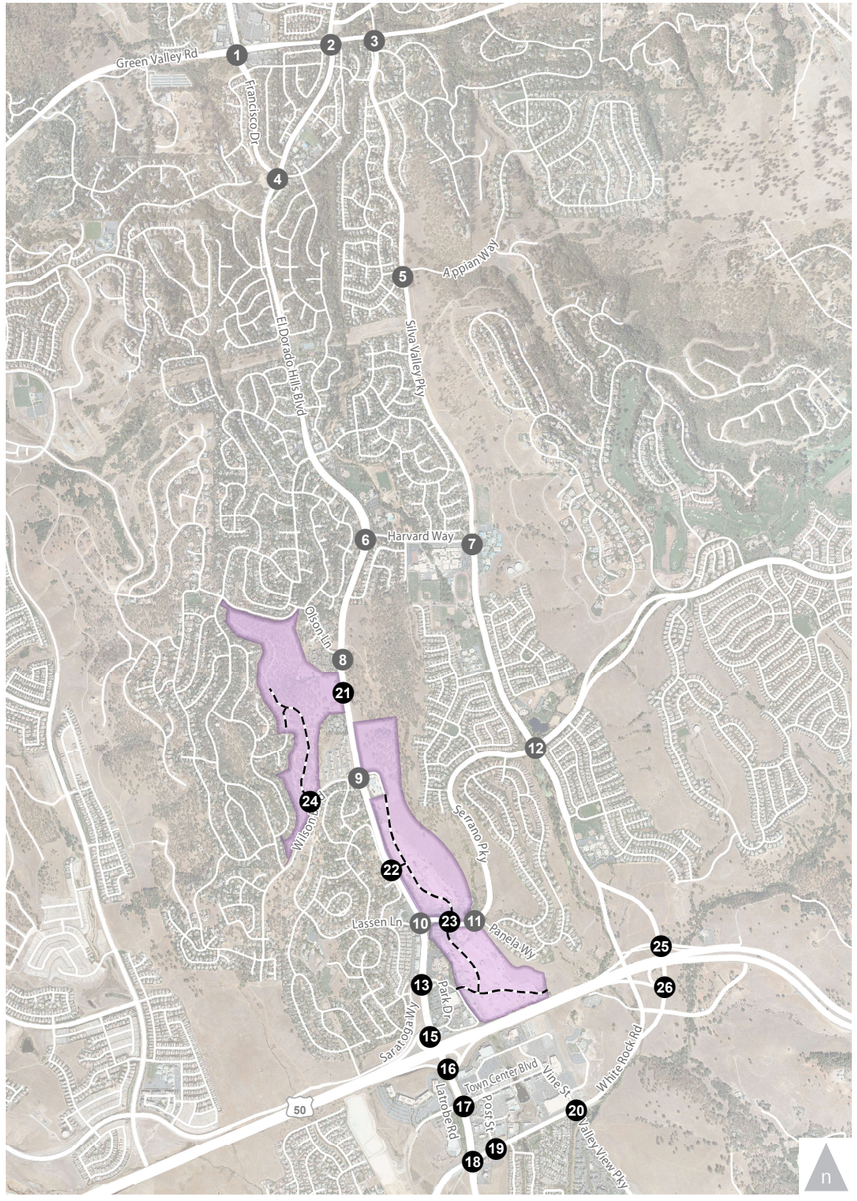

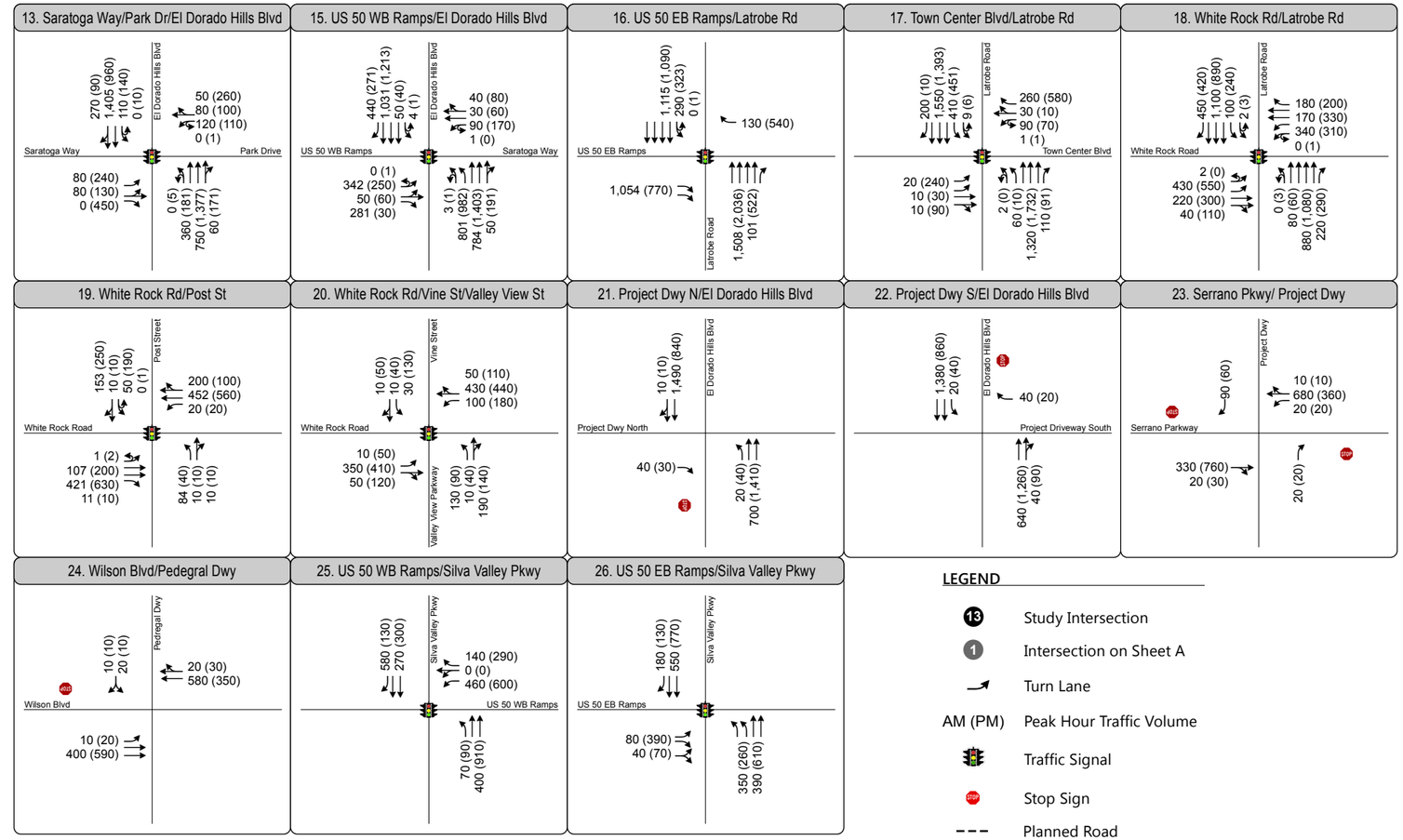

LEGEND

- 13 — Study Intersection
- 1 — Intersection on Sheet A
- Turn Lane
- AM (PM) — Peak Hour Traffic Volume
- Traffic Signal
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Figure 2B

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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NEAR-TERM NO PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions.

Intersections

Table 2 compares existing AM and PM peak hour intersection operations to near-term conditions. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years, except for the Silva Valley Parkway / Appian Way and the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersections during the AM Peak Hour.

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46	D / 37	D / 40
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 46	E / 67	D / 41
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20	C / 23	B / 17
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 17	C / 19	C / 26	B / 13
5. Silva Valley Pkwy / Appian Wy	AWSC	C / 23	B / 15	**F / 85**	D / 35
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17	C / 30	B / 15
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22	B / 13	B / 11
8. El Dorado Hills Blvd / Olson Ln	Signal	B / 12	A / 9	A / 6	A / 5
9. El Dorado Hills Blvd / Wilson Blvd	Signal	B / 20	B / 16	C / 23	D / 52
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 49	C / 21	D / 44	C / 27
11. Serrano Pkwy / Penela Wy	SSSC	D / 32	C / 23	E / 36	E / 37
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 40	C / 30	D / 39	C / 26
13. El Dorado Hills Blvd / Saratoga Way / Park Dr	Signal	B / 19	C / 20	**F / 108**	D / 47
15. El Dorado Hills Blvd / US 50 WB Ramps / Park Dr	Signal	C / 31	C / 33	D / 44	D / 37
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 33	C / 20	B / 20	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50	C / 20	D / 47
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27	C / 35	C / 33
19. White Rock Rd / Post St	Signal	C / 24	C / 31	B / 17	C / 31
20. White Rock Rd / Valley View Dr / Vine St	Signal	C / 21	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	-	-
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	-	-
23. Serrano Pkwy / Project Dwy	SSSC	-	-	-	-

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	-	-
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	B / 11	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 13	B / 10	B / 11

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 3 compares existing AM and PM peak hour freeway operations to near-term conditions. As shown in Table 3, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years.

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	30 / D	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	14 / B	26 / C	13 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	10 / A	23 / C	11 / B	23 / C
		Basic	7 / A	15 / B	7 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	11 / B	21 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	11 / A	20 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	15 / B	25 / C	18 / B	25 / C
	Bass Lake Road on-ramp	Merge	16 / B	27 / C	20 / C	27 / C

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	14 / B	25 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	18 / B	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	19 / B	26 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / C	23 / C	28 / D	29 / D
	Cambridge Road on-ramp	Merge	20 / B	13 / B	21 / C	19 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23 / C	17 / B	25 / C	23 / C
	Bass Lake Road off-ramp	Diverge	29 / D	21 / C	30 / D	28 / D
	Bass Lake Road on-ramp	Merge	32 / D	21 / C	33 / D	27 / C
	Bass Lake Road on-ramp to lane addition	Basic	29 / D	17 / B	30 / D	24 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	12 / B	19 / C	16 / B
	Silva Valley Parkway off-ramp	Diverge	13 / B	5 / A	14 / B	11 / B
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	34 / D	18 / B	36 / E	21 / C
		Basic	19 / C	11 / A	19 / C	13 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	24 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.
[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.
Source: Fehr & Peers, 2017

NEAR-TERM PLUS PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions with the addition of the project.

Intersections

Table 4 compares AM and PM peak hour intersection operations under near-term conditions without and with the proposed project. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of project trips under near-term conditions, except for the Silva Valley Parkway / Appian Way and the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersections during the AM peak hour.

- Silva Valley Parkway / Apain Way (Intersection 5) - This intersection will operate at LOS F during the AM peak hour under near-term conditions without the project. According to County policy, the addition of the project would worsen conditions, since it would add 10 trips to the intersection during the AM Peak Hour.

- El Dorado Hills Boulevard / Saratoga Way / Park Drive (Intersection 13) – The intersection will operate at LOS F during the AM peak hour under near-term conditions without the project. According to County policy, the addition of the project would worsen conditions, since it would add 10 or more trips to the intersection during the AM peak hour.

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TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 37	D / 40	D / 37	D / 41
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 41	E / 60	D / 38
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 23	B / 17	C / 22	B / 18
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 26	B / 13	C / 22	B / 14
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / 85**	D / 35	**F / 89**	E / 37
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 15	C / 32	B / 16
7. Silva Valley Pkwy / Harvard Wy	Signal	B / 13	B / 11	B / 13	B / 12
8. El Dorado Hills Blvd / Olson Ln	Signal	A / 6	A / 5	A / 6	A / 6
9. El Dorado Hills Blvd / Wilson Blvd	Signal	C / 23	D / 52	E / 59	E / 68
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 44	C / 27	E / 62	C / 32
11. Serrano Pkwy / Penela Wy	SSSC	E / 36	E / 37	E / 39	E / 43
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 39	C / 26	D / 39	C / 26
13. El Dorado Hills Blvd / Saratoga Wy / Park Dr	Signal	**F / 108**	D / 47	**F / 175**	D / 51
15. El Dorado Hills Blvd / US 50 WB Ramps / Park Dr	Signal	D / 44	D / 37	D / 41	D / 44
16. Latrobe Rd / US 50 EB Ramps	Signal	B / 20	B / 18	B / 18	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	C / 20	D / 47	C / 22	D / 44
18. Latrobe Rd / White Rock Rd	Signal	C / 35	C / 33	C / 35	C / 32
19. White Rock Rd / Post St	Signal	B / 17	C / 31	B / 19	C / 29
20. White Rock Rd / Valley View Dr / Vine St	Signal	B / 20	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	C / 18	B / 12
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	B / 11	C / 16
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 16	C / 16
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	C / 16	B / 13

TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS					
Intersection	**Control**	**Near-Term (LOS/Delay)**		**Near-Term Plus Project (LOS/Delay)**	
		AM	**PM**	**AM**	**PM**
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	A / 10	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 11	B / 10	B / 12

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS. Underlined indicates a significant impact.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 5 compares AM and PM peak hour freeway operations under near-term conditions without and with the proposed project. As shown in Table 5, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of project trips.

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS						
Freeway	**Segment**	**Facility Type**	**Near-Term Density[1] / LOS**		**Near-Term Plus Project Density[1] / LOS**	
			AM	**AM**	**AM**	**PM**
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	27 / C	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	13 / B	23 / C	14 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	11 / B	23 / C	11 / B	23 / C
		Basic	7 / A	14 / B	8 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	15 / B	20 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	14 / B	19 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	18 / B	25 / C	18 / B	25 / C

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Near-Term Density[1] / LOS		Near-Term Plus Project Density[1] / LOS	
			AM	AM	AM	PM
	Bass Lake Road on-ramp	Merge	20 / C	27 / C	21 / C	27 / C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	18 / B	24 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	23 / C	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	23 / C	25 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / D	29 / D	28 / D	27 / C
	Cambridge Road on-ramp	Merge	21 / C	19 / B	21 / C	17 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	25 / C	23 / C	25 / C	21 / C
	Bass Lake Road off-ramp	Diverge	30 / D	28 / D	30 / D	26 / C
	Bass Lake Road on-ramp	Merge	33 / D	27 / C	32 / D	25 / C
	Bass Lake Road on-ramp to lane addition	Basic	30 / D	24 / C	30 / D	22 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	16 / B	19 / C	15 / B
	Silva Valley Parkway off-ramp	Diverge	14 / B	11 / B	14 / B	10 / A
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	36 / E	21 / C	37 / E	19 / B
		Basic	19 / C	13 / B	20 / C	11 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	25 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.
[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.

Source: Fehr & Peers, 2017

RECOMMENDED IMPROVEMENTS

The following outlines recommended improvements for the identified operational deficiencies.

Intersections

The addition of the project results in an intersection impact at Silva Valley Parkway / Appian Way under Near Term Plus Project conditions. The following improvements are recommended to provide acceptable operations during the AM and PM Peak Hours.

- Install a traffic signal with protect left-turn phasing north and southbound and split phasing east and westbound
- Provide one left-turn lane and a shared through / right-turn lane on the north and southbound approaches

The intersection satisfies the Peak Hour Signal Warrant under the Near-Term Plus Project AM Peak Hour Conditions.

The addition of the project results in an intersection impact at El Dorado Hills Blvd / Saratoga Way / Park Drive under Near Term Plus Project conditions. The following improvements are recommended to provide acceptable operations during the AM and PM Peak Hours.

- Provide one left-turn lane, two through lanes, and one right-turn lane on the southbound approach.

Table 6 shows the AM and PM peak hour operations with the recommended improvements.

TABLE 6: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT (IMPROVED) CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)		Near-Term Plus Project (Improved) (LOS/Delay)	
		AM	PM	AM	PM	AM	PM
5. Silva Valley Pkwy / Appian Wy	AWSC / Signal	**F / 85**	D / 35	**F / 89**	E / 37	C / 24	B / 17
13. El Dorado Hills Blvd / Saratoga Wy / Park Dr	Signal	**F / 108**	D / 47	**F / 175**	D / 51	E / 72	D / 51

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS. Underlined indicates a significant impact.

Source: Fehr & Peers, 2017

Appendix L-6

Memorandum: Central El Dorado Hills Specific Plan VMT Analysis

TECHNICAL MEMORANDUM - DRAFT

Date: February 5, 2021

To: Kirk Bone – Serrano Associates

From: David B. Robinson – Fehr & Peers

Subject: Central El Dorado Hills Specific Plan VMT Analysis RS12-3017

This memorandum presents vehicle miles traveled (VMT) analysis of the proposed Central El Dorado Hills Specific Plan (CEDHSP).

With the implementation of Senate Bill (SB) 743, local agencies such as El Dorado County may no longer rely on vehicular delay or capacity-based analyses for California Environmental Quality Act (CEQA) impact determination. Instead, agencies must analyze transportation impacts utilizing VMT, a measure of the total distance traveled by vehicles for trips beginning or ending in the County on a typical weekday. This memorandum covers the following topics:

- SB 743
- VMT Thresholds of Significance
- VMT Estimation Methodology
- Project Summary
- VMT for Central El Dorado Hills Specific Plan

SB 743

Passed in 2013, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change is being made by replacing LOS with vehicle miles of travel (VMT). This shift in transportation impact focus is intended to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. Level of service or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review and impact fee programs.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of

Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. The provisions apply statewide as of July 1, 2020.

To help aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the *Technical Advisory on Evaluating Transportation Impacts in CEQA*[1] (December 2018) that provides guidance about the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per rate" basis.
- OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold. In other words, an office project that generates VMT per employee that is more than 85 percent of the regional VMT per employee could result in a significant impact. OPR notes that this threshold is supported by evidence that connects this level of reduction to the State's emissions goals.
- OPR recommends that where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.
- Lead agencies have the discretion to set or apply their own significance thresholds.

VMT Thresholds of Significance

In 2019, the El Dorado County Transportation Commission completed the *El Dorado County and City of Placerville SB 743 Implementation Plan*[2] (July 19, 2019) to support El Dorado County and the City of Placerville with implementation of SB 743, including the selection of VMT analysis methodology, setting thresholds of significance, and potential mitigation.

[1] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

[2] El Dorado County Transportation Commission. *El Dorado County and City of Placerville SB 743 Implementation Plan.* July 19, 2019. https://www.edcgov.us/Government/dot/Documents/Transportation%20Planning/EDCTC%20SB743%20Implementation%20Plan.pdf

With Resolution 141-2020[3] (October 6, 2020), the Board of Supervisors of the County of El Dorado adopted VMT thresholds of significance for purposes of analyzing transportation impacts under CEQA.

The County's VMT thresholds consider the VMT performance of residential and office components of a project separately, using the efficiency metrics of VMT per capita and VMT per employee, respectively. For retail components of a project, the county-wide VMT effect is analyzed. The El Dorado County VMT thresholds of significance are summarized below for each of these components:

- Residential – 15% below baseline unincorporated countywide VMT per Capita
- Commercial Office – 15% below baseline unincorporated countywide VMT per Employee
- Commercial Retail – No net increase in VMT

VMT Estimation Methodology

Consistent with Resolution 141-2020, VMT estimation was conducted using the El Dorado County Travel Demand Forecasting Model (EDCTDM). The VMT estimation process generates estimates in a manner that is consistent with OPRs Technical Advisory and the selected VMT significance thresholds outlined above.

The following section from the Technical Advisory suggests that lead agencies should use VMT estimation methodologies that account for the "full extent of vehicle travel".

> **Considerations for All Projects**. Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." (CEQA Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project's short-term and long-term effects on VMT.

To provide a full accounting of vehicle travel, the EDCTDM provides VMT estimates that include the VMT from intrazonal vehicle trips and trip length adjustments for the trips that enter or exit the area covered by the EDCTDM.

Intrazonal Trips and Trip Lengths

The VMT estimation process includes intrazonal trips in its estimates. Intrazonal trips are trips that have their origin and destination within the same traffic analysis zone (TAZ). Because these trips do not leave a TAZ, they are not assigned to the EDCTDM's roadway network. Consequently, intrazonal trips cannot be

[3] Board of Supervisors of the County of El Dorado Resolution 141-2020. https://www.edcgov.us/Government/dot/Documents/Transportation%20Planning/Executed%20Resolution%20141-2020.pdf

directly derived from the EDCTDM's network and must be estimated to provide a more complete VMT analysis. The intrazonal trip lengths are estimated by calculating half of the shortest travel distance between a given TAZ and all the other TAZs, using the EDCTDM's midday assignment. The EDCTDM uses the following four assignment periods to develop a 24-hour travel assignment:

- AM3VS.NET – AM 3-Hour Assignment
- MDVS.NET – Midday 5-Hour Assignment
- P3V.NET – PM 3-Hour Assignment
- EVV.NET – Evening 13-Hour Assignment

The different assignment periods are used to account for the affect that congestion has on accessibility (i.e., the ability to travel between two locations). It typically takes longer to travel the same distance during peak periods than it does during other times of the day. The midday 5-hour assignment period is used to calculate intrazonal travel because there is generally less traffic and less congestion (i.e., compared to the AM or PM peak periods) and is more representative of average daily conditions.

Gateway Trip Length Adjustments

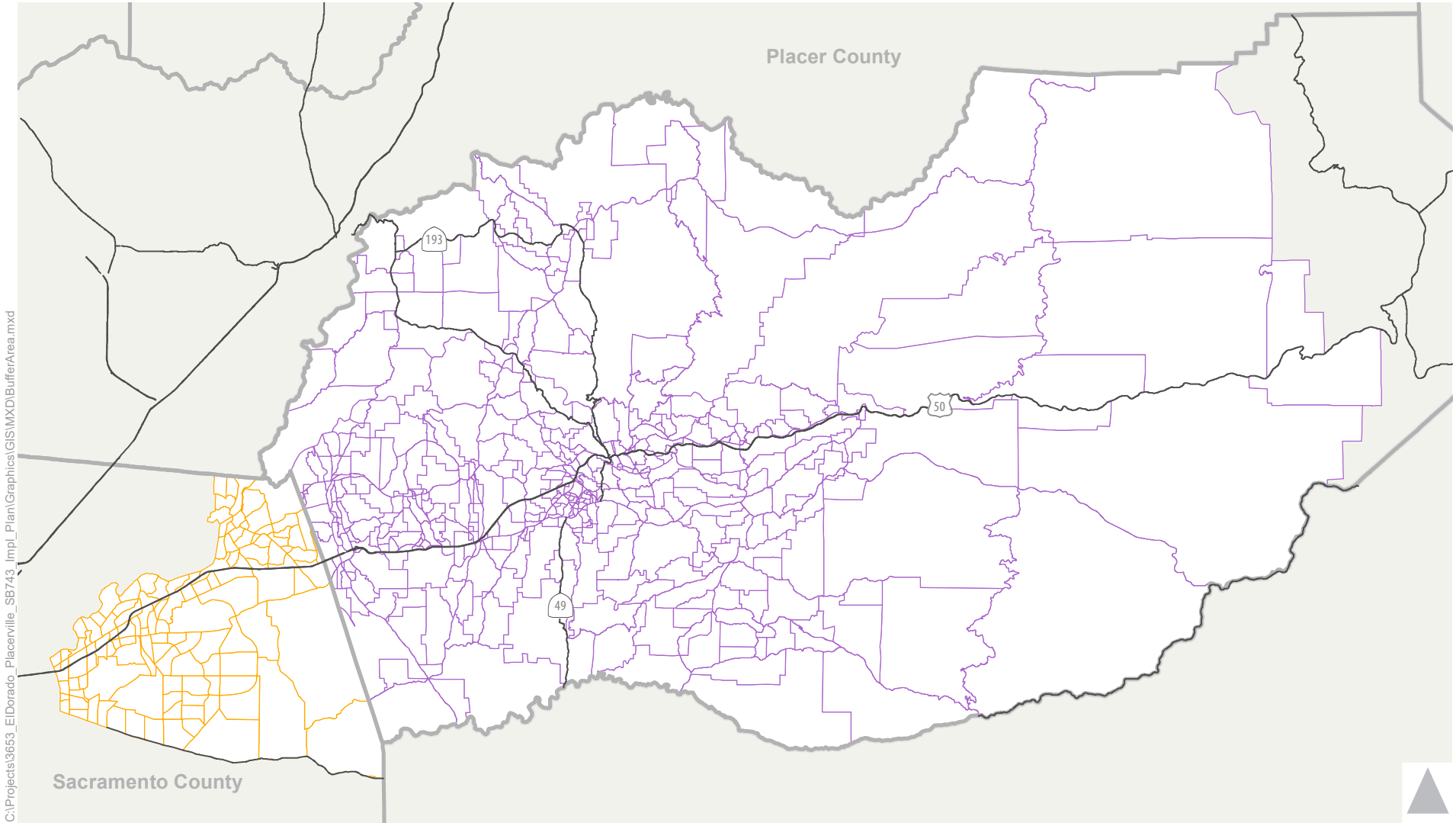
The EDCTDM includes a buffer area that extends along Highway 50 from El Dorado County into eastern Sacramento County, including the City of Folsom and City of Rancho Cordova. **Figure 1** shows the model area, including the TAZs that represent El Dorado County (purple), the buffer area (yellow), and the state highway system. The buffer area allows for more detailed modeling of travel interaction between El Dorado County and eastern Sacramento County. However, even with the buffer area, adjustments to the length of trips passing through the EDCTDM's gateway locations are necessary to account for the full length of trips throughout California.

Table 1 summarizes the average trip lengths for trips entering (XI) and exiting (IX) the EDCTDM developed using the California Statewide Travel Demand Model (CSTDM). Although not as detailed a the EDCTDM, the CSTDM can summarize the general patterns of trips made by El Dorado County residents and employees entering and leaving the County throughout California. The CSTDM scale makes it a useful tool to generate trip length estimates for trips entering or leaving the EDCTDM coverage area.

Because of the sample size limitations with the California Household Travel Survey (CHTS) data (i.e., only 163 recorded trips), trip length adjustments from the CSTDM are used. The average additional travel distance from the CSTDM shown in **Table 1** indicate the additional lengths added to the trips that pass through the EDCTDM's gateway locations.

Table 1: Average Trip Length Adjustments for Each Gateway Location				
			Average Additional Travel Distance (miles)	
Gateway Location	Direction	Gateway Node ID	Internal to External (IX) Trips	External to Internal (XI) Trips
US 50	West	650	12.41	13.08
Dillard Road	South	651	4.11	3.96
Sloughhouse Road	South	652	0.00	0.00
Grant Line Rd/Sunrise Boulevard	South	653	31.33	20.39
Excelsior Road	South	654	11.07	10.38
Bradshaw Road	South	655	11.32	8.80
Mayhew Road	South	656	0.00	0.00
Jackson Road (SR 16)	West	657	6.91	6.40
Local Access between Bradshaw Road and Excelsior Road	South	658	0.00	0.00
Eagles Nest Road	South	659	0.00	0.00
Folsom Boulevard	West	660	7.73	7.19
Kiefer Boulevard	West	661	8.88	8.54
Sunrise Boulevard	North	662	5.47	6.14
Hazel Avenue	North	663	8.16	5.41
Folsom Auburn Road	North	664	10.17	12.66
Greenback Lane	West	665	5.43	5.17
Oak Avenue	West	666	6.97	7.44
SR 49	South	667	0.00	0.00
Jackson Road/Latrobe Road/SR 49/Omo Ranch Road	South	668	15.96	14.21
Jackson Road	South	669	0.00	0.00
Latrobe Road	South	670	0.00	0.00
SR 49	North	671	18.61	16.28
SR 88	East	672	0.00	0.00
N. South Rd	South	673	3.73	3.82
US 50	East	674	19.21	18.38

Notes:
Internal to External (IX) trips are trips that begin inside the El Dorado County model area and end outside.
External to Internal (XI) trips are trips that begin outside the El Dorado County model area and end inside.
Source: California Statewide Travel Demand Model



Traffic Analysis Zones (TAZs)

- TAZs within the County
- Buffer Area
- Regional Centerlines
- SACOG Counties

Figure 1
El Dorado County Model (2018)
Traffic Analysis Zones within El Dorado County and the Buffer Area

Study Area Network Refinements

The EDCTDM is a countywide model developed and maintained by the County for traffic analysis related to the General Plan and Traffic Impact Fee Program. Consistent with these applications, the model includes major transportation facilities, including County arterials like El Dorado Hills Boulevard and State facilities like US 50, and a TAZ system that is at a corresponding level of detail. The EDCTDM does not include local and collector roadways. Therefore, the EDCTDM may require refinement for different applications.

The 2017 California Regional Transportation Plan Guidelines (CTC, January 2017) provides guidance on the application of travel demand models. Specifically, that travel demand models should be at an appropriate scale relative to the analysis being conducted. Consistent with this guidance, additional roadway network and TAZ detail was added in El Dorado Hills north of US 50, south of Green Valley Road, east of Sophia Parkway, and west of El Dorado Hills Boulevard to better reflect actual travel time and distance between El Dorado Hills and the City of Folsom. **Figure 2** compares the traffic analysis zone and roadway network detail with and without modification.

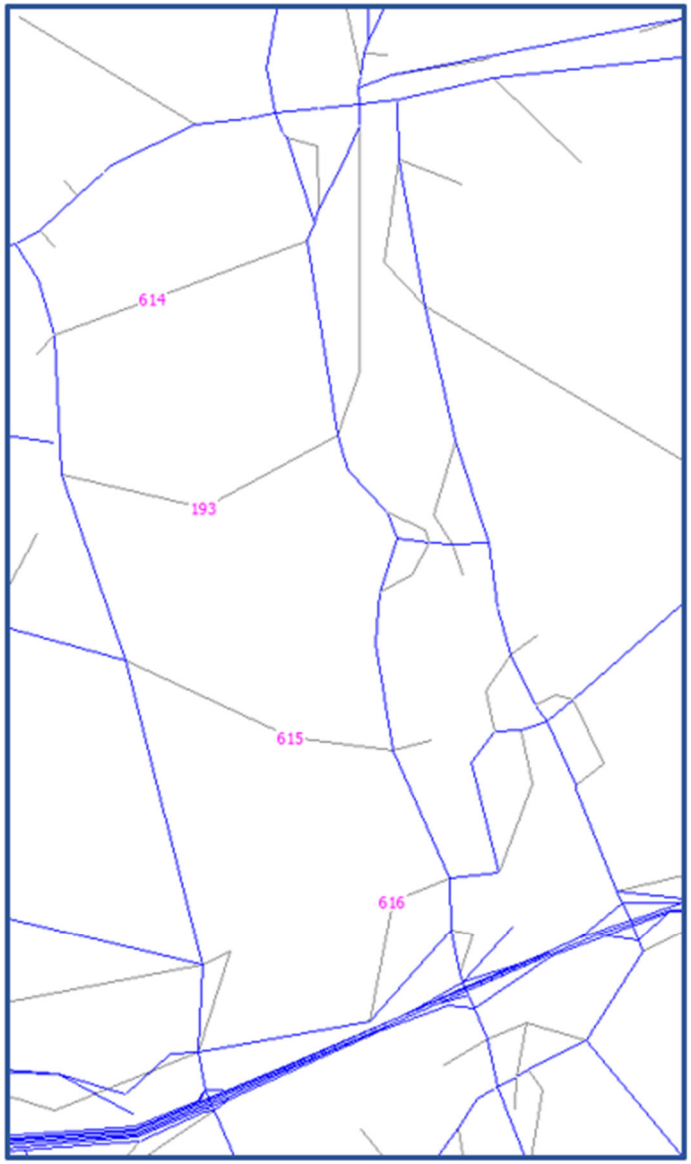
Without modification, the EDCTDM uses 4 TAZs to represent most of the land use in this area with local roadway access modeled using special model links, referred to as TAZ centroid connectors. TAZ centroid connectors provide access for the local development but not for other trips on the network. With this roadway network coding trip lengths are shorter for the land uses represented by the 4 TAZs.

The modified network increased the TAZ detail from 4 to 22 and added roadway links, instead of TAZ centroid connectors, for local access between El Dorado Hills and the City of Folsom in this area. The following public roadway connections were added between El Dorado Hills Boulevard and Sophia Parkway/Empire Ranch Road:

- North Connection: Brittany Way – Suffolk Way – Elmores Way
- North Central Connection: Olson Lane – Gillette Drive – Ridgeview Drive – Muse Drive – Mossridge Way – Powers Drive – Julie Ann Way – Beatty Drive – Alexandra Drive
- South Central Connection: Wilson Boulevard –Ridgeview Drive – Powers Drive – Montridge Way – Crestline Circle – Via Treviso – Via Barlogio – Hildebrand Circle – Woodhead Street
- South Connection: Wilson Boulevard (El Dorado Hills Boulevard to Saratoga Way)

Figure 2 – EDCTDM Model Network Refinements

Without Modification



With Modification

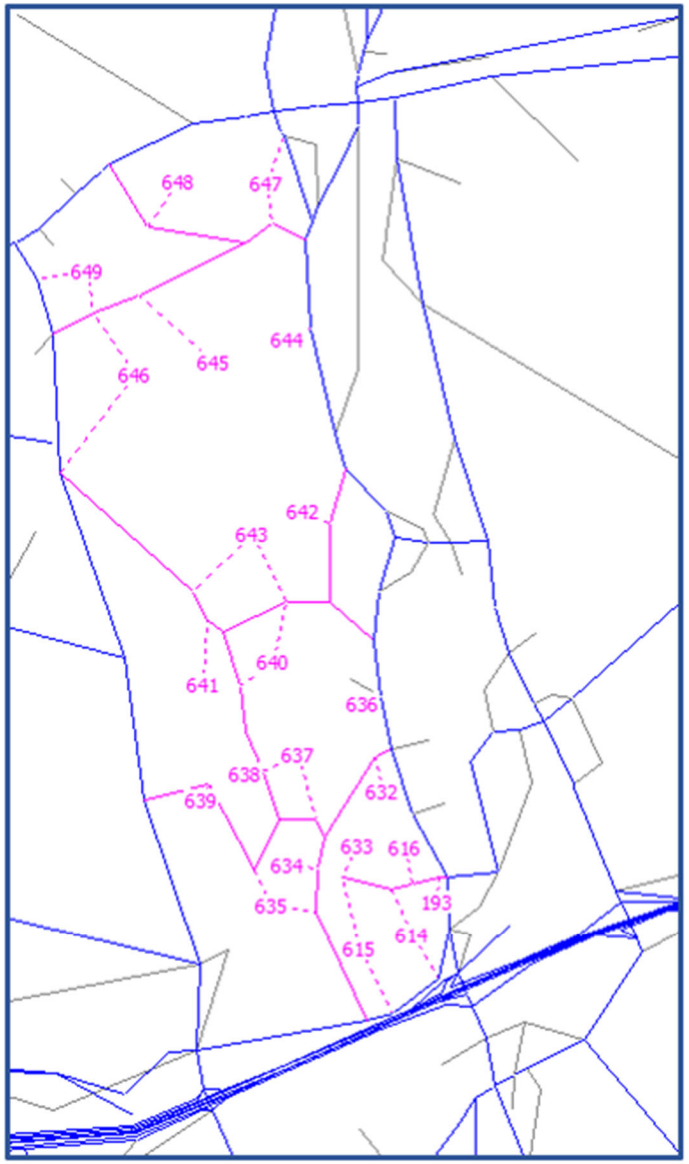


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Table 2 compares the estimated travel time from the EDCTDM after modification to field measured travel times. As shown, the model's estimated travel time is consistent with and comparable to field measurements. Therefore, the model is appropriate for application and is more representative of actual travel times and distance than the EDCTDM prior to modification since the model did not include these connections.

Table 2: Travel Time Comparison (Model Estimate vs Field Measurement)			
	Travel Time (minutes)		
Added Roadway Connection	Model Estimate	Field Measurement	Difference (Model – Field)
North	3.3	3.0	+0.3
North Central	5.2	5.1	+0.1
South Central	4.4	4.7	-0.3
South	2.5	2.7	-0.2

The TAZ and roadway network modifications shown in **Figure 2** were made to both the Base Year (2018) and Cumulative Year (2040) EDCTDMs. The modified models were used for the analysis of the proposed project to maintain analysis consistency.

Table 3 compares the VMT efficiency metrics for residential and commercial office land uses in unincorporated El Dorado County with and without the roadway network refinements outlined above and on **Figure 2**. As shown, the VMT efficiency metrics for both residential and commercial office land use increased with the network refinement. The direction and magnitude of the change is reasonable and in the correct direction relative to the network refinements made.

Table 3: VMT Efficiency Metrics with Network Refinements				
	VMT Efficiency Metrics (Unincorporated El Dorado County			
Land Use	Without Refinements	With Refinements	Difference	VMT Threshold (With Refinements)[1]
2018				
Residential	22.5	22.7	+0.2	19.3
Commercial Office	12.8	13.0	+0.2	11.1
2040				
Residential	16.9	17.1	+0.2	14.5
Commercial Office	11.7	12.0	+0.3	10.2

Notes:
[1]85% of Unincorporated El Dorado County VMT per Capita (Residential) and VMT per Employee (Commercial Office)

The following steps outline the method we used to forecast VMT under existing and cumulative conditions:

- Existing Conditions (2018) – For existing conditions (i.e., baseline conditions), the base year model land use and transportation network were used to estimate baseline (2018) average VMT per capita and average VMT per employee for unincorporated El Dorado County.

  For existing plus project conditions, the project's land use was added to the model, increasing the base year population and employment. Project-generated average VMT per capita and VMT per employee were calculated.

- Cumulative Conditions (2040) – For cumulative conditions, the future year model was used to estimate cumulative (2040) average VMT per capita and average VMT per employee.

  For cumulative plus project conditions, the project's land use was added to the model, increasing the cumulative year population and employment. Project-generated average VMT per capita and VMT per employee were calculated.

VMT Calculation for Each TAZ

VMT is estimated using a three-step process. In the first step, travel distance between each pair of TAZs for using the loaded networks for the four model time periods (AM Peak Period, Midday Period, PM Peak Period, and Evening Period). Using the loaded network accounts for any increases in trip distance that may result from traffic congestion. In this process, the additional trip lengths associated with the model gateways are added to the trip length estimates. The distance of intrazonal trips is estimated as outlined above.

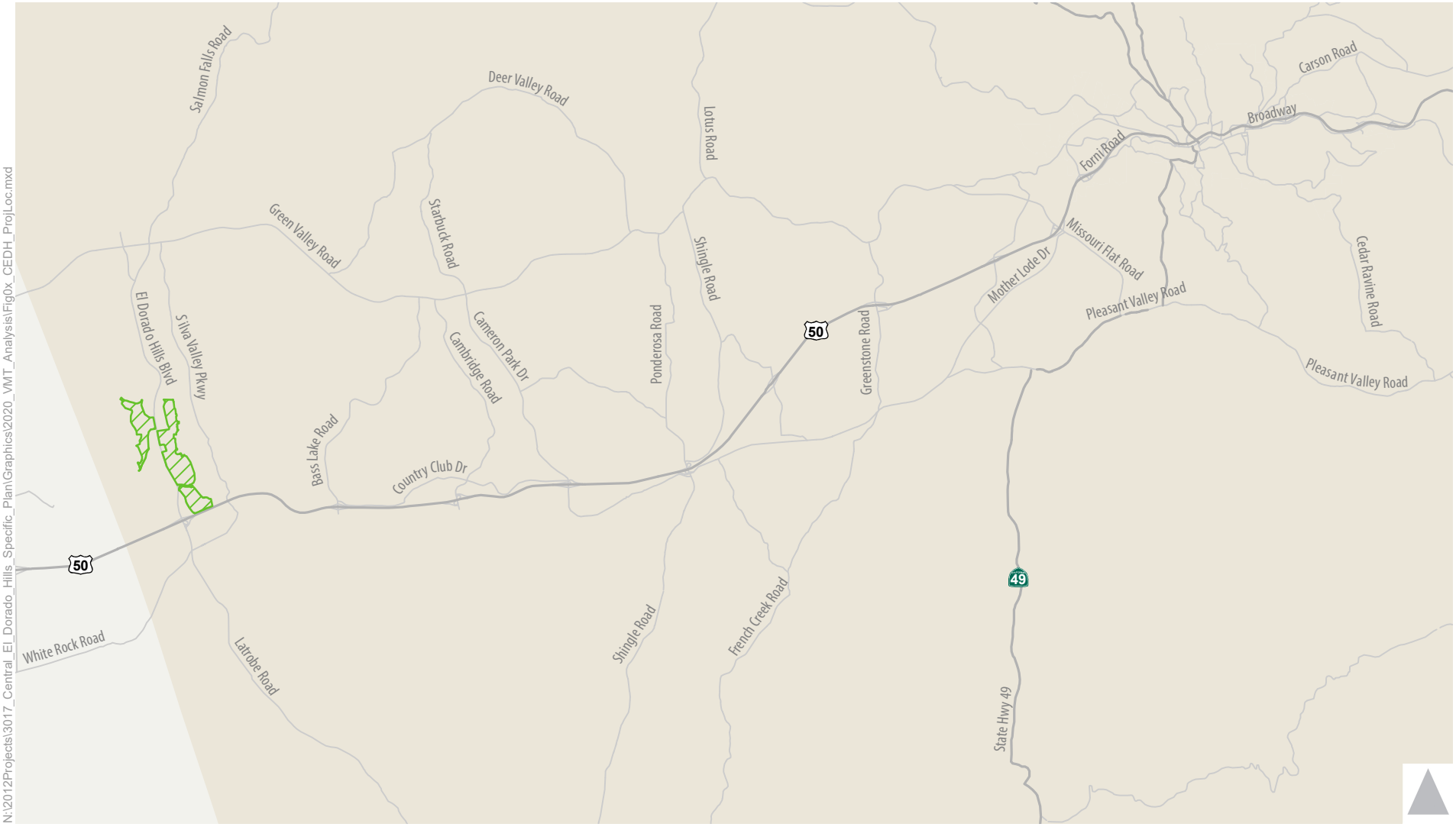
The second step of the process calculates the VMT for travel between each TAZ pair. The number of vehicle trips modeled between each TAZ pair is multiplied by the trip lengths to estimate the VMT associated with the travel between each TAZ pair for each time period. The VMT from the intrazonal trips is also included in the VMT estimates.

The third step estimates the home-based and home-based work VMT. These estimates are calculated by determining the percentage of vehicle productions and attractions by trip purpose and direction (departures and returns). These percentages are then applied to the total VMT estimates, to determine the VMT by trip purpose and direction. The home-based VMT summarizes VMT by the origin TAZ. The home-based work VMT summarizes VMT by the destination TAZ. The use of home-based and home-based work VMT allows independent analysis of residential and commercial project components.

Project Summary

The Central El Dorado Hills Specific Plan includes two planning areas, Serrano Westside and Pedregal. **Figure 3** shows the location of the project. As proposed, the project includes residential, commercial, park and open space land use. **Table 4** summarizes the project's trip generating land uses.

Table 4: Central El Dorado Hills Specific Plan Land Use					
Land Use					
Category		**Units**	**Serrano Westside**	**Pedregal**	**Total**
Residential	Single Family	Dwellings	433	37	470
	Multi-Family		330	200	530
		Total	763	237	1,000
Non-Residential	Commercial (Civic)	Square Feet	50	-	50
	Village Park	Acres	15	-	15



Central El Dorado Hills Specific Plan

El Dorado County

Figure 3

Project Location

VMT for Central El Dorado Hills Specific Plan

Consistent with the County's VMT methodology, the residential and commercial office land use components are analyzed separately. **Table 5** summarizes the VMT analysis for the residential component and **Table 6** summarizes the VMT analysis for the commercial office component. The VMT calculations for all scenarios are included in **Attachment A**.

Table 5: Central El Dorado Hills Specific Plan's VMT – Residential Component				
Scenario	Analysis Geography	VMT	Total Population	VMT per Capita
2018 Baseline	Unincorporated El Dorado County	3,088,005	136,108	22.7
2018 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Capita)				19.3
2018 Baseline Plus Project	Project Area	48,016	2,848	16.9
VMT Threshold Exceeded?				**No**
2040 Baseline	Unincorporated El Dorado County	3,102,953	181,914	17.1
2040 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Capita)				14.5
2040 Baseline Plus Project	Project Area	37,309	2,848	13.1
VMT Threshold Exceeded?				**No**

Table 6: Central El Dorado Hills Specific Plan's VMT – Commercial Office Component				
Scenario	Analysis Geography	VMT	Total Employment	VMT per Employee
2018 Baseline	Unincorporated El Dorado County	428,483	33,076	13.0
2018 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Employee)				11.1
2018 Baseline Plus Project	Project Area	921	100	9.2
VMT Threshold Exceeded?				**No**
2040 Baseline	Unincorporated El Dorado County	675,594	56,413	12.0
2040 Baseline Threshold (85% of Unincorporated El Dorado County Total Average VMT per Employee)				10.2
2040 Baseline Plus Project	Project Area	813	100	8.1
VMT Threshold Exceeded?				**No**

As shown, the project's VMT per Capita for the residential component and VMT per Employee for the commercial office component would not exceed the VMT threshold under existing or cumulative conditions. Therefore, the project's impact on VMT would be less than significant.

Attachment A

DRAFT

2018 No Project

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VMT Summary by Jurisdiction - 2018 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	297,880	69,463	90,185	20.9	10.6	11.8	2,914	6,581	7,639	14,220	2.26
Unincorporated El Dorado County	3,697,567	3,088,005	428,483	21.9	22.7	13.0	55,055	136,108	33,076	169,184	2.47
Threshold (85% of Unincorporated El Dorado County)					19.3	11.0					

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	4,166	2,626	327	46	75	16	91	46.0
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,118	32,047	463	525	1,185	34	1,219	19.0
3.00	Unincorporated El Dorado County (Remainder Area)	0	2,949	3,745	42	34	88	0	88	33.6
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,536	1,540	52	16	34	2	36	43.0
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,866	4,046	27	33	73	0	73	39.5
6.00	Unincorporated El Dorado County (Remainder Area)	0	12,336	15,861	354	270	646	9	655	18.8
7.00	Unincorporated El Dorado County (Remainder Area)	0	25,856	33,452	993	516	1,119	71	1,190	21.7
8.00	Unincorporated El Dorado County (Remainder Area)	0	2,718	792	751	14	36	60	96	28.3
9.00	Unincorporated El Dorado County (Remainder Area)	0	28,499	33,395	1,708	482	1,240	117	1,357	21.0
10.00	Outside of County	0	0	0	0	0	0	0	0	-
11.00	Outside of County	0	0	0	0	0	0	0	0	-
12.00	Outside of County	0	39,353	30,977	1,872	663	1,741	96	1,837	21.4
13.00	Outside of County	0	31,126	35,939	676	775	1,995	0	1,995	15.6
14.00	Outside of County	0	64,157	72,184	1,543	1,502	4,068	32	4,100	15.6
15.00	Outside of County	0	497	523	10	10	23	0	23	22.1
16.00	Outside of County	0	56,270	8,955	7,530	149	378	434	812	69.3
17.00	Outside of County	0	0	0	0	0	0	0	0	-
18.00	Outside of County	0	1,564	620	67	41	116	0	116	13.5
19.00	Outside of County	0	0	0	0	0	0	0	0	-
20.00	Outside of County	0	219	18	118	1	1	5	6	36.5
21.00	Outside of County	0	5,220	50	2,538	1	2	112	114	45.8
22.00	Outside of County	0	2,239	269	579	2	6	23	29	77.2
23.00	Outside of County	0	58,930	23,741	6,314	101	273	244	517	114.1
24.00	Outside of County	0	48	30	1	1	1	0	1	47.5
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	0	0	0	0	0	0	0	-
27.00	Outside of County	0	1,320	266	500	2	6	22	28	47.1
28.00	Outside of County	0	12,524	14,738	377	123	332	6	338	37.0
29.00	Outside of County	0	7,845	9,174	242	72	192	5	197	39.8
30.00	Outside of County	0	6,050	0	3,192	0	0	133	133	45.5
31.00	Outside of County	0	5,557	4,119	1,039	44	94	45	139	39.9
32.00	Outside of County	0	24,953	6,831	622	676	1,526	0	1,526	16.3
33.00	Outside of County	0	0	0	0	0	0	0	0	-
34.00	Outside of County	0	8,755	9,498	584	75	191	16	207	42.3
35.00	Outside of County	0	0	0	0	0	0	0	0	-
36.00	Outside of County	0	0	0	0	0	0	0	0	-
37.00	Outside of County	0	5,042	0	2,670	0	0	178	178	28.3
38.00	Outside of County	0	0	0	0	0	0	0	0	-
39.00	Outside of County	0	24,310	22,457	3,316	666	1,569	227	1,796	13.5
40.00	Outside of County	0	112,464	25,842	18,883	916	2,079	1,839	3,918	28.7
41.00	Outside of County	0	30,906	26,574	3,958	544	1,271	203	1,474	21.0
42.00	Outside of County	0	0	0	0	0	0	0	0	-
43.00	Outside of County	0	53,527	63,304	1,203	828	2,045	0	2,045	26.2
44.00	Outside of County	0	79,459	76,876	3,256	1,069	2,614	95	2,709	29.3
45.00	Outside of County	0	101,352	24,241	14,670	906	2,057	1,357	3,414	29.7
46.00	Outside of County	0	0	0	0	0	0	0	0	-
47.00	Outside of County	0	100,800	0	42,751	0	0	2,398	2,398	42.0
48.00	Outside of County	0	71,735	71,936	3,413	1,203	3,068	121	3,189	22.5
49.00	Outside of County	0	152,679	0	78,101	0	0	4,642	4,642	32.9
50.00	Outside of County	0	120,870	85,622	19,287	1,025	2,430	826	3,256	37.1
51.00	Outside of County	0	127,937	69,592	18,217	1,768	4,253	1,237	5,490	23.3
52.00	Outside of County	0	45,479	25,262	4,454	297	667	240	907	50.1
53.00	Outside of County	0	113,884	87,730	8,465	1,335	3,452	377	3,829	29.7
54.00	Outside of County	0	93,497	36,350	38,701	476	1,153	1,827	2,980	31.4
55.00	Outside of County	0	82,632	38,237	12,452	675	1,583	800	2,383	34.7
56.00	Outside of County	0	34,972	40,102	993	820	1,933	4	1,937	18.1
57.00	Outside of County	0	162,092	0	113,336	0	0	7,375	7,375	22.0
58.00	Outside of County	0	43,751	24,397	6,802	465	1,160	388	1,548	28.3
59.00	Outside of County	0	426	110	173	2	4	9	13	32.7
60.00	Outside of County	0	205,449	17,434	103,017	238	478	4,236	4,714	43.6
61.00	Outside of County	0	277,015	193,125	22,414	2,205	5,227	797	6,024	46.0
62.00	Outside of County	0	55,666	318	26,745	4	8	1,150	1,158	48.1

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	114,425	18,521	51,559	340	756	3,083	3,839	29.8
64.00	Outside of County	0	79,435	60,433	11,462	865	2,156	560	2,716	29.2
65.00	Outside of County	0	10,503	11,624	218	136	338	0	338	31.1
66.00	Outside of County	0	62,374	51,041	4,282	826	1,950	172	2,122	29.4
67.00	Outside of County	0	10,409	0	2,797	0	0	178	178	58.5
68.00	Outside of County	0	55,078	32,867	11,777	616	1,314	679	1,993	27.6
69.00	Outside of County	0	143,872	90,934	38,058	1,588	4,122	2,320	6,442	22.3
70.00	Outside of County	0	210,170	801	126,672	0	0	6,956	6,956	30.2
71.00	Outside of County	0	107,548	111,353	4,863	1,231	3,088	121	3,209	33.5
72.00	Outside of County	0	247,277	358	132,064	0	0	5,133	5,133	48.2
73.00	Outside of County	0	122,122	0	80,001	0	0	5,627	5,627	21.7
74.00	Outside of County	0	176,117	21,981	81,378	435	1,022	4,728	5,750	30.6
75.00	Outside of County	0	106,895	77,981	27,259	1,936	4,401	1,866	6,267	17.1
76.00	Outside of County	0	42,176	23,721	5,013	508	1,352	297	1,649	25.6
77.00	Outside of County	0	160,532	79,023	34,071	1,155	2,810	1,659	4,469	35.9
78.00	Outside of County	0	88,858	0	23,882	0	0	1,567	1,567	56.7
79.00	Outside of County	0	971	0	0	0	0	20	20	48.6
80.00	Outside of County	0	50,636	0	23,931	0	0	1,410	1,410	35.9
81.00	Outside of County	0	160,628	0	83,068	0	0	4,951	4,951	32.4
82.00	Outside of County	0	56,271	0	29,838	0	0	1,787	1,787	31.5
83.00	Outside of County	0	0	0	0	0	0	0	0	-
84.00	Outside of County	0	64,935	48,607	6,599	1,226	2,817	405	3,222	20.2
85.00	Outside of County	0	71,715	60,548	4,739	1,295	3,246	253	3,499	20.5
86.00	Outside of County	0	111,986	74,912	11,544	1,968	4,487	754	5,241	21.4
87.00	Outside of County	0	102,508	66,622	12,953	2,114	4,344	800	5,144	19.9
88.00	Outside of County	0	86,778	48,055	11,980	1,099	2,679	762	3,441	25.2
89.00	Outside of County	0	11,255	0	4,682	0	0	293	293	38.4
90.00	Outside of County	0	53,226	0	10,922	0	0	592	592	89.9
91.00	Outside of County	0	123,481	16,293	50,210	383	961	4,100	5,061	24.4
92.00	Outside of County	0	59,947	56,565	3,275	1,139	2,709	141	2,850	21.0
93.00	Outside of County	0	0	0	0	0	0	0	0	-
94.00	Outside of County	0	432	480	9	6	15	0	15	28.8
95.00	Outside of County	0	924	0	440	0	0	27	27	34.2
96.00	Outside of County	0	343	0	174	0	0	12	12	28.6
97.00	Outside of County	0	110	103	2	2	4	0	4	27.5
98.00	Outside of County	0	75,981	352	27,272	10	25	2,289	2,314	32.8
99.00	Outside of County	0	49,798	27,047	11,872	791	1,944	958	2,902	17.2
100.00	Outside of County	0	6,021	7,034	128	84	203	0	203	29.6
101.00	Outside of County	0	12,099	0	6,018	0	0	320	320	37.8
102.00	Outside of County	0	6,000	5,243	996	51	153	53	206	29.1
103.00	Outside of County	0	58,984	68,339	1,381	910	2,200	0	2,200	26.8
104.00	Outside of County	0	0	0	0	0	0	0	0	-
105.00	Outside of County	0	0	0	0	0	0	0	0	-
106.00	Outside of County	0	2,868	0	1,439	0	0	70	70	41.0
107.00	Outside of County	0	86,625	0	45,771	0	0	3,135	3,135	27.6
108.00	Outside of County	0	437	0	202	0	0	15	15	29.1
109.00	Outside of County	0	18,922	0	4,255	0	0	238	238	79.5
110.00	Outside of County	0	63,976	8,774	28,943	205	426	1,610	2,036	31.4
111.00	Outside of County	0	136,717	12,325	24,963	350	728	1,151	1,879	72.8
112.00	Outside of County	0	195,988	38,217	41,788	747	1,946	2,117	4,063	48.2
113.00	Outside of County	0	88,904	0	47,000	0	0	4,022	4,022	22.1
114.00	Outside of County	0	40,814	30,283	7,763	770	1,950	660	2,610	15.6
115.00	Outside of County	0	0	0	0	0	0	0	0	-
116.00	Outside of County	0	0	0	0	0	0	0	0	-
117.00	Outside of County	0	87,124	32,807	23,801	401	1,031	1,492	2,523	34.5
118.00	Outside of County	0	89,463	81,373	3,775	2,313	5,898	187	6,085	14.7
119.00	Outside of County	0	171,753	7,945	75,523	214	522	6,545	7,067	24.3
120.00	Outside of County	0	203,382	0	58,569	0	0	4,131	4,131	49.2
121.00	Outside of County	0	166,199	57,288	22,361	1,642	4,261	1,724	5,985	27.8
122.00	Outside of County	0	67,095	20,235	12,428	619	1,530	1,071	2,601	25.8
123.00	Outside of County	0	52,834	7,535	10,726	200	529	855	1,384	38.2
124.00	Outside of County	0	80,923	55,078	5,562	1,240	2,628	328	2,956	27.4

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	59,993	10,940	9,293	389	801	781	1,582	37.9
126.00	Outside of County	0	15,688	4,356	1,784	136	279	129	408	38.4
127.00	Outside of County	0	38,513	34,433	2,025	800	1,693	117	1,810	21.3
128.00	Outside of County	0	85,653	40,306	11,052	999	2,062	767	2,829	30.3
129.00	Outside of County	0	42,715	46,640	819	994	2,246	0	2,246	19.0
130.00	Outside of County	0	31,447	10,020	4,065	369	740	416	1,156	27.2
131.00	Outside of County	0	75,374	20,584	13,616	607	1,234	1,278	2,512	30.0
132.00	Outside of County	0	33,903	20,607	3,968	407	894	260	1,154	29.4
133.00	Outside of County	0	132,673	63,999	14,735	2,087	5,211	1,475	6,686	19.8
134.00	Outside of County	0	70,311	32,120	18,482	1,075	2,460	1,492	3,952	17.8
135.00	Outside of County	0	43,514	0	23,772	0	0	2,114	2,114	20.6
136.00	Outside of County	0	31,862	28,679	1,647	669	1,669	82	1,751	18.2
137.00	Outside of County	0	138,587	104,455	9,379	2,349	6,735	673	7,408	18.7
138.00	El Dorado Diamond Springs	0	5,531	5,338	430	161	367	25	392	14.1
139.00	El Dorado Diamond Springs	0	3,994	1,768	670	62	135	55	190	21.0
140.00	El Dorado Diamond Springs	0	24,371	265	5,033	10	27	383	410	59.4
141.00	Unincorporated El Dorado County (Remainder Area)	0	2,082	1,974	80	21	49	2	51	41.0
142.00	Unincorporated El Dorado County (Remainder Area)	0	7,364	7,976	178	157	353	0	353	20.9
143.00	Unincorporated El Dorado County (Remainder Area)	0	3,601	3,742	133	93	209	4	213	16.9
144.00	Unincorporated El Dorado County (Remainder Area)	0	3,896	4,004	290	74	186	19	205	19.0
145.00	Unincorporated El Dorado County (Remainder Area)	0	802	837	22	30	69	0	69	11.7
146.00	El Dorado Diamond Springs	0	3,810	1,778	632	64	145	51	196	19.5
147.00	El Dorado Diamond Springs	0	4,298	4,544	135	159	359	0	359	12.0
148.00	Outside of County	0	189,218	257,141	6,738	2,250	5,293	137	5,430	34.8
149.00	Shingle Springs	0	6,891	1,697	1,466	37	98	112	210	32.8
150.00	Unincorporated El Dorado County (Remainder Area)	0	7,722	8,487	225	109	260	3	263	29.4
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,453	2,003	20	23	67	0	67	21.6
152.00	Shingle Springs	0	9,916	6,134	1,454	122	315	99	414	24.0
153.00	Unincorporated El Dorado County (Remainder Area)	0	6,431	6,651	217	178	388	5	393	16.4
154.00	Unincorporated El Dorado County (Remainder Area)	0	3,340	3,259	235	84	196	16	212	15.7
155.00	Shingle Springs	0	2,686	3,144	57	62	161	0	161	16.6
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,329	2,755	39	27	67	0	67	34.6
157.00	El Dorado Hills	0	11,314	14,582	188	274	807	0	807	14.0
158.00	Cameron Park	0	22,047	24,487	1,060	598	1,373	72	1,445	15.3
159.00	Cameron Park	0	12,635	16,235	239	340	878	1	879	14.4
160.00	Shingle Springs	0	7,853	9,562	164	194	501	0	501	15.7
161.00	El Dorado Hills	0	6,106	7,825	93	105	283	0	283	21.6
162.00	El Dorado Hills	0	71,569	99,177	978	1,503	4,414	0	4,414	16.2
163.00	El Dorado Hills	0	350	364	39	7	21	4	25	14.2
164.00	El Dorado Hills	0	27,784	0	14,365	0	0	1,232	1,232	22.6
165.00	El Dorado Hills	0	16,363	19,623	373	373	997	0	997	16.4
166.00	Outside of County	0	41,447	42,198	1,373	749	1,892	49	1,941	21.4
167.00	El Dorado Hills	0	50,123	52,254	2,138	1,297	2,904	55	2,959	16.9
168.00	El Dorado Hills	0	30,546	36,220	944	1,125	2,519	9	2,528	12.1
169.00	El Dorado Hills	0	102,894	154	21,197	0	0	1,688	1,688	61.0
170.00	El Dorado Hills	0	27,560	0	15,243	0	0	1,357	1,357	20.3
171.00	El Dorado Hills	0	14,234	12,753	758	441	790	20	810	17.6
172.00	El Dorado Hills	0	8,204	0	1,963	0	0	168	168	48.8
173.00	El Dorado Hills	0	29,687	0	6,376	0	0	547	547	54.3
174.00	Unincorporated El Dorado County (Remainder Area)	0	2,218	1,539	249	15	37	11	48	45.9
175.00	Unincorporated El Dorado County (Remainder Area)	0	955	876	97	11	26	5	31	30.6
176.00	Unincorporated El Dorado County (Remainder Area)	0	2,048	2,324	41	29	69	0	69	29.6
177.00	Unincorporated El Dorado County (Remainder Area)	0	827	702	119	10	25	7	32	25.9
178.00	Unincorporated El Dorado County (Remainder Area)	0	2,085	2,421	40	30	77	0	77	27.0
179.00	Unincorporated El Dorado County (Remainder Area)	0	10	17	0	1	3	0	3	3.7
180.00	El Dorado Hills	0	3,243	3,924	54	58	149	0	149	21.7
181.00	El Dorado Hills	0	1,418	8	645	1	3	58	61	23.4
182.00	Cameron Park	0	51,882	68,033	795	1,186	3,202	0	3,202	16.2
183.00	Unincorporated El Dorado County (Remainder Area)	0	6,525	7,645	127	152	355	0	355	18.4
184.00	Cameron Park	0	28,763	20,492	3,325	357	964	300	1,264	22.8
185.00	Cameron Park	0	5,401	6,636	94	149	342	0	342	15.8
186.00	Cameron Park	0	647	102	236	3	7	28	35	18.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
187.00	Cameron Park	0	10,281	9,793	1,023	239	549	85	634	16.2
188.00	Cameron Park	0	7,327	7,048	803	188	432	69	501	14.6
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,895	3,688	44	37	104	0	104	28.0
190.00	Unincorporated El Dorado County (Remainder Area)	0	11,290	14,830	175	237	663	0	663	17.0
191.00	El Dorado Hills	0	824	1,100	11	19	53	0	53	15.5
192.00	El Dorado Hills	0	1,093	1,444	15	25	70	0	70	15.7
193.00	El Dorado Hills	0	8,893	4,380	2,565	100	253	246	499	17.8
194.00	El Dorado Hills	0	18,209	23,760	280	439	1,285	0	1,285	14.2
195.00	El Dorado Hills	0	1,605	531	184	10	26	14	40	40.6
196.00	Outside of County	0	45,981	51,299	1,506	923	2,503	82	2,585	17.8
197.00	El Dorado Hills	0	3,954	4,957	65	86	219	0	219	18.0
198.00	El Dorado Hills	0	58,474	46,936	4,592	887	2,482	453	2,935	19.9
199.00	El Dorado Hills	0	11,088	3,692	1,539	62	173	120	293	37.8
200.00	El Dorado Hills	0	3,335	333	740	7	18	67	85	39.3
201.00	El Dorado Hills	0	13,472	8,479	2,757	150	439	301	740	18.2
202.00	El Dorado Hills	0	41,829	41,531	2,356	737	2,062	199	2,261	18.5
203.00	El Dorado Hills	0	52,615	66,781	1,839	1,043	3,061	139	3,200	16.4
204.00	El Dorado Hills	0	18,761	20,036	597	362	1,067	41	1,108	16.9
205.00	El Dorado Hills	0	628	0	288	0	0	30	30	20.9
206.00	El Dorado Hills	0	2,124	2,756	30	52	153	0	153	13.9
207.00	El Dorado Hills	0	15,051	19,923	231	296	869	0	869	17.3
208.00	Unincorporated El Dorado County (Remainder Area)	0	412	558	5	9	26	0	26	15.6
209.00	El Dorado Hills	0	2,999	3,557	172	55	161	14	175	17.1
210.00	El Dorado Hills	0	5,743	7,581	87	125	366	0	366	15.7
211.00	Unincorporated El Dorado County (Remainder Area)	0	167	231	2	4	11	0	11	15.0
212.00	El Dorado Hills	0	1,871	2,523	25	35	103	0	103	18.2
213.00	Unincorporated El Dorado County (Remainder Area)	0	6,812	8,992	101	116	323	0	323	21.1
214.00	Unincorporated El Dorado County (Remainder Area)	0	686	922	10	8	19	0	19	35.4
215.00	El Dorado Hills	0	6,138	8,031	95	113	316	0	316	19.4
216.00	Unincorporated El Dorado County (Remainder Area)	0	400	520	5	5	12	0	12	33.1
217.00	Unincorporated El Dorado County (Remainder Area)	0	740	957	10	11	31	0	31	24.0
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,723	2,237	25	28	78	0	78	22.0
219.00	Unincorporated El Dorado County (Remainder Area)	0	4,456	2,399	1,004	28	78	77	155	28.8
220.00	Unincorporated El Dorado County (Remainder Area)	0	581	762	8	9	25	0	25	23.2
221.00	El Dorado Hills	0	43,247	59,070	587	876	2,359	0	2,359	18.3
222.00	Cameron Park	0	2,699	1,423	256	26	71	26	97	28.0
223.00	Cameron Park	0	4,072	5,524	52	103	279	0	279	14.6
224.00	Unincorporated El Dorado County (Remainder Area)	0	5,457	6,394	348	95	258	29	287	19.0
225.00	Unincorporated El Dorado County (Remainder Area)	0	11,249	7,664	978	92	270	79	349	32.2
226.00	Cameron Park	0	10,028	8,755	771	131	384	76	460	21.8
227.00	Cameron Park	0	182	177	13	5	12	2	14	12.9
228.00	Cameron Park	0	23,398	31,104	509	705	1,703	20	1,723	13.6
229.00	El Dorado Hills	0	405	556	4	9	24	0	24	16.7
230.00	El Dorado Hills	0	590	809	6	12	35	0	35	16.7
231.00	Unincorporated El Dorado County (Remainder Area)	0	1,019	332	239	5	15	28	43	23.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	2,109	2,821	28	33	92	0	92	23.0
233.00	Cameron Park	0	6,653	3,846	768	92	211	101	312	21.3
234.00	Cameron Park	0	47,144	41,546	4,548	1,004	2,306	587	2,893	16.3
235.00	Cameron Park	0	33,832	44,754	479	861	2,214	0	2,214	15.3
236.00	Cameron Park	0	17,939	24,296	298	468	1,204	9	1,213	14.8
237.00	Cameron Park	0	2,846	3,551	47	75	172	0	172	16.5
238.00	Cameron Park	0	15,143	13,696	2,017	280	676	199	875	17.3
239.00	Cameron Park	0	1,950	1,618	135	32	87	16	103	19.0
240.00	Unincorporated El Dorado County (Remainder Area)	0	7,287	9,730	107	127	345	0	345	21.1
241.00	Cameron Park	0	6,848	9,117	105	164	445	2	447	15.3
242.00	Cameron Park	0	806	1,102	9	22	60	0	60	13.5
243.00	Cameron Park	0	2,409	2,931	120	52	141	13	154	15.6
244.00	Unincorporated El Dorado County (Remainder Area)	0	1,391	1,801	23	22	57	0	57	24.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	842	1,066	11	10	29	0	29	29.1
246.00	Unincorporated El Dorado County (Remainder Area)	0	4,452	6,056	59	63	182	0	182	24.4
247.00	Unincorporated El Dorado County (Remainder Area)	0	14,550	16,665	351	296	646	0	646	22.5
248.00	Unincorporated El Dorado County (Remainder Area)	0	10,727	13,056	226	185	441	0	441	24.3

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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249.00	Unincorporated El Dorado County (Remainder Area)	0	1,911	2,086	39	27	59	0	59	32.4
250.00	Unincorporated El Dorado County (Remainder Area)	0	3,223	3,854	63	53	123	0	123	26.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	4,465	5,223	91	88	224	0	224	20.0
252.00	Unincorporated El Dorado County (Remainder Area)	0	20,232	24,935	422	434	1,130	0	1,130	17.9
253.00	Unincorporated El Dorado County (Remainder Area)	0	8,637	10,809	166	147	403	0	403	21.4
254.00	Unincorporated El Dorado County (Remainder Area)	0	6,155	7,315	128	116	295	0	295	20.9
255.00	Cameron Park	0	17,028	0	5,087	0	0	426	426	40.0
256.00	Cameron Park	0	46,408	1,915	13,815	47	121	1,042	1,163	39.9
257.00	Shingle Springs	0	30,259	6,774	11,179	153	389	960	1,349	22.4
258.00	Unincorporated El Dorado County (Remainder Area)	0	1,485	1,749	51	21	58	2	60	25.0
259.00	Unincorporated El Dorado County (Remainder Area)	0	1,819	2,262	31	30	78	0	78	23.3
260.00	Shingle Springs	0	5,677	58	1,817	2	4	146	150	37.7
261.00	Shingle Springs	0	15,334	4,173	3,626	92	252	282	534	28.7
262.00	Shingle Springs	0	12,901	4,871	3,014	121	308	238	546	23.6
263.00	Shingle Springs	0	6,135	4,995	534	108	296	35	331	18.5
264.00	Shingle Springs	0	4,761	2,290	629	50	137	45	182	26.2
265.00	Unincorporated El Dorado County (Remainder Area)	0	2,408	2,965	44	45	117	0	117	20.6
266.00	Unincorporated El Dorado County (Remainder Area)	0	2,362	2,170	117	42	92	4	96	24.7
267.00	Unincorporated El Dorado County (Remainder Area)	0	5,496	6,891	127	129	336	0	336	16.4
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,278	3,761	133	69	180	6	186	17.7
269.00	Unincorporated El Dorado County (Remainder Area)	0	9,325	10,939	228	204	516	1	517	18.0
270.00	Unincorporated El Dorado County (Remainder Area)	0	2,473	3,221	42	44	113	0	113	21.8
271.00	Unincorporated El Dorado County (Remainder Area)	0	8,088	10,053	199	150	379	5	384	21.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	6,800	7,760	363	131	347	23	370	18.4
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,904	10,189	255	134	391	12	403	19.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	15,445	13,859	1,331	233	618	99	717	21.6
275.00	Unincorporated El Dorado County (Remainder Area)	0	15,495	18,287	458	321	828	13	841	18.4
276.00	Cameron Park	0	9,014	10,844	268	224	541	12	553	16.3
277.00	Cameron Park	0	6,258	7,932	106	161	416	0	416	15.1
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,210	6,797	84	91	247	0	247	21.1
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,678	3,507	42	45	122	0	122	21.9
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,778	2,200	33	37	98	0	98	18.1
281.00	Unincorporated El Dorado County (Remainder Area)	0	3,869	3,572	543	59	156	36	192	20.1
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,747	2,152	33	39	103	0	103	16.9
283.00	Shingle Springs	0	16,088	3,776	2,073	0	0	161	161	99.9
284.00	Shingle Springs	0	1,621	1,091	305	25	65	25	90	18.1
285.00	Unincorporated El Dorado County (Remainder Area)	0	5,130	1,491	887	12	26	66	92	55.5
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,776	2,318	29	36	95	0	95	18.6
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,717	2,179	29	34	88	0	88	19.6
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,324	46	51	135	0	135	19.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	360	514	4	8	23	0	23	15.4
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,416	3,228	37	44	129	0	129	18.8
291.00	Unincorporated El Dorado County (Remainder Area)	0	9,922	12,933	181	188	463	0	463	21.4
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,576	6,311	64	72	210	0	210	21.8
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,230	1,276	32	34	77	0	77	15.9
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,021	4,645	94	97	247	0	247	16.3
295.00	Unincorporated El Dorado County (Remainder Area)	0	148,908	5,014	26,719	110	284	1,491	1,775	83.9
296.00	El Dorado Diamond Springs	0	9,633	6,665	855	117	305	56	361	26.7
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,430	3,140	57	70	182	0	182	13.3
298.00	Unincorporated El Dorado County (Remainder Area)	0	3,313	3,810	75	79	206	0	206	16.1
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	6,062	106	106	268	0	268	19.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,197	1,390	26	28	71	0	71	16.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	1	2	0	2	0.1
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,967	2,475	500	57	130	33	163	24.4
303.00	El Dorado Diamond Springs	0	3,470	3,661	91	106	231	0	231	15.0
304.00	El Dorado Diamond Springs	0	6,356	379	2,386	12	27	224	251	25.3
305.00	El Dorado Diamond Springs	0	7,603	0	3,158	1	2	283	285	26.7
306.00	El Dorado Diamond Springs	0	1,629	375	629	10	22	55	77	21.2
307.00	El Dorado Diamond Springs	0	617	494	38	16	36	2	38	16.2
308.00	El Dorado Diamond Springs	0	272	273	15	11	25	1	26	10.5
309.00	El Dorado Diamond Springs	0	533	434	52	14	32	4	36	14.8
310.00	El Dorado Diamond Springs	0	4,146	794	1,294	26	59	122	181	22.9

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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311.00	El Dorado Diamond Springs	0	8,533	1,197	2,120	38	87	158	245	34.9
312.00	El Dorado Diamond Springs	0	870	891	49	31	70	3	73	11.9
313.00	El Dorado Diamond Springs	0	23,390	4,175	6,912	38	99	506	605	38.7
314.00	El Dorado Diamond Springs	0	2,981	3,093	154	81	206	8	214	13.9
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	342	346	9	13	30	0	30	11.5
317.00	El Dorado Diamond Springs	0	206	210	5	8	18	0	18	11.3
318.00	Unincorporated El Dorado County (Remainder Area)	0	4,322	4,680	137	128	326	2	328	13.2
319.00	El Dorado Diamond Springs	0	1,220	1,220	91	38	99	6	105	11.6
320.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	2,179	537	18	44	39	83	61.1
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,291	6,703	102	104	256	0	256	20.6
322.00	Unincorporated El Dorado County (Remainder Area)	0	7,460	8,020	553	153	387	33	420	17.8
323.00	Unincorporated El Dorado County (Remainder Area)	0	2,846	3,454	85	51	129	4	133	21.4
324.00	Unincorporated El Dorado County (Remainder Area)	0	3,638	4,777	61	64	165	0	165	22.1
325.00	Unincorporated El Dorado County (Remainder Area)	0	706	878	14	16	39	0	39	17.9
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,171	2,731	54	49	121	1	122	17.8
327.00	Placerville	0	1,704	2,003	39	40	101	0	101	16.9
328.00	Unincorporated El Dorado County (Remainder Area)	0	847	998	18	19	48	0	48	17.7
329.00	Placerville	0	4,862	5,451	124	139	317	0	317	15.3
330.00	Unincorporated El Dorado County (Remainder Area)	0	2,701	3,124	65	73	184	0	184	14.7
331.00	Unincorporated El Dorado County (Remainder Area)	0	5,824	7,134	116	110	274	0	274	21.3
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,541	1,805	36	47	104	0	104	14.8
333.00	Unincorporated El Dorado County (Remainder Area)	0	4,529	5,675	86	91	226	0	226	20.1
334.00	Unincorporated El Dorado County (Remainder Area)	0	3,809	1,175	1,315	26	58	110	168	22.7
335.00	Unincorporated El Dorado County (Remainder Area)	0	3,013	3,285	124	77	165	5	170	17.7
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,225	1,475	25	30	70	0	70	17.4
337.00	Unincorporated El Dorado County (Remainder Area)	0	9,197	7,630	869	121	302	62	364	25.3
338.00	Unincorporated El Dorado County (Remainder Area)	0	14,133	17,909	370	322	831	14	845	16.7
339.00	Unincorporated El Dorado County (Remainder Area)	0	8,581	12,365	118	188	410	0	410	20.9
340.00	Unincorporated El Dorado County (Remainder Area)	0	6,896	8,586	224	93	205	14	219	31.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,489	1,918	86	31	71	8	79	18.9
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,620	3,271	48	48	124	0	124	21.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	3,485	4,097	63	53	116	0	116	30.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	3,762	4,481	68	55	120	0	120	31.3
345.00	Unincorporated El Dorado County (Remainder Area)	0	1,796	1,949	35	29	63	0	63	28.4
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,272	1,399	24	22	49	0	49	25.7
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,911	3,675	48	42	108	0	108	26.9
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,799	2,993	63	49	110	0	110	25.4
349.00	Unincorporated El Dorado County (Remainder Area)	0	6,297	8,014	252	83	191	18	209	30.1
350.00	Unincorporated El Dorado County (Remainder Area)	0	1,179	1,682	17	22	48	0	48	24.5
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,305	1,880	16	23	50	0	50	26.0
352.00	Unincorporated El Dorado County (Remainder Area)	0	1,857	2,624	24	29	63	0	63	29.3
353.00	Unincorporated El Dorado County (Remainder Area)	0	9,027	13,265	99	167	365	1	366	24.7
354.00	Unincorporated El Dorado County (Remainder Area)	0	5,501	3,517	746	53	116	77	193	28.5
355.00	Placerville	1	14,292	6,555	2,957	241	550	244	794	18.0
356.00	Placerville	1	2,499	2,652	73	91	195	0	195	12.8
357.00	Unincorporated El Dorado County (Remainder Area)	0	4,889	3,827	367	89	209	21	230	21.3
358.00	Placerville	0	5,870	2,945	1,187	81	190	98	288	20.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	4,285	5,085	93	105	254	0	254	16.9
360.00	Unincorporated El Dorado County (Remainder Area)	0	5,338	5,780	239	98	237	10	247	21.6
361.00	Placerville	1	17,728	10,267	4,156	458	938	392	1,330	13.3
362.00	Placerville	1	46,119	5,945	10,928	252	591	876	1,467	31.4
363.00	Unincorporated El Dorado County (Remainder Area)	0	327	343	9	13	31	0	31	10.6
364.00	Placerville	0	4,044	3,540	416	138	328	30	358	11.3
365.00	El Dorado Diamond Springs	0	10,889	8,653	1,046	322	722	71	793	13.7
366.00	El Dorado Diamond Springs	0	380	274	42	15	31	4	35	10.8
367.00	El Dorado Diamond Springs	0	4,054	0	1,960	0	0	197	197	20.6
368.00	El Dorado Diamond Springs	0	1,589	1,730	48	68	149	0	149	10.7
369.00	El Dorado Diamond Springs	0	5,670	5,750	283	228	507	13	520	10.9
370.00	El Dorado Diamond Springs	0	6,432	0	3,038	0	0	303	303	21.2
371.00	El Dorado Diamond Springs	0	740	795	18	21	47	0	47	15.9
372.00	El Dorado Diamond Springs	0	16,774	7,739	2,417	195	433	211	644	26.0

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
373.00	El Dorado Diamond Springs	0	652	643	19	26	59	0	59	11.1
374.00	El Dorado Diamond Springs	0	414	329	29	13	28	2	30	13.6
375.00	El Dorado Diamond Springs	0	368	368	10	14	32	0	32	11.7
376.00	El Dorado Diamond Springs	0	973	935	57	34	77	3	80	12.2
377.00	El Dorado Diamond Springs	0	561	329	157	13	29	14	43	12.9
378.00	El Dorado Diamond Springs	0	667	652	19	27	59	0	59	11.3
379.00	El Dorado Diamond Springs	0	1,102	1,113	31	48	105	0	105	10.5
380.00	El Dorado Diamond Springs	0	256	245	7	12	26	0	26	9.7
381.00	El Dorado Diamond Springs	0	158	143	5	7	15	0	15	10.3
382.00	El Dorado Diamond Springs	0	261	239	8	11	24	0	24	10.8
383.00	Unincorporated El Dorado County (Remainder Area)	0	1,591	1,742	40	46	102	0	102	15.6
384.00	El Dorado Diamond Springs	0	3,654	3,970	95	120	267	0	267	13.7
385.00	El Dorado Diamond Springs	0	11,717	13,659	337	451	1,002	0	1,002	11.7
386.00	El Dorado Diamond Springs	0	2,657	2,922	67	90	200	0	200	13.3
387.00	El Dorado Diamond Springs	0	1,172	929	107	36	80	8	88	13.3
388.00	El Dorado Diamond Springs	0	6,359	0	3,067	0	0	303	303	21.0
389.00	El Dorado Diamond Springs	0	6,129	11	2,616	2	4	264	268	22.8
390.00	El Dorado Diamond Springs	0	4,307	3,894	359	182	379	23	402	10.7
391.00	El Dorado Diamond Springs	0	2,173	196	547	11	23	54	77	28.3
392.00	El Dorado Diamond Springs	0	671	600	23	28	58	0	58	11.5
393.00	El Dorado Diamond Springs	0	9,002	6,354	1,004	268	605	68	673	13.4
394.00	El Dorado Diamond Springs	0	186	202	5	8	22	0	22	8.5
395.00	Placerville	1	62,226	1,584	26,085	74	166	2,253	2,419	25.7
396.00	El Dorado Diamond Springs	0	28,140	0	5,846	0	0	439	439	64.1
397.00	El Dorado Diamond Springs	0	1,329	1,264	69	50	114	3	117	11.4
398.00	El Dorado Diamond Springs	0	413	322	38	14	32	3	35	11.9
399.00	El Dorado Diamond Springs	0	1,126	1,133	32	43	97	0	97	11.6
400.00	El Dorado Diamond Springs	0	313	262	11	16	33	0	33	9.4
401.00	Placerville	0	8,987	658	2,628	28	63	213	276	32.6
402.00	El Dorado Diamond Springs	0	3,541	1,448	1,078	51	133	106	239	14.8
403.00	El Dorado Diamond Springs	0	23,814	3,632	7,792	124	258	654	912	26.1
404.00	El Dorado Diamond Springs	0	1,343	409	459	19	42	49	91	14.8
405.00	El Dorado Diamond Springs	0	169	150	5	9	20	0	20	8.6
406.00	El Dorado Diamond Springs	0	18,956	553	3,787	24	53	286	339	56.0
407.00	El Dorado Diamond Springs	0	9,540	18	3,373	1	2	309	311	30.7
408.00	El Dorado Diamond Springs	0	4,167	22	1,742	1	2	182	184	22.6
409.00	Placerville	0	18,695	3,018	5,656	104	248	445	693	27.0
410.00	El Dorado Diamond Springs	0	24,455	14,637	3,607	426	1,031	277	1,308	18.7
411.00	Placerville	1	50,523	6,155	13,292	298	712	1,271	1,983	25.5
412.00	Unincorporated El Dorado County (Remainder Area)	0	2,967	3,203	79	86	206	0	206	14.4
413.00	Placerville	0	3,607	3,787	102	126	301	0	301	12.0
414.00	El Dorado Diamond Springs	0	2,618	129	1,180	7	15	120	135	19.5
415.00	Unincorporated El Dorado County (Remainder Area)	0	434	442	12	18	40	0	40	10.7
416.00	El Dorado Diamond Springs	0	148	145	4	9	19	0	19	7.9
417.00	Placerville	1	9,685	1,098	2,868	45	114	278	392	24.7
418.00	Placerville	1	3,170	0	673	0	0	64	64	49.5
419.00	Placerville	1	3,283	0	844	0	0	85	85	38.6
420.00	Placerville	1	1,760	957	498	42	100	52	152	11.5
421.00	Placerville	1	1,662	1,578	97	68	163	5	168	9.9
422.00	Placerville	1	52,703	6,323	24,673	278	652	1,907	2,559	20.6
423.00	Unincorporated El Dorado County (Remainder Area)	0	460	482	12	20	48	0	48	9.6
424.00	Placerville	0	10,237	4,839	2,517	171	391	228	619	16.6
425.00	Placerville	0	52,855	32,203	5,947	1,167	2,617	563	3,180	16.6
426.00	Placerville	0	859	990	19	33	82	0	82	10.5
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,962	4,548	92	93	232	0	232	17.1
428.00	Unincorporated El Dorado County (Remainder Area)	0	643	741	15	22	55	0	55	11.7
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,310	1,650	34	35	83	0	83	15.9
430.00	Unincorporated El Dorado County (Remainder Area)	0	2,529	2,476	178	58	137	10	147	17.2
431.00	Placerville	1	1,794	471	655	22	45	60	105	17.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,284	10,519	2,696	309	729	229	958	16.0
433.00	Placerville	1	10,428	9,659	707	481	1,041	36	1,077	9.7
434.00	Placerville	1	673	587	23	33	71	0	71	9.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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435.00	Placerville	1	1,186	645	243	36	77	27	104	11.4
436.00	Unincorporated El Dorado County (Remainder Area)	0	970	1,150	20	25	62	0	62	15.6
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,377	5,676	248	117	287	12	299	18.0
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,578	5,269	232	124	278	11	289	19.3
439.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	6,310	172	156	350	3	353	15.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	1,394	1,100	177	28	63	15	78	17.9
441.00	Placerville	1	362	377	9	12	29	0	29	12.6
442.00	Placerville	1	13,108	10,677	1,035	313	768	69	837	15.7
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,458	1,567	36	38	85	0	85	17.1
444.00	Unincorporated El Dorado County (Remainder Area)	0	200	220	5	8	19	0	19	10.4
445.00	Placerville	0	1,044	902	151	23	56	11	67	15.5
446.00	Placerville	1	1,761	851	247	25	59	19	78	22.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	3,244	3,964	67	76	189	0	189	17.1
448.00	Placerville	0	1,803	2,094	74	53	130	4	134	13.5
449.00	Unincorporated El Dorado County (Remainder Area)	0	540	573	14	14	30	0	30	18.0
450.00	Unincorporated El Dorado County (Remainder Area)	0	3,267	2,678	392	84	180	31	211	15.5
451.00	Unincorporated El Dorado County (Remainder Area)	0	980	1,034	25	27	58	0	58	16.9
452.00	Placerville	0	6,274	4,034	500	121	259	33	292	21.5
453.00	Placerville	1	2,919	3,086	120	145	310	1	311	9.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	567	544	18	25	54	0	54	10.6
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,712	3,062	67	73	172	0	172	15.8
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,880	2,061	48	51	109	0	109	17.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	2,808	3,060	129	62	137	5	142	19.8
458.00	Placerville	0	2,940	2,602	343	67	157	26	183	16.0
459.00	Placerville	0	309	353	7	11	26	0	26	12.0
460.00	Unincorporated El Dorado County (Remainder Area)	0	1,457	966	264	22	47	20	67	21.7
461.00	Unincorporated El Dorado County (Remainder Area)	0	1,567	222	616	6	14	59	73	21.4
462.00	Unincorporated El Dorado County (Remainder Area)	0	5,224	1,278	1,752	31	66	125	191	27.3
463.00	Unincorporated El Dorado County (Remainder Area)	0	4,473	7,256	39	85	194	0	194	23.0
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,526	3,312	39	47	104	0	104	24.4
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,956	5,701	114	58	134	16	150	26.4
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,542	4,418	201	61	139	22	161	22.0
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,484	3,848	23	39	89	0	89	27.9
468.00	Unincorporated El Dorado County (Remainder Area)	0	6,778	9,766	125	120	277	6	283	24.0
469.00	Unincorporated El Dorado County (Remainder Area)	0	4,092	5,682	136	59	131	15	146	28.1
470.00	Unincorporated El Dorado County (Remainder Area)	0	2,031	3,078	27	32	73	1	74	27.4
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,477	2,039	54	23	53	6	59	25.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,953	2,297	146	26	59	20	79	24.6
473.00	Unincorporated El Dorado County (Remainder Area)	0	602	576	30	10	23	2	25	24.1
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,692	2,178	28	37	81	0	81	20.9
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,797	2,384	27	38	83	0	83	21.7
476.00	Unincorporated El Dorado County (Remainder Area)	0	859	1,123	12	16	41	0	41	20.8
477.00	Unincorporated El Dorado County (Remainder Area)	0	2,038	2,558	124	30	69	15	84	24.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,481	1,914	24	30	66	0	66	22.5
479.00	Unincorporated El Dorado County (Remainder Area)	0	4,068	3,155	440	51	118	37	155	26.3
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,298	1,999	13	20	46	0	46	28.4
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	2,030	15	20	44	0	44	30.4
482.00	Unincorporated El Dorado County (Remainder Area)	0	5,633	7,942	92	74	163	3	166	34.0
483.00	Unincorporated El Dorado County (Remainder Area)	0	4,435	5,257	173	115	249	9	258	17.2
484.00	Unincorporated El Dorado County (Remainder Area)	0	6,755	5,646	945	91	227	114	341	19.8
485.00	Unincorporated El Dorado County (Remainder Area)	0	1,058	1,522	11	15	37	0	37	28.3
486.00	Unincorporated El Dorado County (Remainder Area)	0	4,063	5,882	47	69	156	0	156	26.1
487.00	Unincorporated El Dorado County (Remainder Area)	0	11,817	11,343	739	221	519	36	555	21.3
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,531	7,566	86	107	242	0	242	22.9
489.00	Unincorporated El Dorado County (Remainder Area)	0	6,881	7,088	660	133	300	58	358	19.2
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,174	1,529	19	24	60	0	60	19.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,374	9,114	177	160	399	3	402	18.3
492.00	Unincorporated El Dorado County (Remainder Area)	0	5,053	4,473	408	71	176	31	207	24.4
493.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	4,560	369	72	178	26	204	24.9
494.00	Unincorporated El Dorado County (Remainder Area)	0	3,256	3,963	138	68	170	10	180	18.1
495.00	Unincorporated El Dorado County (Remainder Area)	0	652	851	11	16	40	0	40	16.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,363	4,566	830	81	201	67	268	27.5

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497.00	Unincorporated El Dorado County (Remainder Area)	0	4,324	5,722	101	88	224	3	227	19.0
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,446	4,471	104	70	158	6	164	21.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,340	1,788	22	30	75	0	75	17.9
500.00	Unincorporated El Dorado County (Remainder Area)	0	4,091	1,341	603	11	26	51	77	53.3
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,805	1,018	768	22	49	83	132	21.3
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,007	7,684	351	117	272	18	290	24.2
503.00	Unincorporated El Dorado County (Remainder Area)	0	4,159	0	1,010	1	2	76	78	53.2
504.00	Unincorporated El Dorado County (Remainder Area)	0	6,094	6,503	344	141	313	19	332	18.4
505.00	Unincorporated El Dorado County (Remainder Area)	0	73	86	1	3	7	0	7	11.0
506.00	Unincorporated El Dorado County (Remainder Area)	0	1,026	1,245	22	28	62	0	62	16.5
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,748	2,382	392	50	116	37	153	17.9
508.00	Unincorporated El Dorado County (Remainder Area)	0	6,688	3,507	1,838	85	184	186	370	18.1
509.00	Unincorporated El Dorado County (Remainder Area)	0	392	428	22	12	27	2	29	13.7
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,230	3,509	157	92	199	10	209	15.5
511.00	Unincorporated El Dorado County (Remainder Area)	0	2,738	1,886	359	45	105	33	138	19.9
512.00	Unincorporated El Dorado County (Remainder Area)	0	2,833	1,982	367	37	86	27	113	25.1
513.00	Unincorporated El Dorado County (Remainder Area)	0	7,428	10,752	84	142	354	0	354	21.0
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,897	46,989	311	622	1,551	0	1,551	20.6
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,604	4,785	105	69	176	8	184	19.6
516.00	Unincorporated El Dorado County (Remainder Area)	0	8,117	11,779	87	142	362	0	362	22.4
517.00	Unincorporated El Dorado County (Remainder Area)	0	18,953	21,253	1,114	388	857	101	958	19.8
518.00	Unincorporated El Dorado County (Remainder Area)	0	11,917	15,759	307	289	671	17	688	17.3
519.00	Unincorporated El Dorado County (Remainder Area)	0	5,880	7,837	191	142	330	12	342	17.2
520.00	Unincorporated El Dorado County (Remainder Area)	0	11,943	16,149	268	266	617	12	629	19.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	10,860	13,145	581	290	641	60	701	15.5
522.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	7,230	64	85	221	0	221	23.1
523.00	Unincorporated El Dorado County (Remainder Area)	0	16,440	10,403	1,911	240	588	206	794	20.7
524.00	Unincorporated El Dorado County (Remainder Area)	0	14,687	12,653	1,114	205	490	103	593	24.8
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,887	7,158	44	85	199	0	199	24.5
526.00	Unincorporated El Dorado County (Remainder Area)	0	245	336	3	5	12	0	12	20.1
527.00	Unincorporated El Dorado County (Remainder Area)	0	7,769	9,527	361	162	380	38	418	18.6
528.00	Unincorporated El Dorado County (Remainder Area)	0	59,936	84,546	793	1,001	2,429	72	2,501	24.0
529.00	Unincorporated El Dorado County (Remainder Area)	0	918	1,150	13	15	36	0	36	25.3
530.00	Unincorporated El Dorado County (Remainder Area)	0	12,922	17,323	192	191	462	0	462	28.0
531.00	Unincorporated El Dorado County (Remainder Area)	0	2,524	3,389	35	34	82	0	82	30.7
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,157	59	61	147	0	147	27.1
533.00	Unincorporated El Dorado County (Remainder Area)	0	9,310	8,574	645	105	271	34	305	30.5
534.00	Unincorporated El Dorado County (Remainder Area)	0	3,782	4,952	52	53	128	0	128	29.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,931	7,811	74	91	221	0	221	26.8
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,088	6,583	64	82	200	0	200	25.5
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,390	14,148	106	165	402	0	402	25.9
538.00	Unincorporated El Dorado County (Remainder Area)	0	3,965	3,049	304	44	107	22	129	30.8
539.00	Unincorporated El Dorado County (Remainder Area)	0	12,990	1,298	2,075	6	15	166	181	72.0
540.00	Unincorporated El Dorado County (Remainder Area)	0	2,856	0	572	0	0	53	53	53.9
541.00	Unincorporated El Dorado County (Remainder Area)	0	1,050	1,118	61	18	42	6	48	21.8
542.00	Unincorporated El Dorado County (Remainder Area)	0	3,610	3,094	413	52	123	37	160	22.6
543.00	Unincorporated El Dorado County (Remainder Area)	0	10,542	2,434	1,775	49	114	107	221	47.6
544.00	Unincorporated El Dorado County (Remainder Area)	0	679	496	104	9	21	8	29	23.4
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,521	2,046	16	23	54	0	54	28.3
546.00	Unincorporated El Dorado County (Remainder Area)	0	4,811	6,428	54	61	143	0	143	33.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	523	481	10	23	46	69	57.9
548.00	Unincorporated El Dorado County (Remainder Area)	0	17,475	23,311	467	386	910	22	932	18.7
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,160	2,718	39	42	99	0	99	21.8
550.00	Unincorporated El Dorado County (Remainder Area)	0	265	347	4	7	18	0	18	14.7
551.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	2,524	783	41	105	54	159	34.0
552.00	Unincorporated El Dorado County (Remainder Area)	0	2,436	423	500	8	19	32	51	48.0
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,568	2,058	26	32	75	0	75	21.0
554.00	Unincorporated El Dorado County (Remainder Area)	0	4,047	5,248	105	83	194	4	198	20.4
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,654	2,238	24	34	80	0	80	20.6
556.00	Unincorporated El Dorado County (Remainder Area)	0	5,091	6,971	66	82	192	0	192	26.6
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,694	2,093	31	35	82	1	83	20.5
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,716	2,988	163	36	84	19	103	26.3

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,381	1,831	17	25	59	0	59	23.6
560.00	Unincorporated El Dorado County (Remainder Area)	0	1,604	1,673	100	27	63	10	73	21.9
561.00	Unincorporated El Dorado County (Remainder Area)	0	1,182	1,578	18	22	52	0	52	22.7
562.00	Unincorporated El Dorado County (Remainder Area)	0	4,016	5,900	39	62	145	0	145	27.6
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,211	3,362	17	32	71	0	71	31.3
564.00	Unincorporated El Dorado County (Remainder Area)	0	620	834	10	14	33	0	33	18.5
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,669	38	56	129	0	129	20.4
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,387	70	93	220	1	221	18.1
567.00	Unincorporated El Dorado County (Remainder Area)	0	671	816	25	18	42	2	44	15.4
568.00	Unincorporated El Dorado County (Remainder Area)	0	931	1,259	14	26	62	0	62	15.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	3,705	2,852	298	61	144	31	175	21.1
570.00	Unincorporated El Dorado County (Remainder Area)	0	4,738	2,119	775	40	92	92	184	25.7
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,371	1,843	22	33	76	0	76	18.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	1,867	1,377	262	25	61	34	95	19.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	6,504	7,840	121	89	197	2	199	32.7
574.00	Unincorporated El Dorado County (Remainder Area)	0	5,059	8,006	30	71	174	0	174	29.1
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,777	4,117	16	29	71	0	71	39.1
576.00	Unincorporated El Dorado County (Remainder Area)	0	1,093	1,543	16	19	42	1	43	25.4
577.00	Unincorporated El Dorado County (Remainder Area)	0	753	1,117	7	13	29	0	29	26.2
578.00	Unincorporated El Dorado County (Remainder Area)	0	23,468	37,261	106	370	817	0	817	28.7
579.00	Unincorporated El Dorado County (Remainder Area)	0	3,788	5,279	100	38	96	12	108	34.9
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,893	4,142	62	35	89	5	94	30.8
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,278	5,106	291	43	95	32	127	33.8
582.00	Unincorporated El Dorado County (Remainder Area)	0	1,258	1,708	16	13	34	0	34	37.2
583.00	Unincorporated El Dorado County (Remainder Area)	0	27,736	43,328	212	352	774	10	784	35.4
584.00	Unincorporated El Dorado County (Remainder Area)	0	1,736	2,097	55	18	40	3	43	40.7
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,569	14,366	78	124	273	0	273	35.1
586.00	Unincorporated El Dorado County (Remainder Area)	0	5,837	2,525	1,555	51	91	92	183	32.0
587.00	Unincorporated El Dorado County (Remainder Area)	0	2,277	3,414	17	39	99	0	99	22.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	19,726	30,121	125	323	805	0	805	24.5
589.00	Unincorporated El Dorado County (Remainder Area)	0	393	627	2	3	12	0	12	32.7
590.00	Unincorporated El Dorado County (Remainder Area)	0	830	1,145	12	18	46	0	46	18.2
591.00	Unincorporated El Dorado County (Remainder Area)	0	86	122	1	3	8	0	8	11.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	12,714	13,276	739	339	749	91	840	15.1
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,940	9,089	265	151	382	28	410	16.9
594.00	Unincorporated El Dorado County (Remainder Area)	0	16,945	24,780	182	312	790	5	795	21.3
595.00	Unincorporated El Dorado County (Remainder Area)	0	1,939	1,825	265	25	56	31	87	22.2
596.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	2,777	221	34	85	25	110	25.8
597.00	Unincorporated El Dorado County (Remainder Area)	0	11,029	4,036	1,914	106	234	278	512	21.5
598.00	Unincorporated El Dorado County (Remainder Area)	0	1,719	544	259	14	31	35	66	26.1
599.00	Unincorporated El Dorado County (Remainder Area)	0	712	969	11	17	38	0	38	18.9
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,268	11,074	1,266	205	453	130	583	19.3
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,338	1,903	4	10	22	0	22	60.9
602.00	Unincorporated El Dorado County (Remainder Area)	0	433	137	53	3	5	2	7	59.0
603.00	Unincorporated El Dorado County (Remainder Area)	0	906	729	84	11	20	2	22	42.0
604.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,776	109	17	33	3	36	39.3
605.00	Unincorporated El Dorado County (Remainder Area)	0	1,653	1,766	86	18	38	2	40	41.3
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,530	4,854	12	19	49	0	49	71.5
608.00	Unincorporated El Dorado County (Remainder Area)	0	6	0	0	1	2	0	2	2.9
609.00	Unincorporated El Dorado County (Remainder Area)	0	3,028	3,208	117	34	72	4	76	40.0
610.00	El Dorado Hills	0	38,894	185	20,450	0	0	1,745	1,745	22.3
611.00	El Dorado Hills	0	315	0	10	153	0	1	1	315.1
612.00	El Dorado Hills	0	79,244	0	44,405	0	0	3,121	3,121	25.4
613.00	Unincorporated El Dorado County (Remainder Area)	0	71	67	1	2	5	0	5	13.8
614.00	El Dorado Hills	0	5,951	7,036	115	150	383	0	383	15.6
615.00	El Dorado Hills	0	12,122	9,014	1,032	150	402	75	477	25.4
616.00	El Dorado Hills	0	1,374	1,639	25	37	94	0	94	14.7
617.00	El Dorado Hills	0	20,608	12,689	1,251	187	547	118	665	31.0
618.00	El Dorado Hills	0	3,136	0	1,248	0	0	146	146	21.5
619.00	El Dorado Hills	0	3,458	0	1,252	0	0	151	151	22.9
620.00	El Dorado Hills	0	17,790	3,464	1,776	0	0	188	188	94.6

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	14,299	18,797	223	327	957	0	957	14.9
622.00	El Dorado Hills	0	21,947	21,514	1,625	370	1,083	147	1,230	17.8
623.00	Unincorporated El Dorado County (Remainder Area)	0	393	0	173	0	0	16	16	24.5
624.00	El Dorado Hills	0	15,659	17,550	1,193	308	905	96	1,001	15.7
625.00	El Dorado Hills	0	861	0	418	0	0	40	40	21.5
626.00	Unincorporated El Dorado County (Remainder Area)	0	8,700	7,509	1,120	164	383	98	481	18.1
627.00	Unincorporated El Dorado County (Remainder Area)	0	54,214	0	11,337	0	0	897	897	60.4
628.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,446	1,742	25	37	94	0	94	15.4
633.00	Unincorporated El Dorado County (Remainder Area)	0	6,287	7,481	122	150	379	0	379	16.6
634.00	Unincorporated El Dorado County (Remainder Area)	0	6,451	7,748	122	150	379	0	379	17.0
635.00	Unincorporated El Dorado County (Remainder Area)	0	4,874	5,840	92	113	286	0	286	17.0
636.00	Unincorporated El Dorado County (Remainder Area)	0	4,366	6,094	81	120	322	0	322	13.6
637.00	Unincorporated El Dorado County (Remainder Area)	0	8,062	9,923	140	171	458	0	458	17.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,037	1,266	16	23	62	0	62	16.8
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,263	2,810	36	46	123	0	123	18.4
640.00	Unincorporated El Dorado County (Remainder Area)	0	7,666	9,534	125	176	472	0	472	16.2
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,088	2,601	33	46	123	0	123	16.9
642.00	Unincorporated El Dorado County (Remainder Area)	0	28,454	33,516	1,269	637	1,708	93	1,801	15.8
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,822	12,118	163	216	579	0	579	17.0
644.00	Unincorporated El Dorado County (Remainder Area)	0	2,922	3,676	47	76	194	0	194	15.1
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,198	24,639	949	415	1,059	51	1,110	19.1
646.00	Unincorporated El Dorado County (Remainder Area)	0	8,819	11,040	154	192	490	0	490	18.0
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,587	1,896	69	38	97	6	103	15.4
648.00	Unincorporated El Dorado County (Remainder Area)	0	1,814	2,169	46	38	97	2	99	18.3
649.00	Unincorporated El Dorado County (Remainder Area)	0	5,510	3,117	31	38	97	0	97	56.8
650.00	Outside of County	0	3,018,017	1,487,652	470,023	0	0	0	0	-
651.00	Outside of County	0	28,430	14,325	4,161	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	391,601	159,733	51,129	0	0	0	0	-
654.00	Outside of County	0	56,157	9,082	2,855	0	0	0	0	-
655.00	Outside of County	0	269,259	107,794	35,163	0	0	0	0	-
656.00	Outside of County	0	76,873	18,147	8,671	0	0	0	0	-
657.00	Outside of County	0	186,257	8,193	3,831	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	7,525	3,130	1,406	0	0	0	0	-
660.00	Outside of County	0	164,217	81,865	31,549	0	0	0	0	-
661.00	Outside of County	0	156,422	71,575	25,672	0	0	0	0	-
662.00	Outside of County	0	700,690	338,333	119,222	0	0	0	0	-
663.00	Outside of County	0	679,400	227,123	80,896	0	0	0	0	-
664.00	Outside of County	0	347,429	190,135	54,774	0	0	0	0	-
665.00	Outside of County	0	199,364	79,618	30,980	0	0	0	0	-
666.00	Outside of County	0	88,161	45,079	14,335	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	512,377	310,784	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	169,913	96,013	23,735	0	0	0	0	-
672.00	Outside of County	0	33,262	34,250	0	0	0	0	0	-
673.00	Outside of County	0	24,884	14,900	0	0	0	0	0	-
674.00	Outside of County	0	355,415	29,972	0	0	0	0	0	-

2040 No Project

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VMT Summary by Jurisdiction - 2040 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	403,646	62,940	105,579	24.8	8.2	12.2	3,429	7,658	8,649	16,307	2.23
Unincorporated El Dorado County	5,042,237	3,102,953	675,594	21.2	17.1	12.0	73,092	181,914	56,413	238,327	2.49
Threshold (85% of Unincorporated El Dorado County)					14.5	10.2					

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	5,577	1,771	819	47	99	36	135	41.3
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,283	24,630	870	592	1,338	77	1,415	16.5
3.00	Unincorporated El Dorado County (Remainder Area)	0	5,275	6,532	98	74	180	0	180	29.4
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,065	1,368	17	16	35	0	35	30.7
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,584	3,591	26	33	73	0	73	35.4
6.00	Unincorporated El Dorado County (Remainder Area)	0	13,805	15,958	505	366	847	14	861	16.0
7.00	Unincorporated El Dorado County (Remainder Area)	0	24,308	26,914	1,345	565	1,223	92	1,315	18.5
8.00	Unincorporated El Dorado County (Remainder Area)	0	11,267	575	1,969	15	38	129	167	67.6
9.00	Unincorporated El Dorado County (Remainder Area)	0	25,132	30,522	627	559	1,400	13	1,413	17.8
10.00	Outside of County	0	108,486	87,346	11,383	2,178	5,588	1,056	6,644	16.3
11.00	Outside of County	0	111,997	80,769	13,767	2,148	5,511	1,297	6,808	16.5
12.00	Outside of County	0	58,773	44,883	4,878	1,179	3,234	437	3,671	16.0
13.00	Outside of County	0	34,464	40,043	1,540	906	2,458	99	2,557	13.5
14.00	Outside of County	0	59,225	68,150	1,704	1,511	4,120	78	4,198	14.1
15.00	Outside of County	0	3,041	3,912	59	58	166	0	166	18.4
16.00	Outside of County	0	56,181	21,685	7,600	659	1,614	689	2,303	24.4
17.00	Outside of County	0	161,000	141,146	14,049	2,811	7,160	1,363	8,523	18.9
18.00	Outside of County	0	84,904	96,958	3,631	1,930	4,652	246	4,898	17.3
19.00	Outside of County	0	10,270	5,762	1,091	96	217	103	320	32.1
20.00	Outside of County	0	7,630	143	4,060	2	7	283	290	26.3
21.00	Outside of County	0	26,219	73	13,535	2	4	1,082	1,086	24.1
22.00	Outside of County	0	1,683	10	335	1	1	21	22	76.5
23.00	Outside of County	0	29,007	12,699	3,659	115	322	261	583	49.7
24.00	Outside of County	0	4,209	3,133	139	133	133	0	133	31.6
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	109,636	103,251	7,988	2,238	5,070	642	5,712	19.2
27.00	Outside of County	0	8,221	76	3,043	2	5	338	343	24.0
28.00	Outside of County	0	240,481	201,753	17,253	4,828	12,553	1,923	14,476	16.6
29.00	Outside of County	0	8,677	11,086	163	170	486	0	486	17.9
30.00	Outside of County	0	71,035	73,528	5,820	1,194	3,041	368	3,409	20.8
31.00	Outside of County	0	10,189	5,261	599	41	106	44	150	67.7
32.00	Outside of County	0	30,011	38,869	687	692	1,811	21	1,832	16.4
33.00	Outside of County	0	38,665	48,142	1,368	857	2,183	69	2,252	17.2
34.00	Outside of County	0	6,133	5,984	702	69	156	32	188	32.6
35.00	Outside of County	0	30,842	37,467	774	812	2,092	0	2,092	14.7
36.00	Outside of County	0	37,373	45,280	905	910	2,318	0	2,318	16.1
37.00	Outside of County	0	58,191	2,570	21,985	57	142	1,643	1,785	32.6
38.00	Outside of County	0	6,657	3,876	635	57	142	45	187	35.7
39.00	Outside of County	0	16,965	14,560	2,117	514	1,180	181	1,361	12.5
40.00	Outside of County	0	75,695	22,144	16,170	851	1,972	1,905	3,877	19.5
41.00	Outside of County	0	35,443	24,462	7,537	592	1,368	567	1,935	18.3
42.00	Outside of County	0	175,509	97,906	24,675	2,081	5,108	1,911	7,019	25.0
43.00	Outside of County	0	34,551	40,416	973	849	2,170	46	2,216	15.6
44.00	Outside of County	0	110,572	81,356	8,862	1,827	4,654	791	5,445	20.3
45.00	Outside of County	0	72,610	23,160	12,084	846	1,936	1,262	3,198	22.7
46.00	Outside of County	0	5,984	6,531	150	164	375	0	375	15.9
47.00	Outside of County	0	201,201	9,498	80,144	284	681	5,991	6,672	30.2
48.00	Outside of County	0	48,147	42,713	3,724	1,211	3,071	266	3,337	14.4
49.00	Outside of County	0	109,811	586	49,788	18	45	4,248	4,293	25.6
50.00	Outside of County	0	73,223	36,351	21,786	981	2,487	1,736	4,223	17.3
51.00	Outside of County	0	97,988	51,789	15,576	1,710	4,116	1,373	5,489	17.9
52.00	Outside of County	0	30,503	15,044	3,151	279	629	279	908	33.6
53.00	Outside of County	0	78,930	47,997	10,799	1,399	3,606	983	4,589	17.2
54.00	Outside of County	0	59,817	22,507	22,177	494	1,220	1,748	2,968	20.2
55.00	Outside of County	0	76,816	30,242	13,824	639	1,471	1,127	2,598	29.6
56.00	Outside of County	0	36,016	40,247	1,285	872	2,337	56	2,393	15.0
57.00	Outside of County	0	107,258	24,206	46,054	660	1,466	4,152	5,618	19.1
58.00	Outside of County	0	36,017	26,091	4,381	613	1,587	352	1,939	18.6
59.00	Outside of County	0	45,084	90	26,765	2	5	2,191	2,196	20.5
60.00	Outside of County	0	67,902	8,286	30,755	240	512	2,711	3,223	21.1
61.00	Outside of County	0	140,399	87,296	22,426	2,381	5,595	1,810	7,405	19.0
62.00	Outside of County	0	51,641	1,929	23,725	33	110	2,000	2,110	24.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	65,971	5,287	26,981	143	350	2,462	2,812	23.5
64.00	Outside of County	0	128,949	73,483	20,622	2,031	5,053	1,733	6,786	19.0
65.00	Outside of County	0	5,599	6,327	125	127	328	0	328	17.1
66.00	Outside of County	0	37,694	28,192	4,165	887	2,117	331	2,448	15.4
67.00	Outside of County	0	117,020	21,912	38,405	633	1,374	3,381	4,755	24.6
68.00	Outside of County	0	38,606	12,450	10,773	453	946	1,002	1,948	19.8
69.00	Outside of County	0	240,406	69,515	96,278	1,950	5,172	7,364	12,536	19.2
70.00	Outside of County	0	160,478	1,049	96,174	15	38	7,503	7,541	21.3
71.00	Outside of County	0	216,856	131,337	32,088	2,596	6,730	2,417	9,147	23.7
72.00	Outside of County	0	269,467	750	154,094	0	0	10,084	10,084	26.7
73.00	Outside of County	0	96,236	0	60,285	0	0	4,612	4,612	20.9
74.00	Outside of County	0	134,490	17,437	65,999	546	1,335	5,255	6,590	20.4
75.00	Outside of County	0	84,202	62,232	16,925	1,946	4,535	1,072	5,607	15.0
76.00	Outside of County	0	27,691	16,903	3,797	497	1,333	313	1,646	16.8
77.00	Outside of County	0	80,840	41,776	19,346	1,068	2,684	1,384	4,068	19.9
78.00	Outside of County	0	70,420	0	20,196	1	2	1,777	1,779	39.6
79.00	Outside of County	0	75,763	58,024	9,204	1,345	3,258	620	3,878	19.5
80.00	Outside of County	0	33,570	0	16,311	0	0	1,306	1,306	25.7
81.00	Outside of County	0	178,581	0	99,760	0	0	7,809	7,809	22.9
82.00	Outside of County	0	52,351	0	25,971	0	0	2,171	2,171	24.1
83.00	Outside of County	0	51,010	34,487	6,753	590	1,536	460	1,996	25.6
84.00	Outside of County	0	51,746	42,015	4,072	1,305	3,049	306	3,355	15.4
85.00	Outside of County	0	54,629	45,545	4,618	1,261	3,154	354	3,508	15.6
86.00	Outside of County	0	84,779	60,757	8,187	1,996	4,538	681	5,219	16.2
87.00	Outside of County	0	63,414	50,564	7,466	1,845	3,996	613	4,609	13.8
88.00	Outside of County	0	71,073	42,292	8,187	1,184	2,955	696	3,651	19.5
89.00	Outside of County	0	18,652	0	6,015	0	0	455	455	41.0
90.00	Outside of County	0	56,882	2,014	28,031	92	157	2,453	2,610	21.8
91.00	Outside of County	0	99,198	13,519	36,251	389	997	3,846	4,843	20.5
92.00	Outside of County	0	50,863	47,767	2,466	1,234	2,964	133	3,097	16.4
93.00	Outside of County	0	93,216	64,870	18,649	1,374	3,459	1,484	4,943	18.9
94.00	Outside of County	0	1,125	102	456	2	4	41	45	25.0
95.00	Outside of County	0	119,957	0	63,185	0	0	4,542	4,542	26.4
96.00	Outside of County	0	160,963	53,684	54,076	1,026	2,520	3,884	6,404	25.1
97.00	Outside of County	0	57,299	51,467	4,469	1,030	2,624	349	2,973	19.3
98.00	Outside of County	0	84,308	13,260	27,261	375	984	2,705	3,689	22.9
99.00	Outside of County	0	71,250	27,674	23,074	806	1,976	2,391	4,367	16.3
100.00	Outside of County	0	21,474	26,993	440	470	1,178	0	1,178	18.2
101.00	Outside of County	0	54,838	41,910	8,797	869	2,253	822	3,075	17.8
102.00	Outside of County	0	22,160	5,203	6,155	92	237	467	704	31.5
103.00	Outside of County	0	96,154	107,011	3,994	2,474	5,823	281	6,104	15.8
104.00	Outside of County	0	60,057	9,222	12,931	184	451	868	1,319	45.5
105.00	Outside of County	0	40,776	52,407	879	1,011	2,513	10	2,523	16.2
106.00	Outside of County	0	6,839	0	3,166	0	0	283	283	24.2
107.00	Outside of County	0	296,406	40,382	94,449	1,362	3,008	7,445	10,453	28.4
108.00	Outside of County	0	27,008	16,940	5,680	370	988	479	1,467	18.4
109.00	Outside of County	0	16,618	0	7,326	0	0	563	563	29.5
110.00	Outside of County	0	62,156	8,647	28,456	209	495	2,207	2,702	23.0
111.00	Outside of County	0	81,795	7,429	15,287	223	512	1,049	1,561	52.4
112.00	Outside of County	0	133,552	30,397	26,842	763	2,056	2,119	4,175	32.0
113.00	Outside of County	0	53,819	115	23,681	0	0	2,386	2,386	22.6
114.00	Outside of County	0	36,060	29,492	6,410	809	2,141	572	2,713	13.3
115.00	Outside of County	0	153,182	86,205	20,787	1,900	4,875	1,584	6,459	23.7
116.00	Outside of County	0	2,991	0	1,474	0	0	116	116	25.8
117.00	Outside of County	0	51,596	17,174	15,342	327	920	1,448	2,368	21.8
118.00	Outside of County	0	76,582	80,927	3,240	2,338	6,182	191	6,373	12.0
119.00	Outside of County	0	133,930	7,155	62,174	216	540	6,222	6,762	19.8
120.00	Outside of County	0	176,902	0	43,368	0	0	4,669	4,669	37.9
121.00	Outside of County	0	137,388	48,395	19,509	1,513	3,882	1,917	5,799	23.7
122.00	Outside of County	0	56,501	14,997	10,481	533	1,248	1,125	2,373	23.8
123.00	Outside of County	0	28,595	6,998	5,098	200	547	536	1,083	26.4
124.00	Outside of County	0	52,817	48,084	2,776	1,044	2,229	168	2,397	22.0

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	27,933	9,995	5,545	414	817	583	1,400	20.0
126.00	Outside of County	0	16,243	4,837	2,898	156	342	274	616	26.4
127.00	Outside of County	0	38,646	33,709	2,382	870	1,855	169	2,024	19.1
128.00	Outside of County	0	66,050	47,193	6,765	1,262	2,600	538	3,138	21.0
129.00	Outside of County	0	41,333	43,608	1,825	1,045	2,302	117	2,419	17.1
130.00	Outside of County	0	21,004	9,167	2,657	342	786	298	1,084	19.4
131.00	Outside of County	0	47,353	14,668	11,269	494	1,013	1,272	2,285	20.7
132.00	Outside of County	0	27,968	23,222	2,759	556	1,258	235	1,493	18.7
133.00	Outside of County	0	118,100	58,239	14,396	2,077	5,182	1,628	6,810	17.3
134.00	Outside of County	0	61,149	30,010	18,017	1,074	2,483	1,578	4,061	15.1
135.00	Outside of County	0	50,360	0	27,533	0	0	2,740	2,740	18.4
136.00	Outside of County	0	25,821	27,605	1,369	661	1,688	93	1,781	14.5
137.00	Outside of County	0	112,329	102,589	6,994	2,426	6,986	595	7,581	14.8
138.00	El Dorado Diamond Springs	0	21,919	6,082	4,329	264	577	297	874	25.1
139.00	El Dorado Diamond Springs	0	10,536	1,345	1,705	67	144	156	300	35.1
140.00	El Dorado Diamond Springs	0	56,900	127	10,262	10	22	811	833	68.3
141.00	Unincorporated El Dorado County (Remainder Area)	0	1,488	1,667	28	21	49	0	49	30.3
142.00	Unincorporated El Dorado County (Remainder Area)	0	6,586	6,517	171	156	347	0	347	19.0
143.00	Unincorporated El Dorado County (Remainder Area)	0	4,208	3,324	255	108	240	12	252	16.7
144.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	3,572	339	80	200	21	221	18.2
145.00	Unincorporated El Dorado County (Remainder Area)	0	742	650	25	30	70	0	70	10.6
146.00	El Dorado Diamond Springs	0	6,251	2,345	1,107	114	261	98	359	17.4
147.00	El Dorado Diamond Springs	0	3,727	3,553	131	165	378	0	378	9.8
148.00	Outside of County	0	155,420	185,969	5,362	2,264	5,302	120	5,422	28.7
149.00	Shingle Springs	0	16,644	1,750	3,538	53	149	287	436	38.2
150.00	Unincorporated El Dorado County (Remainder Area)	0	6,010	6,830	131	107	254	0	254	23.7
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,302	1,727	19	23	67	0	67	19.5
152.00	Shingle Springs	0	34,226	6,129	5,240	201	488	370	858	39.9
153.00	Unincorporated El Dorado County (Remainder Area)	0	8,548	8,130	247	290	623	0	623	13.7
154.00	Unincorporated El Dorado County (Remainder Area)	0	6,923	7,061	192	254	597	0	597	11.6
155.00	Shingle Springs	0	5,210	5,654	133	154	406	0	406	12.8
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,047	2,316	57	27	68	1	69	29.7
157.00	El Dorado Hills	0	8,646	10,861	168	273	790	0	790	10.9
158.00	Cameron Park	0	17,384	18,613	505	624	1,431	11	1,442	12.1
159.00	Cameron Park	0	15,343	14,559	1,449	446	1,082	114	1,196	12.8
160.00	Shingle Springs	0	18,392	16,609	1,167	504	1,223	70	1,293	14.2
161.00	El Dorado Hills	0	11,353	14,244	210	290	754	0	754	15.1
162.00	El Dorado Hills	0	57,372	77,615	887	1,503	4,465	0	4,465	12.8
163.00	El Dorado Hills	0	37,646	7,638	5,100	165	490	438	928	40.6
164.00	El Dorado Hills	0	61,232	0	32,391	0	0	3,124	3,124	19.6
165.00	El Dorado Hills	0	17,367	20,569	424	551	1,369	0	1,369	12.7
166.00	Outside of County	0	28,692	30,496	1,012	766	1,965	50	2,015	14.2
167.00	El Dorado Hills	0	47,835	46,337	2,359	1,520	3,531	111	3,641	13.1
168.00	El Dorado Hills	0	26,965	29,653	1,084	1,133	2,632	35	2,667	10.1
169.00	El Dorado Hills	0	118,869	5,595	25,708	208	517	2,484	3,001	39.6
170.00	El Dorado Hills	0	46,923	722	23,705	26	65	2,562	2,627	17.9
171.00	El Dorado Hills	0	16,341	16,278	1,064	441	1,081	68	1,148	14.2
172.00	El Dorado Hills	0	9,465	0	1,696	0	0	158	158	59.9
173.00	El Dorado Hills	0	46,417	0	11,158	0	0	1,140	1,140	40.7
174.00	Unincorporated El Dorado County (Remainder Area)	0	3,863	1,487	1,078	15	38	54	92	42.1
175.00	Unincorporated El Dorado County (Remainder Area)	0	2,612	630	484	10	24	22	46	57.1
176.00	Unincorporated El Dorado County (Remainder Area)	0	3,211	3,633	70	58	137	0	137	23.4
177.00	Unincorporated El Dorado County (Remainder Area)	0	11,090	8,569	1,814	147	370	130	500	22.2
178.00	Unincorporated El Dorado County (Remainder Area)	0	4,884	5,616	138	87	223	3	226	21.6
179.00	Unincorporated El Dorado County (Remainder Area)	0	737	932	12	21	55	0	55	13.5
180.00	El Dorado Hills	0	18,216	22,374	354	450	1,155	0	1,155	15.8
181.00	El Dorado Hills	0	6,992	5,404	692	120	315	61	376	18.6
182.00	Cameron Park	0	39,176	47,651	767	1,244	3,262	0	3,262	12.0
183.00	Unincorporated El Dorado County (Remainder Area)	0	11,007	11,993	270	354	832	0	832	13.2
184.00	Cameron Park	0	39,181	16,173	4,511	417	1,093	425	1,518	25.8
185.00	Cameron Park	0	3,898	4,376	86	152	349	0	349	11.2
186.00	Cameron Park	0	50,840	4,599	8,898	170	390	896	1,286	39.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
187.00	Cameron Park	0	10,759	7,112	1,208	247	566	104	670	16.0
188.00	Cameron Park	0	6,611	5,630	598	213	489	49	538	12.3
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,454	3,141	40	36	100	0	100	24.4
190.00	Unincorporated El Dorado County (Remainder Area)	0	10,416	13,307	182	255	712	0	712	14.6
191.00	El Dorado Hills	0	1,437	1,825	24	39	109	0	109	13.2
192.00	El Dorado Hills	0	866	1,089	14	25	69	0	69	12.5
193.00	El Dorado Hills	0	14,290	5,231	3,682	156	406	361	768	18.6
194.00	El Dorado Hills	0	15,034	19,467	268	439	1,297	0	1,297	11.6
195.00	El Dorado Hills	0	9,027	469	2,007	10	26	176	203	44.5
196.00	Outside of County	0	52,397	59,847	1,724	1,148	3,198	97	3,295	15.9
197.00	El Dorado Hills	0	3,186	3,921	56	85	225	0	225	14.2
198.00	El Dorado Hills	0	69,020	39,116	6,079	887	2,476	623	3,099	22.3
199.00	El Dorado Hills	0	11,332	2,877	1,620	62	173	143	316	35.9
200.00	El Dorado Hills	0	6,394	305	1,223	7	19	121	140	45.8
201.00	El Dorado Hills	0	20,651	6,786	2,765	150	443	269	712	29.0
202.00	El Dorado Hills	0	37,475	35,429	2,120	762	2,127	169	2,296	16.3
203.00	El Dorado Hills	0	51,666	65,660	1,162	1,300	3,762	43	3,805	13.6
204.00	El Dorado Hills	0	17,153	16,147	639	362	1,048	48	1,096	15.6
205.00	El Dorado Hills	0	504	0	244	0	0	30	30	16.8
206.00	El Dorado Hills	0	1,622	2,074	28	51	148	0	148	11.0
207.00	El Dorado Hills	0	12,923	16,554	220	304	880	0	880	14.7
208.00	Unincorporated El Dorado County (Remainder Area)	0	325	424	5	9	26	0	26	12.5
209.00	El Dorado Hills	0	11,559	4,446	1,414	88	254	118	372	31.1
210.00	El Dorado Hills	0	6,340	8,147	109	162	479	0	479	13.2
211.00	Unincorporated El Dorado County (Remainder Area)	0	135	178	2	4	11	0	11	11.9
212.00	El Dorado Hills	0	2,394	3,100	38	53	153	0	153	15.6
213.00	Unincorporated El Dorado County (Remainder Area)	0	9,180	11,783	154	193	534	0	534	17.2
214.00	Unincorporated El Dorado County (Remainder Area)	0	2,328	3,353	31	31	76	0	76	30.8
215.00	El Dorado Hills	0	6,798	8,623	121	148	413	0	413	16.5
216.00	Unincorporated El Dorado County (Remainder Area)	0	1,749	2,460	26	23	56	0	56	31.2
217.00	Unincorporated El Dorado County (Remainder Area)	0	587	759	9	11	31	0	31	19.1
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,510	1,891	26	28	78	0	78	19.3
219.00	Unincorporated El Dorado County (Remainder Area)	0	3,903	4,955	67	69	191	0	191	20.4
220.00	Unincorporated El Dorado County (Remainder Area)	0	471	632	6	9	25	0	25	18.9
221.00	El Dorado Hills	0	37,326	48,591	581	999	2,596	0	2,596	14.4
222.00	Cameron Park	0	2,165	1,463	427	34	90	58	148	14.6
223.00	Cameron Park	0	5,504	7,081	79	174	461	0	461	11.9
224.00	Unincorporated El Dorado County (Remainder Area)	0	8,565	7,314	500	144	382	37	419	20.5
225.00	Unincorporated El Dorado County (Remainder Area)	0	23,221	10,893	2,967	147	424	277	702	33.1
226.00	Cameron Park	0	27,514	26,959	1,255	550	1,591	118	1,709	16.1
227.00	Cameron Park	0	8,651	10,994	207	281	689	10	699	12.4
228.00	Cameron Park	0	20,463	24,983	508	724	1,775	25	1,800	11.4
229.00	El Dorado Hills	0	41,462	34,471	2,382	793	2,061	237	2,298	18.0
230.00	El Dorado Hills	0	22,862	27,784	343	557	1,655	0	1,655	13.8
231.00	Unincorporated El Dorado County (Remainder Area)	0	4,978	6,651	73	134	388	0	388	12.8
232.00	Unincorporated El Dorado County (Remainder Area)	0	4,539	5,862	73	87	241	0	241	18.9
233.00	Cameron Park	0	8,471	3,660	748	116	266	100	366	23.1
234.00	Cameron Park	0	55,511	33,426	5,094	1,085	2,488	670	3,158	17.6
235.00	Cameron Park	0	42,235	54,330	640	1,322	3,580	2	3,582	11.8
236.00	Cameron Park	0	14,727	19,307	262	473	1,281	9	1,290	11.4
237.00	Cameron Park	0	2,247	2,615	46	78	179	0	179	12.6
238.00	Cameron Park	0	39,546	15,069	5,313	415	1,018	527	1,545	25.6
239.00	Cameron Park	0	2,338	3,345	35	86	228	0	228	10.3
240.00	Unincorporated El Dorado County (Remainder Area)	0	6,561	8,295	109	137	363	0	363	18.1
241.00	Cameron Park	0	14,966	7,538	1,277	181	480	151	631	23.7
242.00	Cameron Park	0	698	904	9	24	64	0	64	11.0
243.00	Cameron Park	0	2,017	2,585	32	61	162	1	163	12.4
244.00	Unincorporated El Dorado County (Remainder Area)	0	3,006	3,713	57	51	128	0	128	23.5
245.00	Unincorporated El Dorado County (Remainder Area)	0	772	999	11	10	30	0	30	25.7
246.00	Unincorporated El Dorado County (Remainder Area)	0	3,912	5,184	56	63	189	0	189	20.7
247.00	Unincorporated El Dorado County (Remainder Area)	0	13,625	14,348	352	296	636	0	636	21.4
248.00	Unincorporated El Dorado County (Remainder Area)	0	13,273	10,381	942	182	431	39	470	28.2

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
249.00	Unincorporated El Dorado County (Remainder Area)	0	3,358	1,860	529	26	56	25	81	41.5
250.00	Unincorporated El Dorado County (Remainder Area)	0	2,870	3,279	60	53	124	0	124	23.1
251.00	Unincorporated El Dorado County (Remainder Area)	0	5,625	6,213	136	139	363	0	363	15.5
252.00	Unincorporated El Dorado County (Remainder Area)	0	24,724	28,716	576	666	1,756	0	1,756	14.1
253.00	Unincorporated El Dorado County (Remainder Area)	0	7,485	8,850	159	149	410	0	410	18.3
254.00	Unincorporated El Dorado County (Remainder Area)	0	5,268	5,898	122	119	311	0	311	16.9
255.00	Cameron Park	0	64,954	0	14,885	0	0	1,405	1,405	46.2
256.00	Cameron Park	0	44,527	1,998	10,490	72	175	872	1,047	42.5
257.00	Shingle Springs	0	62,227	15,348	14,601	511	1,335	1,312	2,647	23.5
258.00	Unincorporated El Dorado County (Remainder Area)	0	2,120	2,523	40	36	99	0	99	21.4
259.00	Unincorporated El Dorado County (Remainder Area)	0	2,603	3,101	52	50	132	0	132	19.8
260.00	Shingle Springs	0	27,087	140	5,665	5	15	441	456	59.4
261.00	Shingle Springs	0	27,150	3,584	4,859	121	333	388	721	37.7
262.00	Shingle Springs	0	40,675	5,472	6,539	203	530	514	1,044	39.0
263.00	Shingle Springs	0	10,047	3,816	1,485	121	333	119	452	22.2
264.00	Shingle Springs	0	7,892	3,089	1,056	97	267	82	349	22.6
265.00	Unincorporated El Dorado County (Remainder Area)	0	1,956	2,209	43	44	116	0	116	16.9
266.00	Unincorporated El Dorado County (Remainder Area)	0	6,118	1,664	666	41	88	33	121	50.5
267.00	Unincorporated El Dorado County (Remainder Area)	0	8,695	10,038	219	240	633	0	633	13.7
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,023	3,094	171	72	190	10	200	15.1
269.00	Unincorporated El Dorado County (Remainder Area)	0	13,580	9,332	1,442	217	558	81	639	21.2
270.00	Unincorporated El Dorado County (Remainder Area)	0	6,207	2,667	678	54	135	39	174	35.7
271.00	Unincorporated El Dorado County (Remainder Area)	0	9,840	9,935	735	172	442	50	492	20.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	9,795	6,482	806	145	407	55	462	21.2
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,439	8,885	376	138	400	22	422	17.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	21,558	18,879	1,567	411	1,153	122	1,275	16.9
275.00	Unincorporated El Dorado County (Remainder Area)	0	14,758	17,112	337	379	971	0	971	15.2
276.00	Cameron Park	0	28,055	18,733	2,074	535	1,312	179	1,491	18.8
277.00	Cameron Park	0	4,944	5,796	100	176	427	0	427	11.6
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,749	5,977	217	100	265	10	275	20.9
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,919	3,719	49	55	146	0	146	20.0
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,438	1,677	31	37	103	0	103	14.0
281.00	Unincorporated El Dorado County (Remainder Area)	0	4,881	4,202	427	85	238	28	266	18.3
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,390	1,617	30	39	109	0	109	12.7
283.00	Shingle Springs	0	15,332	3,049	2,225	0	0	197	197	77.8
284.00	Shingle Springs	0	4,299	1,009	657	36	87	53	140	30.6
285.00	Unincorporated El Dorado County (Remainder Area)	0	14,061	2,737	2,962	53	154	233	387	36.3
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,660	2,071	30	36	101	0	101	16.4
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,395	1,685	27	34	87	0	87	16.0
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,174	2,688	40	50	140	0	140	15.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	320	421	5	8	23	0	23	13.8
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,045	2,614	35	44	128	0	128	16.0
291.00	Unincorporated El Dorado County (Remainder Area)	0	12,413	15,726	238	254	647	0	647	19.2
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,243	5,672	64	72	209	0	209	20.3
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,294	1,289	36	41	90	0	90	14.4
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,477	4,692	122	129	321	0	321	14.0
295.00	Unincorporated El Dorado County (Remainder Area)	0	62,264	4,926	22,499	110	282	1,540	1,822	34.2
296.00	El Dorado Diamond Springs	0	52,128	6,599	9,732	188	496	729	1,225	42.6
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,262	2,673	62	79	208	0	208	10.9
298.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	3,081	71	79	208	0	208	13.6
299.00	Unincorporated El Dorado County (Remainder Area)	0	4,994	5,716	112	114	293	0	293	17.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,728	1,917	41	45	116	0	116	14.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	624	549	41	20	44	3	47	13.4
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,867	2,605	208	89	194	10	204	18.9
303.00	El Dorado Diamond Springs	0	4,188	2,682	443	106	228	28	255	16.4
304.00	El Dorado Diamond Springs	0	8,292	283	2,652	12	26	269	296	28.1
305.00	El Dorado Diamond Springs	0	10,709	0	4,971	1	2	536	539	19.9
306.00	El Dorado Diamond Springs	0	7,895	3,170	1,348	128	275	110	386	20.5
307.00	El Dorado Diamond Springs	0	2,949	2,816	92	112	257	0	257	11.5
308.00	El Dorado Diamond Springs	0	239	245	6	12	28	0	28	8.7
309.00	El Dorado Diamond Springs	0	808	720	26	34	74	0	74	10.9
310.00	El Dorado Diamond Springs	0	13,788	638	2,504	29	66	220	286	48.2

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
311.00	El Dorado Diamond Springs	0	3,547	1,728	438	75	164	33	197	18.0
312.00	El Dorado Diamond Springs	0	9,915	6,814	976	310	711	71	782	12.7
313.00	El Dorado Diamond Springs	0	23,526	3,405	7,013	71	178	534	712	33.0
314.00	El Dorado Diamond Springs	0	10,542	2,505	1,454	100	249	103	352	30.0
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	674	642	22	31	68	0	68	10.0
317.00	El Dorado Diamond Springs	0	140	126	4	8	17	0	17	8.0
318.00	Unincorporated El Dorado County (Remainder Area)	0	8,111	4,743	732	182	452	41	493	16.4
319.00	El Dorado Diamond Springs	0	1,396	1,289	45	57	143	0	143	9.8
320.00	Unincorporated El Dorado County (Remainder Area)	0	4,885	1,581	810	19	48	61	109	44.7
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,212	6,158	137	116	295	2	297	17.5
322.00	Unincorporated El Dorado County (Remainder Area)	0	10,673	10,591	570	242	623	26	649	16.5
323.00	Unincorporated El Dorado County (Remainder Area)	0	8,272	3,756	1,838	67	172	139	311	26.6
324.00	Unincorporated El Dorado County (Remainder Area)	0	7,025	3,631	697	73	183	39	222	31.7
325.00	Unincorporated El Dorado County (Remainder Area)	0	717	836	16	20	51	0	51	14.1
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,083	2,471	49	57	145	0	145	14.4
327.00	Placerville	0	3,209	3,505	82	84	210	0	210	15.3
328.00	Unincorporated El Dorado County (Remainder Area)	0	696	793	16	19	48	0	48	14.6
329.00	Placerville	0	4,820	4,856	140	156	360	0	360	13.4
330.00	Unincorporated El Dorado County (Remainder Area)	0	3,484	3,705	94	109	273	0	273	12.8
331.00	Unincorporated El Dorado County (Remainder Area)	0	6,120	6,990	140	130	325	0	325	18.8
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,432	1,528	38	47	105	0	105	13.6
333.00	Unincorporated El Dorado County (Remainder Area)	0	3,938	4,510	87	91	225	0	225	17.5
334.00	Unincorporated El Dorado County (Remainder Area)	0	1,640	1,002	256	26	58	18	76	21.5
335.00	Unincorporated El Dorado County (Remainder Area)	0	2,801	3,021	73	76	163	0	163	17.2
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,045	1,118	26	30	66	0	66	15.8
337.00	Unincorporated El Dorado County (Remainder Area)	0	10,198	6,044	1,758	124	304	128	432	23.6
338.00	Unincorporated El Dorado County (Remainder Area)	0	13,834	15,709	397	350	900	11	911	15.2
339.00	Unincorporated El Dorado County (Remainder Area)	0	9,273	12,029	145	224	508	0	508	18.3
340.00	Unincorporated El Dorado County (Remainder Area)	0	8,019	5,276	510	95	202	30	232	34.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,630	1,556	172	34	75	16	91	18.0
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,375	2,733	49	48	123	0	123	19.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	4,958	5,767	91	78	177	0	177	28.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	5,861	6,947	107	92	208	0	208	28.1
345.00	Unincorporated El Dorado County (Remainder Area)	0	2,005	2,121	39	34	77	0	77	26.1
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,267	1,247	28	23	51	0	51	24.8
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,642	3,127	49	42	108	0	108	24.5
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,505	2,468	59	48	107	0	107	23.5
349.00	Unincorporated El Dorado County (Remainder Area)	0	8,160	4,922	577	94	193	34	227	35.9
350.00	Unincorporated El Dorado County (Remainder Area)	0	987	1,147	17	20	45	0	45	21.8
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,469	1,853	23	31	70	0	70	20.9
352.00	Unincorporated El Dorado County (Remainder Area)	0	2,102	2,701	31	38	86	0	86	24.4
353.00	Unincorporated El Dorado County (Remainder Area)	0	10,678	10,292	512	200	453	43	496	21.5
354.00	Unincorporated El Dorado County (Remainder Area)	0	7,011	4,699	456	68	154	43	197	35.6
355.00	Placerville	1	27,205	5,137	4,963	257	594	387	981	27.7
356.00	Placerville	1	2,711	2,556	91	109	235	0	235	11.6
357.00	Unincorporated El Dorado County (Remainder Area)	0	8,042	4,243	728	133	294	42	336	23.9
358.00	Placerville	0	10,297	3,363	1,630	128	283	123	406	25.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	3,540	3,686	94	105	247	0	247	14.3
360.00	Unincorporated El Dorado County (Remainder Area)	0	4,180	4,550	98	97	228	0	228	18.3
361.00	Placerville	1	26,989	10,058	4,607	570	1,189	370	1,558	17.3
362.00	Placerville	1	46,670	3,856	7,966	194	457	616	1,073	43.5
363.00	Unincorporated El Dorado County (Remainder Area)	0	416	428	12	19	48	0	48	8.7
364.00	Placerville	0	4,535	3,718	415	173	439	28	466	9.7
365.00	El Dorado Diamond Springs	0	24,235	9,333	2,984	541	1,147	223	1,370	17.7
366.00	El Dorado Diamond Springs	0	10,584	1,561	1,636	108	232	146	378	28.0
367.00	El Dorado Diamond Springs	0	7,168	0	3,549	0	0	398	398	18.0
368.00	El Dorado Diamond Springs	0	4,905	1,336	823	68	157	81	238	20.6
369.00	El Dorado Diamond Springs	0	14,199	8,875	1,412	485	1,088	114	1,202	11.8
370.00	El Dorado Diamond Springs	0	6,930	78	2,913	0	0	317	317	21.9
371.00	El Dorado Diamond Springs	0	2,152	2,077	61	69	155	0	155	13.9
372.00	El Dorado Diamond Springs	0	28,663	14,060	3,147	559	1,254	296	1,550	18.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
373.00	El Dorado Diamond Springs	0	556	494	18	27	62	0	62	9.0
374.00	El Dorado Diamond Springs	0	1,046	276	116	14	32	10	42	24.8
375.00	El Dorado Diamond Springs	0	361	329	11	15	34	0	34	10.5
376.00	El Dorado Diamond Springs	0	1,492	726	219	34	78	17	95	15.7
377.00	El Dorado Diamond Springs	0	723	318	170	14	32	16	48	15.0
378.00	El Dorado Diamond Springs	0	547	518	16	27	62	0	62	8.8
379.00	El Dorado Diamond Springs	0	941	874	29	48	111	0	111	8.5
380.00	El Dorado Diamond Springs	0	196	186	6	12	28	0	28	7.1
381.00	El Dorado Diamond Springs	0	115	111	3	7	16	0	16	7.2
382.00	El Dorado Diamond Springs	0	222	184	8	11	25	0	25	8.7
383.00	Unincorporated El Dorado County (Remainder Area)	0	2,357	2,392	64	80	179	0	179	13.1
384.00	El Dorado Diamond Springs	0	4,504	4,469	123	174	390	0	390	11.5
385.00	El Dorado Diamond Springs	0	14,274	13,898	540	600	1,346	14	1,360	10.5
386.00	El Dorado Diamond Springs	0	2,238	2,243	60	90	202	0	202	11.1
387.00	El Dorado Diamond Springs	0	3,281	744	471	36	81	44	124	26.4
388.00	El Dorado Diamond Springs	0	5,459	0	2,606	0	0	278	278	19.6
389.00	El Dorado Diamond Springs	0	5,903	19	2,148	2	5	240	245	24.1
390.00	El Dorado Diamond Springs	0	7,345	4,866	735	311	670	54	724	10.1
391.00	El Dorado Diamond Springs	0	6,028	144	968	11	24	92	116	52.0
392.00	El Dorado Diamond Springs	0	1,014	475	89	28	60	5	66	15.5
393.00	El Dorado Diamond Springs	0	25,639	4,760	3,793	281	645	288	932	27.5
394.00	El Dorado Diamond Springs	0	6,140	111	2,051	8	18	168	186	33.0
395.00	Placerville	1	80,005	1,459	29,650	98	206	2,613	2,819	28.4
396.00	El Dorado Diamond Springs	0	30,664	0	5,532	0	0	425	425	72.2
397.00	El Dorado Diamond Springs	0	1,453	905	120	50	109	7	116	12.5
398.00	El Dorado Diamond Springs	0	1,155	266	144	14	32	11	43	26.7
399.00	El Dorado Diamond Springs	0	959	834	33	43	99	0	99	9.7
400.00	El Dorado Diamond Springs	0	7,340	210	1,237	16	35	97	132	55.8
401.00	Placerville	0	26,880	942	4,574	57	121	337	458	58.7
402.00	El Dorado Diamond Springs	0	4,675	2,567	1,032	137	344	103	447	10.5
403.00	El Dorado Diamond Springs	0	31,547	2,590	12,686	124	267	906	1,174	26.9
404.00	El Dorado Diamond Springs	0	1,727	303	333	19	44	32	76	22.8
405.00	El Dorado Diamond Springs	0	1,669	148	251	9	21	21	41	40.2
406.00	El Dorado Diamond Springs	0	26,221	386	4,385	24	55	339	395	66.5
407.00	El Dorado Diamond Springs	0	16,201	554	3,223	39	84	285	369	43.9
408.00	El Dorado Diamond Springs	0	5,521	0	2,366	1	2	279	281	19.6
409.00	Placerville	0	37,977	3,517	8,041	162	410	610	1,019	37.3
410.00	El Dorado Diamond Springs	0	40,316	14,331	5,587	602	1,418	423	1,840	21.9
411.00	Placerville	1	55,481	5,299	11,419	335	793	982	1,775	31.3
412.00	Unincorporated El Dorado County (Remainder Area)	0	3,441	3,309	105	114	271	0	271	12.7
413.00	Placerville	0	4,918	4,594	170	199	472	1	473	10.4
414.00	El Dorado Diamond Springs	0	20,103	92	5,325	7	15	561	576	34.9
415.00	Unincorporated El Dorado County (Remainder Area)	0	437	320	42	18	38	4	42	10.3
416.00	El Dorado Diamond Springs	0	267	129	54	9	19	7	26	10.1
417.00	Placerville	1	22,868	912	4,798	55	124	424	548	41.8
418.00	Placerville	1	5,504	0	1,376	0	0	130	130	42.3
419.00	Placerville	1	6,891	0	1,208	0	0	112	112	61.6
420.00	Placerville	1	5,272	970	1,322	56	132	117	249	21.2
421.00	Placerville	1	2,553	1,466	406	81	191	28	219	11.7
422.00	Placerville	1	67,392	5,183	31,184	303	714	2,392	3,106	21.7
423.00	Unincorporated El Dorado County (Remainder Area)	0	448	391	26	21	49	1	50	9.0
424.00	Placerville	0	25,597	5,377	4,430	252	582	351	934	27.4
425.00	Placerville	0	67,430	28,934	8,086	1,390	3,090	730	3,820	17.7
426.00	Placerville	0	706	726	18	32	80	0	80	8.8
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,813	4,038	100	102	255	0	255	15.0
428.00	Unincorporated El Dorado County (Remainder Area)	0	551	584	14	22	55	0	55	10.0
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,193	1,395	35	35	87	0	87	13.8
430.00	Unincorporated El Dorado County (Remainder Area)	0	3,098	2,008	547	59	146	44	190	16.3
431.00	Placerville	1	13,596	511	2,247	28	59	167	226	60.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,626	10,622	3,103	363	900	241	1,140	13.7
433.00	Placerville	1	16,918	10,023	2,268	678	1,398	175	1,572	10.8
434.00	Placerville	1	828	640	30	44	95	0	95	8.7

VMT Summary by Jurisdiction - 2040 Baseline Scenario

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435.00	Placerville	1	1,290	671	231	47	100	27	127	10.2
436.00	Unincorporated El Dorado County (Remainder Area)	0	1,146	1,171	49	32	79	2	81	14.2
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,360	5,919	131	147	371	0	371	14.5
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,837	4,262	505	143	303	32	335	17.4
439.00	Unincorporated El Dorado County (Remainder Area)	0	9,608	4,644	1,525	169	359	90	449	21.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	5,939	863	1,570	31	66	111	177	33.6
441.00	Placerville	1	399	393	11	15	35	0	35	11.4
442.00	Placerville	1	13,545	9,872	968	350	882	56	939	14.4
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,946	1,882	56	59	125	0	125	15.5
444.00	Unincorporated El Dorado County (Remainder Area)	0	273	179	17	8	19	1	20	13.7
445.00	Placerville	0	839	789	56	26	65	3	68	12.3
446.00	Placerville	1	4,234	763	694	28	65	53	119	35.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	8,302	3,155	1,566	81	199	116	314	26.4
448.00	Placerville	0	1,804	2,034	52	64	161	0	161	11.2
449.00	Unincorporated El Dorado County (Remainder Area)	0	465	476	12	14	30	0	30	15.5
450.00	Unincorporated El Dorado County (Remainder Area)	0	2,337	2,203	75	84	180	0	180	13.0
451.00	Unincorporated El Dorado County (Remainder Area)	0	894	868	26	27	58	0	58	15.4
452.00	Placerville	0	6,873	3,649	920	150	321	66	387	17.7
453.00	Placerville	1	3,297	3,171	139	182	391	0	391	8.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	543	478	19	28	59	0	59	9.2
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,531	2,663	67	73	181	0	181	14.0
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,775	1,772	50	51	109	0	109	16.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	3,115	3,005	249	68	153	13	166	18.7
458.00	Placerville	0	11,360	1,923	1,822	71	157	130	287	39.6
459.00	Placerville	0	726	702	21	28	62	0	62	11.7
460.00	Unincorporated El Dorado County (Remainder Area)	0	823	792	23	22	47	0	47	17.4
461.00	Unincorporated El Dorado County (Remainder Area)	0	113	128	2	6	13	0	13	8.6
462.00	Unincorporated El Dorado County (Remainder Area)	0	2,602	1,238	402	31	67	24	91	28.7
463.00	Unincorporated El Dorado County (Remainder Area)	0	3,727	5,338	47	89	195	0	195	19.1
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,789	3,416	47	55	129	0	129	21.7
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,725	5,388	32	65	163	0	163	22.8
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,077	3,406	113	65	143	7	150	20.6
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,487	3,499	29	49	107	0	107	23.2
468.00	Unincorporated El Dorado County (Remainder Area)	0	5,812	6,924	96	128	263	0	263	22.1
469.00	Unincorporated El Dorado County (Remainder Area)	0	3,786	5,171	42	70	156	0	156	24.3
470.00	Unincorporated El Dorado County (Remainder Area)	0	1,666	2,153	23	33	72	0	72	23.0
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,208	1,595	17	26	57	0	57	21.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,206	1,631	17	26	57	0	57	21.1
473.00	Unincorporated El Dorado County (Remainder Area)	0	1,175	676	222	13	33	25	58	20.4
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,758	2,037	35	42	95	0	95	18.5
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,837	2,192	33	42	95	0	95	19.3
476.00	Unincorporated El Dorado County (Remainder Area)	0	4,009	899	523	16	41	34	75	53.4
477.00	Unincorporated El Dorado County (Remainder Area)	0	1,570	2,180	20	31	78	0	78	20.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,224	1,437	24	30	66	0	66	18.4
479.00	Unincorporated El Dorado County (Remainder Area)	0	5,057	3,301	420	62	156	29	185	27.4
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,693	2,440	28	31	68	1	69	24.5
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,353	1,928	18	24	53	0	53	25.5
482.00	Unincorporated El Dorado County (Remainder Area)	0	6,439	8,493	87	102	226	0	226	28.5
483.00	Unincorporated El Dorado County (Remainder Area)	0	9,535	4,695	1,031	132	285	76	361	26.4
484.00	Unincorporated El Dorado County (Remainder Area)	0	8,636	4,829	1,170	104	267	118	384	22.5
485.00	Unincorporated El Dorado County (Remainder Area)	0	2,234	3,011	30	40	103	0	103	21.8
486.00	Unincorporated El Dorado County (Remainder Area)	0	5,286	7,069	75	110	249	0	249	21.3
487.00	Unincorporated El Dorado County (Remainder Area)	0	18,701	8,250	3,045	228	504	184	688	27.2
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,732	7,282	104	125	283	0	283	20.3
489.00	Unincorporated El Dorado County (Remainder Area)	0	7,396	6,626	406	157	355	24	379	19.5
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,515	1,805	31	35	86	0	86	17.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,401	8,785	160	181	444	0	444	16.7
492.00	Unincorporated El Dorado County (Remainder Area)	0	8,812	3,449	1,038	76	188	72	259	34.0
493.00	Unincorporated El Dorado County (Remainder Area)	0	9,816	3,608	1,461	79	195	101	296	33.1
494.00	Unincorporated El Dorado County (Remainder Area)	0	6,332	2,995	757	71	174	55	229	27.7
495.00	Unincorporated El Dorado County (Remainder Area)	0	642	749	14	17	42	0	42	15.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,203	4,221	709	94	232	52	284	25.3

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
497.00	Unincorporated El Dorado County (Remainder Area)	0	9,446	4,990	1,004	109	263	75	338	27.9
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,590	4,033	175	78	176	13	189	19.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,503	1,832	30	38	93	0	93	16.1
500.00	Unincorporated El Dorado County (Remainder Area)	0	5,290	1,094	1,164	11	24	97	121	43.6
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,232	817	553	22	49	58	107	20.8
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,254	8,928	139	147	349	0	349	20.8
503.00	Unincorporated El Dorado County (Remainder Area)	0	5,070	10	842	1	2	56	58	87.1
504.00	Unincorporated El Dorado County (Remainder Area)	0	13,658	5,066	1,629	140	313	103	416	32.8
505.00	Unincorporated El Dorado County (Remainder Area)	0	80	95	1	3	7	0	7	11.9
506.00	Unincorporated El Dorado County (Remainder Area)	0	995	1,020	35	28	64	1	65	15.4
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,130	2,501	48	61	145	0	145	14.7
508.00	Unincorporated El Dorado County (Remainder Area)	0	4,878	2,870	1,160	85	184	114	298	16.4
509.00	Unincorporated El Dorado County (Remainder Area)	0	2,068	407	651	12	27	77	104	19.9
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,520	2,933	223	92	200	15	215	16.3
511.00	Unincorporated El Dorado County (Remainder Area)	0	1,993	1,574	132	46	109	9	118	16.8
512.00	Unincorporated El Dorado County (Remainder Area)	0	1,909	2,176	43	45	107	0	107	17.9
513.00	Unincorporated El Dorado County (Remainder Area)	0	8,016	10,349	170	178	456	7	463	17.3
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,462	43,123	374	714	1,830	0	1,830	17.2
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,165	4,073	54	78	188	0	188	16.8
516.00	Unincorporated El Dorado County (Remainder Area)	0	7,404	10,018	101	162	391	0	391	18.9
517.00	Unincorporated El Dorado County (Remainder Area)	0	23,471	18,996	1,723	489	1,085	139	1,224	19.2
518.00	Unincorporated El Dorado County (Remainder Area)	0	13,133	12,367	799	325	745	53	799	16.4
519.00	Unincorporated El Dorado County (Remainder Area)	0	7,739	6,213	744	162	371	60	432	17.9
520.00	Unincorporated El Dorado County (Remainder Area)	0	13,964	12,163	1,168	296	678	99	778	18.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	15,913	9,284	1,662	309	686	167	853	18.6
522.00	Unincorporated El Dorado County (Remainder Area)	0	4,836	5,854	167	96	236	9	245	19.7
523.00	Unincorporated El Dorado County (Remainder Area)	0	24,551	10,064	3,120	302	698	272	970	25.3
524.00	Unincorporated El Dorado County (Remainder Area)	0	19,198	8,822	2,532	214	495	207	702	27.3
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,565	5,782	59	97	233	0	233	19.6
526.00	Unincorporated El Dorado County (Remainder Area)	0	3,206	4,031	56	55	142	0	142	22.6
527.00	Unincorporated El Dorado County (Remainder Area)	0	8,811	6,976	838	186	447	71	517	17.0
528.00	Unincorporated El Dorado County (Remainder Area)	0	51,708	63,975	888	1,061	2,556	51	2,607	19.8
529.00	Unincorporated El Dorado County (Remainder Area)	0	1,259	1,222	124	19	46	8	54	23.2
530.00	Unincorporated El Dorado County (Remainder Area)	0	13,300	17,586	223	226	551	0	551	24.2
531.00	Unincorporated El Dorado County (Remainder Area)	0	3,817	5,010	62	59	144	0	144	26.6
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,640	4,570	64	64	156	0	156	23.4
533.00	Unincorporated El Dorado County (Remainder Area)	0	11,659	9,338	984	151	367	53	420	27.8
534.00	Unincorporated El Dorado County (Remainder Area)	0	4,280	5,431	71	69	168	0	168	25.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,371	6,745	84	95	245	0	245	21.9
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,499	6,973	82	106	273	0	273	20.1
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,964	14,381	138	208	536	0	536	20.4
538.00	Unincorporated El Dorado County (Remainder Area)	0	15,597	7,381	1,837	159	382	137	519	30.0
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,553	1,922	1,903	11	27	142	169	80.2
540.00	Unincorporated El Dorado County (Remainder Area)	0	9,633	0	1,686	0	0	132	132	72.8
541.00	Unincorporated El Dorado County (Remainder Area)	0	2,568	840	299	18	43	24	67	38.2
542.00	Unincorporated El Dorado County (Remainder Area)	0	6,153	2,205	963	55	130	76	206	29.9
543.00	Unincorporated El Dorado County (Remainder Area)	0	32,304	1,673	6,353	50	118	368	486	66.4
544.00	Unincorporated El Dorado County (Remainder Area)	0	2,506	2,672	63	58	137	0	137	18.2
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,758	20	27	64	0	64	22.2
546.00	Unincorporated El Dorado County (Remainder Area)	0	7,991	10,043	115	131	310	0	310	25.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,914	533	758	13	31	64	95	51.8
548.00	Unincorporated El Dorado County (Remainder Area)	0	15,338	17,576	597	405	960	27	987	15.5
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,386	2,760	64	54	128	1	129	18.5
550.00	Unincorporated El Dorado County (Remainder Area)	0	6,354	1,696	996	40	100	62	162	39.1
551.00	Unincorporated El Dorado County (Remainder Area)	0	8,972	1,812	1,357	46	115	87	202	44.4
552.00	Unincorporated El Dorado County (Remainder Area)	0	1,059	454	106	11	26	6	32	33.1
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,477	1,741	32	35	83	0	83	17.8
554.00	Unincorporated El Dorado County (Remainder Area)	0	6,782	7,946	189	185	438	5	443	15.3
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,558	1,761	31	39	92	0	92	16.9
556.00	Unincorporated El Dorado County (Remainder Area)	0	4,503	5,469	80	89	211	0	211	21.4
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,811	1,549	214	34	81	20	101	18.0
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,005	2,503	27	40	96	0	96	20.9

VMT Summary by Jurisdiction - 2040 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,256	1,459	22	28	67	0	67	18.7
560.00	Unincorporated El Dorado County (Remainder Area)	0	5,897	1,198	1,745	28	66	172	238	24.7
561.00	Unincorporated El Dorado County (Remainder Area)	0	901	1,024	19	23	54	0	54	16.6
562.00	Unincorporated El Dorado County (Remainder Area)	0	3,761	4,664	55	73	175	0	175	21.4
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,095	2,703	24	40	90	0	90	23.2
564.00	Unincorporated El Dorado County (Remainder Area)	0	1,035	1,214	24	27	62	0	62	16.6
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,174	2,329	52	69	143	0	143	15.2
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,929	3,986	140	112	264	5	269	14.6
567.00	Unincorporated El Dorado County (Remainder Area)	0	3,065	694	580	29	60	50	110	27.9
568.00	Unincorporated El Dorado County (Remainder Area)	0	2,929	754	551	26	61	47	108	27.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	6,998	1,996	1,081	72	169	96	265	26.4
570.00	Unincorporated El Dorado County (Remainder Area)	0	8,639	1,184	1,851	53	109	169	278	31.1
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,099	1,130	28	38	79	0	79	14.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	4,739	1,232	962	39	90	89	178	26.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	7,934	9,693	125	126	284	0	284	27.9
574.00	Unincorporated El Dorado County (Remainder Area)	0	4,398	5,592	54	88	204	1	205	21.5
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,797	4,029	21	37	86	0	86	32.7
576.00	Unincorporated El Dorado County (Remainder Area)	0	2,740	856	322	19	43	33	76	36.1
577.00	Unincorporated El Dorado County (Remainder Area)	0	527	635	8	14	32	0	32	16.7
578.00	Unincorporated El Dorado County (Remainder Area)	0	25,033	38,183	125	451	1,016	0	1,016	24.6
579.00	Unincorporated El Dorado County (Remainder Area)	0	2,783	4,024	21	41	96	0	96	29.0
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,454	3,330	26	42	98	0	98	24.9
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,765	7,005	39	66	146	0	146	32.6
582.00	Unincorporated El Dorado County (Remainder Area)	0	13,111	992	1,606	15	37	65	102	128.6
583.00	Unincorporated El Dorado County (Remainder Area)	0	30,927	46,535	291	446	987	15	1,002	30.9
584.00	Unincorporated El Dorado County (Remainder Area)	0	2,103	2,052	106	22	47	6	53	39.8
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,922	14,081	94	148	327	0	327	30.3
586.00	Unincorporated El Dorado County (Remainder Area)	0	3,736	2,865	258	56	105	10	115	32.5
587.00	Unincorporated El Dorado County (Remainder Area)	0	1,958	2,756	23	48	116	0	116	16.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	15,965	22,673	145	348	892	0	892	17.9
589.00	Unincorporated El Dorado County (Remainder Area)	0	239	290	6	8	16	0	16	14.9
590.00	Unincorporated El Dorado County (Remainder Area)	0	819	1,034	14	23	55	0	55	14.9
591.00	Unincorporated El Dorado County (Remainder Area)	0	67	87	1	3	7	0	7	9.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	14,394	9,407	1,281	361	801	146	947	15.2
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,848	5,889	529	155	370	56	426	16.1
594.00	Unincorporated El Dorado County (Remainder Area)	0	11,293	15,053	163	316	754	0	754	15.0
595.00	Unincorporated El Dorado County (Remainder Area)	0	4,038	2,673	251	46	104	27	131	30.8
596.00	Unincorporated El Dorado County (Remainder Area)	0	5,258	3,064	493	59	151	48	199	26.4
597.00	Unincorporated El Dorado County (Remainder Area)	0	12,298	3,074	1,753	122	271	214	485	25.3
598.00	Unincorporated El Dorado County (Remainder Area)	0	8,757	386	1,441	15	33	166	200	43.9
599.00	Unincorporated El Dorado County (Remainder Area)	0	622	765	12	18	40	0	40	15.6
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,409	8,190	1,044	217	481	94	575	19.8
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	1,856	5	11	24	0	24	54.9
602.00	Unincorporated El Dorado County (Remainder Area)	0	1,851	116	235	3	6	9	15	126.6
603.00	Unincorporated El Dorado County (Remainder Area)	0	3,571	470	923	12	23	32	55	65.5
604.00	Unincorporated El Dorado County (Remainder Area)	0	3,261	634	449	17	31	13	44	74.4
605.00	Unincorporated El Dorado County (Remainder Area)	0	2,835	914	807	21	46	29	75	38.0
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,216	4,498	12	19	47	0	47	68.8
608.00	Unincorporated El Dorado County (Remainder Area)	0	30	41	0	1	2	0	2	13.8
609.00	Unincorporated El Dorado County (Remainder Area)	0	9,749	1,528	1,526	37	80	61	141	69.0
610.00	El Dorado Hills	0	60,722	137	28,105	0	0	2,725	2,725	22.3
611.00	El Dorado Hills	0	59,180	34,796	8,774	1,023	2,614	672	3,286	18.0
612.00	El Dorado Hills	0	128,483	1,046	62,207	0	0	5,778	5,778	22.2
613.00	Unincorporated El Dorado County (Remainder Area)	0	119	102	18	4	10	3	13	9.3
614.00	El Dorado Hills	0	6,284	7,424	137	211	550	0	550	11.4
615.00	El Dorado Hills	0	10,543	8,776	725	211	550	60	609	17.3
616.00	El Dorado Hills	0	1,568	1,862	33	53	138	0	138	11.4
617.00	El Dorado Hills	0	13,981	9,746	904	187	553	89	642	21.8
618.00	El Dorado Hills	0	4,693	0	2,128	0	0	265	265	17.7
619.00	El Dorado Hills	0	3,485	0	566	0	0	60	60	58.1
620.00	El Dorado Hills	0	17,466	3,715	1,583	0	0	178	178	98.1

VMT Summary by Jurisdiction - 2040 Baseline Scenario

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621.00	El Dorado Hills	0	12,558	16,345	218	326	963	0	963	13.0
622.00	El Dorado Hills	0	19,304	18,056	1,112	370	1,094	90	1,184	16.3
623.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
624.00	El Dorado Hills	0	15,290	14,513	684	309	918	54	972	15.7
625.00	El Dorado Hills	0	182	0	105	0	0	12	12	15.2
626.00	Unincorporated El Dorado County (Remainder Area)	0	42,077	4,866	6,506	164	386	554	939	44.8
627.00	Unincorporated El Dorado County (Remainder Area)	0	59,517	0	11,017	0	0	966	966	61.6
628.00	Unincorporated El Dorado County (Remainder Area)	0	19,745	23,460	458	515	1,322	0	1,322	14.9
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,660	2,025	33	53	138	0	138	12.0
633.00	Unincorporated El Dorado County (Remainder Area)	0	7,027	8,434	150	211	550	0	550	12.8
634.00	Unincorporated El Dorado County (Remainder Area)	0	7,361	8,924	151	212	552	0	552	13.3
635.00	Unincorporated El Dorado County (Remainder Area)	0	3,605	4,362	72	106	276	0	276	13.1
636.00	Unincorporated El Dorado County (Remainder Area)	0	6,042	8,294	136	212	556	0	556	10.9
637.00	Unincorporated El Dorado County (Remainder Area)	0	9,445	11,545	188	265	695	0	695	13.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,274	1,595	22	36	94	0	94	13.5
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,735	3,343	52	72	189	0	189	14.5
640.00	Unincorporated El Dorado County (Remainder Area)	0	9,539	11,832	183	272	713	0	713	13.4
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,759	3,405	52	72	189	0	189	14.6
642.00	Unincorporated El Dorado County (Remainder Area)	0	36,495	38,459	1,582	926	2,421	96	2,517	14.5
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,281	11,512	180	257	672	0	672	13.8
644.00	Unincorporated El Dorado County (Remainder Area)	0	3,071	3,879	54	90	238	0	238	12.9
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,188	24,962	914	495	1,311	56	1,367	15.5
646.00	Unincorporated El Dorado County (Remainder Area)	0	7,088	8,875	124	180	477	0	477	14.9
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,499	1,883	26	45	119	0	119	12.6
648.00	Unincorporated El Dorado County (Remainder Area)	0	3,880	2,218	512	45	119	42	161	24.1
649.00	Unincorporated El Dorado County (Remainder Area)	0	4,695	2,830	29	45	119	0	119	39.4
650.00	Outside of County	0	2,924,327	1,494,977	488,244	0	0	0	0	-
651.00	Outside of County	0	29,889	17,048	4,074	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	418,098	187,954	51,242	0	0	0	0	-
654.00	Outside of County	0	41,830	9,395	2,400	0	0	0	0	-
655.00	Outside of County	0	352,832	120,373	33,664	0	0	0	0	-
656.00	Outside of County	0	56,354	18,723	6,997	0	0	0	0	-
657.00	Outside of County	0	196,519	9,096	3,547	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	5,729	3,013	928	0	0	0	0	-
660.00	Outside of County	0	181,521	102,048	33,425	0	0	0	0	-
661.00	Outside of County	0	148,492	79,165	24,191	0	0	0	0	-
662.00	Outside of County	0	710,514	374,713	120,676	0	0	0	0	-
663.00	Outside of County	0	733,804	259,751	80,292	0	0	0	0	-
664.00	Outside of County	0	451,825	247,011	65,947	0	0	0	0	-
665.00	Outside of County	0	221,136	97,356	35,746	0	0	0	0	-
666.00	Outside of County	0	102,261	56,553	17,165	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	535,637	361,820	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	203,230	110,554	30,430	0	0	0	0	-
672.00	Outside of County	0	38,760	38,854	0	0	0	0	0	-
673.00	Outside of County	0	33,691	16,694	0	0	0	0	0	-
674.00	Outside of County	0	405,139	27,678	0	0	0	0	0	-

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VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

	VMT Estimates			VMT Efficiency Metrics			Population Details				
Jurisdiction	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	298,629	68,875	90,564	21.0	10.5	11.9	2,914	6,581	7,639	14,220	2.26
Unincorporated El Dorado County	3,727,347	3,133,149	424,536	21.7	22.5	12.8	56,055	138,957	33,176	172,133	2.48
205	2,717	0	1,197	20.9	#DIV/0!	9.2	0	0	130	130	#DIV/0!
629	17,944	23,782	325	11.7	15.5	#DIV/0!	521	1,535	0	1,535	2.95
630	10,121	12,921	165	14.2	18.1	#DIV/0!	242	713	0	713	2.95
631	8,419	11,314	156	14.0	18.9	#DIV/0!	237	600	0	600	2.53
Average (Residential)	36,484	48,016	645	12.8	16.9	#DIV/0!	1,000	2,848	0	2,848	2.85

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	4,165	2,607	329	46	75	16	91	46.0
2.00	Unincorporated El Dorado County (Remainder Area)	0	22,965	31,759	465	525	1,185	34	1,219	18.8
3.00	Unincorporated El Dorado County (Remainder Area)	0	2,956	3,755	42	34	88	0	88	33.7
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,534	1,531	52	16	34	2	36	42.9
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,863	4,033	27	33	73	0	73	39.5
6.00	Unincorporated El Dorado County (Remainder Area)	0	12,281	15,758	355	270	646	9	655	18.8
7.00	Unincorporated El Dorado County (Remainder Area)	0	25,749	33,214	999	516	1,119	71	1,190	21.6
8.00	Unincorporated El Dorado County (Remainder Area)	0	2,719	788	754	14	36	60	96	28.3
9.00	Unincorporated El Dorado County (Remainder Area)	0	28,470	33,255	1,713	482	1,240	117	1,357	21.0
10.00	Outside of County	0	0	0	0	0	0	0	0	-
11.00	Outside of County	0	0	0	0	0	0	0	0	-
12.00	Outside of County	0	39,358	31,044	1,867	663	1,741	96	1,837	21.4
13.00	Outside of County	0	31,233	36,088	679	775	1,995	0	1,995	15.7
14.00	Outside of County	0	64,471	72,523	1,557	1,502	4,068	32	4,100	15.7
15.00	Outside of County	0	498	526	10	10	23	0	23	22.1
16.00	Outside of County	0	55,841	9,013	7,475	149	378	434	812	68.8
17.00	Outside of County	0	0	0	0	0	0	0	0	-
18.00	Outside of County	0	1,559	615	67	41	116	0	116	13.4
19.00	Outside of County	0	0	0	0	0	0	0	0	-
20.00	Outside of County	0	220	18	119	1	1	5	6	36.6
21.00	Outside of County	0	5,284	50	2,566	1	2	112	114	46.4
22.00	Outside of County	0	2,239	268	582	2	6	23	29	77.2
23.00	Outside of County	0	59,412	23,930	6,374	101	273	244	517	115.0
24.00	Outside of County	0	48	30	1	1	1	0	1	48.1
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	0	0	0	0	0	0	0	-
27.00	Outside of County	0	1,331	266	504	2	6	22	28	47.5
28.00	Outside of County	0	12,518	14,669	379	123	332	6	338	37.0
29.00	Outside of County	0	7,969	9,215	245	72	192	5	197	40.5
30.00	Outside of County	0	6,064	0	3,219	0	0	133	133	45.6
31.00	Outside of County	0	5,555	4,106	1,047	44	94	45	139	39.9
32.00	Outside of County	0	25,001	6,789	622	676	1,526	0	1,526	16.4
33.00	Outside of County	0	0	0	0	0	0	0	0	-
34.00	Outside of County	0	8,742	9,467	588	75	191	16	207	42.3
35.00	Outside of County	0	0	0	0	0	0	0	0	-
36.00	Outside of County	0	0	0	0	0	0	0	0	-
37.00	Outside of County	0	5,055	0	2,683	0	0	178	178	28.4
38.00	Outside of County	0	0	0	0	0	0	0	0	-
39.00	Outside of County	0	24,469	22,495	3,316	666	1,569	227	1,796	13.6
40.00	Outside of County	0	114,083	26,152	18,937	916	2,079	1,839	3,918	29.1
41.00	Outside of County	0	30,929	26,530	3,959	544	1,271	203	1,474	21.0
42.00	Outside of County	0	0	0	0	0	0	0	0	-
43.00	Outside of County	0	53,474	63,111	1,216	828	2,045	0	2,045	26.1
44.00	Outside of County	0	79,462	76,681	3,293	1,069	2,614	95	2,709	29.3
45.00	Outside of County	0	100,919	24,095	14,595	906	2,057	1,357	3,414	29.6
46.00	Outside of County	0	0	0	0	0	0	0	0	-
47.00	Outside of County	0	101,098	0	42,946	0	0	2,398	2,398	42.2
48.00	Outside of County	0	80,586	76,188	3,530	1,203	3,068	121	3,189	25.3
49.00	Outside of County	0	153,081	0	78,472	0	0	4,642	4,642	33.0
50.00	Outside of County	0	120,596	85,048	19,401	1,025	2,430	826	3,256	37.0
51.00	Outside of County	0	128,230	69,560	18,278	1,768	4,253	1,237	5,490	23.4
52.00	Outside of County	0	45,740	25,374	4,482	297	667	240	907	50.4
53.00	Outside of County	0	114,291	87,442	8,514	1,335	3,452	377	3,829	29.9
54.00	Outside of County	0	95,552	36,626	39,348	476	1,153	1,827	2,980	32.1
55.00	Outside of County	0	82,785	38,244	12,555	675	1,583	800	2,383	34.7
56.00	Outside of County	0	34,954	39,996	1,001	820	1,933	4	1,937	18.0
57.00	Outside of County	0	162,501	0	114,100	0	0	7,375	7,375	22.0
58.00	Outside of County	0	43,884	24,409	6,860	465	1,160	388	1,548	28.3
59.00	Outside of County	0	424	110	174	2	4	9	13	32.6
60.00	Outside of County	0	205,887	17,385	103,752	238	478	4,236	4,714	43.7
61.00	Outside of County	0	273,319	191,117	22,407	2,205	5,227	797	6,024	45.4
62.00	Outside of County	0	55,263	316	26,863	4	8	1,150	1,158	47.7

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	112,860	18,408	51,560	340	756	3,083	3,839	29.4
64.00	Outside of County	0	79,005	60,129	11,519	865	2,156	560	2,716	29.1
65.00	Outside of County	0	10,440	11,567	219	136	338	0	338	30.9
66.00	Outside of County	0	61,903	50,243	4,323	826	1,950	172	2,122	29.2
67.00	Outside of County	0	10,476	0	2,823	0	0	178	178	58.9
68.00	Outside of County	0	55,181	32,687	11,906	616	1,314	679	1,993	27.7
69.00	Outside of County	0	144,002	90,645	38,376	1,588	4,122	2,320	6,442	22.4
70.00	Outside of County	0	210,784	809	127,309	0	0	6,956	6,956	30.3
71.00	Outside of County	0	107,466	110,633	4,910	1,231	3,088	121	3,209	33.5
72.00	Outside of County	0	254,300	367	134,528	0	0	5,133	5,133	49.5
73.00	Outside of County	0	122,403	0	80,593	0	0	5,627	5,627	21.8
74.00	Outside of County	0	176,685	21,974	81,872	435	1,022	4,728	5,750	30.7
75.00	Outside of County	0	106,661	77,457	27,373	1,936	4,401	1,866	6,267	17.0
76.00	Outside of County	0	42,192	23,697	5,035	508	1,352	297	1,649	25.6
77.00	Outside of County	0	163,941	79,527	34,650	1,155	2,810	1,659	4,469	36.7
78.00	Outside of County	0	88,614	0	23,929	0	0	1,567	1,567	56.5
79.00	Outside of County	0	973	0	0	0	0	20	20	48.6
80.00	Outside of County	0	50,449	0	24,013	0	0	1,410	1,410	35.8
81.00	Outside of County	0	161,159	0	83,716	0	0	4,951	4,951	32.6
82.00	Outside of County	0	56,296	0	30,053	0	0	1,787	1,787	31.5
83.00	Outside of County	0	0	0	0	0	0	0	0	-
84.00	Outside of County	0	65,088	48,670	6,646	1,226	2,817	405	3,222	20.2
85.00	Outside of County	0	71,942	60,280	4,755	1,295	3,246	253	3,499	20.6
86.00	Outside of County	0	112,658	75,282	11,608	1,968	4,487	754	5,241	21.5
87.00	Outside of County	0	103,506	66,791	13,031	2,114	4,344	800	5,144	20.1
88.00	Outside of County	0	86,551	47,829	11,999	1,099	2,679	762	3,441	25.2
89.00	Outside of County	0	11,291	0	4,706	0	0	293	293	38.5
90.00	Outside of County	0	53,408	0	10,937	0	0	592	592	90.2
91.00	Outside of County	0	123,677	16,282	50,522	383	961	4,100	5,061	24.4
92.00	Outside of County	0	59,462	56,287	3,285	1,139	2,709	141	2,850	20.9
93.00	Outside of County	0	0	0	0	0	0	0	0	-
94.00	Outside of County	0	432	478	9	6	15	0	15	28.8
95.00	Outside of County	0	925	0	442	0	0	27	27	34.3
96.00	Outside of County	0	343	0	174	0	0	12	12	28.6
97.00	Outside of County	0	110	102	2	2	4	0	4	27.4
98.00	Outside of County	0	76,231	353	27,219	10	25	2,289	2,314	32.9
99.00	Outside of County	0	49,812	27,121	11,868	791	1,944	958	2,902	17.2
100.00	Outside of County	0	6,019	7,014	129	84	203	0	203	29.6
101.00	Outside of County	0	12,123	0	6,073	0	0	320	320	37.9
102.00	Outside of County	0	6,008	5,247	1,004	51	153	53	206	29.2
103.00	Outside of County	0	58,924	67,986	1,396	910	2,200	0	2,200	26.8
104.00	Outside of County	0	0	0	0	0	0	0	0	-
105.00	Outside of County	0	0	0	0	0	0	0	0	-
106.00	Outside of County	0	2,872	0	1,450	0	0	70	70	41.0
107.00	Outside of County	0	85,845	0	45,815	0	0	3,135	3,135	27.4
108.00	Outside of County	0	438	0	202	0	0	15	15	29.2
109.00	Outside of County	0	19,015	0	4,266	0	0	238	238	79.9
110.00	Outside of County	0	64,108	8,696	29,010	205	426	1,610	2,036	31.5
111.00	Outside of County	0	136,459	12,302	25,013	350	728	1,151	1,879	72.6
112.00	Outside of County	0	195,418	38,327	41,956	747	1,946	2,117	4,063	48.1
113.00	Outside of County	0	91,693	0	47,257	0	0	4,022	4,022	22.8
114.00	Outside of County	0	40,937	30,398	7,759	770	1,950	660	2,610	15.7
115.00	Outside of County	0	0	0	0	0	0	0	0	-
116.00	Outside of County	0	0	0	0	0	0	0	0	-
117.00	Outside of County	0	86,844	32,765	23,768	401	1,031	1,492	2,523	34.4
118.00	Outside of County	0	89,530	81,646	3,761	2,313	5,898	187	6,085	14.7
119.00	Outside of County	0	170,451	7,914	75,131	214	522	6,545	7,067	24.1
120.00	Outside of County	0	203,302	0	58,337	0	0	4,131	4,131	49.2
121.00	Outside of County	0	165,250	57,396	22,238	1,642	4,261	1,724	5,985	27.6
122.00	Outside of County	0	66,757	20,260	12,351	619	1,530	1,071	2,601	25.7
123.00	Outside of County	0	52,853	7,552	10,700	200	529	855	1,384	38.2
124.00	Outside of County	0	81,325	55,372	5,594	1,240	2,628	328	2,956	27.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	60,264	11,011	9,310	389	801	781	1,582	38.1
126.00	Outside of County	0	15,749	4,360	1,782	136	279	129	408	38.6
127.00	Outside of County	0	38,798	34,680	2,028	800	1,693	117	1,810	21.4
128.00	Outside of County	0	86,192	40,508	11,054	999	2,062	767	2,829	30.5
129.00	Outside of County	0	43,013	46,939	819	994	2,246	0	2,246	19.1
130.00	Outside of County	0	31,666	10,073	4,059	369	740	416	1,156	27.4
131.00	Outside of County	0	75,709	20,699	13,614	607	1,234	1,278	2,512	30.1
132.00	Outside of County	0	34,058	20,710	3,990	407	894	260	1,154	29.5
133.00	Outside of County	0	132,949	63,818	14,727	2,087	5,211	1,475	6,686	19.9
134.00	Outside of County	0	70,531	32,257	18,473	1,075	2,460	1,492	3,952	17.8
135.00	Outside of County	0	43,627	0	23,842	0	0	2,114	2,114	20.6
136.00	Outside of County	0	31,777	28,714	1,643	669	1,669	82	1,751	18.1
137.00	Outside of County	0	139,265	104,782	9,412	2,349	6,735	673	7,408	18.8
138.00	El Dorado Diamond Springs	0	5,518	5,295	430	161	367	25	392	14.1
139.00	El Dorado Diamond Springs	0	3,997	1,756	671	62	135	55	190	21.0
140.00	El Dorado Diamond Springs	0	24,499	263	5,046	10	27	383	410	59.7
141.00	Unincorporated El Dorado County (Remainder Area)	0	2,089	1,983	80	21	49	2	51	41.1
142.00	Unincorporated El Dorado County (Remainder Area)	0	7,355	7,934	178	157	353	0	353	20.8
143.00	Unincorporated El Dorado County (Remainder Area)	0	3,596	3,720	134	93	209	4	213	16.9
144.00	Unincorporated El Dorado County (Remainder Area)	0	3,886	3,978	292	74	186	19	205	18.9
145.00	Unincorporated El Dorado County (Remainder Area)	0	800	831	23	30	69	0	69	11.7
146.00	El Dorado Diamond Springs	0	3,811	1,765	634	64	145	51	196	19.5
147.00	El Dorado Diamond Springs	0	4,290	4,511	135	159	359	0	359	11.9
148.00	Outside of County	0	189,085	256,420	6,861	2,250	5,293	137	5,430	34.8
149.00	Shingle Springs	0	6,891	1,691	1,463	37	98	112	210	32.8
150.00	Unincorporated El Dorado County (Remainder Area)	0	7,764	8,584	224	109	260	3	263	29.5
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,455	2,005	20	23	67	0	67	21.7
152.00	Shingle Springs	0	9,916	6,119	1,452	122	315	99	414	24.0
153.00	Unincorporated El Dorado County (Remainder Area)	0	6,420	6,610	218	178	388	5	393	16.3
154.00	Unincorporated El Dorado County (Remainder Area)	0	3,334	3,251	234	84	196	16	212	15.7
155.00	Shingle Springs	0	2,681	3,132	57	62	161	0	161	16.6
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,339	2,771	39	27	67	0	67	34.8
157.00	El Dorado Hills	0	11,125	14,442	177	274	807	0	807	13.8
158.00	Cameron Park	0	22,029	24,436	1,056	598	1,373	72	1,445	15.2
159.00	Cameron Park	0	12,629	16,206	238	340	878	1	879	14.4
160.00	Shingle Springs	0	7,847	9,542	163	194	501	0	501	15.7
161.00	El Dorado Hills	0	6,125	7,864	92	105	283	0	283	21.7
162.00	El Dorado Hills	0	72,134	100,198	965	1,503	4,414	0	4,414	16.3
163.00	El Dorado Hills	0	351	368	38	7	21	4	25	14.3
164.00	El Dorado Hills	0	27,448	0	13,851	0	0	1,232	1,232	22.3
165.00	El Dorado Hills	0	16,754	20,265	364	373	997	0	997	16.8
166.00	Outside of County	0	41,140	42,271	1,358	749	1,892	49	1,941	21.2
167.00	El Dorado Hills	0	50,391	53,195	2,104	1,297	2,904	55	2,959	17.0
168.00	El Dorado Hills	0	30,807	37,194	900	1,125	2,519	9	2,528	12.2
169.00	El Dorado Hills	0	99,261	134	19,976	0	0	1,688	1,688	58.8
170.00	El Dorado Hills	0	27,061	0	14,371	0	0	1,357	1,357	19.9
171.00	El Dorado Hills	0	14,175	13,040	736	441	790	20	810	17.5
172.00	El Dorado Hills	0	7,982	0	1,870	0	0	168	168	47.5
173.00	El Dorado Hills	0	28,280	0	5,720	0	0	547	547	51.7
174.00	Unincorporated El Dorado County (Remainder Area)	0	2,225	1,550	250	15	37	11	48	46.0
175.00	Unincorporated El Dorado County (Remainder Area)	0	956	880	96	11	26	5	31	30.6
176.00	Unincorporated El Dorado County (Remainder Area)	0	2,058	2,349	41	29	69	0	69	29.8
177.00	Unincorporated El Dorado County (Remainder Area)	0	829	710	118	10	25	7	32	26.0
178.00	Unincorporated El Dorado County (Remainder Area)	0	2,096	2,450	40	30	77	0	77	27.1
179.00	Unincorporated El Dorado County (Remainder Area)	0	10	17	0	1	3	0	3	3.7
180.00	El Dorado Hills	0	3,248	3,942	54	58	149	0	149	21.7
181.00	El Dorado Hills	0	1,413	8	639	1	3	58	61	23.3
182.00	Cameron Park	0	51,995	68,142	788	1,186	3,202	0	3,202	16.2
183.00	Unincorporated El Dorado County (Remainder Area)	0	6,519	7,645	126	152	355	0	355	18.4
184.00	Cameron Park	0	28,747	20,515	3,302	357	964	300	1,264	22.7
185.00	Cameron Park	0	5,400	6,633	93	149	342	0	342	15.8
186.00	Cameron Park	0	645	102	234	3	7	28	35	18.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
187.00	Cameron Park	0	10,276	9,783	1,017	239	549	85	634	16.2
188.00	Cameron Park	0	7,318	7,031	799	188	432	69	501	14.6
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,906	3,708	44	37	104	0	104	28.1
190.00	Unincorporated El Dorado County (Remainder Area)	0	11,340	14,927	174	237	663	0	663	17.1
191.00	El Dorado Hills	0	826	1,104	11	19	53	0	53	15.5
192.00	El Dorado Hills	0	1,095	1,449	15	25	70	0	70	15.7
193.00	El Dorado Hills	0	8,840	4,454	2,335	100	253	246	499	17.7
194.00	El Dorado Hills	0	18,376	23,974	272	439	1,285	0	1,285	14.3
195.00	El Dorado Hills	0	1,605	534	184	10	26	14	40	40.6
196.00	Outside of County	0	46,043	51,473	1,507	923	2,503	82	2,585	17.8
197.00	El Dorado Hills	0	3,956	4,964	65	86	219	0	219	18.0
198.00	El Dorado Hills	0	58,589	47,292	4,567	887	2,482	453	2,935	20.0
199.00	El Dorado Hills	0	11,093	3,710	1,536	62	173	120	293	37.8
200.00	El Dorado Hills	0	3,329	334	740	7	18	67	85	39.2
201.00	El Dorado Hills	0	13,459	8,507	2,727	150	439	301	740	18.2
202.00	El Dorado Hills	0	41,933	41,834	2,343	737	2,062	199	2,261	18.5
203.00	El Dorado Hills	0	52,344	66,971	1,812	1,043	3,061	139	3,200	16.4
204.00	El Dorado Hills	0	18,872	20,216	601	362	1,067	41	1,108	17.0
205.00	El Dorado Hills	0	2,717	0	1,197	0	0	130	130	20.9
206.00	El Dorado Hills	0	2,134	2,776	29	52	153	0	153	13.9
207.00	El Dorado Hills	0	15,105	20,022	229	296	869	0	869	17.4
208.00	Unincorporated El Dorado County (Remainder Area)	0	411	559	5	9	26	0	26	15.6
209.00	El Dorado Hills	0	3,006	3,573	171	55	161	14	175	17.1
210.00	El Dorado Hills	0	5,758	7,623	86	125	366	0	366	15.7
211.00	Unincorporated El Dorado County (Remainder Area)	0	167	231	2	4	11	0	11	15.0
212.00	El Dorado Hills	0	1,877	2,533	25	35	103	0	103	18.3
213.00	Unincorporated El Dorado County (Remainder Area)	0	6,824	9,015	100	116	323	0	323	21.1
214.00	Unincorporated El Dorado County (Remainder Area)	0	687	921	10	8	19	0	19	35.5
215.00	El Dorado Hills	0	6,156	8,067	95	113	316	0	316	19.5
216.00	Unincorporated El Dorado County (Remainder Area)	0	400	520	5	5	12	0	12	33.1
217.00	Unincorporated El Dorado County (Remainder Area)	0	742	961	10	11	31	0	31	24.1
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,730	2,248	25	28	78	0	78	22.1
219.00	Unincorporated El Dorado County (Remainder Area)	0	4,460	2,410	1,000	28	78	77	155	28.8
220.00	Unincorporated El Dorado County (Remainder Area)	0	583	766	7	9	25	0	25	23.3
221.00	El Dorado Hills	0	43,350	59,266	583	876	2,359	0	2,359	18.4
222.00	Cameron Park	0	2,685	1,419	255	26	71	26	97	27.8
223.00	Cameron Park	0	4,075	5,527	52	103	279	0	279	14.6
224.00	Unincorporated El Dorado County (Remainder Area)	0	5,459	6,401	348	95	258	29	287	19.0
225.00	Unincorporated El Dorado County (Remainder Area)	0	11,242	7,669	974	92	270	79	349	32.2
226.00	Cameron Park	0	10,031	8,767	767	131	384	76	460	21.8
227.00	Cameron Park	0	181	176	13	5	12	2	14	12.9
228.00	Cameron Park	0	23,408	31,102	508	705	1,703	20	1,723	13.6
229.00	El Dorado Hills	0	407	559	4	9	24	0	24	16.8
230.00	El Dorado Hills	0	591	812	6	12	35	0	35	16.8
231.00	Unincorporated El Dorado County (Remainder Area)	0	1,018	334	237	5	15	28	43	23.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	2,114	2,829	28	33	92	0	92	23.0
233.00	Cameron Park	0	6,657	3,848	767	92	211	101	312	21.3
234.00	Cameron Park	0	47,127	41,436	4,531	1,004	2,306	587	2,893	16.3
235.00	Cameron Park	0	33,883	44,773	478	861	2,214	0	2,214	15.3
236.00	Cameron Park	0	17,951	24,300	297	468	1,204	9	1,213	14.8
237.00	Cameron Park	0	2,850	3,551	47	75	172	0	172	16.5
238.00	Cameron Park	0	15,138	13,685	2,014	280	676	199	875	17.3
239.00	Cameron Park	0	1,950	1,618	135	32	87	16	103	19.0
240.00	Unincorporated El Dorado County (Remainder Area)	0	7,301	9,746	106	127	345	0	345	21.2
241.00	Cameron Park	0	6,848	9,112	105	164	445	2	447	15.3
242.00	Cameron Park	0	805	1,101	9	22	60	0	60	13.5
243.00	Cameron Park	0	2,409	2,930	120	52	141	13	154	15.6
244.00	Unincorporated El Dorado County (Remainder Area)	0	1,388	1,796	23	22	57	0	57	24.5
245.00	Unincorporated El Dorado County (Remainder Area)	0	846	1,072	11	10	29	0	29	29.2
246.00	Unincorporated El Dorado County (Remainder Area)	0	4,516	6,114	59	63	182	0	182	24.7
247.00	Unincorporated El Dorado County (Remainder Area)	0	14,527	16,579	352	296	646	0	646	22.5
248.00	Unincorporated El Dorado County (Remainder Area)	0	10,796	13,134	226	185	441	0	441	24.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

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249.00	Unincorporated El Dorado County (Remainder Area)	0	1,916	2,094	39	27	59	0	59	32.5
250.00	Unincorporated El Dorado County (Remainder Area)	0	3,234	3,866	63	53	123	0	123	26.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	4,361	5,133	91	88	224	0	224	19.5
252.00	Unincorporated El Dorado County (Remainder Area)	0	20,213	24,862	422	434	1,130	0	1,130	17.9
253.00	Unincorporated El Dorado County (Remainder Area)	0	8,631	10,791	166	147	403	0	403	21.4
254.00	Unincorporated El Dorado County (Remainder Area)	0	6,225	7,354	128	116	295	0	295	21.1
255.00	Cameron Park	0	17,016	0	5,064	0	0	426	426	39.9
256.00	Cameron Park	0	46,371	1,910	13,749	47	121	1,042	1,163	39.9
257.00	Shingle Springs	0	30,242	6,759	11,156	153	389	960	1,349	22.4
258.00	Unincorporated El Dorado County (Remainder Area)	0	1,488	1,750	51	21	58	2	60	25.0
259.00	Unincorporated El Dorado County (Remainder Area)	0	1,822	2,262	31	30	78	0	78	23.3
260.00	Shingle Springs	0	5,676	58	1,815	2	4	146	150	37.7
261.00	Shingle Springs	0	15,348	4,163	3,622	92	252	282	534	28.7
262.00	Shingle Springs	0	13,112	4,915	3,015	121	308	238	546	24.0
263.00	Shingle Springs	0	6,136	4,980	533	108	296	35	331	18.5
264.00	Shingle Springs	0	4,760	2,282	628	50	137	45	182	26.2
265.00	Unincorporated El Dorado County (Remainder Area)	0	2,402	2,952	44	45	117	0	117	20.5
266.00	Unincorporated El Dorado County (Remainder Area)	0	2,358	2,157	117	42	92	4	96	24.7
267.00	Unincorporated El Dorado County (Remainder Area)	0	5,482	6,857	127	129	336	0	336	16.3
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,275	3,746	133	69	180	6	186	17.6
269.00	Unincorporated El Dorado County (Remainder Area)	0	9,309	10,876	229	204	516	1	517	18.0
270.00	Unincorporated El Dorado County (Remainder Area)	0	2,465	3,202	42	44	113	0	113	21.8
271.00	Unincorporated El Dorado County (Remainder Area)	0	8,074	10,012	199	150	379	5	384	21.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	6,793	7,735	363	131	347	23	370	18.3
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,896	10,156	255	134	391	12	403	19.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	15,433	13,822	1,331	233	618	99	717	21.5
275.00	Unincorporated El Dorado County (Remainder Area)	0	15,486	18,225	458	321	828	13	841	18.4
276.00	Cameron Park	0	8,997	10,817	267	224	541	12	553	16.3
277.00	Cameron Park	0	6,254	7,897	106	161	416	0	416	15.0
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,215	6,799	84	91	247	0	247	21.1
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,682	3,507	42	45	122	0	122	22.0
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,776	2,193	33	37	98	0	98	18.1
281.00	Unincorporated El Dorado County (Remainder Area)	0	3,811	3,524	542	59	156	36	192	19.8
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,743	2,143	33	39	103	0	103	16.9
283.00	Shingle Springs	0	16,122	3,801	2,070	0	0	161	161	100.1
284.00	Shingle Springs	0	1,618	1,086	304	25	65	25	90	18.1
285.00	Unincorporated El Dorado County (Remainder Area)	0	5,143	1,498	886	12	26	66	92	55.7
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,779	2,314	29	36	95	0	95	18.6
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,715	2,172	29	34	88	0	88	19.6
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,630	3,314	46	51	135	0	135	19.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	359	513	4	8	23	0	23	15.4
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,414	3,218	37	44	129	0	129	18.8
291.00	Unincorporated El Dorado County (Remainder Area)	0	9,907	12,881	182	188	463	0	463	21.4
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,584	6,314	65	72	210	0	210	21.8
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,226	1,267	32	34	77	0	77	15.8
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,011	4,618	95	97	247	0	247	16.2
295.00	Unincorporated El Dorado County (Remainder Area)	0	149,192	4,993	26,748	110	284	1,491	1,775	84.1
296.00	El Dorado Diamond Springs	0	9,640	6,654	856	117	305	56	361	26.7
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,423	3,119	57	70	182	0	182	13.3
298.00	Unincorporated El Dorado County (Remainder Area)	0	3,307	3,791	75	79	206	0	206	16.1
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,070	6,023	107	106	268	0	268	18.9
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,193	1,381	26	28	71	0	71	16.8
301.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	1	2	0	2	0.1
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,979	2,472	501	57	130	33	163	24.4
303.00	El Dorado Diamond Springs	0	3,462	3,639	91	106	231	0	231	15.0
304.00	El Dorado Diamond Springs	0	6,359	376	2,388	12	27	224	251	25.3
305.00	El Dorado Diamond Springs	0	7,610	0	3,164	1	2	283	285	26.7
306.00	El Dorado Diamond Springs	0	1,630	373	630	10	22	55	77	21.2
307.00	El Dorado Diamond Springs	0	618	492	38	16	36	2	38	16.2
308.00	El Dorado Diamond Springs	0	272	271	15	11	25	1	26	10.5
309.00	El Dorado Diamond Springs	0	532	432	52	14	32	4	36	14.8
310.00	El Dorado Diamond Springs	0	4,151	789	1,297	26	59	122	181	23.0

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311.00	El Dorado Diamond Springs	0	8,565	1,189	2,124	38	87	158	245	35.0
312.00	El Dorado Diamond Springs	0	867	884	49	31	70	3	73	11.9
313.00	El Dorado Diamond Springs	0	23,523	4,228	6,935	38	99	506	605	38.9
314.00	El Dorado Diamond Springs	0	2,974	3,069	154	81	206	8	214	13.9
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	341	343	9	13	30	0	30	11.5
317.00	El Dorado Diamond Springs	0	206	208	5	8	18	0	18	11.3
318.00	Unincorporated El Dorado County (Remainder Area)	0	4,309	4,641	137	128	326	2	328	13.1
319.00	El Dorado Diamond Springs	0	1,216	1,209	91	38	99	6	105	11.6
320.00	Unincorporated El Dorado County (Remainder Area)	0	5,140	2,204	539	18	44	39	83	61.6
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,276	6,665	102	104	256	0	256	20.6
322.00	Unincorporated El Dorado County (Remainder Area)	0	7,444	7,974	555	153	387	33	420	17.7
323.00	Unincorporated El Dorado County (Remainder Area)	0	2,840	3,436	85	51	129	4	133	21.4
324.00	Unincorporated El Dorado County (Remainder Area)	0	3,629	4,753	61	64	165	0	165	22.0
325.00	Unincorporated El Dorado County (Remainder Area)	0	705	873	14	16	39	0	39	17.9
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,165	2,716	54	49	121	1	122	17.8
327.00	Placerville	0	1,698	1,989	39	40	101	0	101	16.8
328.00	Unincorporated El Dorado County (Remainder Area)	0	845	992	18	19	48	0	48	17.6
329.00	Placerville	0	4,849	5,412	124	139	317	0	317	15.3
330.00	Unincorporated El Dorado County (Remainder Area)	0	2,693	3,101	65	73	184	0	184	14.6
331.00	Unincorporated El Dorado County (Remainder Area)	0	5,814	7,097	116	110	274	0	274	21.2
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,536	1,792	36	47	104	0	104	14.7
333.00	Unincorporated El Dorado County (Remainder Area)	0	4,518	5,642	86	91	226	0	226	20.0
334.00	Unincorporated El Dorado County (Remainder Area)	0	3,809	1,167	1,322	26	58	110	168	22.7
335.00	Unincorporated El Dorado County (Remainder Area)	0	3,002	3,256	124	77	165	5	170	17.7
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,220	1,464	25	30	70	0	70	17.3
337.00	Unincorporated El Dorado County (Remainder Area)	0	9,221	7,615	875	121	302	62	364	25.4
338.00	Unincorporated El Dorado County (Remainder Area)	0	14,093	17,801	373	322	831	14	845	16.7
339.00	Unincorporated El Dorado County (Remainder Area)	0	8,555	12,297	119	188	410	0	410	20.8
340.00	Unincorporated El Dorado County (Remainder Area)	0	6,883	8,547	225	93	205	14	219	31.4
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,486	1,908	87	31	71	8	79	18.9
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,613	3,252	49	48	124	0	124	21.1
343.00	Unincorporated El Dorado County (Remainder Area)	0	3,482	4,078	63	53	116	0	116	30.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	3,756	4,462	68	55	120	0	120	31.3
345.00	Unincorporated El Dorado County (Remainder Area)	0	1,795	1,941	35	29	63	0	63	28.4
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,271	1,392	24	22	49	0	49	25.7
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,904	3,658	48	42	108	0	108	26.8
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,795	2,977	63	49	110	0	110	25.4
349.00	Unincorporated El Dorado County (Remainder Area)	0	6,279	7,974	253	83	191	18	209	30.0
350.00	Unincorporated El Dorado County (Remainder Area)	0	1,175	1,673	17	22	48	0	48	24.5
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,302	1,871	16	23	50	0	50	25.9
352.00	Unincorporated El Dorado County (Remainder Area)	0	1,855	2,614	24	29	63	0	63	29.3
353.00	Unincorporated El Dorado County (Remainder Area)	0	8,999	13,205	100	167	365	1	366	24.6
354.00	Unincorporated El Dorado County (Remainder Area)	0	5,521	3,516	751	53	116	77	193	28.7
355.00	Placerville	1	14,312	6,502	2,969	241	550	244	794	18.0
356.00	Placerville	1	2,492	2,630	74	91	195	0	195	12.8
357.00	Unincorporated El Dorado County (Remainder Area)	0	4,885	3,799	369	89	209	21	230	21.3
358.00	Placerville	0	5,869	2,921	1,191	81	190	98	288	20.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	4,274	5,053	94	105	254	0	254	16.8
360.00	Unincorporated El Dorado County (Remainder Area)	0	5,323	5,743	241	98	237	10	247	21.5
361.00	Placerville	1	17,714	10,182	4,176	458	938	392	1,330	13.3
362.00	Placerville	1	46,299	5,889	10,975	252	591	876	1,467	31.6
363.00	Unincorporated El Dorado County (Remainder Area)	0	327	341	9	13	31	0	31	10.6
364.00	Placerville	0	4,036	3,511	417	138	328	30	358	11.3
365.00	El Dorado Diamond Springs	0	10,880	8,593	1,050	322	722	71	793	13.7
366.00	El Dorado Diamond Springs	0	380	272	42	15	31	4	35	10.8
367.00	El Dorado Diamond Springs	0	4,061	0	1,968	0	0	197	197	20.6
368.00	El Dorado Diamond Springs	0	1,584	1,716	48	68	149	0	149	10.6
369.00	El Dorado Diamond Springs	0	5,660	5,710	284	228	507	13	520	10.9
370.00	El Dorado Diamond Springs	0	6,444	0	3,049	0	0	303	303	21.3
371.00	El Dorado Diamond Springs	0	739	790	18	21	47	0	47	15.8
372.00	El Dorado Diamond Springs	0	16,849	7,750	2,423	195	433	211	644	26.2

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373.00	El Dorado Diamond Springs	0	651	638	19	26	59	0	59	11.1
374.00	El Dorado Diamond Springs	0	413	326	29	13	28	2	30	13.6
375.00	El Dorado Diamond Springs	0	368	365	10	14	32	0	32	11.6
376.00	El Dorado Diamond Springs	0	970	926	57	34	77	3	80	12.2
377.00	El Dorado Diamond Springs	0	561	326	158	13	29	14	43	12.9
378.00	El Dorado Diamond Springs	0	665	647	19	27	59	0	59	11.2
379.00	El Dorado Diamond Springs	0	1,098	1,103	31	48	105	0	105	10.4
380.00	El Dorado Diamond Springs	0	255	243	7	12	26	0	26	9.7
381.00	El Dorado Diamond Springs	0	158	142	5	7	15	0	15	10.3
382.00	El Dorado Diamond Springs	0	261	236	8	11	24	0	24	10.8
383.00	Unincorporated El Dorado County (Remainder Area)	0	1,587	1,730	40	46	102	0	102	15.5
384.00	El Dorado Diamond Springs	0	3,643	3,941	95	120	267	0	267	13.7
385.00	El Dorado Diamond Springs	0	11,682	13,561	338	451	1,002	0	1,002	11.7
386.00	El Dorado Diamond Springs	0	2,649	2,901	67	90	200	0	200	13.2
387.00	El Dorado Diamond Springs	0	1,171	922	107	36	80	8	88	13.3
388.00	El Dorado Diamond Springs	0	6,371	0	3,078	0	0	303	303	21.0
389.00	El Dorado Diamond Springs	0	6,144	11	2,626	2	4	264	268	22.9
390.00	El Dorado Diamond Springs	0	4,301	3,867	360	182	379	23	402	10.7
391.00	El Dorado Diamond Springs	0	2,182	195	549	11	23	54	77	28.4
392.00	El Dorado Diamond Springs	0	669	595	23	28	58	0	58	11.5
393.00	El Dorado Diamond Springs	0	9,007	6,306	1,007	268	605	68	673	13.4
394.00	El Dorado Diamond Springs	0	186	200	5	8	22	0	22	8.5
395.00	Placerville	1	62,429	1,569	26,180	74	166	2,253	2,419	25.8
396.00	El Dorado Diamond Springs	0	28,295	0	5,861	0	0	439	439	64.5
397.00	El Dorado Diamond Springs	0	1,326	1,253	70	50	114	3	117	11.3
398.00	El Dorado Diamond Springs	0	413	320	38	14	32	3	35	11.9
399.00	El Dorado Diamond Springs	0	1,123	1,122	33	43	97	0	97	11.6
400.00	El Dorado Diamond Springs	0	312	259	11	16	33	0	33	9.4
401.00	Placerville	0	9,021	651	2,638	28	63	213	276	32.7
402.00	El Dorado Diamond Springs	0	3,538	1,434	1,080	51	133	106	239	14.8
403.00	El Dorado Diamond Springs	0	23,898	3,636	7,808	124	258	654	912	26.2
404.00	El Dorado Diamond Springs	0	1,343	405	460	19	42	49	91	14.8
405.00	El Dorado Diamond Springs	0	169	148	5	9	20	0	20	8.6
406.00	El Dorado Diamond Springs	0	19,054	549	3,797	24	53	286	339	56.3
407.00	El Dorado Diamond Springs	0	9,572	18	3,388	1	2	309	311	30.8
408.00	El Dorado Diamond Springs	0	4,175	22	1,748	1	2	182	184	22.7
409.00	Placerville	0	18,756	2,994	5,674	104	248	445	693	27.1
410.00	El Dorado Diamond Springs	0	24,468	14,528	3,618	426	1,031	277	1,308	18.7
411.00	Placerville	1	50,726	6,097	13,353	298	712	1,271	1,983	25.6
412.00	Unincorporated El Dorado County (Remainder Area)	0	2,960	3,177	79	86	206	0	206	14.4
413.00	Placerville	0	3,597	3,756	103	126	301	0	301	11.9
414.00	El Dorado Diamond Springs	0	2,622	129	1,184	7	15	120	135	19.5
415.00	Unincorporated El Dorado County (Remainder Area)	0	433	439	12	18	40	0	40	10.7
416.00	El Dorado Diamond Springs	0	147	144	4	9	19	0	19	7.8
417.00	Placerville	1	9,720	1,088	2,880	45	114	278	392	24.8
418.00	Placerville	1	3,186	0	676	0	0	64	64	49.8
419.00	Placerville	1	3,296	0	849	0	0	85	85	38.8
420.00	Placerville	1	1,758	948	501	42	100	52	152	11.5
421.00	Placerville	1	1,655	1,560	98	68	163	5	168	9.9
422.00	Placerville	1	52,861	6,289	24,783	278	652	1,907	2,559	20.7
423.00	Unincorporated El Dorado County (Remainder Area)	0	458	477	12	20	48	0	48	9.6
424.00	Placerville	0	10,242	4,801	2,527	171	391	228	619	16.6
425.00	Placerville	0	53,052	32,091	5,975	1,167	2,617	563	3,180	16.7
426.00	Placerville	0	856	981	19	33	82	0	82	10.4
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,949	4,514	93	93	232	0	232	17.0
428.00	Unincorporated El Dorado County (Remainder Area)	0	641	735	15	22	55	0	55	11.7
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,305	1,639	35	35	83	0	83	15.8
430.00	Unincorporated El Dorado County (Remainder Area)	0	2,521	2,455	179	58	137	10	147	17.2
431.00	Placerville	1	1,795	467	657	22	45	60	105	17.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,265	10,433	2,707	309	729	229	958	15.9
433.00	Placerville	1	10,400	9,567	710	481	1,041	36	1,077	9.7
434.00	Placerville	1	670	581	23	33	71	0	71	9.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

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435.00	Placerville	1	1,184	639	243	36	77	27	104	11.4
436.00	Unincorporated El Dorado County (Remainder Area)	0	965	1,140	20	25	62	0	62	15.5
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,363	5,634	249	117	287	12	299	17.9
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,578	5,242	234	124	278	11	289	19.3
439.00	Unincorporated El Dorado County (Remainder Area)	0	5,407	6,268	173	156	350	3	353	15.3
440.00	Unincorporated El Dorado County (Remainder Area)	0	1,392	1,093	178	28	63	15	78	17.9
441.00	Placerville	1	361	374	9	12	29	0	29	12.6
442.00	Placerville	1	13,103	10,599	1,040	313	768	69	837	15.7
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,455	1,555	36	38	85	0	85	17.1
444.00	Unincorporated El Dorado County (Remainder Area)	0	198	217	5	8	19	0	19	10.4
445.00	Placerville	0	1,041	894	151	23	56	11	67	15.4
446.00	Placerville	1	1,763	844	248	25	59	19	78	22.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	3,235	3,939	67	76	189	0	189	17.1
448.00	Placerville	0	1,797	2,078	75	53	130	4	134	13.4
449.00	Unincorporated El Dorado County (Remainder Area)	0	538	568	14	14	30	0	30	17.9
450.00	Unincorporated El Dorado County (Remainder Area)	0	3,261	2,655	394	84	180	31	211	15.5
451.00	Unincorporated El Dorado County (Remainder Area)	0	978	1,027	26	27	58	0	58	16.9
452.00	Placerville	0	6,306	4,034	502	121	259	33	292	21.6
453.00	Placerville	1	2,904	3,053	121	145	310	1	311	9.3
454.00	Unincorporated El Dorado County (Remainder Area)	0	566	539	18	25	54	0	54	10.6
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,703	3,037	67	73	172	0	172	15.7
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,872	2,043	48	51	109	0	109	17.1
457.00	Unincorporated El Dorado County (Remainder Area)	0	2,798	3,036	130	62	137	5	142	19.7
458.00	Placerville	0	2,936	2,583	344	67	157	26	183	16.0
459.00	Placerville	0	308	350	7	11	26	0	26	11.9
460.00	Unincorporated El Dorado County (Remainder Area)	0	1,456	959	265	22	47	20	67	21.7
461.00	Unincorporated El Dorado County (Remainder Area)	0	1,567	220	619	6	14	59	73	21.4
462.00	Unincorporated El Dorado County (Remainder Area)	0	5,233	1,267	1,761	31	66	125	191	27.3
463.00	Unincorporated El Dorado County (Remainder Area)	0	4,459	7,224	40	85	194	0	194	23.0
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,518	3,294	39	47	104	0	104	24.3
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,947	5,681	115	58	134	16	150	26.4
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,533	4,394	202	61	139	22	161	21.9
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,482	3,839	23	39	89	0	89	27.9
468.00	Unincorporated El Dorado County (Remainder Area)	0	6,755	9,712	125	120	277	6	283	23.9
469.00	Unincorporated El Dorado County (Remainder Area)	0	4,087	5,665	137	59	131	15	146	28.0
470.00	Unincorporated El Dorado County (Remainder Area)	0	2,027	3,067	27	32	73	1	74	27.4
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,475	2,032	54	23	53	6	59	25.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,950	2,287	148	26	59	20	79	24.6
473.00	Unincorporated El Dorado County (Remainder Area)	0	602	573	30	10	23	2	25	24.0
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,688	2,166	28	37	81	0	81	20.9
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,790	2,369	28	38	83	0	83	21.6
476.00	Unincorporated El Dorado County (Remainder Area)	0	858	1,118	12	16	41	0	41	20.8
477.00	Unincorporated El Dorado County (Remainder Area)	0	2,033	2,545	125	30	69	15	84	24.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,474	1,902	24	30	66	0	66	22.3
479.00	Unincorporated El Dorado County (Remainder Area)	0	4,065	3,137	443	51	118	37	155	26.3
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,297	1,994	13	20	46	0	46	28.4
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,332	2,023	15	20	44	0	44	30.3
482.00	Unincorporated El Dorado County (Remainder Area)	0	5,623	7,916	92	74	163	3	166	33.9
483.00	Unincorporated El Dorado County (Remainder Area)	0	4,417	5,214	174	115	249	9	258	17.1
484.00	Unincorporated El Dorado County (Remainder Area)	0	6,739	5,610	951	91	227	114	341	19.8
485.00	Unincorporated El Dorado County (Remainder Area)	0	1,055	1,514	11	15	37	0	37	28.2
486.00	Unincorporated El Dorado County (Remainder Area)	0	4,044	5,843	47	69	156	0	156	26.0
487.00	Unincorporated El Dorado County (Remainder Area)	0	11,792	11,262	742	221	519	36	555	21.3
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,503	7,509	87	107	242	0	242	22.8
489.00	Unincorporated El Dorado County (Remainder Area)	0	6,861	7,035	663	133	300	58	358	19.2
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,170	1,520	19	24	60	0	60	19.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,350	9,049	178	160	399	3	402	18.3
492.00	Unincorporated El Dorado County (Remainder Area)	0	5,044	4,443	411	71	176	31	207	24.4
493.00	Unincorporated El Dorado County (Remainder Area)	0	5,097	4,546	371	72	178	26	204	24.9
494.00	Unincorporated El Dorado County (Remainder Area)	0	3,248	3,941	139	68	170	10	180	18.1
495.00	Unincorporated El Dorado County (Remainder Area)	0	648	843	11	16	40	0	40	16.2
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,361	4,536	835	81	201	67	268	27.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

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497.00	Unincorporated El Dorado County (Remainder Area)	0	4,308	5,686	101	88	224	3	227	19.0
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,426	4,434	104	70	158	6	164	20.9
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,332	1,773	22	30	75	0	75	17.8
500.00	Unincorporated El Dorado County (Remainder Area)	0	4,117	1,353	606	11	26	51	77	53.6
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,805	1,010	772	22	49	83	132	21.3
502.00	Unincorporated El Dorado County (Remainder Area)	0	6,979	7,621	353	117	272	18	290	24.1
503.00	Unincorporated El Dorado County (Remainder Area)	0	4,170	0	1,015	1	2	76	78	53.3
504.00	Unincorporated El Dorado County (Remainder Area)	0	6,075	6,454	345	141	313	19	332	18.3
505.00	Unincorporated El Dorado County (Remainder Area)	0	73	85	1	3	7	0	7	11.0
506.00	Unincorporated El Dorado County (Remainder Area)	0	1,022	1,235	22	28	62	0	62	16.5
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,740	2,362	394	50	116	37	153	17.9
508.00	Unincorporated El Dorado County (Remainder Area)	0	6,677	3,479	1,847	85	184	186	370	18.1
509.00	Unincorporated El Dorado County (Remainder Area)	0	391	425	22	12	27	2	29	13.7
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,218	3,479	158	92	199	10	209	15.4
511.00	Unincorporated El Dorado County (Remainder Area)	0	2,732	1,870	361	45	105	33	138	19.8
512.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	1,966	369	37	86	27	113	25.0
513.00	Unincorporated El Dorado County (Remainder Area)	0	7,394	10,686	85	142	354	0	354	20.9
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,736	46,651	313	622	1,551	0	1,551	20.5
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,587	4,754	106	69	176	8	184	19.5
516.00	Unincorporated El Dorado County (Remainder Area)	0	8,074	11,706	88	142	362	0	362	22.3
517.00	Unincorporated El Dorado County (Remainder Area)	0	18,868	21,063	1,119	388	857	101	958	19.7
518.00	Unincorporated El Dorado County (Remainder Area)	0	11,858	15,629	308	289	671	17	688	17.2
519.00	Unincorporated El Dorado County (Remainder Area)	0	5,849	7,772	192	142	330	12	342	17.1
520.00	Unincorporated El Dorado County (Remainder Area)	0	11,874	16,008	269	266	617	12	629	18.9
521.00	Unincorporated El Dorado County (Remainder Area)	0	10,801	13,020	583	290	641	60	701	15.4
522.00	Unincorporated El Dorado County (Remainder Area)	0	5,069	7,173	65	85	221	0	221	22.9
523.00	Unincorporated El Dorado County (Remainder Area)	0	16,412	10,303	1,924	240	588	206	794	20.7
524.00	Unincorporated El Dorado County (Remainder Area)	0	14,754	12,648	1,120	205	490	103	593	24.9
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,876	7,129	44	85	199	0	199	24.5
526.00	Unincorporated El Dorado County (Remainder Area)	0	244	335	3	5	12	0	12	20.1
527.00	Unincorporated El Dorado County (Remainder Area)	0	7,725	9,440	363	162	380	38	418	18.5
528.00	Unincorporated El Dorado County (Remainder Area)	0	59,797	84,229	797	1,001	2,429	72	2,501	23.9
529.00	Unincorporated El Dorado County (Remainder Area)	0	916	1,146	13	15	36	0	36	25.3
530.00	Unincorporated El Dorado County (Remainder Area)	0	12,917	17,304	192	191	462	0	462	28.0
531.00	Unincorporated El Dorado County (Remainder Area)	0	2,521	3,382	36	34	82	0	82	30.7
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,991	5,142	60	61	147	0	147	27.1
533.00	Unincorporated El Dorado County (Remainder Area)	0	9,305	8,543	648	105	271	34	305	30.5
534.00	Unincorporated El Dorado County (Remainder Area)	0	3,775	4,937	53	53	128	0	128	29.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,923	7,784	75	91	221	0	221	26.7
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,079	6,559	64	82	200	0	200	25.5
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,373	14,101	107	165	402	0	402	25.8
538.00	Unincorporated El Dorado County (Remainder Area)	0	3,963	3,036	306	44	107	22	129	30.8
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,038	1,315	2,088	6	15	166	181	72.2
540.00	Unincorporated El Dorado County (Remainder Area)	0	2,860	0	575	0	0	53	53	54.0
541.00	Unincorporated El Dorado County (Remainder Area)	0	1,049	1,112	62	18	42	6	48	21.8
542.00	Unincorporated El Dorado County (Remainder Area)	0	3,603	3,074	415	52	123	37	160	22.5
543.00	Unincorporated El Dorado County (Remainder Area)	0	10,560	2,420	1,784	49	114	107	221	47.7
544.00	Unincorporated El Dorado County (Remainder Area)	0	679	494	104	9	21	8	29	23.4
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,520	2,041	16	23	54	0	54	28.3
546.00	Unincorporated El Dorado County (Remainder Area)	0	4,810	6,416	54	61	143	0	143	33.7
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,026	520	484	10	23	46	69	58.0
548.00	Unincorporated El Dorado County (Remainder Area)	0	17,412	23,163	470	386	910	22	932	18.7
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,151	2,702	39	42	99	0	99	21.7
550.00	Unincorporated El Dorado County (Remainder Area)	0	264	346	4	7	18	0	18	14.7
551.00	Unincorporated El Dorado County (Remainder Area)	0	5,422	2,511	786	41	105	54	159	34.0
552.00	Unincorporated El Dorado County (Remainder Area)	0	2,438	420	502	8	19	32	51	48.1
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,562	2,045	26	32	75	0	75	20.9
554.00	Unincorporated El Dorado County (Remainder Area)	0	4,032	5,212	105	83	194	4	198	20.4
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,647	2,223	24	34	80	0	80	20.5
556.00	Unincorporated El Dorado County (Remainder Area)	0	5,076	6,933	66	82	192	0	192	26.5
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,688	2,080	31	35	82	1	83	20.4
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,713	2,975	164	36	84	19	103	26.2

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559.00	Unincorporated El Dorado County (Remainder Area)	0	1,377	1,821	17	25	59	0	59	23.5
560.00	Unincorporated El Dorado County (Remainder Area)	0	1,601	1,662	100	27	63	10	73	21.9
561.00	Unincorporated El Dorado County (Remainder Area)	0	1,176	1,567	18	22	52	0	52	22.6
562.00	Unincorporated El Dorado County (Remainder Area)	0	4,007	5,878	39	62	145	0	145	27.6
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,206	3,348	17	32	71	0	71	31.2
564.00	Unincorporated El Dorado County (Remainder Area)	0	617	828	10	14	33	0	33	18.4
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,619	3,639	39	56	129	0	129	20.3
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,981	5,347	71	93	220	1	221	18.0
567.00	Unincorporated El Dorado County (Remainder Area)	0	668	809	26	18	42	2	44	15.3
568.00	Unincorporated El Dorado County (Remainder Area)	0	927	1,249	14	26	62	0	62	15.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	3,698	2,828	300	61	144	31	175	21.1
570.00	Unincorporated El Dorado County (Remainder Area)	0	4,749	2,115	779	40	92	92	184	25.8
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,365	1,829	22	33	76	0	76	17.9
572.00	Unincorporated El Dorado County (Remainder Area)	0	1,863	1,366	264	25	61	34	95	19.5
573.00	Unincorporated El Dorado County (Remainder Area)	0	6,493	7,800	122	89	197	2	199	32.7
574.00	Unincorporated El Dorado County (Remainder Area)	0	5,037	7,969	30	71	174	0	174	28.9
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,771	4,102	16	29	71	0	71	39.0
576.00	Unincorporated El Dorado County (Remainder Area)	0	1,089	1,533	17	19	42	1	43	25.3
577.00	Unincorporated El Dorado County (Remainder Area)	0	749	1,109	7	13	29	0	29	26.1
578.00	Unincorporated El Dorado County (Remainder Area)	0	23,415	37,130	106	370	817	0	817	28.6
579.00	Unincorporated El Dorado County (Remainder Area)	0	3,779	5,258	101	38	96	12	108	34.9
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,884	4,124	62	35	89	5	94	30.7
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,276	5,092	293	43	95	32	127	33.8
582.00	Unincorporated El Dorado County (Remainder Area)	0	1,257	1,700	17	13	34	0	34	37.2
583.00	Unincorporated El Dorado County (Remainder Area)	0	27,670	43,153	213	352	774	10	784	35.3
584.00	Unincorporated El Dorado County (Remainder Area)	0	1,735	2,089	56	18	40	3	43	40.6
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,553	14,327	78	124	273	0	273	35.0
586.00	Unincorporated El Dorado County (Remainder Area)	0	5,835	2,504	1,564	51	91	92	183	31.9
587.00	Unincorporated El Dorado County (Remainder Area)	0	2,266	3,390	17	39	99	0	99	22.8
588.00	Unincorporated El Dorado County (Remainder Area)	0	19,646	29,937	126	323	805	0	805	24.4
589.00	Unincorporated El Dorado County (Remainder Area)	0	391	623	2	3	12	0	12	32.6
590.00	Unincorporated El Dorado County (Remainder Area)	0	825	1,134	12	18	46	0	46	18.1
591.00	Unincorporated El Dorado County (Remainder Area)	0	86	121	1	3	8	0	8	11.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	12,654	13,142	743	339	749	91	840	15.1
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,895	9,003	266	151	382	28	410	16.8
594.00	Unincorporated El Dorado County (Remainder Area)	0	16,847	24,588	183	312	790	5	795	21.2
595.00	Unincorporated El Dorado County (Remainder Area)	0	1,934	1,811	266	25	56	31	87	22.1
596.00	Unincorporated El Dorado County (Remainder Area)	0	2,821	2,757	222	34	85	25	110	25.7
597.00	Unincorporated El Dorado County (Remainder Area)	0	11,024	3,995	1,924	106	234	278	512	21.5
598.00	Unincorporated El Dorado County (Remainder Area)	0	1,719	539	260	14	31	35	66	26.1
599.00	Unincorporated El Dorado County (Remainder Area)	0	707	960	11	17	38	0	38	18.8
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,226	10,971	1,273	205	453	130	583	19.3
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	1,891	4	10	22	0	22	60.7
602.00	Unincorporated El Dorado County (Remainder Area)	0	433	136	53	3	5	2	7	59.1
603.00	Unincorporated El Dorado County (Remainder Area)	0	905	724	84	11	20	2	22	42.0
604.00	Unincorporated El Dorado County (Remainder Area)	0	1,416	1,768	109	17	33	3	36	39.2
605.00	Unincorporated El Dorado County (Remainder Area)	0	1,654	1,761	87	18	38	2	40	41.4
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,523	4,835	12	19	49	0	49	71.3
608.00	Unincorporated El Dorado County (Remainder Area)	0	6	0	0	1	2	0	2	2.9
609.00	Unincorporated El Dorado County (Remainder Area)	0	3,021	3,183	117	34	72	4	76	39.9
610.00	El Dorado Hills	0	38,341	169	19,690	0	0	1,745	1,745	22.0
611.00	El Dorado Hills	0	312	0	10	153	0	1	1	311.9
612.00	El Dorado Hills	0	78,870	0	43,616	0	0	3,121	3,121	25.3
613.00	Unincorporated El Dorado County (Remainder Area)	0	71	68	1	2	5	0	5	13.7
614.00	El Dorado Hills	0	5,892	7,120	106	150	383	0	383	15.4
615.00	El Dorado Hills	0	11,778	8,942	979	150	402	75	477	24.7
616.00	El Dorado Hills	0	1,390	1,669	23	37	94	0	94	14.8
617.00	El Dorado Hills	0	20,268	12,601	1,214	187	547	118	665	30.5
618.00	El Dorado Hills	0	3,104	0	1,206	0	0	146	146	21.3
619.00	El Dorado Hills	0	3,418	0	1,205	0	0	151	151	22.6
620.00	El Dorado Hills	0	16,901	3,189	1,712	0	0	188	188	89.9

VMT Summary by Jurisdiction - 2018 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	14,245	18,859	220	327	957	0	957	14.9
622.00	El Dorado Hills	0	21,846	21,595	1,585	370	1,083	147	1,230	17.8
623.00	Unincorporated El Dorado County (Remainder Area)	0	391	0	172	0	0	16	16	24.5
624.00	El Dorado Hills	0	15,676	17,731	1,159	308	905	96	1,001	15.7
625.00	El Dorado Hills	0	853	0	403	0	0	40	40	21.3
626.00	Unincorporated El Dorado County (Remainder Area)	0	8,686	7,507	1,110	164	383	98	481	18.1
627.00	Unincorporated El Dorado County (Remainder Area)	0	54,192	0	11,282	0	0	897	897	60.4
628.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
629.00	Unincorporated El Dorado County (Remainder Area)	0	17,944	23,782	325	521	1,535	0	1,535	11.7
630.00	Unincorporated El Dorado County (Remainder Area)	0	10,121	12,921	165	242	713	0	713	14.2
631.00	Unincorporated El Dorado County (Remainder Area)	0	8,419	11,314	156	237	600	0	600	14.0
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,735	23	37	94	0	94	15.2
633.00	Unincorporated El Dorado County (Remainder Area)	0	6,385	7,628	116	150	379	0	379	16.8
634.00	Unincorporated El Dorado County (Remainder Area)	0	6,499	7,879	115	150	379	0	379	17.1
635.00	Unincorporated El Dorado County (Remainder Area)	0	4,932	5,941	89	113	286	0	286	17.3
636.00	Unincorporated El Dorado County (Remainder Area)	0	4,423	6,145	74	120	322	0	322	13.7
637.00	Unincorporated El Dorado County (Remainder Area)	0	8,038	9,976	135	171	458	0	458	17.5
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,030	1,269	15	23	62	0	62	16.7
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,262	2,819	35	46	123	0	123	18.3
640.00	Unincorporated El Dorado County (Remainder Area)	0	7,656	9,654	121	176	472	0	472	16.2
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,085	2,621	32	46	123	0	123	16.9
642.00	Unincorporated El Dorado County (Remainder Area)	0	28,038	33,355	1,229	637	1,708	93	1,801	15.6
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,630	12,035	157	216	579	0	579	16.6
644.00	Unincorporated El Dorado County (Remainder Area)	0	2,924	3,696	46	76	194	0	194	15.1
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,197	24,763	944	415	1,059	51	1,110	19.1
646.00	Unincorporated El Dorado County (Remainder Area)	0	8,819	11,064	153	192	490	0	490	18.0
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,595	1,909	68	38	97	6	103	15.5
648.00	Unincorporated El Dorado County (Remainder Area)	0	1,815	2,182	45	38	97	2	99	18.3
649.00	Unincorporated El Dorado County (Remainder Area)	0	5,479	3,103	31	38	97	0	97	56.5
650.00	Outside of County	0	3,025,252	1,491,843	473,589	0	0	0	0	-
651.00	Outside of County	0	28,469	14,323	4,210	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	392,007	159,595	51,645	0	0	0	0	-
654.00	Outside of County	0	56,437	9,099	2,901	0	0	0	0	-
655.00	Outside of County	0	269,947	107,614	35,353	0	0	0	0	-
656.00	Outside of County	0	77,954	18,262	8,781	0	0	0	0	-
657.00	Outside of County	0	187,625	8,231	3,874	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	7,572	3,128	1,425	0	0	0	0	-
660.00	Outside of County	0	164,333	82,583	32,449	0	0	0	0	-
661.00	Outside of County	0	157,226	71,483	25,821	0	0	0	0	-
662.00	Outside of County	0	698,704	337,816	119,299	0	0	0	0	-
663.00	Outside of County	0	680,002	227,104	81,089	0	0	0	0	-
664.00	Outside of County	0	348,413	190,477	55,248	0	0	0	0	-
665.00	Outside of County	0	199,820	79,716	31,084	0	0	0	0	-
666.00	Outside of County	0	88,392	45,173	14,400	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	511,751	311,296	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	170,101	95,908	23,884	0	0	0	0	-
672.00	Outside of County	0	33,195	34,172	0	0	0	0	0	-
673.00	Outside of County	0	24,863	14,855	0	0	0	0	0	-
674.00	Outside of County	0	355,382	29,884	0	0	0	0	0	-

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VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

Jurisdiction	VMT Estimates			VMT Efficiency Metrics			Population Details				
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Total VMT per Service Population	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Households	Total Population	Total Employment	Total Service Population	Persons Per Household
City of Placerville	405,087	62,585	106,003	24.8	8.2	12.3	3,429	7,658	8,649	16,307	2.23
Unincorporated El Dorado County	5,067,477	3,142,566	672,613	21.0	17.0	11.9	74,092	184,762	56,513	241,275	2.49
205	2,242	0	1,057	17.2	#DIV/0!	8.1	0	0	130	130	#DIV/0!
629	14,238	18,652	306	9.3	12.1	#DIV/0!	521	1,535	0	1,535	2.95
630	7,730	9,732	146	10.8	13.6	#DIV/0!	242	713	0	713	2.95
631	6,536	8,925	143	10.9	14.9	#DIV/0!	237	600	0	600	2.53
Average (Residential)	28,504	37,309	595	10.0	13.1	#DIV/0!	1,000	2,848	0	2,848	8.42

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	5,588	1,762	823	47	99	36	135	41.4
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,216	24,457	873	592	1,338	77	1,415	16.4
3.00	Unincorporated El Dorado County (Remainder Area)	0	5,286	6,548	98	74	180	0	180	29.4
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,065	1,364	17	16	35	0	35	30.6
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,579	3,575	26	33	73	0	73	35.3
6.00	Unincorporated El Dorado County (Remainder Area)	0	13,786	15,903	507	366	847	14	861	16.0
7.00	Unincorporated El Dorado County (Remainder Area)	0	24,247	26,765	1,350	565	1,223	92	1,315	18.4
8.00	Unincorporated El Dorado County (Remainder Area)	0	11,299	572	1,973	15	38	129	167	67.8
9.00	Unincorporated El Dorado County (Remainder Area)	0	25,112	30,439	629	559	1,400	13	1,413	17.8
10.00	Outside of County	0	108,577	88,190	11,282	2,178	5,588	1,056	6,644	16.3
11.00	Outside of County	0	111,999	81,246	13,716	2,148	5,511	1,297	6,808	16.5
12.00	Outside of County	0	58,796	45,117	4,861	1,179	3,234	437	3,671	16.0
13.00	Outside of County	0	34,511	40,200	1,536	906	2,458	99	2,557	13.5
14.00	Outside of County	0	58,607	67,974	1,700	1,511	4,120	78	4,198	14.0
15.00	Outside of County	0	3,052	3,931	59	58	166	0	166	18.4
16.00	Outside of County	0	55,947	21,820	7,533	659	1,614	689	2,303	24.3
17.00	Outside of County	0	160,418	140,345	14,099	2,811	7,160	1,363	8,523	18.8
18.00	Outside of County	0	84,508	96,379	3,648	1,930	4,652	246	4,898	17.3
19.00	Outside of County	0	10,315	5,776	1,097	96	217	103	320	32.2
20.00	Outside of County	0	7,652	142	4,094	2	7	283	290	26.4
21.00	Outside of County	0	26,286	73	13,635	2	4	1,082	1,086	24.2
22.00	Outside of County	0	1,689	10	337	1	1	21	22	76.8
23.00	Outside of County	0	29,113	12,721	3,685	115	322	261	583	49.9
24.00	Outside of County	0	4,204	3,109	140	133	133	0	133	31.6
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	109,286	102,779	8,021	2,238	5,070	642	5,712	19.1
27.00	Outside of County	0	8,218	75	3,044	2	5	338	343	24.0
28.00	Outside of County	0	239,909	200,312	17,221	4,828	12,553	1,923	14,476	16.6
29.00	Outside of County	0	8,642	11,009	163	170	486	0	486	17.8
30.00	Outside of County	0	70,980	73,247	5,845	1,194	3,041	368	3,409	20.8
31.00	Outside of County	0	10,236	5,274	601	41	106	44	150	68.1
32.00	Outside of County	0	29,855	38,642	691	692	1,811	21	1,832	16.3
33.00	Outside of County	0	38,459	47,854	1,374	857	2,183	69	2,252	17.1
34.00	Outside of County	0	6,132	5,975	705	69	156	32	188	32.6
35.00	Outside of County	0	30,816	37,343	780	812	2,092	0	2,092	14.7
36.00	Outside of County	0	37,314	45,086	910	910	2,318	0	2,318	16.1
37.00	Outside of County	0	58,355	2,569	22,110	57	142	1,643	1,785	32.7
38.00	Outside of County	0	6,681	3,887	638	57	142	45	187	35.8
39.00	Outside of County	0	17,034	14,607	2,121	514	1,180	181	1,361	12.5
40.00	Outside of County	0	75,622	22,140	16,231	851	1,972	1,905	3,877	19.5
41.00	Outside of County	0	35,475	24,379	7,558	592	1,368	567	1,935	18.3
42.00	Outside of County	0	175,777	97,606	24,852	2,081	5,108	1,911	7,019	25.0
43.00	Outside of County	0	34,537	40,285	979	849	2,170	46	2,216	15.6
44.00	Outside of County	0	110,625	81,097	8,931	1,827	4,654	791	5,445	20.3
45.00	Outside of County	0	72,554	23,171	12,117	846	1,936	1,262	3,198	22.7
46.00	Outside of County	0	5,981	6,512	151	164	375	0	375	15.9
47.00	Outside of County	0	201,753	9,474	80,769	284	681	5,991	6,672	30.2
48.00	Outside of County	0	48,452	43,193	3,761	1,211	3,071	266	3,337	14.5
49.00	Outside of County	0	110,109	588	50,083	18	45	4,248	4,293	25.7
50.00	Outside of County	0	73,253	36,321	21,934	981	2,487	1,736	4,223	17.3
51.00	Outside of County	0	98,245	51,885	15,728	1,710	4,116	1,373	5,489	17.9
52.00	Outside of County	0	30,677	15,221	3,187	279	629	279	908	33.8
53.00	Outside of County	0	78,612	48,397	10,894	1,399	3,606	983	4,589	17.1
54.00	Outside of County	0	60,011	22,413	22,333	494	1,220	1,748	2,968	20.2
55.00	Outside of County	0	76,960	30,120	13,911	639	1,471	1,127	2,598	29.6
56.00	Outside of County	0	35,952	40,058	1,295	872	2,337	56	2,393	15.0
57.00	Outside of County	0	107,425	24,091	46,344	660	1,466	4,152	5,618	19.1
58.00	Outside of County	0	36,057	25,975	4,424	613	1,587	352	1,939	18.6
59.00	Outside of County	0	45,160	88	26,936	2	5	2,191	2,196	20.6
60.00	Outside of County	0	68,017	8,234	30,919	240	512	2,711	3,223	21.1
61.00	Outside of County	0	140,326	86,701	22,574	2,381	5,595	1,810	7,405	18.9
62.00	Outside of County	0	51,744	1,913	23,887	33	110	2,000	2,110	24.5

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	66,111	5,258	27,138	143	350	2,462	2,812	23.5
64.00	Outside of County	0	129,325	73,198	20,772	2,031	5,053	1,733	6,786	19.1
65.00	Outside of County	0	5,600	6,311	126	127	328	0	328	17.1
66.00	Outside of County	0	37,805	28,316	4,203	887	2,117	331	2,448	15.4
67.00	Outside of County	0	117,281	21,789	38,723	633	1,374	3,381	4,755	24.7
68.00	Outside of County	0	38,729	12,536	10,861	453	946	1,002	1,948	19.9
69.00	Outside of County	0	240,676	69,122	96,814	1,950	5,172	7,364	12,536	19.2
70.00	Outside of County	0	160,985	1,055	97,396	15	38	7,503	7,541	21.3
71.00	Outside of County	0	216,959	130,863	32,267	2,596	6,730	2,417	9,147	23.7
72.00	Outside of County	0	269,998	758	154,369	0	0	10,084	10,084	26.8
73.00	Outside of County	0	96,435	0	60,697	0	0	4,612	4,612	20.9
74.00	Outside of County	0	134,627	17,319	66,396	546	1,335	5,255	6,590	20.4
75.00	Outside of County	0	84,260	62,173	17,050	1,946	4,535	1,072	5,607	15.0
76.00	Outside of County	0	27,772	16,945	3,831	497	1,333	313	1,646	16.9
77.00	Outside of County	0	79,703	41,632	19,386	1,068	2,684	1,384	4,068	19.6
78.00	Outside of County	0	70,637	0	20,338	1	2	1,777	1,779	39.7
79.00	Outside of County	0	75,858	57,979	9,258	1,345	3,258	620	3,878	19.6
80.00	Outside of County	0	33,649	0	16,448	0	0	1,306	1,306	25.8
81.00	Outside of County	0	179,005	0	100,372	0	0	7,809	7,809	22.9
82.00	Outside of County	0	52,470	0	26,124	0	0	2,171	2,171	24.2
83.00	Outside of County	0	51,155	34,472	6,788	590	1,536	460	1,996	25.6
84.00	Outside of County	0	51,741	41,890	4,096	1,305	3,049	306	3,355	15.4
85.00	Outside of County	0	55,166	46,234	4,674	1,261	3,154	354	3,508	15.7
86.00	Outside of County	0	85,092	61,003	8,270	1,996	4,538	681	5,219	16.3
87.00	Outside of County	0	63,621	50,734	7,544	1,845	3,996	613	4,609	13.8
88.00	Outside of County	0	71,206	42,690	8,297	1,184	2,955	696	3,651	19.5
89.00	Outside of County	0	18,730	0	6,047	0	0	455	455	41.2
90.00	Outside of County	0	57,044	2,012	28,205	92	157	2,453	2,610	21.9
91.00	Outside of County	0	99,220	13,494	36,459	389	997	3,846	4,843	20.5
92.00	Outside of County	0	50,924	47,750	2,484	1,234	2,964	133	3,097	16.4
93.00	Outside of County	0	93,384	65,078	18,678	1,374	3,459	1,484	4,943	18.9
94.00	Outside of County	0	1,126	102	458	2	4	41	45	25.0
95.00	Outside of County	0	120,151	0	63,495	0	0	4,542	4,542	26.5
96.00	Outside of County	0	161,276	53,728	54,221	1,026	2,520	3,884	6,404	25.2
97.00	Outside of County	0	57,252	51,237	4,490	1,030	2,624	349	2,973	19.3
98.00	Outside of County	0	84,263	13,328	27,285	375	984	2,705	3,689	22.8
99.00	Outside of County	0	71,165	27,623	23,084	806	1,976	2,391	4,367	16.3
100.00	Outside of County	0	21,451	26,910	442	470	1,178	0	1,178	18.2
101.00	Outside of County	0	54,735	41,658	8,839	869	2,253	822	3,075	17.8
102.00	Outside of County	0	22,186	5,183	6,181	92	237	467	704	31.5
103.00	Outside of County	0	96,050	106,538	4,018	2,474	5,823	281	6,104	15.7
104.00	Outside of County	0	60,147	9,184	12,990	184	451	868	1,319	45.6
105.00	Outside of County	0	40,715	52,191	884	1,011	2,513	10	2,523	16.1
106.00	Outside of County	0	6,844	0	3,180	0	0	283	283	24.2
107.00	Outside of County	0	297,089	40,528	94,761	1,362	3,008	7,445	10,453	28.4
108.00	Outside of County	0	27,118	17,026	5,708	370	988	479	1,467	18.5
109.00	Outside of County	0	16,651	0	7,360	0	0	563	563	29.6
110.00	Outside of County	0	62,285	8,634	28,506	209	495	2,207	2,702	23.0
111.00	Outside of County	0	82,128	7,470	15,342	223	512	1,049	1,561	52.6
112.00	Outside of County	0	133,684	30,515	26,945	763	2,056	2,119	4,175	32.0
113.00	Outside of County	0	53,933	115	23,700	0	0	2,386	2,386	22.6
114.00	Outside of County	0	36,099	29,625	6,414	809	2,141	572	2,713	13.3
115.00	Outside of County	0	153,030	86,452	20,819	1,900	4,875	1,584	6,459	23.7
116.00	Outside of County	0	2,993	0	1,479	0	0	116	116	25.8
117.00	Outside of County	0	51,640	17,238	15,352	327	920	1,448	2,368	21.8
118.00	Outside of County	0	76,680	81,114	3,245	2,338	6,182	191	6,373	12.0
119.00	Outside of County	0	133,755	7,149	62,324	216	540	6,222	6,762	19.8
120.00	Outside of County	0	176,269	0	43,206	0	0	4,669	4,669	37.8
121.00	Outside of County	0	137,275	48,649	19,507	1,513	3,882	1,917	5,799	23.7
122.00	Outside of County	0	56,439	15,071	10,476	533	1,248	1,125	2,373	23.8
123.00	Outside of County	0	28,549	7,033	5,093	200	547	536	1,083	26.4
124.00	Outside of County	0	52,888	48,237	2,785	1,044	2,229	168	2,397	22.1

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	27,922	10,033	5,555	414	817	583	1,400	19.9
126.00	Outside of County	0	16,233	4,854	2,904	156	342	274	616	26.3
127.00	Outside of County	0	38,710	33,843	2,387	870	1,855	169	2,024	19.1
128.00	Outside of County	0	65,938	47,458	6,798	1,262	2,600	538	3,138	21.0
129.00	Outside of County	0	41,416	43,792	1,830	1,045	2,302	117	2,419	17.1
130.00	Outside of County	0	21,028	9,185	2,664	342	786	298	1,084	19.4
131.00	Outside of County	0	47,428	14,740	11,297	494	1,013	1,272	2,285	20.8
132.00	Outside of County	0	27,998	23,294	2,766	556	1,258	235	1,493	18.8
133.00	Outside of County	0	117,988	58,042	14,410	2,077	5,182	1,628	6,810	17.3
134.00	Outside of County	0	61,103	29,993	18,062	1,074	2,483	1,578	4,061	15.0
135.00	Outside of County	0	50,334	0	27,576	0	0	2,740	2,740	18.4
136.00	Outside of County	0	25,847	27,701	1,371	661	1,688	93	1,781	14.5
137.00	Outside of County	0	112,453	102,971	7,013	2,426	6,986	595	7,581	14.8
138.00	El Dorado Diamond Springs	0	21,969	6,063	4,340	264	577	297	874	25.1
139.00	El Dorado Diamond Springs	0	10,565	1,338	1,711	67	144	156	300	35.2
140.00	El Dorado Diamond Springs	0	57,121	127	10,285	10	22	811	833	68.6
141.00	Unincorporated El Dorado County (Remainder Area)	0	1,492	1,673	28	21	49	0	49	30.3
142.00	Unincorporated El Dorado County (Remainder Area)	0	6,586	6,503	171	156	347	0	347	19.0
143.00	Unincorporated El Dorado County (Remainder Area)	0	4,209	3,314	256	108	240	12	252	16.7
144.00	Unincorporated El Dorado County (Remainder Area)	0	4,016	3,559	340	80	200	21	221	18.2
145.00	Unincorporated El Dorado County (Remainder Area)	0	741	647	25	30	70	0	70	10.6
146.00	El Dorado Diamond Springs	0	6,259	2,333	1,110	114	261	98	359	17.4
147.00	El Dorado Diamond Springs	0	3,725	3,538	132	165	378	0	378	9.8
148.00	Outside of County	0	155,397	185,841	5,392	2,264	5,302	120	5,422	28.7
149.00	Shingle Springs	0	16,657	1,749	3,539	53	149	287	436	38.2
150.00	Unincorporated El Dorado County (Remainder Area)	0	6,038	6,893	131	107	254	0	254	23.8
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,310	1,738	19	23	67	0	67	19.6
152.00	Shingle Springs	0	34,241	6,125	5,241	201	488	370	858	39.9
153.00	Unincorporated El Dorado County (Remainder Area)	0	8,550	8,110	247	290	623	0	623	13.7
154.00	Unincorporated El Dorado County (Remainder Area)	0	6,935	7,077	192	254	597	0	597	11.6
155.00	Shingle Springs	0	5,210	5,645	133	154	406	0	406	12.8
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,052	2,324	57	27	68	1	69	29.7
157.00	El Dorado Hills	0	8,615	10,948	161	273	790	0	790	10.9
158.00	Cameron Park	0	17,391	18,611	505	624	1,431	11	1,442	12.1
159.00	Cameron Park	0	15,358	14,563	1,449	446	1,082	114	1,196	12.8
160.00	Shingle Springs	0	18,401	16,603	1,167	504	1,223	70	1,293	14.2
161.00	El Dorado Hills	0	11,381	14,308	208	290	754	0	754	15.1
162.00	El Dorado Hills	0	57,629	78,156	879	1,503	4,465	0	4,465	12.9
163.00	El Dorado Hills	0	37,178	7,687	4,998	165	490	438	928	40.1
164.00	El Dorado Hills	0	60,650	0	31,738	0	0	3,124	3,124	19.4
165.00	El Dorado Hills	0	17,431	20,867	417	551	1,369	0	1,369	12.7
166.00	Outside of County	0	28,712	30,778	1,001	766	1,965	50	2,015	14.3
167.00	El Dorado Hills	0	47,944	46,921	2,336	1,520	3,531	111	3,641	13.2
168.00	El Dorado Hills	0	27,007	30,203	1,054	1,133	2,632	35	2,667	10.1
169.00	El Dorado Hills	0	116,155	5,686	24,840	208	517	2,484	3,001	38.7
170.00	El Dorado Hills	0	46,346	735	22,916	26	65	2,562	2,627	17.6
171.00	El Dorado Hills	0	16,364	16,509	1,047	441	1,081	68	1,148	14.3
172.00	El Dorado Hills	0	9,259	0	1,646	0	0	158	158	58.6
173.00	El Dorado Hills	0	45,031	0	10,533	0	0	1,140	1,140	39.5
174.00	Unincorporated El Dorado County (Remainder Area)	0	3,868	1,491	1,079	15	38	54	92	42.1
175.00	Unincorporated El Dorado County (Remainder Area)	0	2,612	633	484	10	24	22	46	57.1
176.00	Unincorporated El Dorado County (Remainder Area)	0	3,225	3,667	69	58	137	0	137	23.5
177.00	Unincorporated El Dorado County (Remainder Area)	0	11,121	8,655	1,805	147	370	130	500	22.2
178.00	Unincorporated El Dorado County (Remainder Area)	0	4,909	5,671	138	87	223	3	226	21.7
179.00	Unincorporated El Dorado County (Remainder Area)	0	738	934	12	21	55	0	55	13.5
180.00	El Dorado Hills	0	18,250	22,476	351	450	1,155	0	1,155	15.8
181.00	El Dorado Hills	0	6,989	5,418	688	120	315	61	376	18.6
182.00	Cameron Park	0	39,232	47,779	765	1,244	3,262	0	3,262	12.0
183.00	Unincorporated El Dorado County (Remainder Area)	0	11,027	12,036	268	354	832	0	832	13.2
184.00	Cameron Park	0	39,145	16,190	4,489	417	1,093	425	1,518	25.8
185.00	Cameron Park	0	3,903	4,387	86	152	349	0	349	11.2
186.00	Cameron Park	0	50,875	4,615	8,885	170	390	896	1,286	39.6

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

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187.00	Cameron Park	0	10,766	7,182	1,212	247	566	104	670	16.1
188.00	Cameron Park	0	6,619	5,647	598	213	489	49	538	12.3
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,468	3,165	40	36	100	0	100	24.6
190.00	Unincorporated El Dorado County (Remainder Area)	0	10,451	13,389	182	255	712	0	712	14.7
191.00	El Dorado Hills	0	1,441	1,836	24	39	109	0	109	13.2
192.00	El Dorado Hills	0	870	1,097	14	25	69	0	69	12.6
193.00	El Dorado Hills	0	13,990	5,278	3,469	156	406	361	768	18.2
194.00	El Dorado Hills	0	15,052	19,640	262	439	1,297	0	1,297	11.6
195.00	El Dorado Hills	0	9,010	473	2,007	10	26	176	203	44.4
196.00	Outside of County	0	52,449	60,020	1,720	1,148	3,198	97	3,295	15.9
197.00	El Dorado Hills	0	3,191	3,937	56	85	225	0	225	14.2
198.00	El Dorado Hills	0	68,938	39,367	6,067	887	2,476	623	3,099	22.2
199.00	El Dorado Hills	0	11,309	2,895	1,618	62	173	143	316	35.8
200.00	El Dorado Hills	0	6,378	307	1,222	7	19	121	140	45.7
201.00	El Dorado Hills	0	20,588	6,834	2,748	150	443	269	712	28.9
202.00	El Dorado Hills	0	37,534	35,646	2,115	762	2,127	169	2,296	16.3
203.00	El Dorado Hills	0	51,877	66,117	1,152	1,300	3,762	43	3,805	13.6
204.00	El Dorado Hills	0	16,984	16,187	622	362	1,048	48	1,096	15.5
205.00	El Dorado Hills	0	2,242	0	1,057	0	0	130	130	17.2
206.00	El Dorado Hills	0	1,619	2,090	27	51	148	0	148	11.0
207.00	El Dorado Hills	0	12,977	16,669	219	304	880	0	880	14.8
208.00	Unincorporated El Dorado County (Remainder Area)	0	325	426	5	9	26	0	26	12.5
209.00	El Dorado Hills	0	11,535	4,475	1,408	88	254	118	372	31.0
210.00	El Dorado Hills	0	6,355	8,185	109	162	479	0	479	13.3
211.00	Unincorporated El Dorado County (Remainder Area)	0	135	179	2	4	11	0	11	11.9
212.00	El Dorado Hills	0	2,403	3,119	38	53	153	0	153	15.7
213.00	Unincorporated El Dorado County (Remainder Area)	0	9,205	11,845	153	193	534	0	534	17.2
214.00	Unincorporated El Dorado County (Remainder Area)	0	2,327	3,350	31	31	76	0	76	30.8
215.00	El Dorado Hills	0	6,816	8,672	121	148	413	0	413	16.5
216.00	Unincorporated El Dorado County (Remainder Area)	0	1,749	2,459	26	23	56	0	56	31.2
217.00	Unincorporated El Dorado County (Remainder Area)	0	589	764	9	11	31	0	31	19.2
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,515	1,903	26	28	78	0	78	19.4
219.00	Unincorporated El Dorado County (Remainder Area)	0	3,917	4,987	67	69	191	0	191	20.5
220.00	Unincorporated El Dorado County (Remainder Area)	0	474	637	6	9	25	0	25	19.0
221.00	El Dorado Hills	0	37,401	48,741	579	999	2,596	0	2,596	14.4
222.00	Cameron Park	0	2,166	1,464	426	34	90	58	148	14.6
223.00	Cameron Park	0	5,513	7,089	78	174	461	0	461	11.9
224.00	Unincorporated El Dorado County (Remainder Area)	0	8,579	7,346	500	144	382	37	419	20.5
225.00	Unincorporated El Dorado County (Remainder Area)	0	23,203	10,915	2,964	147	424	277	702	33.1
226.00	Cameron Park	0	27,530	26,985	1,252	550	1,591	118	1,709	16.1
227.00	Cameron Park	0	8,665	11,010	207	281	689	10	699	12.4
228.00	Cameron Park	0	20,480	24,991	508	724	1,775	25	1,800	11.4
229.00	El Dorado Hills	0	41,517	34,614	2,364	793	2,061	237	2,298	18.1
230.00	El Dorado Hills	0	22,909	27,902	340	557	1,655	0	1,655	13.8
231.00	Unincorporated El Dorado County (Remainder Area)	0	4,991	6,679	72	134	388	0	388	12.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	4,553	5,890	73	87	241	0	241	18.9
233.00	Cameron Park	0	8,478	3,666	747	116	266	100	366	23.2
234.00	Cameron Park	0	55,574	33,508	5,094	1,085	2,488	670	3,158	17.6
235.00	Cameron Park	0	42,333	54,487	640	1,322	3,580	2	3,582	11.8
236.00	Cameron Park	0	14,766	19,348	261	473	1,281	9	1,290	11.4
237.00	Cameron Park	0	2,253	2,624	46	78	179	0	179	12.6
238.00	Cameron Park	0	39,581	15,101	5,310	415	1,018	527	1,545	25.6
239.00	Cameron Park	0	2,342	3,348	35	86	228	0	228	10.3
240.00	Unincorporated El Dorado County (Remainder Area)	0	6,659	8,375	110	137	363	0	363	18.3
241.00	Cameron Park	0	14,976	7,540	1,276	181	480	151	631	23.7
242.00	Cameron Park	0	699	904	9	24	64	0	64	11.0
243.00	Cameron Park	0	2,020	2,587	32	61	162	1	163	12.4
244.00	Unincorporated El Dorado County (Remainder Area)	0	3,010	3,718	57	51	128	0	128	23.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	777	1,006	11	10	30	0	30	25.9
246.00	Unincorporated El Dorado County (Remainder Area)	0	3,937	5,220	56	63	189	0	189	20.8
247.00	Unincorporated El Dorado County (Remainder Area)	0	13,624	14,317	354	296	636	0	636	21.4
248.00	Unincorporated El Dorado County (Remainder Area)	0	13,293	10,406	944	182	431	39	470	28.3

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

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249.00	Unincorporated El Dorado County (Remainder Area)	0	3,360	1,862	530	26	56	25	81	41.5
250.00	Unincorporated El Dorado County (Remainder Area)	0	2,874	3,288	60	53	124	0	124	23.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	5,630	6,213	136	139	363	0	363	15.5
252.00	Unincorporated El Dorado County (Remainder Area)	0	24,744	28,712	577	666	1,756	0	1,756	14.1
253.00	Unincorporated El Dorado County (Remainder Area)	0	7,502	8,864	159	149	410	0	410	18.3
254.00	Unincorporated El Dorado County (Remainder Area)	0	5,277	5,905	123	119	311	0	311	17.0
255.00	Cameron Park	0	64,920	0	14,876	0	0	1,405	1,405	46.2
256.00	Cameron Park	0	44,513	1,998	10,487	72	175	872	1,047	42.5
257.00	Shingle Springs	0	62,243	15,342	14,604	511	1,335	1,312	2,647	23.5
258.00	Unincorporated El Dorado County (Remainder Area)	0	2,125	2,528	40	36	99	0	99	21.5
259.00	Unincorporated El Dorado County (Remainder Area)	0	2,608	3,106	52	50	132	0	132	19.8
260.00	Shingle Springs	0	27,103	140	5,668	5	15	441	456	59.4
261.00	Shingle Springs	0	27,173	3,577	4,861	121	333	388	721	37.7
262.00	Shingle Springs	0	40,700	5,466	6,541	203	530	514	1,044	39.0
263.00	Shingle Springs	0	10,055	3,812	1,486	121	333	119	452	22.3
264.00	Shingle Springs	0	7,896	3,086	1,056	97	267	82	349	22.6
265.00	Unincorporated El Dorado County (Remainder Area)	0	1,958	2,210	43	44	116	0	116	16.9
266.00	Unincorporated El Dorado County (Remainder Area)	0	6,131	1,659	669	41	88	33	121	50.6
267.00	Unincorporated El Dorado County (Remainder Area)	0	8,693	10,018	220	240	633	0	633	13.7
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,024	3,091	172	72	190	10	200	15.1
269.00	Unincorporated El Dorado County (Remainder Area)	0	13,587	9,299	1,446	217	558	81	639	21.3
270.00	Unincorporated El Dorado County (Remainder Area)	0	6,217	2,658	680	54	135	39	174	35.7
271.00	Unincorporated El Dorado County (Remainder Area)	0	9,851	9,935	736	172	442	50	492	20.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	9,803	6,483	806	145	407	55	462	21.2
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,446	8,887	377	138	400	22	422	17.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	21,574	18,891	1,566	411	1,153	122	1,275	16.9
275.00	Unincorporated El Dorado County (Remainder Area)	0	14,766	17,105	337	379	971	0	971	15.2
276.00	Cameron Park	0	28,088	18,770	2,073	535	1,312	179	1,491	18.8
277.00	Cameron Park	0	4,951	5,804	100	176	427	0	427	11.6
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,758	5,988	217	100	265	10	275	20.9
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,926	3,727	49	55	146	0	146	20.1
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,439	1,676	31	37	103	0	103	14.0
281.00	Unincorporated El Dorado County (Remainder Area)	0	4,885	4,201	428	85	238	28	266	18.3
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,389	1,615	30	39	109	0	109	12.7
283.00	Shingle Springs	0	15,358	3,058	2,226	0	0	197	197	78.0
284.00	Shingle Springs	0	4,303	1,007	657	36	87	53	140	30.7
285.00	Unincorporated El Dorado County (Remainder Area)	0	14,080	2,740	2,965	53	154	233	387	36.4
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,662	2,073	30	36	101	0	101	16.5
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,397	1,685	27	34	87	0	87	16.0
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,177	2,688	40	50	140	0	140	15.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	320	420	5	8	23	0	23	13.8
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,045	2,613	35	44	128	0	128	16.0
291.00	Unincorporated El Dorado County (Remainder Area)	0	12,410	15,698	238	254	647	0	647	19.2
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,262	5,700	64	72	209	0	209	20.4
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,294	1,287	36	41	90	0	90	14.4
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,475	4,676	123	129	321	0	321	14.0
295.00	Unincorporated El Dorado County (Remainder Area)	0	62,313	4,917	22,542	110	282	1,540	1,822	34.2
296.00	El Dorado Diamond Springs	0	52,179	6,591	9,745	188	496	729	1,225	42.6
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,261	2,667	62	79	208	0	208	10.9
298.00	Unincorporated El Dorado County (Remainder Area)	0	2,828	3,075	71	79	208	0	208	13.6
299.00	Unincorporated El Dorado County (Remainder Area)	0	4,992	5,705	112	114	293	0	293	17.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,728	1,912	41	45	116	0	116	14.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	624	547	41	20	44	3	47	13.4
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,875	2,601	209	89	194	10	204	19.0
303.00	El Dorado Diamond Springs	0	4,192	2,675	443	106	228	28	255	16.4
304.00	El Dorado Diamond Springs	0	8,308	283	2,659	12	26	269	296	28.1
305.00	El Dorado Diamond Springs	0	10,721	0	4,982	1	2	536	539	19.9
306.00	El Dorado Diamond Springs	0	7,910	3,161	1,353	128	275	110	386	20.5
307.00	El Dorado Diamond Springs	0	2,950	2,808	92	112	257	0	257	11.5
308.00	El Dorado Diamond Springs	0	239	244	6	12	28	0	28	8.7
309.00	El Dorado Diamond Springs	0	807	717	26	34	74	0	74	10.9
310.00	El Dorado Diamond Springs	0	13,829	636	2,510	29	66	220	286	48.3

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
311.00	El Dorado Diamond Springs	0	3,554	1,723	439	75	164	33	197	18.1
312.00	El Dorado Diamond Springs	0	9,926	6,791	978	310	711	71	782	12.7
313.00	El Dorado Diamond Springs	0	23,600	3,422	7,033	71	178	534	712	33.1
314.00	El Dorado Diamond Springs	0	10,566	2,492	1,458	100	249	103	352	30.0
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	674	640	22	31	68	0	68	10.0
317.00	El Dorado Diamond Springs	0	140	126	4	8	17	0	17	8.0
318.00	Unincorporated El Dorado County (Remainder Area)	0	8,122	4,724	734	182	452	41	493	16.5
319.00	El Dorado Diamond Springs	0	1,395	1,283	45	57	143	0	143	9.8
320.00	Unincorporated El Dorado County (Remainder Area)	0	4,901	1,587	812	19	48	61	109	44.8
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,205	6,138	138	116	295	2	297	17.5
322.00	Unincorporated El Dorado County (Remainder Area)	0	10,670	10,523	571	242	623	26	649	16.5
323.00	Unincorporated El Dorado County (Remainder Area)	0	8,276	3,745	1,842	67	172	139	311	26.6
324.00	Unincorporated El Dorado County (Remainder Area)	0	7,033	3,618	698	73	183	39	222	31.7
325.00	Unincorporated El Dorado County (Remainder Area)	0	717	833	16	20	51	0	51	14.1
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,080	2,462	49	57	145	0	145	14.3
327.00	Placerville	0	3,204	3,489	82	84	210	0	210	15.2
328.00	Unincorporated El Dorado County (Remainder Area)	0	695	790	16	19	48	0	48	14.6
329.00	Placerville	0	4,815	4,833	140	156	360	0	360	13.4
330.00	Unincorporated El Dorado County (Remainder Area)	0	3,480	3,688	94	109	273	0	273	12.8
331.00	Unincorporated El Dorado County (Remainder Area)	0	6,114	6,965	141	130	325	0	325	18.8
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,430	1,521	38	47	105	0	105	13.6
333.00	Unincorporated El Dorado County (Remainder Area)	0	3,933	4,493	88	91	225	0	225	17.5
334.00	Unincorporated El Dorado County (Remainder Area)	0	1,641	998	257	26	58	18	76	21.5
335.00	Unincorporated El Dorado County (Remainder Area)	0	2,796	3,007	74	76	163	0	163	17.1
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,044	1,114	26	30	66	0	66	15.7
337.00	Unincorporated El Dorado County (Remainder Area)	0	10,216	6,035	1,766	124	304	128	432	23.6
338.00	Unincorporated El Dorado County (Remainder Area)	0	13,816	15,646	399	350	900	11	911	15.2
339.00	Unincorporated El Dorado County (Remainder Area)	0	9,262	11,962	146	224	508	0	508	18.3
340.00	Unincorporated El Dorado County (Remainder Area)	0	8,022	5,248	512	95	202	30	232	34.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,629	1,548	173	34	75	16	91	18.0
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,370	2,721	50	48	123	0	123	19.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	4,955	5,754	91	78	177	0	177	28.0
344.00	Unincorporated El Dorado County (Remainder Area)	0	5,855	6,933	107	92	208	0	208	28.1
345.00	Unincorporated El Dorado County (Remainder Area)	0	2,005	2,116	39	34	77	0	77	26.0
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,265	1,243	28	23	51	0	51	24.7
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,640	3,118	49	42	108	0	108	24.5
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,502	2,461	59	48	107	0	107	23.4
349.00	Unincorporated El Dorado County (Remainder Area)	0	8,166	4,895	579	94	193	34	227	35.9
350.00	Unincorporated El Dorado County (Remainder Area)	0	987	1,140	17	20	45	0	45	21.8
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,466	1,845	23	31	70	0	70	20.9
352.00	Unincorporated El Dorado County (Remainder Area)	0	2,098	2,690	31	38	86	0	86	24.4
353.00	Unincorporated El Dorado County (Remainder Area)	0	10,671	10,251	515	200	453	43	496	21.5
354.00	Unincorporated El Dorado County (Remainder Area)	0	7,040	4,700	458	68	154	43	197	35.7
355.00	Placerville	1	27,289	5,105	4,979	257	594	387	981	27.8
356.00	Placerville	1	2,709	2,543	91	109	235	0	235	11.5
357.00	Unincorporated El Dorado County (Remainder Area)	0	8,055	4,224	731	133	294	42	336	23.9
358.00	Placerville	0	10,323	3,346	1,637	128	283	123	406	25.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	3,538	3,672	95	105	247	0	247	14.3
360.00	Unincorporated El Dorado County (Remainder Area)	0	4,179	4,536	98	97	228	0	228	18.3
361.00	Placerville	1	27,031	10,005	4,627	570	1,189	370	1,558	17.3
362.00	Placerville	1	46,876	3,832	7,999	194	457	616	1,073	43.7
363.00	Unincorporated El Dorado County (Remainder Area)	0	415	425	12	19	48	0	48	8.6
364.00	Placerville	0	4,531	3,696	416	173	439	28	466	9.7
365.00	El Dorado Diamond Springs	0	24,295	9,285	3,001	541	1,147	223	1,370	17.7
366.00	El Dorado Diamond Springs	0	10,624	1,552	1,647	108	232	146	378	28.1
367.00	El Dorado Diamond Springs	0	7,171	0	3,555	0	0	398	398	18.0
368.00	El Dorado Diamond Springs	0	4,917	1,331	826	68	157	81	238	20.7
369.00	El Dorado Diamond Springs	0	14,203	8,803	1,422	485	1,088	114	1,202	11.8
370.00	El Dorado Diamond Springs	0	6,939	79	2,914	0	0	317	317	21.9
371.00	El Dorado Diamond Springs	0	2,150	2,071	61	69	155	0	155	13.9
372.00	El Dorado Diamond Springs	0	28,751	14,054	3,160	559	1,254	296	1,550	18.5

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373.00	El Dorado Diamond Springs	0	557	492	18	27	62	0	62	9.0
374.00	El Dorado Diamond Springs	0	1,048	275	117	14	32	10	42	24.8
375.00	El Dorado Diamond Springs	0	361	328	11	15	34	0	34	10.5
376.00	El Dorado Diamond Springs	0	1,494	723	220	34	78	17	95	15.7
377.00	El Dorado Diamond Springs	0	725	317	171	14	32	16	48	15.1
378.00	El Dorado Diamond Springs	0	546	515	16	27	62	0	62	8.8
379.00	El Dorado Diamond Springs	0	940	871	29	48	111	0	111	8.5
380.00	El Dorado Diamond Springs	0	196	185	6	12	28	0	28	7.1
381.00	El Dorado Diamond Springs	0	115	111	3	7	16	0	16	7.1
382.00	El Dorado Diamond Springs	0	222	183	8	11	25	0	25	8.7
383.00	Unincorporated El Dorado County (Remainder Area)	0	2,357	2,384	65	80	179	0	179	13.1
384.00	El Dorado Diamond Springs	0	4,503	4,450	124	174	390	0	390	11.5
385.00	El Dorado Diamond Springs	0	14,271	13,838	544	600	1,346	14	1,360	10.5
386.00	El Dorado Diamond Springs	0	2,238	2,234	60	90	202	0	202	11.1
387.00	El Dorado Diamond Springs	0	3,290	741	472	36	81	44	124	26.5
388.00	El Dorado Diamond Springs	0	5,464	0	2,608	0	0	278	278	19.7
389.00	El Dorado Diamond Springs	0	5,913	18	2,150	2	5	240	245	24.2
390.00	El Dorado Diamond Springs	0	7,348	4,830	740	311	670	54	724	10.1
391.00	El Dorado Diamond Springs	0	6,052	143	975	11	24	92	116	52.2
392.00	El Dorado Diamond Springs	0	1,016	473	89	28	60	5	66	15.5
393.00	El Dorado Diamond Springs	0	25,723	4,738	3,804	281	645	288	932	27.6
394.00	El Dorado Diamond Springs	0	6,159	111	2,057	8	18	168	186	33.2
395.00	Placerville	1	80,577	1,455	29,781	98	206	2,613	2,819	28.6
396.00	El Dorado Diamond Springs	0	30,790	0	5,545	0	0	425	425	72.5
397.00	El Dorado Diamond Springs	0	1,453	900	120	50	109	7	116	12.5
398.00	El Dorado Diamond Springs	0	1,158	264	144	14	32	11	43	26.7
399.00	El Dorado Diamond Springs	0	959	830	33	43	99	0	99	9.7
400.00	El Dorado Diamond Springs	0	7,370	209	1,241	16	35	97	132	56.0
401.00	Placerville	0	27,001	937	4,590	57	121	337	458	59.0
402.00	El Dorado Diamond Springs	0	4,677	2,554	1,034	137	344	103	447	10.5
403.00	El Dorado Diamond Springs	0	31,648	2,594	12,709	124	267	906	1,174	27.0
404.00	El Dorado Diamond Springs	0	1,732	302	333	19	44	32	76	22.9
405.00	El Dorado Diamond Springs	0	1,675	147	251	9	21	21	41	40.4
406.00	El Dorado Diamond Springs	0	26,329	384	4,396	24	55	339	395	66.7
407.00	El Dorado Diamond Springs	0	16,270	552	3,221	39	84	285	369	44.1
408.00	El Dorado Diamond Springs	0	5,532	0	2,379	1	2	279	281	19.7
409.00	Placerville	0	38,073	3,496	8,055	162	410	610	1,019	37.3
410.00	El Dorado Diamond Springs	0	40,431	14,245	5,615	602	1,418	423	1,840	22.0
411.00	Placerville	1	55,549	5,254	11,456	335	793	982	1,775	31.3
412.00	Unincorporated El Dorado County (Remainder Area)	0	3,441	3,294	105	114	271	0	271	12.7
413.00	Placerville	0	4,916	4,571	171	199	472	1	473	10.4
414.00	El Dorado Diamond Springs	0	20,171	92	5,351	7	15	561	576	35.0
415.00	Unincorporated El Dorado County (Remainder Area)	0	437	318	42	18	38	4	42	10.3
416.00	El Dorado Diamond Springs	0	267	128	54	9	19	7	26	10.1
417.00	Placerville	1	22,964	906	4,813	55	124	424	548	41.9
418.00	Placerville	1	5,529	0	1,382	0	0	130	130	42.5
419.00	Placerville	1	6,928	0	1,213	0	0	112	112	61.9
420.00	Placerville	1	5,288	964	1,326	56	132	117	249	21.3
421.00	Placerville	1	2,554	1,457	408	81	191	28	219	11.7
422.00	Placerville	1	67,593	5,160	31,311	303	714	2,392	3,106	21.8
423.00	Unincorporated El Dorado County (Remainder Area)	0	449	390	26	21	49	1	50	9.0
424.00	Placerville	0	25,675	5,345	4,446	252	582	351	934	27.5
425.00	Placerville	0	67,580	28,825	8,108	1,390	3,090	730	3,820	17.7
426.00	Placerville	0	705	722	18	32	80	0	80	8.8
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,810	4,021	101	102	255	0	255	15.0
428.00	Unincorporated El Dorado County (Remainder Area)	0	550	581	14	22	55	0	55	10.0
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,193	1,389	36	35	87	0	87	13.8
430.00	Unincorporated El Dorado County (Remainder Area)	0	3,093	1,998	549	59	146	44	190	16.3
431.00	Placerville	1	13,650	508	2,257	28	59	167	226	60.4
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,620	10,560	3,115	363	900	241	1,140	13.7
433.00	Placerville	1	16,935	9,964	2,279	678	1,398	175	1,572	10.8
434.00	Placerville	1	828	637	31	44	95	0	95	8.7

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435.00	Placerville	1	1,291	667	232	47	100	27	127	10.2
436.00	Unincorporated El Dorado County (Remainder Area)	0	1,145	1,166	49	32	79	2	81	14.2
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,350	5,890	132	147	371	0	371	14.4
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,842	4,245	508	143	303	32	335	17.4
439.00	Unincorporated El Dorado County (Remainder Area)	0	9,633	4,627	1,533	169	359	90	449	21.5
440.00	Unincorporated El Dorado County (Remainder Area)	0	5,957	859	1,577	31	66	111	177	33.7
441.00	Placerville	1	399	391	11	15	35	0	35	11.4
442.00	Placerville	1	13,552	9,821	972	350	882	56	939	14.4
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,944	1,874	56	59	125	0	125	15.5
444.00	Unincorporated El Dorado County (Remainder Area)	0	273	178	17	8	19	1	20	13.7
445.00	Placerville	0	838	785	56	26	65	3	68	12.3
446.00	Placerville	1	4,248	759	698	28	65	53	119	35.8
447.00	Unincorporated El Dorado County (Remainder Area)	0	8,319	3,143	1,573	81	199	116	314	26.5
448.00	Placerville	0	1,800	2,023	52	64	161	0	161	11.2
449.00	Unincorporated El Dorado County (Remainder Area)	0	464	473	12	14	30	0	30	15.4
450.00	Unincorporated El Dorado County (Remainder Area)	0	2,336	2,191	76	84	180	0	180	13.0
451.00	Unincorporated El Dorado County (Remainder Area)	0	894	864	26	27	58	0	58	15.4
452.00	Placerville	0	6,893	3,643	925	150	321	66	387	17.8
453.00	Placerville	1	3,296	3,157	140	182	391	0	391	8.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	542	475	19	28	59	0	59	9.2
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,528	2,649	68	73	181	0	181	14.0
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,773	1,763	51	51	109	0	109	16.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	3,111	2,990	250	68	153	13	166	18.7
458.00	Placerville	0	11,399	1,913	1,829	71	157	130	287	39.7
459.00	Placerville	0	726	698	21	28	62	0	62	11.7
460.00	Unincorporated El Dorado County (Remainder Area)	0	823	789	23	22	47	0	47	17.4
461.00	Unincorporated El Dorado County (Remainder Area)	0	113	127	2	6	13	0	13	8.5
462.00	Unincorporated El Dorado County (Remainder Area)	0	2,607	1,232	403	31	67	24	91	28.8
463.00	Unincorporated El Dorado County (Remainder Area)	0	3,718	5,306	47	89	195	0	195	19.0
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,786	3,398	48	55	129	0	129	21.7
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,717	5,362	33	65	163	0	163	22.8
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,073	3,387	113	65	143	7	150	20.5
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,482	3,479	29	49	107	0	107	23.1
468.00	Unincorporated El Dorado County (Remainder Area)	0	5,808	6,887	96	128	263	0	263	22.0
469.00	Unincorporated El Dorado County (Remainder Area)	0	3,779	5,143	42	70	156	0	156	24.2
470.00	Unincorporated El Dorado County (Remainder Area)	0	1,662	2,140	23	33	72	0	72	23.0
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,206	1,587	17	26	57	0	57	21.1
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,204	1,622	17	26	57	0	57	21.1
473.00	Unincorporated El Dorado County (Remainder Area)	0	1,176	672	223	13	33	25	58	20.4
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,756	2,029	35	42	95	0	95	18.5
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,833	2,182	33	42	95	0	95	19.3
476.00	Unincorporated El Dorado County (Remainder Area)	0	4,020	895	526	16	41	34	75	53.5
477.00	Unincorporated El Dorado County (Remainder Area)	0	1,566	2,166	20	31	78	0	78	20.1
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,228	1,435	24	30	66	0	66	18.5
479.00	Unincorporated El Dorado County (Remainder Area)	0	5,060	3,280	422	62	156	29	185	27.4
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,688	2,427	28	31	68	1	69	24.5
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,351	1,918	18	24	53	0	53	25.4
482.00	Unincorporated El Dorado County (Remainder Area)	0	6,433	8,459	87	102	226	0	226	28.5
483.00	Unincorporated El Dorado County (Remainder Area)	0	9,546	4,666	1,035	132	285	76	361	26.4
484.00	Unincorporated El Dorado County (Remainder Area)	0	8,673	4,817	1,177	104	267	118	384	22.6
485.00	Unincorporated El Dorado County (Remainder Area)	0	2,226	2,995	30	40	103	0	103	21.7
486.00	Unincorporated El Dorado County (Remainder Area)	0	5,270	7,036	75	110	249	0	249	21.2
487.00	Unincorporated El Dorado County (Remainder Area)	0	18,741	8,212	3,058	228	504	184	688	27.2
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,716	7,246	104	125	283	0	283	20.2
489.00	Unincorporated El Dorado County (Remainder Area)	0	7,391	6,590	407	157	355	24	379	19.5
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,511	1,796	31	35	86	0	86	17.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,386	8,742	161	181	444	0	444	16.6
492.00	Unincorporated El Dorado County (Remainder Area)	0	8,858	3,441	1,043	76	188	72	259	34.2
493.00	Unincorporated El Dorado County (Remainder Area)	0	9,843	3,601	1,468	79	195	101	296	33.2
494.00	Unincorporated El Dorado County (Remainder Area)	0	6,342	2,983	761	71	174	55	229	27.7
495.00	Unincorporated El Dorado County (Remainder Area)	0	641	745	14	17	42	0	42	15.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,237	4,213	713	94	232	52	284	25.5

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497.00	Unincorporated El Dorado County (Remainder Area)	0	9,494	4,980	1,009	109	263	75	338	28.1
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,582	4,013	176	78	176	13	189	18.9
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,504	1,827	30	38	93	0	93	16.1
500.00	Unincorporated El Dorado County (Remainder Area)	0	5,309	1,099	1,169	11	24	97	121	43.8
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,233	813	555	22	49	58	107	20.8
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,233	8,884	140	147	349	0	349	20.7
503.00	Unincorporated El Dorado County (Remainder Area)	0	5,093	10	846	1	2	56	58	87.5
504.00	Unincorporated El Dorado County (Remainder Area)	0	13,693	5,040	1,636	140	313	103	416	32.9
505.00	Unincorporated El Dorado County (Remainder Area)	0	80	95	1	3	7	0	7	11.9
506.00	Unincorporated El Dorado County (Remainder Area)	0	993	1,015	35	28	64	1	65	15.4
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,125	2,488	48	61	145	0	145	14.7
508.00	Unincorporated El Dorado County (Remainder Area)	0	4,876	2,854	1,165	85	184	114	298	16.3
509.00	Unincorporated El Dorado County (Remainder Area)	0	2,070	405	654	12	27	77	104	19.9
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,519	2,918	224	92	200	15	215	16.3
511.00	Unincorporated El Dorado County (Remainder Area)	0	1,993	1,567	132	46	109	9	118	16.8
512.00	Unincorporated El Dorado County (Remainder Area)	0	1,906	2,165	43	45	107	0	107	17.8
513.00	Unincorporated El Dorado County (Remainder Area)	0	8,042	10,336	171	178	456	7	463	17.4
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,338	42,892	376	714	1,830	0	1,830	17.1
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,175	4,068	54	78	188	0	188	16.9
516.00	Unincorporated El Dorado County (Remainder Area)	0	7,428	10,010	102	162	391	0	391	19.0
517.00	Unincorporated El Dorado County (Remainder Area)	0	23,444	18,861	1,730	489	1,085	139	1,224	19.2
518.00	Unincorporated El Dorado County (Remainder Area)	0	13,109	12,286	803	325	745	53	799	16.4
519.00	Unincorporated El Dorado County (Remainder Area)	0	7,731	6,171	747	162	371	60	432	17.9
520.00	Unincorporated El Dorado County (Remainder Area)	0	13,940	12,078	1,173	296	678	99	778	17.9
521.00	Unincorporated El Dorado County (Remainder Area)	0	15,915	9,214	1,669	309	686	167	853	18.7
522.00	Unincorporated El Dorado County (Remainder Area)	0	4,819	5,818	167	96	236	9	245	19.6
523.00	Unincorporated El Dorado County (Remainder Area)	0	24,621	10,006	3,137	302	698	272	970	25.4
524.00	Unincorporated El Dorado County (Remainder Area)	0	19,256	8,813	2,541	214	495	207	702	27.4
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,560	5,768	60	97	233	0	233	19.6
526.00	Unincorporated El Dorado County (Remainder Area)	0	3,206	4,028	56	55	142	0	142	22.6
527.00	Unincorporated El Dorado County (Remainder Area)	0	8,799	6,934	842	186	447	71	517	17.0
528.00	Unincorporated El Dorado County (Remainder Area)	0	51,639	63,804	892	1,061	2,556	51	2,607	19.8
529.00	Unincorporated El Dorado County (Remainder Area)	0	1,260	1,220	125	19	46	8	54	23.2
530.00	Unincorporated El Dorado County (Remainder Area)	0	13,307	17,590	224	226	551	0	551	24.2
531.00	Unincorporated El Dorado County (Remainder Area)	0	3,815	5,007	62	59	144	0	144	26.6
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,640	4,566	65	64	156	0	156	23.4
533.00	Unincorporated El Dorado County (Remainder Area)	0	11,664	9,329	989	151	367	53	420	27.8
534.00	Unincorporated El Dorado County (Remainder Area)	0	4,279	5,427	72	69	168	0	168	25.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,366	6,732	85	95	245	0	245	21.9
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,494	6,959	83	106	273	0	273	20.1
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,951	14,349	139	208	536	0	536	20.4
538.00	Unincorporated El Dorado County (Remainder Area)	0	15,616	7,365	1,847	159	382	137	519	30.1
539.00	Unincorporated El Dorado County (Remainder Area)	0	13,593	1,936	1,915	11	27	142	169	80.4
540.00	Unincorporated El Dorado County (Remainder Area)	0	9,652	0	1,696	0	0	132	132	73.0
541.00	Unincorporated El Dorado County (Remainder Area)	0	2,572	838	301	18	43	24	67	38.2
542.00	Unincorporated El Dorado County (Remainder Area)	0	6,161	2,194	967	55	130	76	206	29.9
543.00	Unincorporated El Dorado County (Remainder Area)	0	32,410	1,667	6,373	50	118	368	486	66.6
544.00	Unincorporated El Dorado County (Remainder Area)	0	2,503	2,664	63	58	137	0	137	18.2
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,754	20	27	64	0	64	22.2
546.00	Unincorporated El Dorado County (Remainder Area)	0	7,981	10,019	116	131	310	0	310	25.7
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,925	531	762	13	31	64	95	52.0
548.00	Unincorporated El Dorado County (Remainder Area)	0	15,314	17,498	599	405	960	27	987	15.5
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,382	2,750	64	54	128	1	129	18.5
550.00	Unincorporated El Dorado County (Remainder Area)	0	6,365	1,690	998	40	100	62	162	39.2
551.00	Unincorporated El Dorado County (Remainder Area)	0	8,993	1,805	1,360	46	115	87	202	44.5
552.00	Unincorporated El Dorado County (Remainder Area)	0	1,061	453	107	11	26	6	32	33.1
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,474	1,734	33	35	83	0	83	17.8
554.00	Unincorporated El Dorado County (Remainder Area)	0	6,766	7,905	189	185	438	5	443	15.3
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,555	1,752	31	39	92	0	92	16.9
556.00	Unincorporated El Dorado County (Remainder Area)	0	4,493	5,444	81	89	211	0	211	21.3
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,810	1,545	215	34	81	20	101	18.0
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,004	2,498	27	40	96	0	96	20.9

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
559.00	Unincorporated El Dorado County (Remainder Area)	0	1,255	1,456	22	28	67	0	67	18.7
560.00	Unincorporated El Dorado County (Remainder Area)	0	5,903	1,192	1,754	28	66	172	238	24.8
561.00	Unincorporated El Dorado County (Remainder Area)	0	898	1,018	19	23	54	0	54	16.5
562.00	Unincorporated El Dorado County (Remainder Area)	0	3,761	4,658	55	73	175	0	175	21.4
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,091	2,692	24	40	90	0	90	23.2
564.00	Unincorporated El Dorado County (Remainder Area)	0	1,034	1,208	24	27	62	0	62	16.6
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,167	2,315	52	69	143	0	143	15.2
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,922	3,964	141	112	264	5	269	14.6
567.00	Unincorporated El Dorado County (Remainder Area)	0	3,073	690	583	29	60	50	110	28.0
568.00	Unincorporated El Dorado County (Remainder Area)	0	2,937	750	554	26	61	47	108	27.2
569.00	Unincorporated El Dorado County (Remainder Area)	0	7,013	1,982	1,086	72	169	96	265	26.5
570.00	Unincorporated El Dorado County (Remainder Area)	0	8,669	1,175	1,861	53	109	169	278	31.2
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,096	1,123	28	38	79	0	79	13.9
572.00	Unincorporated El Dorado County (Remainder Area)	0	4,748	1,224	967	39	90	89	178	26.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	7,925	9,665	126	126	284	0	284	27.9
574.00	Unincorporated El Dorado County (Remainder Area)	0	4,386	5,569	54	88	204	1	205	21.4
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,790	4,012	22	37	86	0	86	32.6
576.00	Unincorporated El Dorado County (Remainder Area)	0	2,744	852	324	19	43	33	76	36.2
577.00	Unincorporated El Dorado County (Remainder Area)	0	525	632	8	14	32	0	32	16.6
578.00	Unincorporated El Dorado County (Remainder Area)	0	24,973	38,046	125	451	1,016	0	1,016	24.6
579.00	Unincorporated El Dorado County (Remainder Area)	0	2,773	4,004	21	41	96	0	96	28.9
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,446	3,313	26	42	98	0	98	24.9
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,762	6,979	39	66	146	0	146	32.6
582.00	Unincorporated El Dorado County (Remainder Area)	0	13,166	989	1,614	15	37	65	102	129.2
583.00	Unincorporated El Dorado County (Remainder Area)	0	30,859	46,368	292	446	987	15	1,002	30.8
584.00	Unincorporated El Dorado County (Remainder Area)	0	2,105	2,045	107	22	47	6	53	39.8
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,907	14,023	94	148	327	0	327	30.3
586.00	Unincorporated El Dorado County (Remainder Area)	0	3,740	2,852	260	56	105	10	115	32.5
587.00	Unincorporated El Dorado County (Remainder Area)	0	1,948	2,739	23	48	116	0	116	16.8
588.00	Unincorporated El Dorado County (Remainder Area)	0	15,896	22,543	146	348	892	0	892	17.8
589.00	Unincorporated El Dorado County (Remainder Area)	0	239	289	6	8	16	0	16	14.9
590.00	Unincorporated El Dorado County (Remainder Area)	0	815	1,027	14	23	55	0	55	14.8
591.00	Unincorporated El Dorado County (Remainder Area)	0	67	86	1	3	7	0	7	9.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	14,390	9,337	1,287	361	801	146	947	15.2
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,835	5,848	530	155	370	56	426	16.1
594.00	Unincorporated El Dorado County (Remainder Area)	0	11,251	14,960	164	316	754	0	754	14.9
595.00	Unincorporated El Dorado County (Remainder Area)	0	4,040	2,664	252	46	104	27	131	30.8
596.00	Unincorporated El Dorado County (Remainder Area)	0	5,257	3,046	495	59	151	48	199	26.4
597.00	Unincorporated El Dorado County (Remainder Area)	0	12,327	3,050	1,761	122	271	214	485	25.4
598.00	Unincorporated El Dorado County (Remainder Area)	0	8,790	384	1,448	15	33	166	200	44.0
599.00	Unincorporated El Dorado County (Remainder Area)	0	621	760	12	18	40	0	40	15.6
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,400	8,131	1,048	217	481	94	575	19.8
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,331	1,846	5	11	24	0	24	54.8
602.00	Unincorporated El Dorado County (Remainder Area)	0	1,860	115	236	3	6	9	15	127.1
603.00	Unincorporated El Dorado County (Remainder Area)	0	3,583	467	926	12	23	32	55	65.7
604.00	Unincorporated El Dorado County (Remainder Area)	0	3,272	631	451	17	31	13	44	74.7
605.00	Unincorporated El Dorado County (Remainder Area)	0	2,844	914	810	21	46	29	75	38.1
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,211	4,483	12	19	47	0	47	68.7
608.00	Unincorporated El Dorado County (Remainder Area)	0	29	41	0	1	2	0	2	13.8
609.00	Unincorporated El Dorado County (Remainder Area)	0	9,785	1,523	1,534	37	80	61	141	69.2
610.00	El Dorado Hills	0	60,033	130	27,513	0	0	2,725	2,725	22.0
611.00	El Dorado Hills	0	59,122	35,319	8,685	1,023	2,614	672	3,286	18.0
612.00	El Dorado Hills	0	127,618	1,006	61,463	0	0	5,778	5,778	22.1
613.00	Unincorporated El Dorado County (Remainder Area)	0	119	104	18	4	10	3	13	9.3
614.00	El Dorado Hills	0	6,251	7,486	131	211	550	0	550	11.4
615.00	El Dorado Hills	0	10,420	8,817	704	211	550	60	609	17.1
616.00	El Dorado Hills	0	1,559	1,878	31	53	138	0	138	11.3
617.00	El Dorado Hills	0	13,831	9,727	887	187	553	89	642	21.6
618.00	El Dorado Hills	0	4,664	0	2,081	0	0	265	265	17.6
619.00	El Dorado Hills	0	3,433	0	551	0	0	60	60	57.2
620.00	El Dorado Hills	0	17,015	3,476	1,546	0	0	178	178	95.6

VMT Summary by Jurisdiction - 2040 Baseline Scenario (Plus Project)

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	12,602	16,446	216	326	963	0	963	13.1
622.00	El Dorado Hills	0	19,216	18,131	1,093	370	1,094	90	1,184	16.2
623.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
624.00	El Dorado Hills	0	15,237	14,612	670	309	918	54	972	15.7
625.00	El Dorado Hills	0	181	0	103	0	0	12	12	15.1
626.00	Unincorporated El Dorado County (Remainder Area)	0	41,972	4,882	6,439	164	386	554	939	44.7
627.00	Unincorporated El Dorado County (Remainder Area)	0	59,483	0	11,008	0	0	966	966	61.6
628.00	Unincorporated El Dorado County (Remainder Area)	0	19,812	23,716	453	515	1,322	0	1,322	15.0
629.00	Unincorporated El Dorado County (Remainder Area)	0	14,238	18,652	306	521	1,535	0	1,535	9.3
630.00	Unincorporated El Dorado County (Remainder Area)	0	7,730	9,732	146	242	713	0	713	10.8
631.00	Unincorporated El Dorado County (Remainder Area)	0	6,536	8,925	143	237	600	0	600	10.9
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,652	2,046	31	53	138	0	138	12.0
633.00	Unincorporated El Dorado County (Remainder Area)	0	7,019	8,530	145	211	550	0	550	12.8
634.00	Unincorporated El Dorado County (Remainder Area)	0	7,342	8,999	146	212	552	0	552	13.3
635.00	Unincorporated El Dorado County (Remainder Area)	0	3,604	4,408	71	106	276	0	276	13.1
636.00	Unincorporated El Dorado County (Remainder Area)	0	5,986	8,322	127	212	556	0	556	10.8
637.00	Unincorporated El Dorado County (Remainder Area)	0	9,444	11,651	184	265	695	0	695	13.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,270	1,602	22	36	94	0	94	13.5
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,742	3,376	51	72	189	0	189	14.5
640.00	Unincorporated El Dorado County (Remainder Area)	0	9,516	11,913	178	272	713	0	713	13.3
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,773	3,435	52	72	189	0	189	14.7
642.00	Unincorporated El Dorado County (Remainder Area)	0	36,406	38,701	1,548	926	2,421	96	2,517	14.5
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,261	11,571	176	257	672	0	672	13.8
644.00	Unincorporated El Dorado County (Remainder Area)	0	3,074	3,901	54	90	238	0	238	12.9
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,192	25,073	910	495	1,311	56	1,367	15.5
646.00	Unincorporated El Dorado County (Remainder Area)	0	7,105	8,921	123	180	477	0	477	14.9
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,501	1,892	26	45	119	0	119	12.6
648.00	Unincorporated El Dorado County (Remainder Area)	0	3,876	2,233	510	45	119	42	161	24.1
649.00	Unincorporated El Dorado County (Remainder Area)	0	4,674	2,827	28	45	119	0	119	39.2
650.00	Outside of County	0	2,926,888	1,492,211	489,751	0	0	0	0	-
651.00	Outside of County	0	29,919	17,049	4,097	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	418,540	187,947	51,500	0	0	0	0	-
654.00	Outside of County	0	41,850	9,393	2,410	0	0	0	0	-
655.00	Outside of County	0	353,363	120,269	33,997	0	0	0	0	-
656.00	Outside of County	0	56,455	18,686	7,085	0	0	0	0	-
657.00	Outside of County	0	196,560	9,085	3,583	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	5,740	3,011	933	0	0	0	0	-
660.00	Outside of County	0	181,814	101,861	33,632	0	0	0	0	-
661.00	Outside of County	0	148,723	79,030	24,408	0	0	0	0	-
662.00	Outside of County	0	711,268	374,077	121,180	0	0	0	0	-
663.00	Outside of County	0	734,723	259,576	80,524	0	0	0	0	-
664.00	Outside of County	0	452,334	247,505	66,205	0	0	0	0	-
665.00	Outside of County	0	221,365	97,538	35,910	0	0	0	0	-
666.00	Outside of County	0	102,432	56,688	17,238	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	535,760	362,073	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	203,416	110,462	30,597	0	0	0	0	-
672.00	Outside of County	0	38,732	38,815	0	0	0	0	0	-
673.00	Outside of County	0	33,678	16,647	0	0	0	0	0	-
674.00	Outside of County	0	405,077	27,595	0	0	0	0	0	-

Appendix L-7

Memorandum: Country Club Drive Alignment Analysis

FEHR PEERS

MEMORANDUM

Date: October 29, 2021

To: Kirk Bone, Parker Development

From: David B. Robinson, Fehr & Peers

Subject: Country Club Drive Alignment Analysis

RS12-3017

INTRODUCTION

Fehr & Peers completed the transportation impact analyses for the Central El Dorado Hills Specific Plan (CEDHSP) with the proposed Country Club Drive connection between Serrano Parkway and Silva Valley Parkway.

The Country Club Drive Connection west of Silva Valley Parkway is Project 36105007 in the El Dorado County Adopted 2021 Capital Improvement Program (CIP). As described, the CIP project would construct Country Club Drive from Silva Valley Parkway to El Dorado Hills Boulevard as a two-lane roadway, including curb, gutter, and sidewalks on both sides of the roadway. The CEDHSP would be required to construct the portions of the proposed CIP project within the specific plan.

Consistent with the CIP, the transportation analysis for the CEDHSP included this project with the west end of the new roadway, extending between the Raley's and La Borgata shopping centers, and connecting to the east leg of the El Dorado Hills Boulevard/Saratoga Way/Park Drive intersection. However, El Dorado County is proposing a modification to the roadway alignment that would connect the west end to Serrano Parkway. Consequently, the transportation analysis of the CEDHSP needed to be updated to analyze the effect of the modified alignment.

This memorandum summarizes traffic operations for the following study intersections[1] that would be affected by the proposed Country Club Drive alignment:

- Intersection 10 – El Dorado Hills Boulevard/Serrano Parkway
- Intersection 13 – El Dorado Hills Boulevard/Saratoga Way/Park Drive
- Intersection 15 – El Dorado Hills Boulevard/US 50 WB Ramps
- Intersection 23 – Serrano Parkway/Country Club Drive

The updated operations analysis was conducted for existing, near-term, and cumulative conditions with and without trips from the proposed project.

[1] The intersection numbering corresponds to the numbering in the traffic study.

EXISTING CONDITIONS

Existing turning movement traffic counts at Intersections 10, 13, and 15 were collection in October and November 2020 after the Saratoga Way and Wilson Boulevard extensions were open to traffic. To account for the change in travel due the pandemic, the existing traffic counts were factored (i.e., increased) 15 percent. Existing conditions are representative of pre-COVID-19 pandemic conditions. The existing traffic counts are included in Attachment A.

FORECAST DEVELOPMENT

We used the modified version of the El Dorado County travel demand forecasting model, developed for the VMT analysis, to develop traffic volume forecasts under near-term and cumulative conditions.

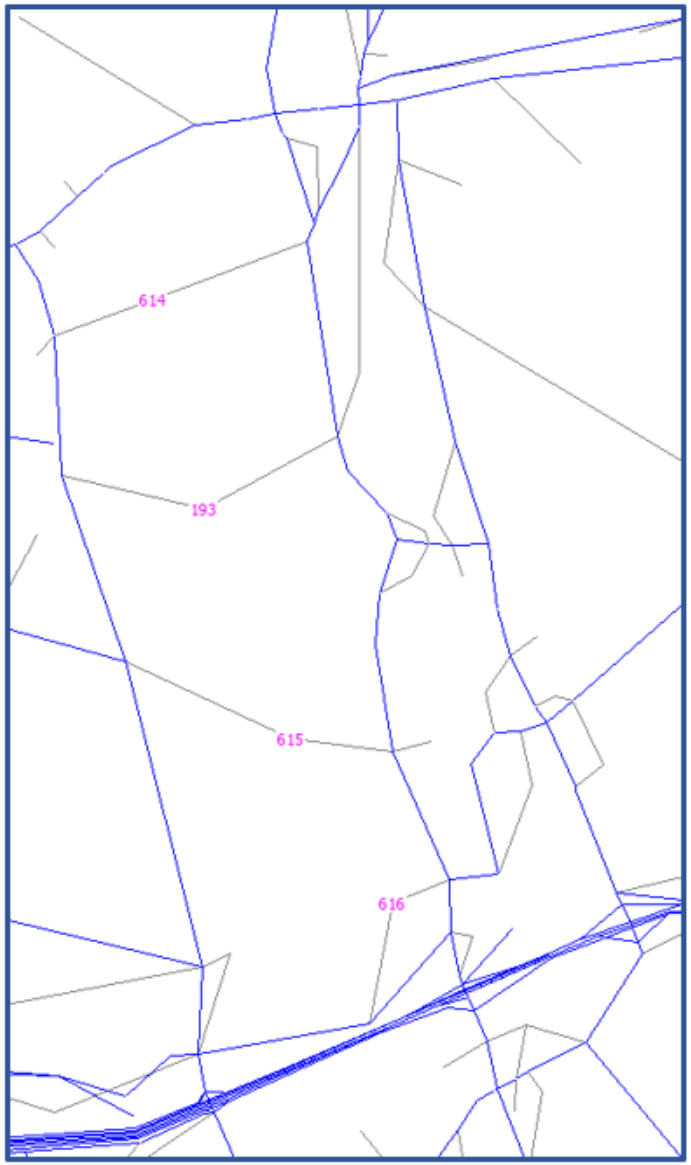
The EDCTDM is a countywide model developed and maintained by the County for traffic analysis related to the General Plan and Traffic Impact Fee Program. Consistent with these applications, the model includes major transportation facilities, including County arterials like El Dorado Hills Boulevard and State facilities like US 50, and a TAZ system that is at a corresponding level of detail. The EDCTDM does not include local and collector roadways. Therefore, the EDCTDM may require refinement for different applications.

The 2017 California Regional Transportation Plan Guidelines (CTC, January 2017) provides guidance on the application of travel demand models. Specifically, that travel demand models should be at an appropriate scale relative to the analysis being conducted. Consistent with this guidance, additional roadway network and TAZ detail was added in El Dorado Hills north of US 50, south of Green Valley Road, east of Sophia Parkway, and west of El Dorado Hills Boulevard to better reflect actual travel time and distance between El Dorado Hills and the City of Folsom with the construction and opening of the Saratoga Way and Wilson Boulevard extension projects. **Figure 1** compares the traffic analysis zone and roadway network detail with and without modification.

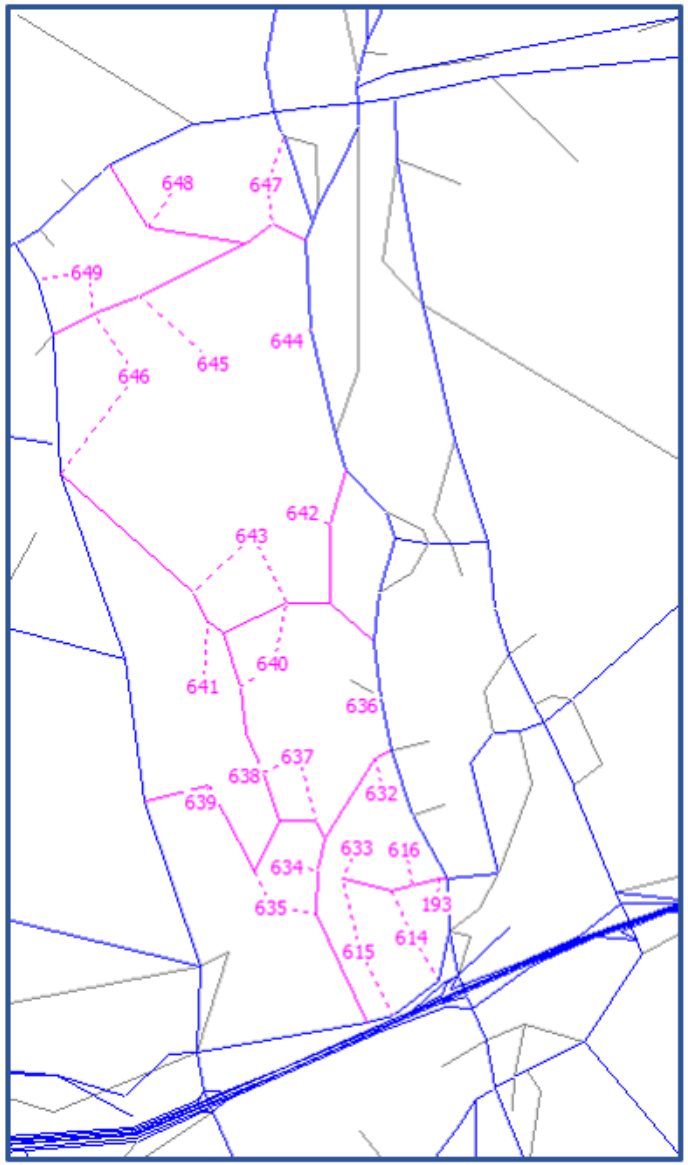
Without modification, the EDCTDM uses 4 TAZs to represent most of the land use in this area with local roadway access modeled using special model links, referred to as TAZ centroid connectors. TAZ centroid connectors provide access for the local development but not for other trips on the network. With this roadway network coding trip lengths are shorter for the land uses represented by the 4 TAZs.

Figure 1 – EDCTDM Model Network Refinements

Without Modification



With Modification



The modified network increased the TAZ detail from 4 to 22 and added roadway links, instead of TAZ centroid connectors, for local access between El Dorado Hills and the City of Folsom in this area. The following public roadway connections were added between El Dorado Hills Boulevard and Sophia Parkway/Empire Ranch Road:

- North Connection: Brittany Way – Suffolk Way – Elmores Way
- North Central Connection: Olson Lane – Gillette Drive – Ridgeview Drive – Muse Drive – Mossridge Way – Powers Drive – Julie Ann Way – Beatty Drive – Alexandra Drive
- South Central Connection: Wilson Boulevard –Ridgeview Drive – Powers Drive – Montridge Way – Crestline Circle – Via Treviso – Via Barlogio – Hildebrand Circle – Woodhead Street
- South Connection: Wilson Boulevard (El Dorado Hills Boulevard to Saratoga Way)

Table 1 compares the estimated travel time from the EDCTDM after modification to field measured travel times. As shown, the model's estimated travel time is consistent with and comparable to field measurements. Therefore, the model is appropriate for application and is more representative of actual travel times and distance than the EDCTDM prior to modification since the model did not include these connections.

Table 1: Travel Time Comparison (Model Estimate vs Field Measurement)

Added Roadway Connection	Travel Time (minutes)		
	Model Estimate	Field Measurement	Difference (Model – Field)
North	3.3	3.0	+0.3
North Central	5.2	5.1	+0.1
South Central	4.4	4.7	-0.3
South	2.5	2.7	-0.2

The TAZ and roadway network modifications shown in **Figure 1** were made to both the Base Year (2018) and Cumulative Year (2040) EDCTDMs. **Table 2** shows the capacity-enhancing roadway improvements from the CIP that are included in the cumulative year model. In addition to the capacity-enhancing projects, the County's Traffic Impact Fee (TIF) program includes an intersection safety improvement at the El Dorado Hills Boulevard/Saratoga Way/Park Drive intersection.

The following steps were used to develop the traffic volume forecasts for analysis:

1. Country Club Drive Connection – Added Country Club Drive as a two-lane roadway between Silva Valley Parkway and Serrano Parkway.
2. Cumulative Year (2040) No Project Forecasts – Used the modified EDCTDM to develop AM and PM peak hour turning movement forecasts for the study intersections, by calculating the growth in travel demand between the base year and future year model, factoring the volumes

entering the study corridor based on the calculated growth, and distributing the volume through the study intersections.

3. Near-Term No Project Forecasts – Developed AM and PM peak hour traffic volume forecasts by interpolating between the existing counts (i.e., after factoring) and the Cumulative Year (2040) No Project forecasts from Step 2. Near-Term Conditions represent 10 years of background growth from existing conditions.

   As shown in **Table 2**, that the Country Club Extension between Silva Valley Parkway and Serrano Parkway is programmed for construction in the CIP in 2035. Therefore, the use of interpolation results in a conservative (i.e., on the high side) analysis of Near-Term conditions, since a portion of non-project is included in the analysis in the near-term. A condition that would not occur if the Country Club Extension between Silva Valley Parkway and Serrano Parkway is constructed in 2035.

4. Plus Project Forecasts – Added the project trips to the no project traffic volume forecasts from Steps 2 and 3 to develop Near-Term Plus Project and Cumulative Plus Project traffic volume forecasts, using the project trip distribution. The forecasts assume that all vehicle access for the portion of the CEDHSP south of Serrano Parkway would be through Serrano Parkway/Country Club Drive Intersection (Intersection 23).

The AM an PM peak hour traffic volume used for the traffic operations analysis are shown on **Figures 1 through 3** at the end of the memorandum. The figures include the following information:

- **Figure 1** – Compares AM and PM peak hour intersection turning movement volumes under Existing Conditions with and without trips from the proposed project.
- **Figure 2** – Compares AM and PM peak hour intersection turning movement volumes under Near-Term Conditions with and without trips from the proposed project.
- **Figure 3** – Compares AM and PM peak hour intersection turning movement volumes under Cumulative Conditions with and without trips from the proposed project.

TABLE 2: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS BY YEAR		
Project Name	**Project Description**	**Begin Construction**
Green Valley Road Widening – County Line to Sophia Parkway	Widen Green Valley Rd from County line to Sophia Parkway from two to four lanes.	Complete
Saratoga Way Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy. from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance, and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd.	Complete
Latrobe Connection	The project consists of intersection improvements at Golden Foothill Parkway (south) and Carson Crossing Drive.	Complete
US 50 / El Dorado Hills Blvd Interchange Improvements – (Phase 2B) Project - 36104001	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2030
US 50 Auxiliary Lane Westbound – El Dorado Hills Boulevard Interchange to Sacramento County Line Project - 36104021	Construct US 50 Westbound Auxiliary Lane from El Dorado Hills Boulevard Interchange to the County Line.	By 2035
Country Club Drive Extension west of Silva Valley Parkway Project - 36105007	Construct new two-lane extension of Country Club Drive west of Silva Valley Parkway. Project would include curb, gutter, and sidewalk on both sides.	By 2035
Country Club Drive – Silva Valley Parkway to Tong Road Project - 36105008	Construct new 2-lane road Country Club Drive from Silva Valley Parkway to Tong Road. Work includes curb, gutter, and sidewalk on both sides of the roadway. CIP#71362	By 2026
Country Club Drive Extension – Tong Road to Bass Lake Road Project - 36105009	Construct 2-lane extension of Country Club Drive from Tong Road to Bass Lake Road, with 8-foot paved shoulder, curb and gutter, and new intersection at Bass Lake Road. CIP#71361	By 2026
Country Club Drive Realignment - Bass Lake Road to Tierra De Dios Drive Project – 36105010	Realign Country Club Drive from Bass Lake Road/Old Bass Lake Road to Tierra de Dios Drive. Work includes constructing a 2-lane road with 8-foot paved shoulders, sidewalk, curb and gutter. CIP#71360	By 2022
Green Valley Road Widening – East of Francisco to East of Silva Valley Parkway Project - 36105018	Widen Green Valley Road from Francisco Drive to Silva Valley Parkway from two to four lanes (undivided), including curb gutter, sidewalk, and Class II bike lanes.	By 2035
Saratoga Way Widening – Phase 2 Project - 36105035	Widen the Saratoga Way from two to four lanes from Wilson Boulevard to El Dorado Hills Boulevard with full curb, gutter, and sidewalk (north side only)	By 2035

TABLE 2: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS BY YEAR		
Project Name	**Project Description**	**Begin Construction**
White Rock Rd Widening – Windfield Way to Sacramento County Line (Connector Segment) Project - 36105041	Widen White Rock Rd from 2 to 4 lanes, divided, from Windfield Way to Sacramento County Line. CIP#GP137	By 2035
White Rock Road Widening (2 to 4 lanes) – Post Street to South of Silva Valley Pkwy Project - 36105042	Widen White Rock Road from two to four lanes from Post Street east to South of Silva Valley Parkway. Improvements include curb, butter, sidewalk, and Class II bike lanes along a portion of the road segment.	By 2030
Latrobe Road – Golden Foothill parkway (N) to White Rock Road Project - 36105069	Widen Latrobe Road from Golden Foothill Parkway (N) to White Rock Road to a six-lane divided roadway with six-foot shoulders	By 2035
Source: El Dorado County Adopted 2021 Capital Improvement Program, June 8, 2021. (Section 4.1 – West Slope Road/Bridge Individual Project Summaries)		

TRAFFIC OPERATIONS

Table 3 compares existing AM and PM peak hour intersection operations under near-term conditions with and without the addition of project trips. As shown in **Table 3**, most study intersections will continue to operate acceptably, at LOS E or better, with the addition of 10 years of background traffic growth, except for the El Dorado Hills Boulevard / Serrano Parkway / Lassen Lane and the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersections during the PM Peak Hour. Attachment A includes the operations analysis output.

- El Dorado Hills Boulevard / Serrano Parkway / Lassen Lane (Intersection 10) - This intersection will operate at LOS B during the PM peak hour under near-term conditions without the project. The addition of the project would result in LOS F conditions during the PM Peak Hour.

  Improvement Recommendation

  Optimized the PM peak hour traffic signal timing to account for the addition of trips from the proposed project. With this improvement the intersection would operate at LOS E during the PM peak hour.

- El Dorado Hills Boulevard / Saratoga Way / Park Drive (Intersection 13) – The intersection will operate at LOS E during the PM peak hour under near-term conditions without the project. The addition of the project would result in LOS F conditions during the PM Peak Hour.

  Improvement Recommendation

  Add a southbound shared through/right-turn lane to the southbound approach. With this improvement the intersection would operate at LOS E during the PM peak hour.

SERRANO PARKWAY/COUNTRY CLUB DRIVE INTERSECTION

The operations analysis assumes traffic signal control and the following lane configurations at the Serrano Parkway / Country Club Drive Intersection:

- One left-turn lane and a shared left/right-turn lane on the northbound approach.
- One shared through/right-turn lane on the eastbound approach.
- One left-turn lane and one through lane on the westbound approach

In addition, the existing large radius yield right turn movement on the northbound approach to the El Dorado Hills Boulevard / Serrano Parkway / Lassen Lane intersection was assumed to be relocated to the intersection to increase the intersection spacing between El Dorado Hills Boulevard and Country Club Lane on Serrano Parkway. With this modification, the intersections would be spaced about 600 feet apart.

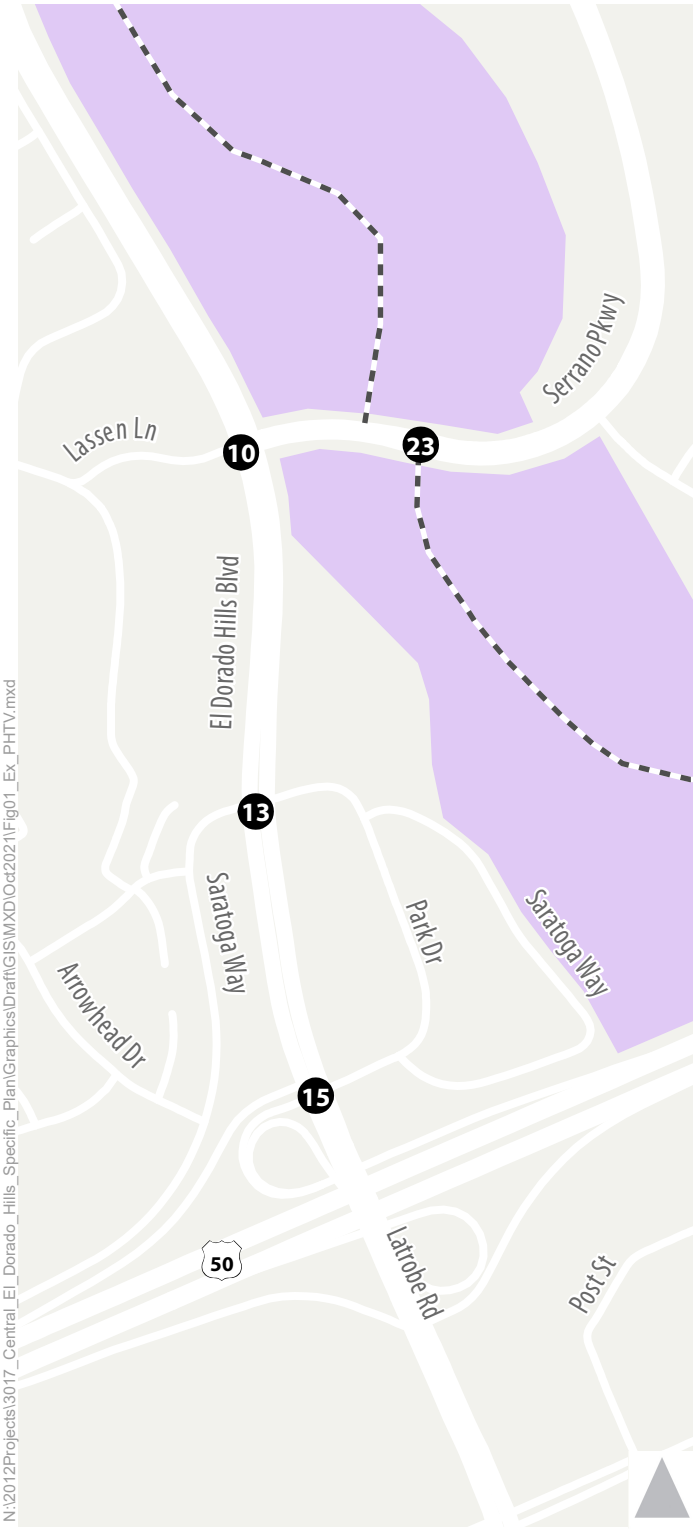
The cumulative operations analysis shows a maximum vehicle queue of about 390 feet would occur during the PM peak hour. Although less than the proposed storage, we recommend that the lane configurations on the eastbound approach to the Serrano Parkway / Country Club Drive Intersection be modified to include a separate right-turn lane to better manage vehicle queues on the eastbound approach.

FEHR PEERS

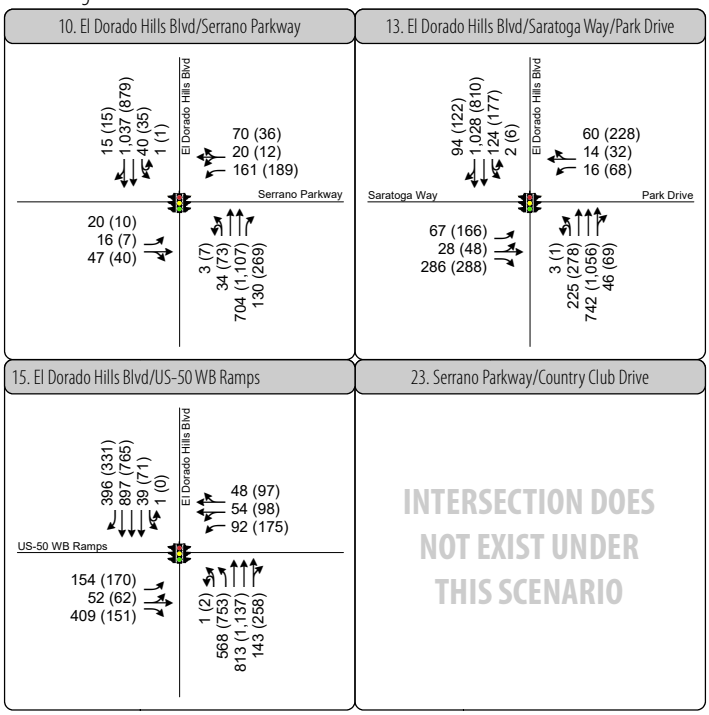
TABLE 3: PEAK HOUR LEVEL OF SERVICE – WITH COUNTRY CLUB ALIGNMENT

			LOS / Delay						
			No Project		Plus Project		Plus Project with Recommended Improvement		
Intersection		Control	AM	PM	AM	PM	AM	PM	Description
Baseline Conditions									
10	El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	17 / B	17 / B	26 / C	44 / D			
13	El Dorado Hills Blvd / Saratoga Way / Park Dr	Signal	35 / D	45 / D	38 / D	78 / E			
15	El Dorado Hills Blvd / US 50 WB Ramps	Signal	35 / D	36 / D	40 / D	39 / D			
23	Serrano Pkwy / Country Club Dr	Signal	-	-	9 / A	14 / B			
Near Term Conditions									
10	El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	20 / B	19 / B	36 / D	125 / F		62 / E	Optimized signal timings for plus-project volumes
13	El Dorado Hills Blvd / Saratoga Way / Park Dr	Signal	41 / D	59 / E	60 / E	89 / F		59 / E	Add SB Shared Through/Right-Turn Lane
15	El Dorado Hills Blvd / US 50 WB Ramps	Signal	25 / C	40 / D	28 / C	45 / D			
23	Serrano Pkwy / Country Club Dr	Signal	-	-	11 / B	18 / C			
Cumulative Conditions									
10	El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	23 / C	22 / C	35 / C	44 / D			
13	El Dorado Hills Blvd / Saratoga Way / Park Dr	Signal	31 / C	37 / D	32 / C	46 / D			
15	El Dorado Hills Blvd / US 50 WB Ramps	Signal	29 / C	35 / D	41 / D	44 / D			
23	Serrano Pkwy / Country Club Dr	Signal	-	-	8 / A	11 / B			

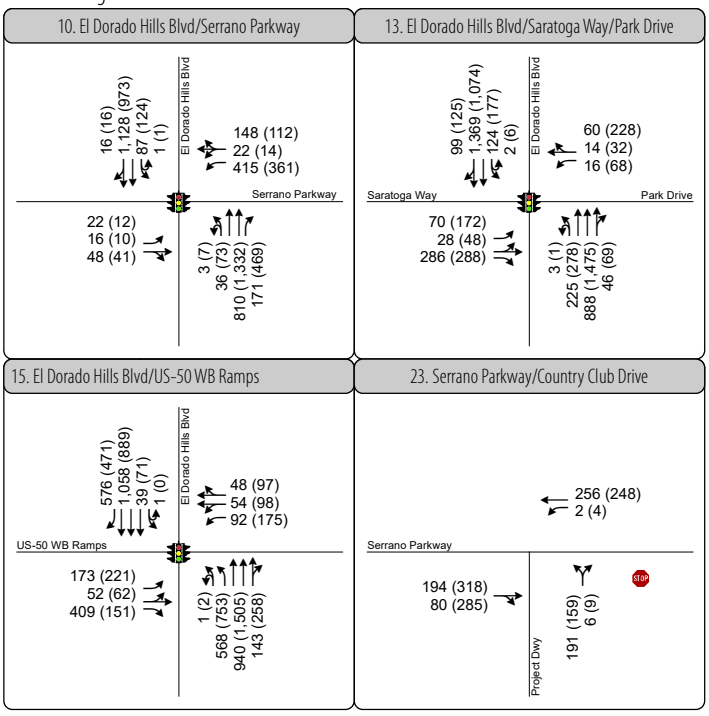
Source: Fehr & Peers, 2021



No Project



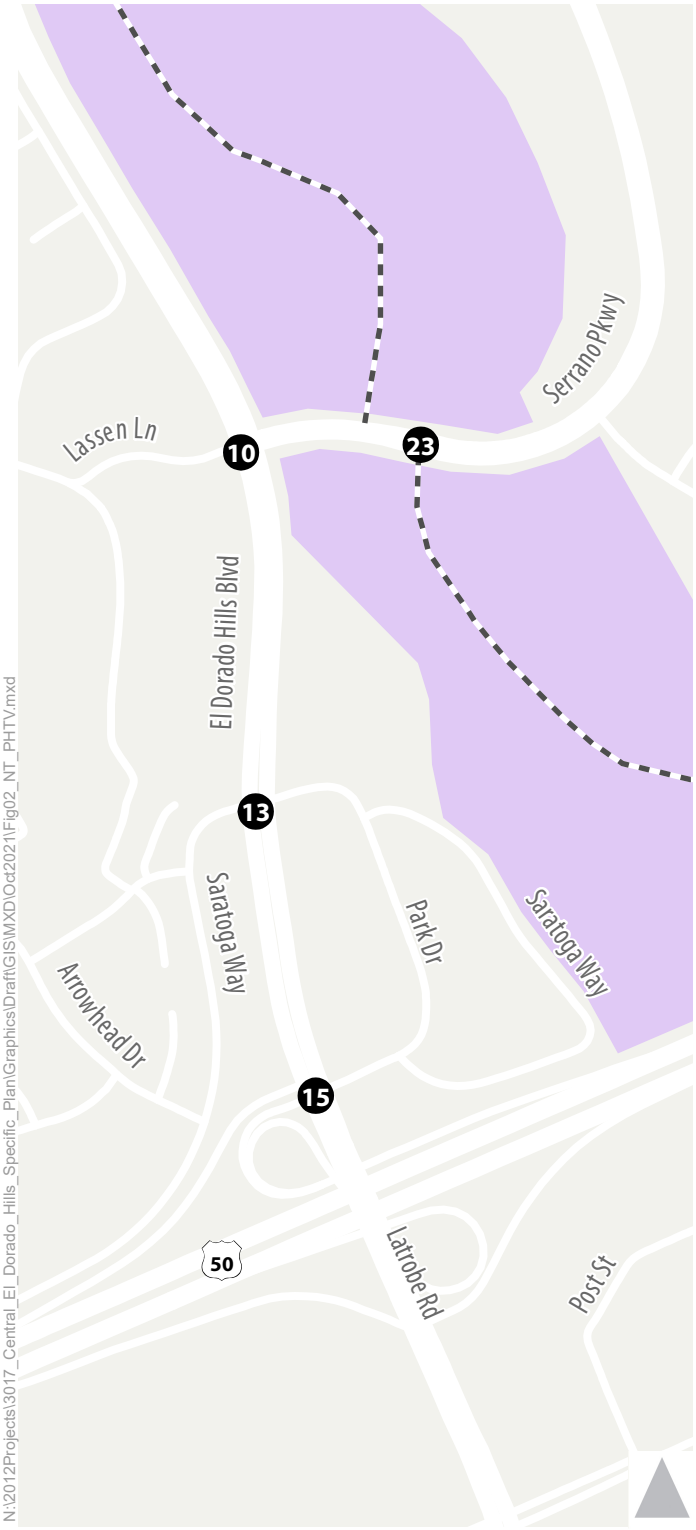
With Project



1	Study Intersection		Turn Lane
	Planned Road	AM (PM)	Peak Hour Traffic Volume
	Project Site		Traffic Signal
			Stop Sign

Figure 2

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



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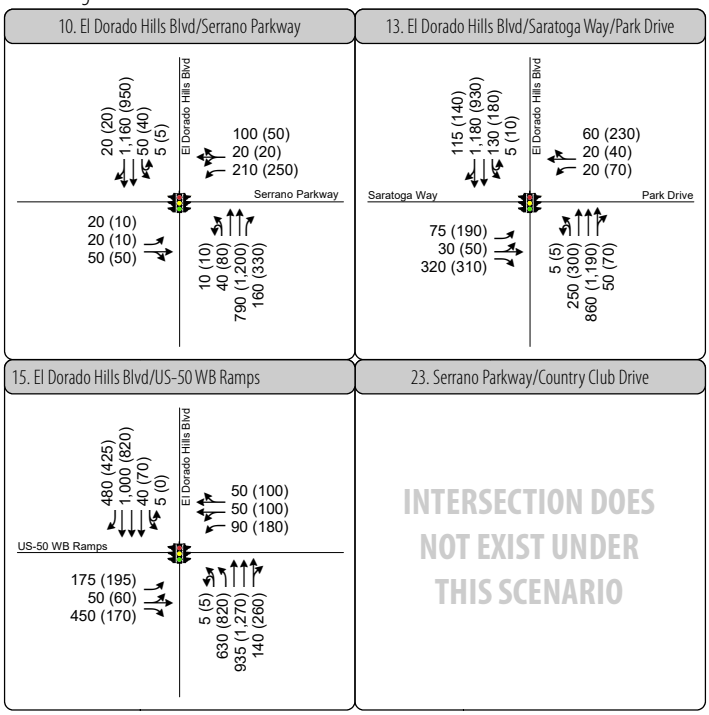
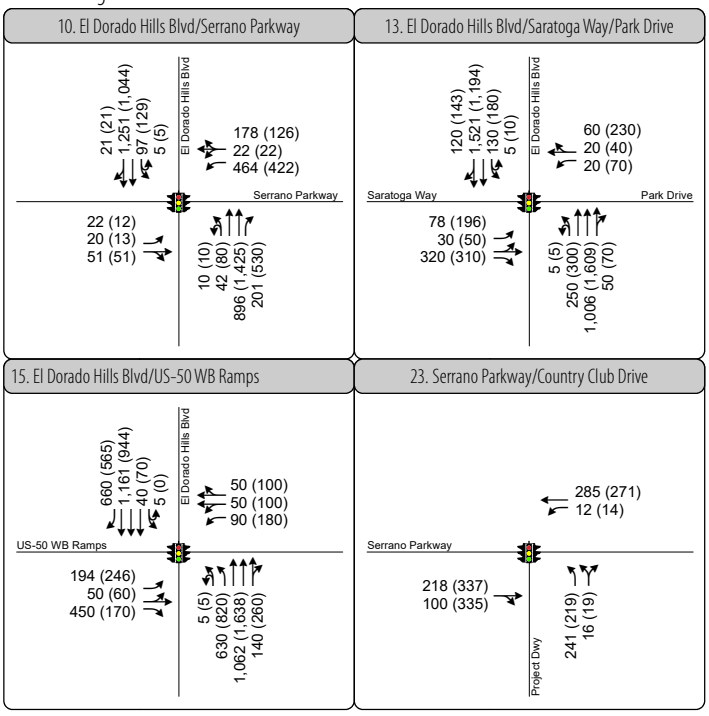
No Project



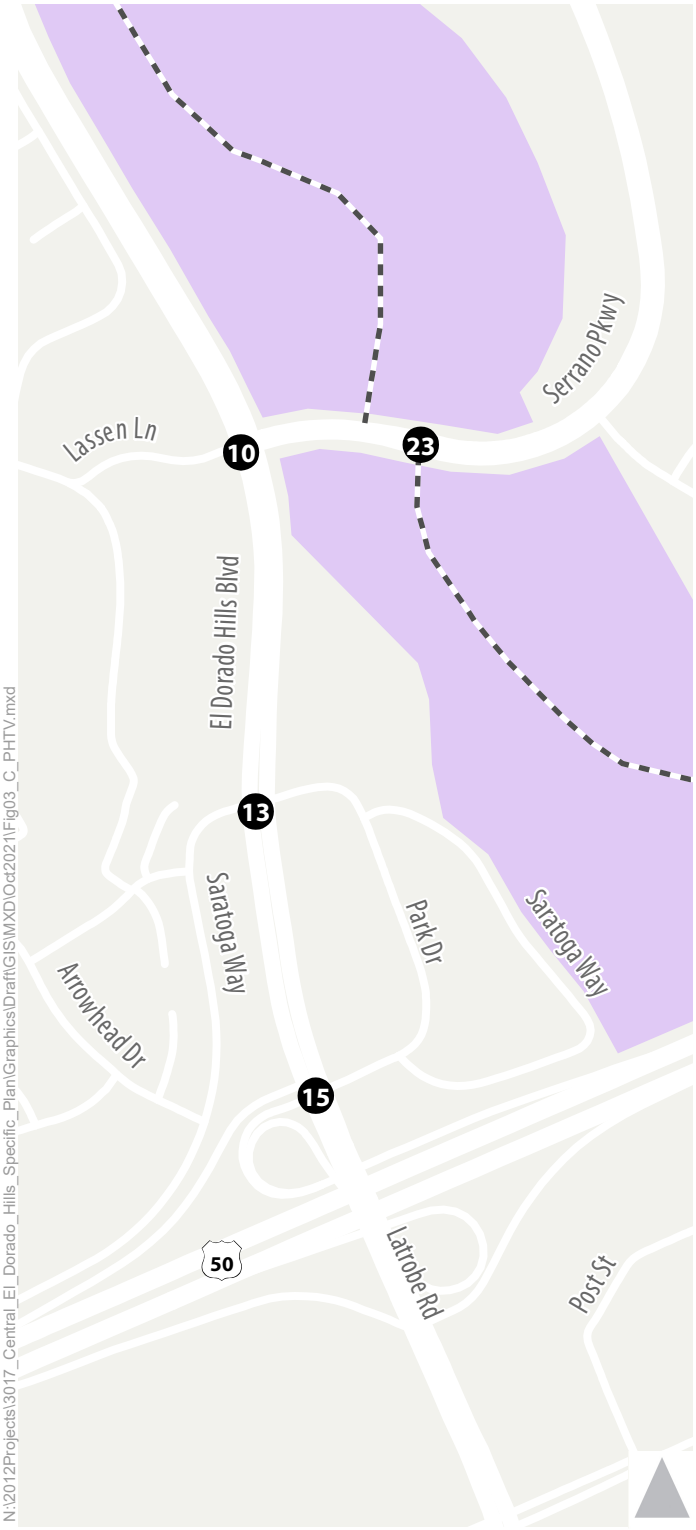
With Project



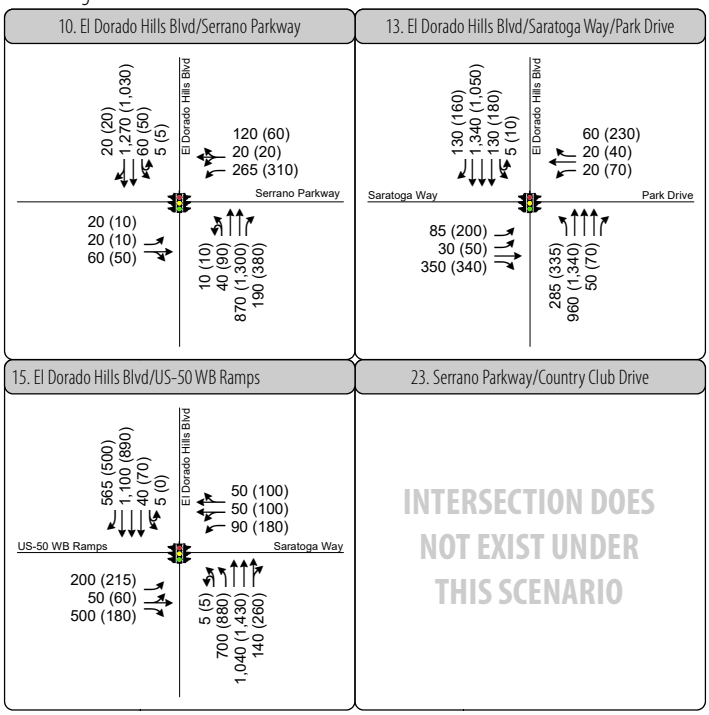
1	Study Intersection		Turn Lane
- - -	Planned Road	AM (PM)	Peak Hour Traffic Volume
	Project Site		Traffic Signal
			Stop Sign

Figure 3

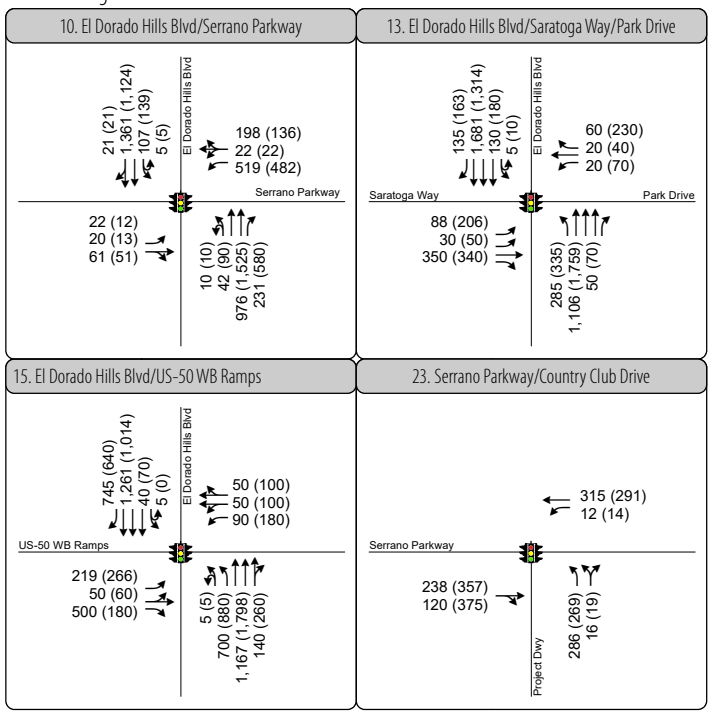
Peak Hour Traffic Volumes and Lane Configurations - Near-Term Conditions



No Project



With Project



1	Study Intersection		Turn Lane
	Planned Road	AM (PM)	Peak Hour Traffic Volume
	Project Site		Traffic Signal
			Stop Sign

Figure 4

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Conditions

Attachment A

Prepared by National Data & Surveying Services

El Dorado Hills Blvd & Serrano Pkwy / Lassen Ln

Peak Hour Turning Movement Count

ID: 20-070173-002
City: El Dorado Hills

Day: Wednesday
Date: 10/21/2020

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	06:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 07:00 PM

El Dorado Hills Blvd — SOUTHBOUND

AM	13	873	35	1	675	AM
NOON	0	0	0	0	0	NOON
PM	13	687	30	1	975	PM

Serrano Pkwy/Lassen Ln — EASTBOUND

AM	NOON	PM	
59	0	83	
0	0	0	0
17	0	9	1
14	0	6	0.5
39	0	31	0.5
AM	NOON	PM	

Serrano Pkwy/Lassen Ln — WESTBOUND

PM	NOON	AM	
31	0	61	0
10	0	17	0.5
148	0	136	1.5
0	0	0	0
264	0	159	
PM	NOON	AM	

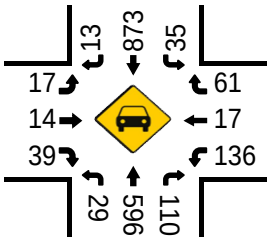
El Dorado Hills Blvd — NORTHBOUND

PM	872	6	60	934	228	PM
NOON	0	0	0	0	0	NOON
AM	1051	3	29	596	110	AM

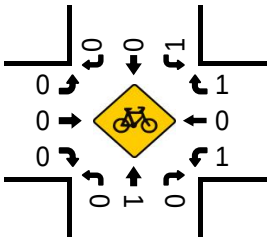
	0	2	1	0
	0	1	2	1

CONTROL			
Signalized			
TEV	1944	0	2194
	AM	NOON	PM
PHF	0.91		0.92

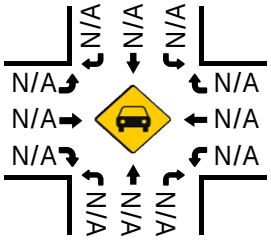
Total Vehicles (AM)



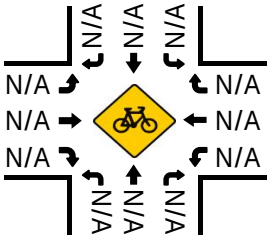
Bikes (AM)



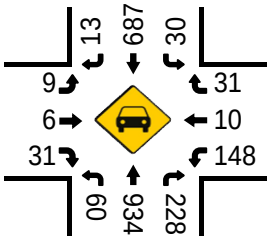
Total Vehicles (Noon)



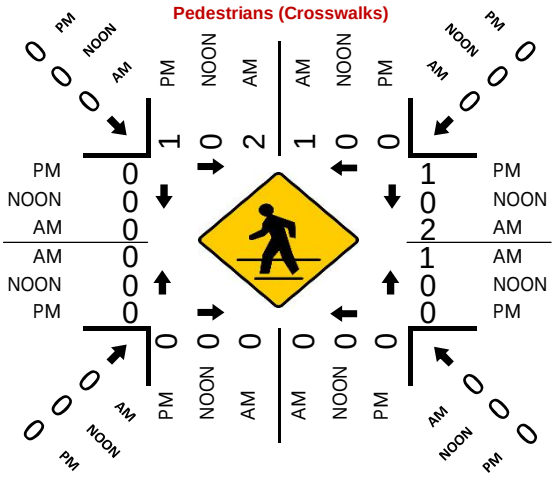
Bikes (NOON)



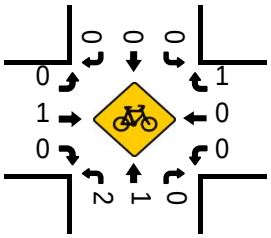
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

El Dorado Hills Blvd & Saratoga Way North/Park Dr

Peak Hour Turning Movement Count

ID: 20-070189-003
City: El Dorado Hills

Day: Thursday
Date: 11/05/2020

	PEAK HOURS	COUNT PERIODS
AM	07:45 AM - 08:45 AM	06:00 AM - 09:00 AM
NOON	11:15 AM - 12:15 PM	11:00 AM - 01:00 PM
PM	04:30 PM - 05:30 PM	04:00 PM - 07:00 PM

El Dorado Hills Blvd – SOUTHBOUND

	Right	Thru	Left	U-Turn	Exiting
AM	82	866	108	2	757
NOON	106	704	156	4	841
PM	106	704	154	5	1265
Lanes	0	2	1	0	

Saratoga Way North/Park Dr – EASTBOUND

	AM	NOON	PM	Lanes
Exiting	290	313	376	
U-Turn	0	0	0	0
Left	58	104	144	1.5
Thru	24	38	42	0.5
Right	241	265	250	1

Saratoga Way North/Park Dr – WESTBOUND

	Lanes	PM	NOON	AM
Right	0.5	198	158	52
Thru	0.5	28	24	12
Left	1	59	52	13
U-Turn	0	0	0	0
Exiting		256	253	172

El Dorado Hills Blvd – NORTHBOUND

	Exiting	U-Turn	Left	Thru	Right
Lanes		0	1	2.5	0.5
PM	1014	1	242	918	60
NOON	1026	5	183	575	59
AM	1123	3	196	645	40

CONTROL

Signalized

	AM	NOON	PM
TEV	2342	2433	2911
PHF	0.94	0.94	0.94

Total Vehicles (AM)

Approach	Right	Thru	Left
Southbound	82	866	108
Eastbound	241	24	58
Westbound	52	12	13
Northbound	40	645	196

Total Vehicles (Noon)

Approach	Right	Thru	Left
Southbound	106	704	156
Eastbound	265	38	104
Westbound	158	24	52
Northbound	59	575	183

Total Vehicles (PM)

Approach	Right	Thru	Left
Southbound	106	704	154
Eastbound	250	42	144
Westbound	198	28	59
Northbound	60	918	242

Bikes (AM)

Approach	Right	Thru	Left
Southbound	1	0	0
Eastbound	0	0	5
Westbound	0	0	0
Northbound	0	0	1

Bikes (NOON)

Approach	Right	Thru	Left
Southbound	2	2	1
Eastbound	0	0	1
Westbound	0	0	0
Northbound	0	1	2

Bikes (PM)

Approach	Right	Thru	Left
Southbound	0	1	0
Eastbound	0	0	2
Westbound	1	0	0
Northbound	0	0	3

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	1	3	0
North	Westbound	0	0	0
West	Southbound	0	0	0
West	Northbound	0	2	0
East	Southbound	2	1	0
East	Northbound	0	0	1
South	Eastbound	0	0	0
South	Westbound	0	0	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

El Dorado Hills Blvd / Latrobe Rd & Saratoga Way / Park Dr / US-50 WB Ramps

Peak Hour Turning Movement Count

ID: 20-070173-003
City: El Dorado Hills

Day: Wednesday
Date: 10/21/2020

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	06:00 AM - 09:00 AM
NOON	12:00 PM - 01:00 PM	11:00 AM - 01:00 PM
PM	04:30 PM - 05:30 PM	04:00 PM - 07:00 PM

El Dorado Hills Blvd/Latrobe Rd – SOUTHBOUND

	Right	Through	Left	U-Turn	Exiting
AM	344	780	34	1	807
NOON	288	685	84	1	966
PM	275	636	59	0	1175
Lanes	1	3	1	0	

Saratoga Way/Park Dr/US-50 WB Ramps – EASTBOUND

	AM	NOON	PM	Lanes
Exiting	885	1110	1015	
U-Turn	0	0	0	0
Left	123	100	143	1.5
Through	45	63	54	0.5
Right	356	180	131	1

Saratoga Way/Park Dr/US-50 WB Ramps – WESTBOUND

	Lanes	PM	NOON	AM
Right	0.5	84	96	42
Through	1	85	83	47
Left	1.5	152	265	80
U-Turn	0	0	0	0
Exiting		337	440	203

El Dorado Hills Blvd/Latrobe Rd – NORTHBOUND

	Exiting	U-Turn	Left	Through	Right
Lanes		0	2	2.5	0.5
PM	921	2	655	948	224
NOON	1131	1	739	769	293
AM	1217	1	494	641	124

CONTROL: Signalized

	AM	NOON	PM
TEV	3112	3647	3448
PHF	0.89	0.94	0.95

Total Vehicles

Period	SB (R / T / L)	EB (L / T / R)	WB (R / T / L)	NB (L / T / R)
Total Vehicles (AM)	344 / 780 / 34	123 / 45 / 356	42 / 47 / 80	494 / 641 / 124
Total Vehicles (Noon)	288 / 685 / 84	100 / 63 / 180	96 / 83 / 265	739 / 769 / 293
Total Vehicles (PM)	275 / 636 / 59	143 / 54 / 131	84 / 85 / 152	655 / 948 / 224

Bikes

Period	SB (R / T / L)	EB (L / T / R)	WB (R / T / L)	NB (L / T / R)
Bikes (AM)	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	0 / 1 / 0
Bikes (NOON)	0 / 1 / 0	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0
Bikes (PM)	0 / 1 / 0	0 / 0 / 0	0 / 0 / 0	0 / 0 / 1

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (eastbound)	0	0	0
North (westbound)	0	0	0
West (southbound)	0	0	0
West (northbound)	0	0	0
East (southbound)	2	0	0
East (northbound)	1	0	0
South (eastbound)	0	0	0
South (westbound)	0	0	0
Diagonal NW	0	0	0
Diagonal NE	0	0	0
Diagonal SW	0	0	0
Diagonal SE	0	0	0

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	37	36	95.9%	35.6	11.2	D
	Through	704	715	101.6%	14.6	2.8	B
	Right Turn	130	128	98.5%	6.4	0.4	A
	Subtotal	871	879	100.9%	14.3	2.6	B
SB	Left Turn	41	42	101.2%	43.6	16.0	D
	Through	1,037	1,032	99.5%	15.7	2.7	B
	Right Turn	15	15	99.3%	6.7	5.3	A
	Subtotal	1,093	1,088	99.6%	16.7	3.0	B
EB	Left Turn	20	18	88.5%	34.4	12.5	C
	Through	16	17	103.1%	36.3	11.2	D
	Right Turn	47	43	92.1%	12.7	3.1	B
	Subtotal	83	78	93.4%	21.7	4.9	C
WB	Left Turn	161	158	98.1%	23.2	3.7	C
	Through	20	21	106.0%	30.1	8.5	C
	Right Turn	70	72	102.1%	16.6	5.3	B
	Subtotal	251	251	99.8%	21.7	3.1	C
Total		2,298	2,295	99.9%	16.5	2.7	B

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	228	234	102.8%	132.4	49.1	F
	Through	742	750	101.1%	16.0	6.0	B
	Right Turn	46	45	98.7%	6.4	2.5	A
	Subtotal	1,016	1,030	101.3%	45.5	18.8	D
SB	Left Turn	126	123	97.9%	71.1	11.7	E
	Through	1,028	1,017	98.9%	26.0	3.5	C
	Right Turn	94	92	97.7%	21.6	2.8	C
	Subtotal	1,248	1,232	98.7%	30.8	3.5	C
EB	Left Turn	67	71	106.1%	53.0	8.3	D
	Through	28	30	108.6%	56.3	11.7	E
	Right Turn	286	294	102.8%	13.9	3.9	B
	Subtotal	381	396	103.8%	23.9	3.7	C
WB	Left Turn	16	17	105.6%	56.9	20.4	E
	Through	14	14	97.9%	55.7	17.6	E
	Right Turn	60	59	98.3%	11.3	5.7	B
	Subtotal	90	90	99.6%	27.4	7.2	C
Total		2,735	2,747	100.4%	35.3	6.9	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	569	542	95.3%	50.4	2.9	D
	Through	813	811	99.8%	20.6	3.8	C
	Right Turn	143	137	95.5%	9.7	4.6	A
	Subtotal	1,525	1,490	97.7%	30.3	2.8	C
SB	Left Turn	40	40	100.3%	84.4	21.2	F
	Through	897	910	101.5%	54.4	4.4	D
	Right Turn	396	391	98.7%	23.3	3.7	C
	Subtotal	1,333	1,341	100.6%	46.2	4.3	D
EB	Left Turn	154	162	105.4%	46.1	7.5	D
	Through	52	57	109.4%	44.8	10.9	D
	Right Turn	409	415	101.4%	3.8	0.3	A
	Subtotal	615	634	103.1%	18.9	3.0	B
WB	Left Turn	92	87	94.3%	49.8	5.8	D
	Through	54	51	94.1%	54.2	10.9	D
	Right Turn	48	51	106.7%	45.5	9.5	D
	Subtotal	194	189	97.3%	49.5	5.2	D
Total		3,667	3,654	99.6%	35.2	1.8	D

SimTraffic Post-Processor **Central El Dorado**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	78	97.5%	37.7	5.8	D
	Through	1,107	1,079	97.5%	18.5	2.5	B
	Right Turn	269	266	99.0%	8.0	0.5	A
	Subtotal	1,456	1,423	97.8%	17.5	2.0	B
SB	Left Turn	36	35	97.2%	45.8	10.0	D
	Through	879	888	101.0%	14.9	1.3	B
	Right Turn	15	17	111.3%	7.6	3.2	A
	Subtotal	930	940	101.1%	15.8	1.3	B
EB	Left Turn	10	12	121.0%	32.1	15.7	C
	Through	7	6	84.3%	26.9	23.6	C
	Right Turn	40	42	105.3%	9.5	4.3	A
	Subtotal	57	60	105.4%	17.9	4.5	B
WB	Left Turn	189	181	95.7%	23.9	2.8	C
	Through	12	13	108.3%	26.5	15.0	C
	Right Turn	36	38	105.8%	19.1	5.7	B
	Subtotal	237	232	97.9%	22.9	2.7	C
Total		2,680	2,655	99.1%	17.4	1.6	B

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	279	281	100.9%	108.4	55.6	F
	Through	1,056	1,026	97.2%	35.8	5.4	D
	Right Turn	69	71	103.0%	18.0	6.7	B
	Subtotal	1,404	1,379	98.2%	50.3	15.3	D
SB	Left Turn	183	189	103.0%	79.7	15.9	E
	Through	810	809	99.9%	38.0	5.3	D
	Right Turn	122	118	96.3%	32.0	6.6	C
	Subtotal	1,115	1,115	100.0%	44.4	7.6	D
EB	Left Turn	166	168	100.9%	77.7	15.8	E
	Through	48	50	105.0%	77.9	16.4	E
	Right Turn	288	291	101.0%	15.9	4.9	B
	Subtotal	502	509	101.3%	44.4	11.7	D
WB	Left Turn	68	68	100.6%	45.3	6.0	D
	Through	32	34	105.3%	41.2	12.6	D
	Right Turn	228	229	100.2%	21.4	6.8	C
	Subtotal	328	331	100.8%	29.0	5.5	C
Total		3,349	3,333	99.5%	45.1	5.0	D

SimTraffic Post-Processor **Central El Dorado**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	755	766	101.4%	51.8	5.2	D
	Through	1,137	1,105	97.2%	25.0	2.0	C
	Right Turn	258	255	98.8%	18.3	3.8	B
	Subtotal	2,150	2,125	98.8%	33.3	2.3	C
SB	Left Turn	71	69	97.2%	78.4	16.9	E
	Through	765	770	100.7%	34.7	4.4	C
	Right Turn	331	330	99.7%	27.6	2.4	C
	Subtotal	1,167	1,169	100.2%	35.5	4.1	D
EB	Left Turn	170	166	97.7%	48.0	6.0	D
	Through	62	66	107.1%	53.8	8.4	D
	Right Turn	151	152	100.5%	2.9	0.2	A
	Subtotal	383	384	100.3%	32.1	3.3	C
WB	Left Turn	175	184	104.9%	56.3	3.7	E
	Through	98	100	102.3%	55.9	8.8	E
	Right Turn	97	98	100.5%	56.1	10.1	E
	Subtotal	370	381	103.1%	56.4	4.9	E
Total		4,070	4,060	99.7%	35.8	2.1	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	39	36	93.1%	44.7	9.5	D
	Through	810	810	100.0%	21.7	3.4	C
	Right Turn	171	165	96.7%	6.1	0.4	A
	Subtotal	1,020	1,012	99.2%	20.0	3.0	B
SB	Left Turn	88	85	96.4%	56.6	11.0	E
	Through	1,128	1,103	97.8%	25.2	7.5	C
	Right Turn	16	17	103.1%	15.1	10.0	B
	Subtotal	1,232	1,204	97.8%	27.2	7.3	C
EB	Left Turn	22	20	90.0%	36.4	11.0	D
	Through	16	16	97.5%	33.7	9.9	C
	Right Turn	48	49	102.7%	16.3	4.8	B
	Subtotal	86	85	98.5%	24.7	3.7	C
WB	Left Turn	415	414	99.6%	35.3	4.6	D
	Through	22	25	114.5%	36.9	10.8	D
	Right Turn	148	149	100.9%	32.8	6.8	C
	Subtotal	585	588	100.5%	34.7	5.1	C
Total		2,923	2,889	98.8%	26.2	3.9	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	228	229	100.6%	127.7	51.3	F
	Through	888	892	100.5%	13.9	4.8	B
	Right Turn	46	46	100.0%	5.7	2.1	A
	Subtotal	1,162	1,168	100.5%	37.5	14.7	D
SB	Left Turn	126	122	96.7%	84.1	11.7	F
	Through	1,369	1,351	98.6%	37.3	10.7	D
	Right Turn	99	97	97.7%	36.3	12.5	D
	Subtotal	1,594	1,569	98.4%	40.8	10.8	D
EB	Left Turn	70	68	97.7%	57.9	5.2	E
	Through	28	27	95.7%	55.9	16.1	E
	Right Turn	286	296	103.5%	24.7	7.4	C
	Subtotal	384	391	101.9%	33.4	5.7	C
WB	Left Turn	16	16	100.6%	42.5	23.6	D
	Through	14	15	108.6%	42.8	18.1	D
	Right Turn	60	57	94.5%	11.7	6.6	B
	Subtotal	90	88	97.8%	26.6	9.2	C
Total		3,230	3,216	99.6%	38.4	6.5	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	569	554	97.3%	48.6	3.2	D
	Through	940	947	100.7%	23.3	2.7	C
	Right Turn	143	155	108.3%	12.4	3.6	B
	Subtotal	1,652	1,656	100.2%	30.8	1.8	C
SB	Left Turn	40	41	101.8%	91.5	16.1	F
	Through	1,058	1,065	100.6%	63.4	2.8	E
	Right Turn	576	581	100.8%	31.0	2.6	C
	Subtotal	1,674	1,686	100.7%	52.5	2.5	D
EB	Left Turn	173	175	100.9%	40.6	7.7	D
	Through	52	55	105.4%	45.0	7.4	D
	Right Turn	409	401	98.0%	3.6	0.3	A
	Subtotal	634	630	99.4%	18.1	3.4	B
WB	Left Turn	92	90	98.3%	49.1	9.9	D
	Through	54	55	101.7%	52.1	9.7	D
	Right Turn	48	41	86.0%	60.7	15.2	E
	Subtotal	194	187	96.2%	52.5	6.0	D
Total		4,154	4,159	100.1%	38.9	1.6	D

Intersection 23 **Project Dwy/Serrano Parkway** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	191	196	102.4%	11.8	2.0	B
	Through						
	Right Turn	6	6	103.3%	4.4	3.5	A
	Subtotal	197	202	102.4%	11.7	2.0	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	194	189	97.5%	13.5	1.1	B
	Right Turn	80	79	98.5%	11.8	0.9	B
	Subtotal	274	268	97.8%	13.0	1.0	B
WB	Left Turn	2	2	85.0%	1.1	2.0	A
	Through	256	248	97.0%	1.3	0.2	A
	Right Turn						
	Subtotal	258	250	96.9%	1.3	0.2	A
Total		729	720	98.7%	8.7	1.1	A

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	78	97.6%	57.4	9.0	E
	Through	1,332	1,352	101.5%	44.8	11.4	D
	Right Turn	469	476	101.5%	9.8	1.1	A
	Subtotal	1,881	1,906	101.3%	36.5	8.9	D
SB	Left Turn	125	126	100.5%	87.3	31.8	F
	Through	973	965	99.1%	59.7	39.0	E
	Right Turn	16	17	103.1%	40.2	29.6	D
	Subtotal	1,114	1,107	99.4%	62.5	37.9	E
EB	Left Turn	12	14	113.3%	46.8	30.1	D
	Through	10	10	98.0%	38.1	20.7	D
	Right Turn	41	43	103.9%	20.2	10.2	C
	Subtotal	63	66	104.8%	29.5	8.7	C
WB	Left Turn	361	362	100.4%	35.9	5.2	D
	Through	14	15	104.3%	35.8	14.8	D
	Right Turn	112	107	95.9%	37.4	9.1	D
	Subtotal	487	484	99.4%	36.2	5.7	D
Total		3,545	3,563	100.5%	44.0	12.6	D

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	279	289	103.5%	101.0	29.1	F
	Through	1,475	1,493	101.2%	47.4	8.8	D
	Right Turn	69	73	105.9%	37.4	7.1	D
	Subtotal	1,823	1,855	101.7%	55.8	9.7	E
SB	Left Turn	183	184	100.3%	160.3	23.3	F
	Through	1,074	1,051	97.9%	130.0	29.2	F
	Right Turn	125	123	98.2%	133.3	30.9	F
	Subtotal	1,382	1,357	98.2%	134.4	28.2	F
EB	Left Turn	172	177	102.8%	69.2	11.2	E
	Through	48	52	107.3%	82.6	18.8	F
	Right Turn	288	293	101.7%	21.3	5.5	C
	Subtotal	508	521	102.6%	45.1	7.7	D
WB	Left Turn	68	69	101.9%	45.0	9.5	D
	Through	32	35	108.8%	51.6	13.2	D
	Right Turn	228	233	102.3%	28.7	7.5	C
	Subtotal	328	337	102.8%	35.2	7.2	D
Total		4,041	4,071	100.7%	78.4	10.9	E

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Existing Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	755	744	98.6%	49.7	5.4	D
	Through	1,505	1,522	101.1%	30.6	2.5	C
	Right Turn	258	258	99.8%	25.3	2.8	C
	Subtotal	2,518	2,523	100.2%	35.5	2.6	D
SB	Left Turn	71	70	99.2%	74.1	8.6	E
	Through	889	883	99.4%	40.6	4.4	D
	Right Turn	471	468	99.4%	35.3	2.8	D
	Subtotal	1,431	1,422	99.4%	40.9	3.3	D
EB	Left Turn	221	217	98.4%	49.7	6.8	D
	Through	62	66	107.1%	45.3	11.6	D
	Right Turn	151	147	97.2%	2.8	0.3	A
	Subtotal	434	431	99.2%	33.1	3.3	C
WB	Left Turn	175	178	101.5%	53.9	6.4	D
	Through	98	96	97.6%	58.7	5.3	E
	Right Turn	97	100	103.3%	57.8	9.9	E
	Subtotal	370	373	100.9%	56.3	4.8	E
Total		4,753	4,749	99.9%	38.5	1.6	D

Intersection 23 **Project Dwy/Serrano Parkway** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	159	157	98.5%	17.9	4.4	C
	Through						
	Right Turn	9	8	87.8%	10.3	11.8	B
	Subtotal	168	165	97.9%	17.4	3.9	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	318	327	102.9%	19.1	1.3	C
	Right Turn	285	288	101.0%	17.0	1.1	C
	Subtotal	603	615	102.0%	18.2	1.2	C
WB	Left Turn	4	3	80.0%	4.4	8.1	A
	Through	248	246	99.2%	1.2	0.2	A
	Right Turn						
	Subtotal	252	249	98.9%	1.3	0.2	A
Total		1,023	1,029	100.6%	14.2	1.2	B

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	49	98.0%	47.5	14.0	D
	Through	790	790	99.9%	18.4	2.7	B
	Right Turn	160	166	103.8%	6.7	0.6	A
	Subtotal	1,000	1,005	100.5%	17.9	2.3	B
SB	Left Turn	55	55	100.0%	42.5	14.0	D
	Through	1,160	1,163	100.3%	19.6	4.2	B
	Right Turn	20	20	101.0%	15.5	6.7	B
	Subtotal	1,235	1,239	100.3%	20.5	4.3	C
EB	Left Turn	20	18	87.5%	29.3	11.1	C
	Through	20	19	94.5%	41.1	11.2	D
	Right Turn	50	53	105.0%	19.1	7.0	B
	Subtotal	90	89	98.8%	25.8	7.0	C
WB	Left Turn	210	206	98.0%	22.2	2.4	C
	Through	20	19	94.0%	24.0	11.3	C
	Right Turn	100	102	102.2%	14.7	1.8	B
	Subtotal	330	327	99.0%	19.8	1.3	B
Total		2,655	2,659	100.1%	19.7	2.4	B

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	255	229	89.9%	214.4	66.8	F
	Through	860	860	100.0%	19.0	6.8	B
	Right Turn	50	51	101.4%	5.7	3.8	A
	Subtotal	1,165	1,140	97.8%	59.7	18.6	E
SB	Left Turn	135	137	101.2%	63.0	7.2	E
	Through	1,180	1,196	101.3%	26.7	4.4	C
	Right Turn	115	113	97.8%	26.0	4.6	C
	Subtotal	1,430	1,445	101.0%	30.6	4.5	C
EB	Left Turn	75	78	104.0%	59.5	7.6	E
	Through	30	28	94.3%	58.0	18.0	E
	Right Turn	320	314	98.1%	19.4	5.3	B
	Subtotal	425	420	98.9%	28.6	5.4	C
WB	Left Turn	20	18	88.5%	57.3	17.1	E
	Through	20	21	104.5%	57.7	27.2	E
	Right Turn	60	64	105.8%	14.1	9.8	B
	Subtotal	100	102	102.1%	28.2	9.7	C
Total		3,120	3,107	99.6%	41.1	6.7	D

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	635	637	100.4%	51.1	2.6	D
	Through	935	935	100.0%	17.4	1.4	B
	Right Turn	140	145	103.7%	8.0	1.8	A
	Subtotal	1,710	1,718	100.4%	29.0	1.5	C
SB	Left Turn	45	46	101.6%	49.1	9.7	D
	Through	1,000	1,006	100.6%	20.1	3.4	C
	Right Turn	480	482	100.4%	14.1	3.8	B
	Subtotal	1,525	1,534	100.6%	19.2	3.1	B
EB	Left Turn	175	163	93.3%	51.7	5.2	D
	Through	50	51	102.0%	57.1	8.9	E
	Right Turn	450	444	98.6%	4.3	0.4	A
	Subtotal	675	658	97.5%	19.8	1.7	B
WB	Left Turn	90	81	90.3%	56.9	4.8	E
	Through	50	47	93.6%	54.0	8.2	D
	Right Turn	50	48	95.4%	54.2	8.1	D
	Subtotal	190	176	92.5%	55.3	4.0	E
Total		4,100	4,085	99.6%	25.1	1.5	C

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	90	86	96.0%	36.8	6.4	D
	Through	1,200	1,204	100.3%	20.0	2.9	B
	Right Turn	330	329	99.8%	8.0	0.9	A
	Subtotal	1,620	1,620	100.0%	18.6	2.2	B
SB	Left Turn	45	47	104.9%	41.8	9.5	D
	Through	950	962	101.2%	17.6	2.6	B
	Right Turn	20	21	102.5%	12.4	6.5	B
	Subtotal	1,015	1,029	101.4%	18.8	2.8	B
EB	Left Turn	10	10	102.0%	27.8	20.7	C
	Through	10	10	99.0%	33.0	14.8	C
	Right Turn	50	50	100.6%	10.0	3.6	B
	Subtotal	70	70	100.6%	16.4	7.7	B
WB	Left Turn	250	249	99.7%	19.3	1.9	B
	Through	20	22	110.5%	23.6	5.9	C
	Right Turn	50	50	100.8%	14.9	3.3	B
	Subtotal	320	322	100.5%	18.9	1.9	B
Total		3,025	3,041	100.5%	18.6	2.0	B

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	305	280	91.9%	191.8	79.5	F
	Through	1,190	1,187	99.7%	30.8	7.6	C
	Right Turn	70	75	107.3%	12.9	3.9	B
	Subtotal	1,565	1,542	98.5%	61.9	20.5	E
SB	Left Turn	190	189	99.2%	109.0	40.4	F
	Through	930	944	101.5%	59.6	26.7	E
	Right Turn	140	147	104.8%	58.6	24.4	E
	Subtotal	1,260	1,280	101.6%	67.2	29.3	E
EB	Left Turn	190	194	102.2%	76.4	11.0	E
	Through	50	52	103.2%	87.1	16.4	F
	Right Turn	310	311	100.3%	17.8	4.0	B
	Subtotal	550	557	101.2%	45.8	8.0	D
WB	Left Turn	70	74	105.1%	46.5	9.4	D
	Through	40	39	98.3%	55.1	12.0	E
	Right Turn	230	236	102.6%	26.5	8.6	C
	Subtotal	340	349	102.6%	34.5	7.5	C
Total		3,715	3,727	100.3%	58.7	9.3	E

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	825	836	101.3%	53.2	12.6	D
	Through	1,270	1,280	100.7%	48.4	27.1	D
	Right Turn	260	262	100.7%	18.4	2.6	B
	Subtotal	2,355	2,377	100.9%	46.8	18.0	D
SB	Left Turn	70	69	97.9%	71.9	11.0	E
	Through	820	828	101.0%	25.7	3.6	C
	Right Turn	425	428	100.6%	15.7	2.3	B
	Subtotal	1,315	1,324	100.7%	24.5	3.2	C
EB	Left Turn	195	201	103.3%	52.9	6.0	D
	Through	60	62	103.7%	53.7	6.8	D
	Right Turn	170	176	103.4%	2.9	0.3	A
	Subtotal	425	439	103.4%	32.4	3.8	C
WB	Left Turn	180	177	98.2%	54.6	6.0	D
	Through	100	100	100.0%	60.3	8.5	E
	Right Turn	100	96	96.1%	60.2	9.9	E
	Subtotal	380	373	98.1%	57.5	5.0	E
Total		4,475	4,514	100.9%	39.8	10.1	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	52	48	92.5%	55.5	13.1	E
	Through	896	887	99.0%	23.4	2.5	C
	Right Turn	201	209	103.9%	6.9	0.5	A
	Subtotal	1,149	1,144	99.6%	21.8	2.6	C
SB	Left Turn	102	104	101.8%	92.9	36.3	F
	Through	1,251	1,246	99.6%	49.8	28.6	D
	Right Turn	21	22	105.2%	45.4	33.4	D
	Subtotal	1,374	1,372	99.9%	53.2	28.2	D
EB	Left Turn	22	22	97.7%	39.5	16.1	D
	Through	20	20	102.0%	47.7	21.3	D
	Right Turn	51	53	104.3%	25.0	12.7	C
	Subtotal	93	95	102.3%	32.3	14.4	C
WB	Left Turn	464	451	97.2%	22.5	3.1	C
	Through	22	21	95.9%	25.7	9.7	C
	Right Turn	178	181	101.4%	19.6	3.0	B
	Subtotal	664	653	98.3%	21.8	2.7	C
Total		3,280	3,264	99.5%	35.9	13.0	D

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	255	229	90.0%	256.0	71.9	F
	Through	1,006	1,009	100.3%	22.1	5.1	C
	Right Turn	50	52	104.6%	7.6	2.0	A
	Subtotal	1,311	1,291	98.5%	61.4	15.5	E
SB	Left Turn	135	138	102.4%	75.7	12.7	E
	Through	1,521	1,525	100.2%	64.5	19.2	E
	Right Turn	120	117	97.3%	66.6	21.6	E
	Subtotal	1,776	1,780	100.2%	65.5	18.7	E
EB	Left Turn	78	74	94.7%	50.1	9.5	D
	Through	30	29	96.3%	49.3	22.3	D
	Right Turn	320	326	101.9%	28.8	7.9	C
	Subtotal	428	429	100.2%	34.7	5.0	C
WB	Left Turn	20	19	93.5%	51.9	13.2	D
	Through	20	20	100.0%	56.3	16.8	E
	Right Turn	60	58	97.3%	15.5	5.4	B
	Subtotal	100	97	97.1%	32.3	5.9	C
Total		3,615	3,597	99.5%	59.7	7.3	E

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	635	654	103.0%	50.5	3.0	D
	Through	1,062	1,054	99.2%	21.1	3.3	C
	Right Turn	140	140	100.2%	11.1	4.3	B
	Subtotal	1,837	1,848	100.6%	30.4	2.4	C
SB	Left Turn	45	44	98.4%	55.7	11.2	E
	Through	1,161	1,177	101.3%	24.4	6.5	C
	Right Turn	660	658	99.8%	21.1	5.9	C
	Subtotal	1,866	1,879	100.7%	24.0	5.9	C
EB	Left Turn	194	192	99.1%	52.7	5.2	D
	Through	50	51	101.4%	47.5	7.2	D
	Right Turn	450	452	100.5%	4.1	0.2	A
	Subtotal	694	695	100.2%	20.6	1.4	C
WB	Left Turn	90	88	98.0%	59.5	9.2	E
	Through	50	46	92.2%	59.3	12.2	E
	Right Turn	50	48	96.8%	58.1	10.6	E
	Subtotal	190	183	96.2%	59.0	7.6	E
Total		4,587	4,605	100.4%	27.7	2.5	C

Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	241	237	98.1%	6.8	0.7	A
	Through						
	Right Turn	16	16	100.0%	3.4	1.2	A
	Subtotal	257	253	98.2%	6.5	0.7	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	218	224	102.7%	19.5	1.0	B
	Right Turn	100	103	103.3%	15.6	1.1	B
	Subtotal	318	327	102.9%	18.2	0.9	B
WB	Left Turn	12	12	99.2%	8.3	3.4	A
	Through	285	280	98.3%	6.0	1.0	A
	Right Turn						
	Subtotal	297	292	98.3%	6.1	1.0	A
Total		872	872	100.0%	10.6	0.5	B

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	90	88	97.4%	92.7	41.6	F
	Through	1,425	1,403	98.5%	101.7	39.5	F
	Right Turn	530	509	95.9%	15.4	6.4	B
	Subtotal	2,045	1,999	97.8%	80.9	31.8	F
SB	Left Turn	134	113	84.3%	409.7	75.9	F
	Through	1,044	942	90.2%	251.0	59.1	F
	Right Turn	21	21	98.6%	205.9	81.2	F
	Subtotal	1,199	1,075	89.7%	267.8	54.2	F
EB	Left Turn	12	13	104.2%	42.6	18.3	D
	Through	13	14	106.2%	36.3	18.2	D
	Right Turn	51	52	102.7%	16.4	6.5	B
	Subtotal	76	79	103.6%	25.6	5.5	C
WB	Left Turn	422	414	98.0%	27.3	7.3	C
	Through	22	26	116.4%	32.2	12.1	C
	Right Turn	126	123	97.4%	24.3	6.9	C
	Subtotal	570	562	98.6%	26.8	6.7	C
Total		3,890	3,715	95.5%	124.8	27.6	F

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	305	280	91.7%	169.2	59.3	F
	Through	1,609	1,578	98.1%	62.9	34.1	E
	Right Turn	70	73	103.9%	46.5	36.8	D
	Subtotal	1,984	1,930	97.3%	77.2	30.3	E
SB	Left Turn	190	172	90.4%	153.6	37.0	F
	Through	1,194	1,107	92.7%	124.0	35.1	F
	Right Turn	143	130	90.8%	137.4	38.7	F
	Subtotal	1,527	1,409	92.2%	129.0	34.9	F
EB	Left Turn	196	197	100.5%	78.8	15.6	E
	Through	50	50	100.4%	96.0	14.9	F
	Right Turn	310	310	100.1%	28.1	8.0	C
	Subtotal	556	557	100.3%	52.9	8.4	D
WB	Left Turn	70	72	103.1%	44.8	9.4	D
	Through	40	42	104.5%	58.4	9.0	E
	Right Turn	230	235	102.0%	37.1	4.6	D
	Subtotal	340	349	102.6%	41.7	4.2	D
Total		4,407	4,245	96.3%	88.8	21.8	F

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Near Term Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	825	816	98.9%	56.9	13.2	E
	Through	1,638	1,632	99.6%	56.6	36.7	E
	Right Turn	260	264	101.5%	38.7	23.8	D
	Subtotal	2,723	2,711	99.6%	54.9	27.8	D
SB	Left Turn	70	67	95.9%	59.2	9.5	E
	Through	944	878	93.0%	25.8	2.9	C
	Right Turn	565	530	93.8%	18.4	3.5	B
	Subtotal	1,579	1,475	93.4%	24.6	2.6	C
EB	Left Turn	246	256	104.1%	48.8	4.8	D
	Through	60	62	103.2%	56.9	7.9	E
	Right Turn	170	171	100.7%	3.0	0.3	A
	Subtotal	476	489	102.8%	33.2	4.1	C
WB	Left Turn	180	173	96.3%	57.0	5.5	E
	Through	100	97	96.6%	63.1	7.6	E
	Right Turn	100	99	98.5%	61.9	7.9	E
	Subtotal	380	368	96.9%	59.6	3.7	E
Total		5,158	5,044	97.8%	44.5	15.9	D

Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	219	214	97.9%	8.4	0.7	A
	Through						
	Right Turn	19	20	105.8%	5.7	2.6	A
	Subtotal	238	235	98.5%	8.1	0.7	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	337	322	95.5%	27.5	3.0	C
	Right Turn	335	314	93.8%	23.7	2.9	C
	Subtotal	672	636	94.7%	25.6	2.9	C
WB	Left Turn	14	15	105.0%	33.6	31.1	C
	Through	271	274	101.0%	4.9	0.5	A
	Right Turn						
	Subtotal	285	288	101.2%	6.3	1.4	A
Total		1,195	1,159	97.0%	17.5	1.8	B

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	90	90	99.7%	108.4	34.6	F
	Through	1,425	1,379	96.8%	112.3	37.4	F
	Right Turn	530	519	97.8%	37.8	21.4	D
	Subtotal	2,045	1,987	97.2%	93.6	33.1	F
SB	Left Turn	134	132	98.7%	73.5	30.3	E
	Through	1,044	1,041	99.7%	22.8	4.0	C
	Right Turn	21	21	97.6%	19.3	12.3	B
	Subtotal	1,199	1,193	99.5%	28.4	6.3	C
EB	Left Turn	12	11	91.7%	35.9	21.2	D
	Through	13	14	107.7%	38.3	17.6	D
	Right Turn	51	54	105.9%	17.6	5.2	B
	Subtotal	76	79	103.9%	23.8	6.6	C
WB	Left Turn	422	426	100.9%	22.4	2.0	C
	Through	22	20	92.7%	26.1	9.0	C
	Right Turn	126	126	100.1%	19.1	3.6	B
	Subtotal	570	573	100.4%	21.8	2.2	C
Total		3,890	3,832	98.5%	61.5	17.7	E

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	305	305	99.8%	105.4	36.2	F
	Through	1,609	1,569	97.5%	37.9	13.9	D
	Right Turn	70	71	101.6%	25.6	10.4	C
	Subtotal	1,984	1,944	98.0%	48.2	13.8	D
SB	Left Turn	190	195	102.5%	112.9	34.6	F
	Through	1,194	1,172	98.1%	70.9	17.8	E
	Right Turn	143	147	102.6%	92.1	29.0	F
	Subtotal	1,527	1,513	99.1%	79.0	18.1	E
EB	Left Turn	196	197	100.7%	78.4	13.4	E
	Through	50	51	101.2%	99.0	14.8	F
	Right Turn	310	312	100.7%	28.4	7.1	C
	Subtotal	556	560	100.7%	53.8	6.9	D
WB	Left Turn	70	66	94.4%	43.7	6.5	D
	Through	40	39	97.5%	49.0	14.1	D
	Right Turn	230	233	101.2%	30.0	4.5	C
	Subtotal	340	338	99.4%	35.4	5.4	D
Total		4,407	4,355	98.8%	58.6	10.0	E

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	825	842	102.0%	49.6	4.0	D
	Through	1,638	1,627	99.3%	30.7	1.9	C
	Right Turn	260	256	98.4%	23.0	3.9	C
	Subtotal	2,723	2,724	100.0%	36.0	2.0	D
SB	Left Turn	70	74	106.3%	56.2	4.5	E
	Through	944	921	97.6%	47.9	8.1	D
	Right Turn	565	556	98.4%	28.0	5.0	C
	Subtotal	1,579	1,551	98.2%	41.1	6.0	D
EB	Left Turn	246	246	100.0%	53.2	6.0	D
	Through	60	68	112.7%	54.5	11.9	D
	Right Turn	170	171	100.8%	3.1	0.4	A
	Subtotal	476	485	101.9%	37.4	5.8	D
WB	Left Turn	180	177	98.1%	54.9	10.7	D
	Through	100	103	102.7%	56.2	5.2	E
	Right Turn	100	91	90.7%	54.3	9.2	D
	Subtotal	380	370	97.4%	55.4	6.2	E
Total		5,158	5,130	99.5%	39.3	2.2	D

Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	219	216	98.8%	8.3	1.1	A
	Through						
	Right Turn	19	22	113.7%	4.2	1.8	A
	Subtotal	238	238	100.0%	7.9	1.0	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	337	332	98.4%	28.0	4.2	C
	Right Turn	335	336	100.4%	24.1	3.4	C
	Subtotal	672	668	99.4%	26.1	3.7	C
WB	Left Turn	14	13	92.9%	45.7	31.2	D
	Through	271	277	102.2%	5.3	1.0	A
	Right Turn						
	Subtotal	285	290	101.8%	7.2	2.1	A
Total		1,195	1,196	100.1%	18.2	2.8	B

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	47	93.6%	46.7	6.8	D
	Through	870	877	100.7%	19.1	1.5	B
	Right Turn	190	190	99.7%	5.4	0.9	A
	Subtotal	1,110	1,113	100.3%	18.0	1.5	B
SB	Left Turn	65	67	102.6%	49.4	12.9	D
	Through	1,270	1,259	99.2%	25.0	5.1	C
	Right Turn	20	19	93.5%	24.2	8.0	C
	Subtotal	1,355	1,345	99.2%	26.2	5.0	C
EB	Left Turn	20	22	110.5%	35.9	9.9	D
	Through	20	20	100.0%	55.6	10.8	E
	Right Turn	60	57	95.3%	22.8	7.8	C
	Subtotal	100	99	99.3%	32.1	7.4	C
WB	Left Turn	265	262	98.7%	28.2	2.0	C
	Through	20	21	104.5%	33.0	8.5	C
	Right Turn	120	120	99.8%	21.3	4.1	C
	Subtotal	405	402	99.3%	26.3	2.2	C
Total		2,970	2,959	99.6%	23.4	2.8	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	285	285	100.0%	90.5	24.0	F
	Through	960	969	101.0%	12.3	1.9	B
	Right Turn	50	50	99.6%	4.5	0.8	A
	Subtotal	1,295	1,304	100.7%	28.7	7.9	C
SB	Left Turn	135	136	100.4%	54.4	8.4	D
	Through	1,340	1,333	99.5%	29.4	2.9	C
	Right Turn	130	136	104.8%	14.6	3.2	B
	Subtotal	1,605	1,605	100.0%	30.3	2.6	C
EB	Left Turn	85	85	100.5%	56.5	6.6	E
	Through	30	29	98.0%	55.9	9.1	E
	Right Turn	350	357	101.9%	28.5	7.1	C
	Subtotal	465	472	101.4%	35.8	4.9	D
WB	Left Turn	20	17	86.0%	71.6	27.8	E
	Through	20	19	94.0%	60.3	6.4	E
	Right Turn	60	57	95.2%	5.8	1.0	A
	Subtotal	100	93	93.1%	26.5	6.1	C
Total		3,465	3,473	100.2%	30.5	3.9	C

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	705	712	101.0%	52.0	6.5	D
	Through	1,040	1,057	101.6%	18.5	2.6	B
	Right Turn	140	137	97.6%	10.1	2.3	B
	Subtotal	1,885	1,905	101.1%	30.0	3.5	C
SB	Left Turn	45	45	99.3%	55.8	15.7	E
	Through	1,100	1,090	99.1%	30.0	2.2	C
	Right Turn	565	574	101.5%	21.9	2.9	C
	Subtotal	1,710	1,708	99.9%	28.0	2.0	C
EB	Left Turn	200	189	94.3%	50.7	4.3	D
	Through	50	45	89.4%	52.6	11.8	D
	Right Turn	500	503	100.7%	4.3	0.3	A
	Subtotal	750	737	98.2%	18.7	2.2	B
WB	Left Turn	90	87	96.9%	52.5	8.5	D
	Through	50	48	95.8%	60.8	9.7	E
	Right Turn	50	48	96.0%	55.6	9.2	E
	Subtotal	190	183	96.4%	55.2	5.2	E
Total		4,535	4,533	100.0%	28.6	1.9	C

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	95	94.7%	53.8	10.9	D
	Through	1,300	1,318	101.4%	25.3	7.3	C
	Right Turn	380	380	100.1%	7.3	1.8	A
	Subtotal	1,780	1,793	100.7%	23.1	5.8	C
SB	Left Turn	55	52	95.3%	36.2	5.2	D
	Through	1,030	1,025	99.5%	19.8	2.0	B
	Right Turn	20	21	106.0%	16.1	6.4	B
	Subtotal	1,105	1,099	99.4%	20.4	1.9	C
EB	Left Turn	10	9	93.0%	32.1	16.3	C
	Through	10	10	103.0%	32.2	11.0	C
	Right Turn	50	49	98.8%	12.4	2.9	B
	Subtotal	70	69	98.6%	18.5	5.1	B
WB	Left Turn	310	301	97.1%	20.3	2.9	C
	Through	20	21	106.0%	25.0	6.4	C
	Right Turn	60	61	101.8%	18.7	3.1	B
	Subtotal	390	383	98.3%	20.3	2.5	C
Total		3,345	3,344	100.0%	21.9	3.6	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	335	330	98.5%	122.6	48.8	F
	Through	1,340	1,347	100.5%	22.4	7.8	C
	Right Turn	70	69	99.0%	7.5	2.3	A
	Subtotal	1,745	1,746	100.0%	40.3	15.3	D
SB	Left Turn	190	189	99.5%	68.4	13.1	E
	Through	1,050	1,022	97.3%	29.3	2.3	C
	Right Turn	160	161	100.6%	11.3	2.6	B
	Subtotal	1,400	1,372	98.0%	33.2	3.2	C
EB	Left Turn	200	207	103.3%	61.4	6.7	E
	Through	50	50	99.4%	52.2	7.4	D
	Right Turn	340	342	100.6%	17.7	2.4	B
	Subtotal	590	599	101.4%	35.1	2.7	D
WB	Left Turn	70	74	105.7%	55.4	11.0	E
	Through	40	37	93.0%	51.7	15.5	D
	Right Turn	230	233	101.5%	21.5	5.8	C
	Subtotal	340	345	101.4%	31.8	3.9	C
Total		4,075	4,061	99.7%	36.5	6.1	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	885	891	100.7%	50.1	5.7	D
	Through	1,430	1,469	102.7%	25.2	2.2	C
	Right Turn	260	262	100.8%	21.3	4.6	C
	Subtotal	2,575	2,622	101.8%	33.6	2.7	C
SB	Left Turn	70	67	95.0%	65.1	19.1	E
	Through	890	870	97.7%	38.8	4.6	D
	Right Turn	500	485	97.0%	20.4	3.2	C
	Subtotal	1,460	1,421	97.3%	33.3	3.5	C
EB	Left Turn	215	212	98.7%	47.8	5.1	D
	Through	60	62	103.8%	53.0	8.7	D
	Right Turn	180	186	103.5%	3.0	0.2	A
	Subtotal	455	461	101.3%	30.7	3.7	C
WB	Left Turn	180	185	102.8%	54.1	6.8	D
	Through	100	104	104.1%	60.6	12.0	E
	Right Turn	100	99	99.0%	56.3	14.0	E
	Subtotal	380	388	102.2%	56.7	8.3	E
Total		4,870	4,892	100.4%	35.3	2.5	D

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	52	49	94.0%	53.7	11.4	D
	Through	976	969	99.3%	30.1	5.8	C
	Right Turn	231	233	100.7%	9.6	2.3	A
	Subtotal	1,259	1,251	99.3%	27.2	5.0	C
SB	Left Turn	112	114	101.7%	62.8	21.1	E
	Through	1,361	1,375	101.0%	34.2	6.1	C
	Right Turn	21	22	104.8%	28.9	6.7	C
	Subtotal	1,494	1,511	101.1%	36.4	7.5	D
EB	Left Turn	22	19	85.9%	36.6	12.9	D
	Through	20	21	104.5%	46.6	12.0	D
	Right Turn	61	57	92.8%	20.2	6.3	C
	Subtotal	103	96	93.6%	30.6	7.2	C
WB	Left Turn	519	522	100.6%	42.3	7.9	D
	Through	22	21	95.0%	52.3	13.6	D
	Right Turn	198	192	96.9%	47.7	13.4	D
	Subtotal	739	735	99.4%	44.0	9.4	D
Total		3,595	3,593	99.9%	34.7	5.0	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	285	278	97.5%	60.5	18.2	E
	Through	1,106	1,081	97.7%	19.4	3.8	B
	Right Turn	50	50	100.6%	5.5	1.2	A
	Subtotal	1,441	1,409	97.8%	27.4	4.5	C
SB	Left Turn	135	141	104.7%	68.9	9.6	E
	Through	1,681	1,691	100.6%	32.3	4.6	C
	Right Turn	135	135	100.1%	15.6	3.9	B
	Subtotal	1,951	1,968	100.9%	33.7	4.9	C
EB	Left Turn	88	89	100.7%	59.5	6.0	E
	Through	30	30	101.3%	65.1	18.0	E
	Right Turn	350	346	98.8%	32.0	7.6	C
	Subtotal	468	465	99.3%	39.2	5.8	D
WB	Left Turn	20	19	96.5%	72.5	22.8	E
	Through	20	20	98.5%	86.9	20.4	F
	Right Turn	60	62	102.8%	7.0	1.6	A
	Subtotal	100	101	100.7%	31.4	6.4	C
Total		3,960	3,942	99.5%	32.2	3.0	C

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	705	690	97.9%	103.6	39.6	F
	Through	1,167	1,164	99.7%	22.5	1.9	C
	Right Turn	140	145	103.7%	15.6	4.4	B
	Subtotal	2,012	2,000	99.4%	51.1	14.0	D
SB	Left Turn	45	44	96.7%	70.1	15.6	E
	Through	1,261	1,291	102.4%	35.3	3.6	D
	Right Turn	745	739	99.2%	41.8	11.3	D
	Subtotal	2,051	2,074	101.1%	38.5	5.7	D
EB	Left Turn	219	219	100.0%	43.5	4.3	D
	Through	50	54	107.0%	44.3	9.1	D
	Right Turn	500	510	101.9%	4.2	0.4	A
	Subtotal	769	782	101.7%	18.5	2.0	B
WB	Left Turn	90	91	100.7%	52.7	7.7	D
	Through	50	48	96.0%	52.4	10.3	D
	Right Turn	50	48	95.0%	45.6	9.4	D
	Subtotal	190	186	97.9%	51.0	4.8	D
Total		5,022	5,041	100.4%	40.8	6.6	D

Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	286	292	102.2%	7.7	1.4	A
	Through						
	Right Turn	16	18	110.0%	5.3	1.9	A
	Subtotal	302	310	102.6%	7.6	1.3	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	238	242	101.8%	9.7	1.4	A
	Right Turn	120	122	101.8%	5.7	1.0	A
	Subtotal	358	365	101.8%	8.3	1.1	A
WB	Left Turn	12	11	89.2%	9.2	8.0	A
	Through	315	308	97.8%	8.2	3.6	A
	Right Turn						
	Subtotal	327	319	97.5%	8.3	3.6	A
Total		987	993	100.6%	8.1	1.7	A

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	98	98.0%	80.7	21.7	F
	Through	1,525	1,503	98.6%	66.6	28.0	E
	Right Turn	580	579	99.9%	25.6	11.2	C
	Subtotal	2,205	2,181	98.9%	56.4	23.5	E
SB	Left Turn	144	144	99.8%	53.1	18.3	D
	Through	1,124	1,128	100.4%	22.2	2.1	C
	Right Turn	21	20	93.3%	24.5	9.0	C
	Subtotal	1,289	1,291	100.2%	25.5	4.0	C
EB	Left Turn	12	13	105.0%	51.1	18.8	D
	Through	13	13	103.1%	40.1	19.9	D
	Right Turn	51	50	97.8%	17.4	4.8	B
	Subtotal	76	76	99.9%	27.2	8.1	C
WB	Left Turn	482	477	99.0%	37.2	6.1	D
	Through	22	24	109.1%	43.0	16.1	D
	Right Turn	136	136	99.9%	40.6	11.7	D
	Subtotal	640	637	99.6%	38.3	7.1	D
Total		4,210	4,185	99.4%	43.9	12.9	D

Intersection 13 **El Dorado Hills Blvd/Saratoga Way/Park Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	335	336	100.3%	143.0	50.0	F
	Through	1,759	1,747	99.3%	40.1	17.4	D
	Right Turn	70	69	98.1%	14.1	6.4	B
	Subtotal	2,164	2,151	99.4%	54.7	19.3	D
SB	Left Turn	190	189	99.3%	64.1	6.0	E
	Through	1,314	1,307	99.5%	37.1	6.8	D
	Right Turn	163	168	102.8%	15.6	5.3	B
	Subtotal	1,667	1,663	99.8%	37.9	6.0	D
EB	Left Turn	206	208	100.9%	69.9	6.7	E
	Through	50	54	108.2%	51.7	10.7	D
	Right Turn	340	345	101.5%	21.7	4.3	C
	Subtotal	596	607	101.8%	40.8	3.0	D
WB	Left Turn	70	67	96.0%	52.5	10.1	D
	Through	40	40	100.8%	47.6	13.6	D
	Right Turn	230	230	99.9%	24.8	7.7	C
	Subtotal	340	337	99.2%	33.3	5.6	C
Total		4,767	4,759	99.8%	45.6	9.8	D

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps/Saratoga Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	885	892	100.8%	64.2	15.5	E
	Through	1,798	1,825	101.5%	36.7	7.8	D
	Right Turn	260	253	97.2%	33.1	10.5	C
	Subtotal	2,943	2,970	100.9%	44.8	9.1	D
SB	Left Turn	70	66	94.0%	54.7	15.8	D
	Through	1,014	1,014	100.0%	42.2	8.9	D
	Right Turn	640	614	95.9%	41.2	14.0	D
	Subtotal	1,724	1,693	98.2%	42.3	9.7	D
EB	Left Turn	266	267	100.5%	58.7	10.3	E
	Through	60	58	96.2%	55.2	14.7	E
	Right Turn	180	178	98.8%	3.1	0.3	A
	Subtotal	506	503	99.4%	40.1	7.2	D
WB	Left Turn	180	179	99.6%	49.0	5.2	D
	Through	100	101	100.6%	55.3	6.7	E
	Right Turn	100	103	103.2%	48.0	6.5	D
	Subtotal	380	383	100.8%	50.5	2.5	D
Total		5,553	5,549	99.9%	44.1	7.0	D

Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	269	263	97.7%	15.7	2.4	B
	Through						
	Right Turn	19	18	95.8%	14.3	13.7	B
	Subtotal	288	281	97.5%	15.7	3.1	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	357	368	103.0%	12.3	2.4	B
	Right Turn	375	367	97.8%	8.6	2.7	A
	Subtotal	732	734	100.3%	10.4	2.4	B
WB	Left Turn	14	12	85.0%	31.0	21.2	C
	Through	291	292	100.4%	5.4	2.5	A
	Right Turn						
	Subtotal	305	304	99.7%	6.6	2.7	A
Total		1,325	1,319	99.6%	10.7	2.5	B

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Queue Length | **AM Peak Hour**
Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** | **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	75	18	4	50	12	75	29	0%	0%
	Through/Right	557	55	9	105	24	133	36	9%	0%
NB	U/Left Turns	250	45	7	119	41	206	115	0%	0%
	Through	1,039	225	30	453	49	505	68	7%	0%
	Right Turn	1,039	52	9	122	24	156	35	0%	0%
SB	U/Left Turns	100	108	16	203	19	190	0	11%	0%
	Through	3,352	267	38	434	61	488	80	32%	0%
	Through/Right	3,352	331	38	494	62	552	90	0%	0%

SimTraffic Post-Processor **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Queue Length **AM Peak Hour**
Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through/Right	449	116	6	192	13	234	13	0%	0%
NB	Left Turn	395	34	3	65	11	83	29	0%	0%
	Shared	395	52	5	96	8	118	19	0%	0%
WB	Left Turn	75	8	3	28	6	40	12	0%	0%
	Through	622	58	12	114	39	172	96	2%	0%

SimTraffic Post-Processor | **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs | **Cumulative Plus Project Conditions**
Queue Length | **PM Peak Hour**
Intersection 10 **El Dorado Hills Blvd/Serrano Parkway** | **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	75	12	5	37	12	49	31	0%	0%
	Through/Right	557	43	6	84	16	105	40	4%	0%
NB	U/Left Turns	250	149	39	339	73	340	0	0%	0%
	Through	1,039	556	63	1,022	72	1,033	31	33%	17%
	Right Turn	1,039	166	19	326	42	423	103	0%	0%
SB	U/Left Turns	100	114	14	193	14	190	0	19%	0%
	Through	3,352	195	23	311	45	356	62	20%	0%
	Through/Right	3,352	243	14	353	26	386	39	0%	0%

SimTraffic Post-Processor **Central El Dorado Hills Specific Plan**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Queue Length **PM Peak Hour**
Intersection 23 **Project Dwy/Serrano Parkway** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through/Right	449	193	9	311	11	391	19	0%	0%
NB	Left Turn	395	46	5	87	10	108	20	0%	0%
	Shared	395	66	5	116	13	149	37	0%	0%
WB	Left Turn	75	11	3	35	5	45	11	0%	0%
	Through	622	40	4	81	11	108	20	1%	0%

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R. E. Y. ENGINEERS, Inc.
Civil Engineers | Land Surveyors | LIDAR

COUNTRY CLUB DRIVE EXTENSION

ALTERNATIVE ALIGNMENT PLAN VIEW

CITY OF EL DORADO HILLS, COUNTY OF EL DORADO, CALIFORNIA

JANUARY 5, 2022

0 50' 100' 200'
SCALE IN FEET

* NOTE: EMERGENCY VEHICLE ACCESS (EVA) ALIGNMENT MATCHES INITIAL PROPOSED COUNTRY CLUB DRIVE ALIGNMENT.

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