Central El Dorado Hills Specific Plan Final Environmental Impact Report

SCH # 2013022044

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ATTACHMENT 5: CENTRAL EL DORADO HILLS SPECIFIC PLAN DRAFT, RE-CIRCULATED, AND FINAL ENVIRONMENTAL IMPACT REPORT

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Acronyms and Abbreviations

AB	Assembly Bill
ADMP	Asbestos Dust Mitigation Plan
ANP	Annual Network Plan
AP	Adopted Plan
APAC	Area Planning Advisory Committee
APNs	Assessor's Parcel Numbers
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BAU	business as usual
BMPs	Best Management Practices
C	Commercial
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CALGreen	Green Building Standards Code
CAP	Climate Action Plan
CARB	California Air Resources Board
CC&Rs	Conditions, Covenants and Restrictions
CCR	California Code of Regulations
CCST	California Center for Science and Technology
CDA	Community Development Agency
CDFW	California Department of Fish and Wildlife
CEDHSP	Central El Dorado Hills Specific Plan
CEQA	California Environmental Quality Act
CFD	Community Facilities District
CIP	Capital Improvement Program
CL1-PD	Civic–Limited Commercial-Planned Development
C-LC	Civic–Limited Commercial
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
County	El Dorado County
County General Plan	*El Dorado County General Plan*
CSD	Community Services District
CVP	Central Valley Project
dB	decibels
DEIR	Draft EIR
diesel PM	diesel particulate matter
District	El Dorado Hills Community Services District
du/ac	dwelling units per acre

E3	Energy + Environmental Economics
EDCAQMD	El Dorado County Air Quality Management District
EDCWA	El Dorado County Water Agency
EDHCSD	El Dorado Hills Community Services District
EDHSP	*El Dorado Hills Specific Plan*
EID	El Dorado Irrigation District
EID 2015 UWMP	EID updated Urban Water Management Plan
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEIR	Final Environmental Impact Report
FHWA	Federal Highway Administration's
Final EIR	Final Environmental Impact Report
GDF	gasoline dispensing facilities
GHG	greenhouse gas
HDR	High-Density Residential
high-density	14–24 du/ac
HOA	Homeowners' Association
HPTP	Historic Properties Treatment Plan
IHMP	Important Habitat Mitigation Plan
kW	kilowatts
LOS	level of service
LRVSP	Lime Rock Valley Specific Plan
MCAB	Mountain Counties Air Basin
medium-density	8–14 du/ac
MERV	minimum efficiency reporting value
MFR	Multifamily Residential
MMRP	Mitigation, Monitoring and Reporting Program
MOA	Master Owners' Association
MS4	General Permit for Municipal Separate Storm Sewer Systems
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
NCIC	North Central Information Center
NHPA	National Historic Preservation Act
NOA	Naturally-Occurring Asbestos
NOI	Notice of Intent
NOP	Notice of Preparation
NWP	Nationwide 29 Permit

OPR	Office of Planning and Research
ORMP	Oak Resources Management Plan
OS	Open Space
OS1-PD	Open Space-Planned Development
OSMP	open space management plan
OWMP	Oak Woodland Management Plan
PAD	Pedregal Archaeological District
pCi/L	picocurie per liter of air
PD	Planned Development
PEVs	plug in electric vehicles
PFFP	Public Facilities Financing Plan
PJD	preliminary jurisdictional determination
PM	Particulate matter
PRC	Public Resources Code
proposed project	proposed Central El Dorado Hills Specific Plan
R1	Single Unit Residential
R1-PD	Single Unit Residential-Planned Development
R20-PD, R4-PD	Single-Family Residential-Planned Development
R2-DC	Multi Unit-Design Control
RCEM	Roadway Construction Emissions Model
RDEIR	Partial Recirculated Draft EIR
Regional Water Board	Regional Water Quality Control Board
RF	Recreational Facilities
RFH1-PD	Recreational Facilities High-Planned Development
RHNA	Regional Housing Needs Allocations
RM1-PD, RM2-PD	Multifamily Residential-Planned Development
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SANDAG	San Diego Association of Governments
SLCPs	short-lived climate pollutants
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
State Water Board	State Water Resources Control Board
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
TCR/CSMP	*Transportation Concept Report and Corridor System Management Plan, United States Route 50*, dated June 2014
TIM	Traffic Impact Mitigation
TIRE	Traffic Infusion on Residential Environment
TMA	transportation management association
TMP	traffic management plan

UAIC	United Auburn Indian Community
US 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
VMT	vehicle miles traveled
VMVSP	Village of Marble Valley Specific Plan
VOC	volatile organic compound
VP	Village Park
VRH	Village Residential – High
VRL	Village Residential – Low
VRM-H	Village Residential Medium – High
VRM-L	Village Residential Medium – Low
WWTP	wastewater treatment plants
WSA	water supply assessment
WSP	Wildfire Safety Plan
ZNE	net zero energy

Introduction

This executive summary addresses the Final Environmental Impact Report (EIR), provides an overview of the proposed Central El Dorado Hills Specific Plan (CEDHSP) (proposed project), and identifies the impacts that would result from implementation of the proposed project and the recommended mitigation measures. This summary incorporates the Draft EIR (or DEIR) and the Partial Recirculated Draft EIR (RDEIR) and changes made to both documents in response to comments or new information. This summary also presents other conclusions required by the California Environmental Quality Act (CEQA, Public Resources Code [PRC] 21000-21189) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Sections 15000-15387).

The project area is located in El Dorado Hills, California, an unincorporated area of El Dorado County (County) approximately 29 miles northeast of downtown Sacramento and 17 miles west of Placerville, California. The proposed project site includes 341 acres north of U.S. Highway 50 (US 50), south of Green Valley Road and Folsom Lake, east of the Sacramento–El Dorado County line, and west of Bass Lake Road. The proposed project contains two planning areas; the Serrano Westside planning area and the Pedregal planning area. The Serrano Westside planning area is east of El Dorado Hills Boulevard at the Serrano Parkway intersection. The Pedregal planning area is west of El Dorado Hills Boulevard between Wilson Boulevard and Olson Lane, adjacent to the Ridgeview subdivision.

Project Overview

The proposed project would provide for development of up to 1,000 dwelling units, 11 acres of civic–limited commercial use (50,000 square feet of commercial use), 15 acres of community active park, a 1-acre neighborhood park, and 169 acres of open space (168 acres of natural open space and a 1-acre neighborhood park) in the center of the El Dorado Hills community. The proposed project consists of two planning areas. The Serrano Westside planning area would complement the existing Serrano development with gated residential neighborhoods and would contain civic or commercial and community park development. The Pedregal planning area would have residential neighborhoods that may or may not be gated.

Several infrastructure improvements outside the CEDHSP area would be required to support the proposed project. These offsite improvements would include connections to existing water and wastewater facilities, road extensions, pedestrian access to retail uses, and relocation of a planned bicycle/pedestrian overcrossing spanning US 50.

To implement the proposed development, the applicant is requesting amendments to the *El Dorado County General Plan* (County General Plan) and the existing *El Dorado Hills Specific Plan* (EDHSP) and rezoning, in addition to implementation of the CEDHSP. The proposed project would require the County actions described below.

El Dorado County General Plan Amendments

The proposed project would include the following general plan amendments.

- Amend the County General Plan Land Use Map designation of subject lands within CEDHSP from High-Density Residential (HDR) (1–5 dwelling units per acre [du/ac]), Multifamily Residential (MFR) (5–24 du/ac), Commercial (C), Open Space (OS), and Adopted Plan- (AP)-EDHSP to AP-CEDHSP and CEDHSP land use designations Village Residential – Low (VRL) (<1.0 du/ac), Village Residential – High (VRH) (14–24 du/ac, average 18.3 du/ac), Village Residential Medium – High (VRM-H) (8–14 du/ac, average 8.3 du/ac), Village Residential Medium – Low (VRM-L) (5–8 du/ac, average 5.3 du/ac), Civic–Limited Commercial (C-LC), OS, and Village Park (VP).
- Amend the General Plan Land Use Map designation of transferred lands within AP-EDHSP as OS.

El Dorado Hills Specific Plan Amendments

The proposed project would amend the EDHSP as follows.

- Transfer a total of 141.67 acres (currently Village D-1, Lots C and D [File numbers TM08-1483 and TM 08-1484, deemed complete December 1, 2008] and a portion of open space by Village D2) and associated EDHSP-vested density affecting portions of Assessor's Parcel Numbers (APNs) 121-040-20, 121-040-29, 121-040-31, and 121-120-24 from the EDHSP area to the CEDHSP area.
- Transfer a total of 0.47 acres affecting a portion of APN 121-160-05 from the former Executive Golf Course to the EDHSP area.

Rezoning

The proposed project would include the following rezoning.

- Amend zone districts from Single Unit Residential (R1), Single Unit Residential-Planned Development (R1-PD), Multi Unit-Design Control (R2-DC), Recreational Facilities (RF), and OS to CEDHSP zone districts Multifamily Residential-Planned Development (RM1-PD, RM2-PD), Single-Family Residential-Planned Development (R20-PD, R4-PD), Civic–Limited Commercial-Planned Development (CL1-PD), Recreational Facility High-Planned Development (RFH1-PD), and Open Space-Planned Development (OS1-PD).
- Amend zone district of transferred lands within AP-EDHSP as OS.

Central El Dorado Hills Specific Plan

The CEDHSP would develop a 341-acre project site consisting of 1,000 dwelling units, 11 acres of civic–limited commercial land use (50,000 square feet of commercial use), 15 acres of Village Park, 1-acre of neighborhood park, and 168 acres of natural open space.

In addition, the project would require the County's approval of a Development Agreement. The Development Agreement application for the proposed project is filed under application DA14-0003. Applications have also been filed for a Planned Development (PD 14-0004) and a Large Lot Tentative Subdivision Map (TM14-1516).

Project Impacts and Mitigation Measures

The potential environmental impacts that would result from implementation of the proposed project and the proposed mitigation measures are summarized in Table ES-1 (at the end of this chapter). In many cases, impacts would be less than significant. Those impacts that cannot be mitigated to a less-than-significant level would remain significant and unavoidable, as shown in Table ES-1.

Other CEQA-Related Impact Conclusions

Cumulative Impacts

Section 15130 of the State CEQA Guidelines requires that an EIR consider a project's contribution to any significant cumulative impacts. Cumulative impacts are the incremental effects of a proposed project added to the impacts of other closely related past, present, and reasonably foreseeable future projects, which, together, are cumulatively considerable. The purpose of the cumulative impact analysis is to assess the project's contribution in the context of the larger, cumulative impact.

All resource areas were analyzed for cumulative impacts. The proposed project's contribution to cumulative impacts is expected to be less than cumulatively considerable for the following resource areas within the El Dorado Hills region (and therefore cumulative impacts would be less than significant).

- Geology, soils, and minerals
- Hazards and hazardous materials
- Hydrology, and water resources
- Land use planning and agricultural resources
- Population and housing
- Public services and utilities
- Recreation

The proposed project is expected to result in considerable contributions that can be mitigated to a less-than-significant level to the following cumulative impacts within the El Dorado Hills region.

- Aesthetics
- Biological resources
- Paleontological resources
- Water quality
- Noise
- Traffic and circulation

The project is expected to result in considerable contributions that cannot be mitigated to a less-than-significant level to the following cumulative impacts within the El Dorado Hills region.

- Air quality (construction emissions)
- Cultural resources
- Greenhouse gas emissions

A detailed assessment of the project's contribution to cumulative impacts is provided in Chapter 5, *Other CEQA Considerations.*

Growth Inducement and Growth-Related Impacts

Section 15126.2 of the State CEQA Guidelines provides guidance for analyzing the growth-inducing impacts of a project. The growth inducement analysis must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Projects that would remove obstacles to population growth could lead to increased demand for existing community services. Growth in an area is not necessarily considered beneficial, detrimental, or of little significance to the environment. However, the secondary impacts associated with growth (e.g., air quality impacts from new construction) can be significant.

This Draft EIR concludes that the project would induce growth not only directly through the construction of housing, but also by amending the County General Plan and EDHSP and constructing roadways and infrastructure and, therefore, removing limitations on growth that may occur in the project vicinity. However, the project site is largely surrounded by existing urban uses, is currently designated, in part, for residential development and, as an infill site, is already accessible by existing roadways and in close proximity to public services and utilities. Because of the limited undeveloped area around the project site, it is unlikely that onsite project improvements would spur significant further growth in the immediate area.

Growth inducement and growth-related impacts are discussed in further detail in Chapter 5, *Other CEQA Considerations*.

Significant Irreversible Environmental Changes

The State CEQA Guidelines Section 15126.2 requires irreversible changes be evaluated in EIRs prepared for projects that would involve the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency. Examples of such changes include commitment of future generations to similar uses, irreversible damage that may result from accidents associated with a project, or irretrievable commitments of resources. This EIR analyzes the extent to which the proposed project would commit nonrenewable resources to uses that future generations will likely be unable to reverse. Implementation of the proposed project would result in the short-term commitment of nonrenewable energy resources and natural resources, including sand and gravel, asphalt, and other resources to construct the project, along with permanent habitat conversion, as discussed in the Draft EIR. The project's significant impacts are discussed in detail in Chapter 3, *Impact Analysis*, and its significant irreversible environmental changes are discussed in Chapter 5, *Other CEQA Considerations*.

Project Alternatives

The Draft EIR must examine a reasonable range of alternatives to the project that could feasibly attain most of the project objectives and avoid or substantially lessen any of the project's significant environmental impacts (State CEQA Guidelines 15126 [f]). As required by Section 15126.6 of the State CEQA Guidelines, the range of alternatives must always include the No-Project Alternative. The purpose of describing and analyzing a No-Project Alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.

The following alternatives are examined in this EIR.

- Alternative 1—No Project
- Alternative 2—Reduced Density
- Alternative 3—Reduced Wetland Impact

The impacts of these alternatives are summarized in Table ES-2 (below) and discussed in more detail in Chapter 4, *Alternatives Analysis*.

Table ES-2. Comparison of Environmental Impacts of Alternatives to the Proposed Project

Resource Topic	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Density	Alternative 3 Reduced Wetland Impact
Aesthetics				
Light/Glare	LTS	LTS (=)	LTS (<)	LTS (>)
Construction	LTS	LTS (<)	LTS (<)	LTS (=)
Operation	LTS w/mit	LTS w/mit (>)	LTS w/mit (>)	LTS w/mit (>)
Air Quality				
Construction	LTS w/mit	LTS w/mit (<)	LTS w/mit (<)	LTS w/mit (=)
Operation	SU	SU (<)	SU (<)	SU (=)
Combined	SU	SU (<)	SU (<)	SU (=)
Health/NOA	LTS w/mit	LTS w/mit (<)	LTS w/mit (<)	LTS w/mit (=)
Biological Resources				
Oak Canopy	LTS w/mit	LTS w/mit (>)	LTS w/mit (>)	LTS w/mit (>)
Sensitive Vegetation Communities	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (<)
Wetlands	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (<)
Special Status Species	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (<)
Cultural Resources				
Known Archaeological Resources	LTS w/mit	LTS w/mit (=)	LTS w/mit (=)	LTS w/mit (=)
Potential Disturbance of Unknown Archaeological Resources	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (=)
Geology, Soils, Minerals, and Paleontological Resources				
Geology	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (<)
Minerals	LTS	LTS (=)	LTS (=)	LTS (=)
Paleontological Resources	LTS w/mit	LTS w/mit (<)	LTS w/mit (>)	LTS w/mit (<)
Greenhouse Gas Emissions				
Generate GHG	SU	SU (>)	SU (<)	SU (<)
Conflict with Plan	SU	SU (>)	SU (<)	SU (<)
Hazards and Hazardous Materials				
Construction	LTS	LTS (<)	LTS (<)	LTS (<)
Operation	LTS	LTS (<)	LTS (<)	LTS (<)

Note: shading indicates change in significance level from proposed project.

NI = no impact.
LTS = less than significant impact.
LTS w/mit = less than significant impact with mitigation incorporated.
SU = significant and unavoidable impact.

(<) less than proposed project.
(=) equal to proposed project.
(>) greater than proposed project.

Resource Topic	Proposed Project	Alternative 1 No Project		Alternative 2 Reduced Density		Alternative 3 Reduced Wetland Impact	
Hydrology, Water Quality, and Water Resources							
Construction Site Stormwater Runoff	LTS	LTS	(<)	LTS	(>)	LTS	(<)
Urban Stormwater Runoff	LTS	LTS	(<)	LTS	(>)	LTS	(<)
Drainage and Flood Hazard	LTS	LTS	(<)	LTS	(>)	LTS	(>)
Water Quality (Wetlands and Other Waters)	LTS w/mit	LTS w/mit	(<)	LTS w/mit	(<)	LTS w/mit	(<)
Land Use Planning and Agricultural Resources							
Divide Community	LTS	LTS	(=)	LTS	(=)	LTS	(=)
Noise and Vibration							
Construction	SU	SU	(=)	SU	(>)	SU	(=)
Traffic	LTS w/mit	LTS w/mit	(<)	SU	(>)	SU	(>)
Operation	LTS w/mit	LTS w/mit	(<)	LTS w/mit	(<)	LTS w/mit	(<)
Mather Airport noise	SU	SU	(=)	SU	(=)	SU	(=)
Population and Housing							
Growth	LTS	LTS	(<)	LTS	(<)	LTS	(=)
Displacement	NI	NI	(=)	NI	(=)	NI	(=)
Public Services and Utilities							
Public Services Facilities	LTS	LTS	(<)	LTS	(<)	LTS	(=)
Wastewater Treatment	LTS	LTS	(<)	LTS	(<)	LTS	(=)
Water Supply	LTS	LTS	(<)	LTS	(<)	LTS	(>)
Other Utilities Demand	LTS	LTS	(<)	LTS	(<)	LTS	(=)
Offsite Infrastructure Construction	LTS w/mit	LTS w/mit	(<)	LTS w/mit	(<)	LTS w/mit	(<)
Recreation							
Impacts on Existing Parks	LTS	LTS	(>)	LTS	(>)	LTS	(>)
Impacts from New Offsite Parks	NI	LTS	(>)	LTS	(>)	LTS	(>)
Traffic and Circulation							
Construction	LTS w/mit	LTS w/mit	(<)	LTS w/mit	(>)	LTS w/mit	(=)
Operation	LTS w/mit	LTS w/mit	(<)	LTS w/mit	(<)	LTS w/mit	(=)
Pedestrian/bicycle/public transit	LTS w/mit	LTS w/mit	(>)	LTS w/mit	(>)	LTS w/mit	(>)

Note: shading indicates change in significance level from proposed project.

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LTS = less than significant impact.
LTS w/mit = less than significant impact with mitigation incorporated.
SU = significant and unavoidable impact.

(<) less than proposed project.
(=) equal to proposed project.
(>) greater than proposed project.

Environmentally Superior Alternative

State CEQA Guidelines Section 15126.6(e)(2) requires a Draft EIR to identify an "environmentally superior alternative." For the proposed project, the environmentally superior alternative is Alternative 1—No Project, because under this alternative nearly all of the impacts associated with development would be less than under the proposed project.

The State CEQA Guidelines require that, if the No-Project Alternative is identified as environmentally superior, the EIR must identify an environmentally superior alternative among the other alternatives (Section 15126.6[e][2]). Based on the assessment provided in Chapter 4, of the remaining two alternatives, Alternative 2, the Reduced-Density Alternative, is the environmentally superior alternative. Though the larger overall footprint (approximately 50 acres more than the proposed project) of Alternative 2 would result in more potential to affect "on-the-ground" resources, such as biological resources, paleontological and archaeological resources and drainage, the development of one-third fewer residential units (328 less than the proposed project) would result in less traffic and fewer traffic-associated air quality and noise impacts. This alternative would reduce environmental impacts related to public services, utilities, and recreational facilities. The Reduced-Density Alternative would meet some but not all of the project objectives (5 of the 15).

Areas of Known Controversy/Issues to be Resolved

State CEQA Guidelines Section 15123(b) requires that the summary section of the EIR include a description of areas of controversy known to the lead agency, including issues raised by agencies and the public and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. The areas of community concern and known controversy primarily focus on the overall level of growth and resulting effects in the El Dorado Hills area.

Areas of community concern (based on comments on the NOP and Draft EIR) include the following.

- Increase in high-density residential uses.
- Incompatibility between the project and existing residences.
- Decrease in open space.
- Increased demand for public services (e.g., police and fire).
- Demand for new schools.
- Naturally occurring asbestos.

Areas of known controversy include the following.

- Increased traffic (and traffic-related hazards) in the area.
- Increased traffic congestion on US 50.
- Water supply/availability
- Availability of recreational facilities.

Required Approvals

This EIR will be used by the County to document the potential environmental impacts of the proposed project and to determine whether the impacts could be avoided or mitigated to less-than-significant levels. The County is the lead agency for the proposed project. As applicable, this EIR may also be used by regulatory and responsible agencies, such as state agencies. These agencies are responsible for issuing permits and approvals that may be needed to proceed with the proposed project. A list of potential permits and approvals required by the County are provided below.

- Approval by the El Dorado County Board of Supervisors of a general plan amendment.
- Approval by the El Dorado County Board of Supervisors of amendments to the EDHSP.
- Approval by the El Dorado County Board of Supervisors of rezoning.
- Approval by the El Dorado County Board of Supervisors of the CEDHSP.
- Approval by the El Dorado County Board of Supervisors of the Planned Development.
- Approval by the El Dorado County Planning Commission and/or Board of Supervisors of large lot tentative subdivision map dividing the property into residential, civic-limited commercial, open space, recreational, and other large lots.
- Approval by the El Dorado County Board of Supervisors of a development agreement between the applicant, Serrano Associates, LLC, and the County.
- Approval by the El Dorado County Board of Supervisors of a financing plan between the applicant, Serrano Associates, LLC, and the County.
- Approval by the County of building and grading permits, General Permit for Municipal Separate Storm Sewer Systems (MS4) compliance, small lot tentative maps, and final maps.
- Approval by the County of a Planned Development (PD) permit to allow the El Dorado Hills CSD to construct and operate the 15-acre Village Park (VP).
- Approval by El Dorado Irrigation District.

Other state and local approvals for CEQA the proposed project may be required as the project is implemented. This EIR may be used for other approvals that may be necessary or desirable for project implementation. Other project approvals that may be required are listed below.

- Section 401 certification from the Regional Water Quality Control Board (Regional Water Board).
- Submittal of a Notice of Intent (NOI) for coverage under the Statewide General Permit (Water Quality Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) for construction activities to the State Water Board.
- Section 1602 streambed alteration agreement from the California Department of Fish and Wildlife (CDFW).

Federal permits or project approvals that may be required are listed below.

- Section 404 permit from the U.S. Army Corps of Engineers (USACE) for fill of waters of the United States.
- Biological opinion from the U.S. Fish and Wildlife Service (USFWS) for project impacts on special-status species.

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Aesthetics			
Impact AES-1: Temporary visual impacts caused by construction activities	Less than significant	–	–
Impact AES-2: Have a substantial adverse effect on a scenic vista	Significant	Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas	Less than significant
Impact AES-3: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway	Less than significant	–	–
Impact AES-4: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant	Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas Mitigation Measure AES-4: Design proposed noise barriers to be visually consistent with existing noise barriers in the project vicinity	Less than significant
Impact AES-5: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Less than significant	–	–
Impact AES-6: Adversely affect scenic highways and vistas, the existing visual character or quality of the site and its surroundings, or create a new source of substantial light or glare as a result of offsite improvements	Less than significant	–	–
Air Quality			
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and unavoidable	–	Significant and unavoidable
Impact AQ-2a: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction	Significant	Mitigation Measure AQ-2a: Use low-VOC coatings during construction Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact AQ-2b: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operation	Significant and unavoidable	–	Significant and unavoidable
Impact AQ-2c: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during combined construction and operation	Significant and unavoidable	–	Significant and unavoidable
Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and unavoidable	–	Significant and unavoidable
Impact AQ-4a: Expose sensitive receptors to substantial diesel particulate matter concentrations during construction	Significant	Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions	Less than significant
Impact AQ-4b: Expose sensitive receptors to substantial toxic air contaminant concentrations during operation	Less than significant	–	–
Impact AQ-4c: Expose sensitive receptors to substantial carbon monoxide concentrations during operation	Less than significant	–	–
Impact AQ-4d: Expose sensitive receptors to naturally occurring asbestos during construction	Significant	Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan in accordance with EDCAQMD Rule 223-2	Less than significant
Impact AQ-5: Create objectionable odors affecting a substantial number of people	Less than significant	–	–
Impact AQ-6: Violate any air quality standard or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to toxic air contaminants, CO concentrations, or NOA or generate odors as a result of construction and operations of offsite improvements	Significant	Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan in accordance with EDCAQMD Rule 223-2	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Biological Resources			
Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat	Less than significant
Impact BIO-2: Loss of riparian woodland	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-2: Compensate for permanent loss of riparian woodland	Less than significant
Impact BIO-3: Loss of jurisdictional wetlands, including seasonal wetlands, seasonal wetland swales, and seeps	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact BIO-4: Loss of other waters of the United States, including intermittent drainages, drainage ditches/roadside ditches, and ponds	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-4: Compensate for loss of other waters of the United States	Less than significant
Impact BIO-5: Potential impacts on special-status plant species within CEDHSP project area	Significant	Mitigation Measure BIO-5a: Conduct floristic surveys for special-status plants during appropriate identification periods Mitigation Measure BIO-5b: Avoid or compensate for substantial effects on special- status plants	Less than Significant
Impact BIO-6: Potential mortality or disturbance of California red-legged frog within the CEDHSP project area	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact BIO-7: Potential mortality or disturbance of Pacific pond turtle within CEDHSP project area	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area	Less than significant
Impact BIO-8: Potential mortality or disturbance of Blainville's horned lizard within CEDHSP project area	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-8: Include measures in the open space management plan identifying homeowner responsibilities to help reduce potential for domestic animal predation on wildlife	Less than significant
Impact BIO-9: Potential mortality or disturbance of nesting special-status and non–special-status birds within the CEDHSP project area	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact BIO-10: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within the CEDHSP project area	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures	Less than significant
Impact BIO-11: Interfere with the movement of resident or migratory wildlife	Significant	Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat Mitigation Measure BIO-8: Include measures in the open space management plan identifying homeowner responsibilities to help reduce potential for domestic animal predation on wildlife	Less than significant
Impact BIO-12: Conflict with the County General Plan oak protection policies	Less than significant	–	–
Impact BIO-13: Potential introduction and spread of noxious plant species	Significant	Mitigation Measure BIO-13: Avoid the introduction and minimize spread of noxious plants	Less than significant
Impact BIO-14: Potential loss of sensitive natural communities within the offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-2: Compensate for permanent loss of riparian woodland Mitigation Measure BIO-14: Compensate for loss of oak woodland in offsite infrastructure improvement areas	
Impact BIO-15: Potential loss of waters of the United States within the offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands	Less than significant
Impact BIO-16: Potential impacts on special-status plant species within the offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-16a: Conduct floristic surveys in the offsite infrastructure improvement areas for special-status plants during appropriate identification periods Mitigation Measure BIO-16b: Avoid or compensate for substantial effects on special- status plants	Less than significant
Impact BIO-17: Potential mortality or disturbance of listed vernal pool branchiopods and their habitat within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-17a: Conduct a habitat assessment in the offsite infrastructure improvement areas for federally listed branchiopods Mitigation Measure BIO-17b: Avoid or compensate for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their habitat	
Impact BIO-19: Potential mortality or disturbance of California red-legged frog within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog	Less than significant
Impact BIO-20: Potential mortality or disturbance of Pacific pond turtle within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact BIO-21: Potential mortality or disturbance of Blainville's horned lizard within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction	Less than significant
Impact BIO-22: Potential mortality or disturbance of nesting special-status and non–special-status birds within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction	Less than significant
Impact BIO-23: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within offsite infrastructure improvement areas	Significant	Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Cultural Resources			
Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource that is a historical resource as defined in Section 15064.5	Significant	Mitigation Measure CUL-1a: Develop and implement a site-specific Historic Properties Treatment Plan for the Pedregal Archaeological District Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites Mitigation Measure CUL-1c: Protect P-09-1667 from future impacts Mitigation Measure CUL-1d: Stop work in the event of discovery of previously unknown cultural resources	Less than significant
Impact CUL-2: Cause a substantial adverse change in the significance of a built environment resource that is a historical resource pursuant to Section 15064.5	No impact	–	–
Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries	Significant	Mitigation Measure CUL-3: Perform construction monitoring during ground-disturbing activities and stop work if human remains are encountered	Less than significant
Impact CUL-4: Result in disturbance to or destruction of cultural resources as a result of offsite improvements	Significant	Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites Mitigation Measure CUL-1d: Stop work in the event of discovery of previously unknown cultural resources Mitigation Measure CUL-3: Perform construction monitoring during ground-disturbing activities and stop work if human remains are encountered Mitigation Measure CUL-4: Perform cultural resources surveys of the offsite areas and mitigate eligible resources in accordance with State CEQA Guidelines Section 15126.4	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Geology, Soils, Minerals, and Paleontological Resources			
Impact GEO-1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: (1) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42; (2) strong seismic ground shaking; (3) seismic-related ground failure, including liquefaction; and (4) landslides	Less than significant	–	–
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil	Less than significant	–	–
Impact GEO-3: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	Less than significant	–	–
Impact GEO-4: Result in fracturing and/or erosion from special construction methods that could result in unstable geologic or soil conditions.	Significant	Mitigation Measure GEO-4: Incorporate mitigation measures identified in geotechnical report and use standard engineering practices to mitigate for increased fracturing and/or erosion	Less than significant
Impact GEO-5: Be located on expansive soil, as defined in Section 1803.5.3 of the 2013 CBSC, creating substantial risks to life or property	Less than significant	–	–
Impact GEO-6: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	No impact	–	–
Impact GEO-7: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	Less than significant	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact GEO-8: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	No impact	–	–
Impact GEO-9: Directly or indirectly destroy a unique paleontological resource	Significant	Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material Mitigation Measure GEO-9b: Stop work if fossil remains are encountered during construction	Less than significant
Impact GEO-10: Impacts on geological, mineral and paleontological resources resulting from offsite improvements	Significant	Mitigation Measure GEO-4: Incorporate mitigation measures identified in geotechnical report and use standard engineering practices to mitigate for increased fracturing and/or erosion Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material Mitigation Measure GEO-9b: Stop work if substantial fossil remains are encountered during construction	Less than significant
Greenhouse Gas Emissions			
Impact GHG-1a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment during construction	Less than significant	–	–
Impact GHG-1b: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment during operation	Significant and unavoidable	Mitigation Measure GHG-1: Revise CEDHSP policies to include additional measures to further reduce operational GHG emissions	Significant and unavoidable
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant and unavoidable	–	Significant and unavoidable

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Hazards and Hazardous Materials			
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than significant	–	–
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Less than significant	–	–
Impact HAZ-3: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No impact	–	–
Impact HAZ-4: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	No impact	–	–
Impact HAZ-5: Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area	No impact	–	–
Impact HAZ-6: Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area	No impact	–	–
Impact HAZ-7: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	Less than significant	–	–
Impact HAZ-8: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	Less than significant	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact HAZ-9: Create a significant hazard to the public or the environment as a result of offsite improvements	Significant	Mitigation Measure AQ-4: Submit and implement an asbestos dust mitigation plan and perform naturally occurring asbestos evaluations during site grading as necessary	Less than significant
Hydrology, Water Quality, and Water Resources			
Impact WQ-1: Violate any water quality standards or waste discharge requirements during construction	Less than significant	–	–
Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	Less than significant	–	–
Impact WQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite	Less than significant	–	–
Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite	Less than significant	–	–
Impact WQ-5: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	Less than significant	–	–
Impact WQ-6: Otherwise substantially degrade water quality	Significant	Mitigation Measure BIO-1a: Install construction barrier fencing around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands Mitigation Measure BIO-4: Compensate for loss of other waters of the United States	
Impact WQ-7: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	Less than significant	–	–
Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect floodflows	Less than significant	–	–
Impact WQ-9: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam	No impact	–	–
Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow	No impact	–	–
Impact WQ-11: Impacts on hydrology and water quality resulting from offsite improvements	Significant	Mitigation Measure BIO-1a: Install construction barrier fencing around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands Mitigation Measure BIO-4: Compensate for loss of other waters of the United States	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Land Use Planning and Agricultural Resources			
Impact LU-1: Physically divide an established community	Less than significant	–	–
Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	Less than significant	–	–
Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan	No impact	–	–
Impact LU-4: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use	No impact	–	–
Impact LU-5: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	No impact	–	–
Impact LU-6: Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220[g]), timberland as defined by Public Resources Code Section 4526, or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])	No impact	–	–
Impact LU-7: Result in the loss of forest land or conversion of forest land to non-forest use	No impact	–	–
Impact LU-8: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use	No impact	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Noise and Vibration			
Impact NOI-1a: Expose persons to or generate noise levels in excess of standards established in the General Plan as a result of construction activities	Significant and unavoidable	Mitigation Measure NOI-1a: Employ noise-reducing construction practices	Significant and unavoidable
Impact NOI-1b: Expose persons to or generate noise levels from project-generated traffic in excess of standards established in the General Plan	Significant	Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses	Less than Significant
Impact NOI-1c: Expose persons to or generate noise levels in excess of standards established in the General Plan for stationary or non-transportation noise sources during project operation	Significant	Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses Mitigation Measure NOI-1c: Implement a noise control plan for the Village Park	Less than Significant
Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels	Significant	Mitigation Measure NOI-2: Employ measures to reduce airblast and vibration from blasting	Less than significant
Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant	Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses Mitigation Measure NOI-1c: Implement a noise control plan for the Village Park	Less than significant
Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project during construction	Significant and unavoidable	Mitigation Measure NOI-1a: Employ noise-reducing construction practices	Significant and unavoidable
Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels	Significant and unavoidable	Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses Mitigation Measure NOI-5: Record Mather Airport noise disclosure for each residential lot	Significant and unavoidable
Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels	No impact	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact NOI-7: Result in noise impacts due to activities associated with project offsite improvements	Significant	Mitigation Measure NOI-1a: Employ noise-reducing construction practices Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses	Less than significant
Population and Housing			
Impact POP-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Less than significant	–	–
Impact POP-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere	No impact	–	–
Impact POP-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere	No impact	–	–
Public Services and Utilities			
Impact PSU-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, or libraries	Less than significant	–	–
Impact PSU-2: Exceed wastewater treatment requirements of the applicable Regional Water Board	Less than significant	–	–
Impact PSU-3: Require or result in the construction of new wastewater treatment or conveyance facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects	Significant	Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure AQ-4: Submit an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat Mitigation Measure BIO-2: Compensate for permanent loss of riparian woodland Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-14: Compensate for loss of oak woodland in offsite infrastructure improvement areas	
		Mitigation Measure BIO-16a: Conduct floristic surveys in the offsite infrastructure improvement areas for special-status plants during appropriate identification periods	
		Mitigation Measure BIO-16b: Avoid or compensate for substantial effects on special- status plants	
		Mitigation Measure BIO-17a: Conduct a habitat assessment in the offsite infrastructure improvement areas for federally listed branchiopods	
		Mitigation Measure BIO-17b: Avoid or compensate for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their habitat	
		Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites	
		Mitigation Measure CUL-1d: Stop work in the event of discovery of previously unknown cultural resources	
		Mitigation Measure CUL-3: Perform archaeological construction monitoring during ground-disturbing activities and stop work if human remains are encountered	
		Mitigation Measure CUL-4: Perform cultural resources surveys of the offsite areas and mitigate eligible resources in accordance with State CEQA Guidelines Section 15126.4	
		Mitigation Measure GEO-4: Incorporate mitigation measures identified in geotechnical report and use standard engineering practices to mitigate for increased fracturing and/or erosion	
		Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material	
		Mitigation Measure GEO-9b: Stop work if substantial fossil remains are encountered during construction	
		Mitigation Measure NOI-1a: Employ noise-reducing construction practices	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan	
Impact PSU-4: Require or result in the construction of new water treatment or conveyance facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects	Significant	Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions	Less than significant
		Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan	
		Mitigation Measure AQ-4: Submit an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading as necessary	
		Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided	
		Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees	
		Mitigation Measure BIO-1c: Conduct periodic site visits during construction	
		Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat	
		Mitigation Measure BIO-2: Compensate for permanent loss of riparian woodland	
		Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands	
		Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands	
		Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable	
		Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog	
		Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors	
		Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction	
		Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures	
		Mitigation Measure BIO-14: Compensate for loss of oak woodland in offsite infrastructure improvement areas	
		Mitigation Measure BIO-16a: Conduct floristic surveys in the offsite infrastructure improvement areas for special-status plants during appropriate identification periods	
		Mitigation Measure BIO-16b: Avoid or compensate for substantial effects on special- status plants	
		Mitigation Measure BIO-17a: Conduct a habitat assessment in the offsite infrastructure improvement areas for federally listed branchiopods	
		Mitigation Measure BIO-17b: Avoid or compensate for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their habitat	
		Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites	
		Mitigation Measure CUL-3: Perform archaeological construction monitoring during ground-disturbing activities and stop work if human remains are encountered	
		Mitigation Measure CUL-4: Perform cultural resources surveys of the offsite areas and mitigate eligible resources in accordance with State CEQA Guidelines Section 15126.4	
		Mitigation Measure GEO-4: Incorporate mitigation measures identified in geotechnical report and use standard engineering practices to mitigate for increased fracturing and/or erosion	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material Mitigation Measure GEO-9b: Stop work if substantial fossil remains are encountered during construction Mitigation Measure NOI-1a: Employ noise-reducing construction practices Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan	
Impact PSU-5: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant	Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan Mitigation Measure AQ-4: Submit an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading as necessary Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees Mitigation Measure BIO-1c: Conduct periodic site visits during construction Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat Mitigation Measure BIO-2: Compensate for permanent loss of riparian woodland Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures Mitigation Measure BIO-14: Compensate for loss of oak woodland in offsite infrastructure improvement areas Mitigation Measure BIO-16a: Conduct floristic surveys in the offsite infrastructure improvement areas for special-status plants during appropriate identification periods Mitigation Measure BIO-16b: Avoid or compensate for substantial effects on special- status plants Mitigation Measure BIO-17a: Conduct a habitat assessment in the offsite infrastructure improvement areas for federally listed branchiopods Mitigation Measure BIO-17b: Avoid or compensate for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their habitat Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites Mitigation Measure CUL-3: Perform archaeological construction monitoring during ground-disturbing activities and stop work if human remains are encountered	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Mitigation Measure CUL-4: Perform cultural resources surveys of the offsite areas and mitigate eligible resources in accordance with State CEQA Guidelines Section 15126.4 Mitigation Measure GEO-4: Incorporate mitigation measures identified in geotechnical report and use standard engineering practices to mitigate for increased fracturing and/or erosion Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material Mitigation Measure GEO-9b: Stop work if substantial fossil remains are encountered during construction Mitigation Measure NOI-1a: Employ noise-reducing construction practices Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan	
Impact PSU-6: Have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements	Less than significant	–	–
Impact PSU-7: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	Less than significant	–	–
Impact PSU-8: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	Less than significant	–	–
Impact PSU-9: Comply with federal, state, and local statues and regulations related to solid waste	Less than significant	–	–
Impact PSU-10: Lead to a wasteful, inefficient, and unnecessary usage of energy	Less than significant	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Recreation			
Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	Less than significant	–	–
Impact REC-2: Require the construction or expansion of offsite recreational facilities that might have an adverse physical effect on the environment	No impact	–	–
Traffic and Circulation			
Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness 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	Significant	Mitigation Measure TRA-1a: Improve the Latrobe Road/Town Center Boulevard Intersection Mitigation Measure TRA-1b: Improve the Silva Valley Parkway/Appian Way Intersection Mitigation Measure TRA-1e: Improve the El Dorado Hills Boulevard/Park Drive/Saratoga Way Intersection	Less than significant
Impact TRA-2: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	No impact	–	–
Impact TRA-3: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	No impact	–	–
Impact TRA-4: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	Less than significant	–	–
Impact TRA-5: Result in inadequate emergency access	Significant	Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
Impact TRA-6: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	Significant	Mitigation Measure TRA-1c: Extend sidewalk from Wilson Boulevard to Pedregal planning area Mitigation Measure TRA-1d: Provide alternative park-and-ride facilities	Less than significant
Impact TRA-7: Impacts on circulation as a result of offsite improvements	Less than significant	–	–
Impact TRA-8: Result in inadequate emergency access as a result of offsite improvements	Significant	Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan	Less than significant

Cumulative Impact	Contribution to Cumulative Effects	Mitigation Measures	Contribution after Mitigation
Air Quality	Considerable contribution	_	Considerable contribution
Cultural Resources, Prehistoric Cultural Resources	Considerable contribution	_	Considerable contribution
Transportation and Circulation Conditions	Considerable contribution	Mitigation Measure CUM-A: Improve the Silva Valley Parkway/Appian Way intersection	Impact is less than significant

Chapter 1
Introduction

The Final Environmental Impact Report

This is the Final Environmental Impact Report (Final EIR) that has been prepared for the proposed Central El Dorado Hills Specific Plan (CEDHSP), (proposed project). As explained below, the Final EIR has been prepared in accordance with the California Environmental Quality Act to disclose to decision-makers and the public the adverse physical changes to the environment that would occur if the Project is approved. The Final EIR incorporates the Draft EIR, the Partial Recirculated Partial Draft EIR (RDEIR), and responds to all of the comments received on both of those documents.

The California Environmental Quality Act

The California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000, et seq.) requires public agencies to consider the potential adverse environmental impacts of proposed projects and to disclose the significance of those impacts. Public agencies must consider both direct impacts and reasonably foreseeable indirect impacts. No discretionary project that may have a significant adverse impact on the environment can be approved without the preparation of an environmental impact report (EIR) and the imposition of all feasible mitigation measures. The CEDHSP is a discretionary project subject to CEQA.

According to Section 15002 of the State CEQA Guidelines, below are the basic purposes of CEQA.

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The process of preparing an EIR involves the following steps.

- Issuing a notice of preparation (NOP) soliciting the comments of public agencies and interested organizations and individuals regarding the scope and content of the EIR. El Dorado County (County) issued an NOP for the Draft EIR on February 20, 2013. A copy of the NOP is in Appendix A of the Draft EIR. The comments received from agencies and the public in response to the NOP are included in Appendix B of the Draft EIR. CEQA does not require the lead agency to respond to the comments received during review of the NOP. The County considered all of these comments in preparing the Draft EIR.

- Conducting a scoping meeting. A scoping meeting was held on March 14, 2013 at Oak Meadow Elementary School in El Dorado Hills to offer additional opportunity for input prior to preparation of the Draft EIR.
- Preparing a Draft EIR and releasing it for public review and comment for a period of at least 45 days. The Draft EIR for the project was available for a review period of 90 days from November 20, 2015 through February 18, 2014 for public agencies and interested organizations and individuals to review. Copies of the Draft EIR were available at the Long Range Planning Division offices, County libraries, and in electronic format on the County's website. An open house was held on Wednesday, December 2, 2015, at Oak Meadow Elementary School in El Dorado Hills.
- As a result of a recent court decision regarding the approach to impact analysis for greenhouse gas (GHG) emissions, the County prepared and released for review and comment a Partial Recirculated Draft EIR (RDEIR) for the 45-day period from April 22, 2016 through June 6, 2016. The RDEIR included revised analyses of GHG emissions only. Copies of the RDEIR were available at the Long Range Planning Division offices, County libraries, and in electronic format on the County's website.
- Preparing a Final EIR. The CEDHSP Final EIR incorporates revisions to the Draft EIR and RDEIR made in response to the comments received during the reviews of both the Draft EIR and RDEIR, written responses to comments, and copies of the comments themselves. The County Board of Supervisors will certify the adequacy of and consider the Final EIR prior to taking action on the project.
- Preparing a Mitigation, Monitoring and Reporting Program (MMRP). The Mitigation, Monitoring and Reporting Program lists the mitigation measures to be incorporated by the County and specifies the implementation and monitoring responsibilities for each of those measures. It is a stand-alone document that is approved along with a project. The MMRP guides construction and operation of the project to ensure that impacts are mitigated wherever possible. If the Board of Supervisors approves the project, it will adopt the MMRP.
- Adopting findings and a statement of overriding considerations. If the Board of Supervisors approves the project, it will adopt a set of findings that describe how each significant impact identified in the Final EIR will be addressed (i.e., whether the impact would be mitigated, would be mitigated by another agency, or would be significant and unavoidable). If the County chooses not to approve any of the alternatives analyzed in the EIR, then the findings will also explain why those alternatives are infeasible. Because the project is expected to result in significant and unavoidable impacts, in accordance with Section 15093(b) of the State CEQA Guidelines, the County would also adopt a statement of overriding considerations that explains the specific benefits of adopting the CEDHSP.

CEQA establishes a process for analyzing a project's potential impacts. The Final EIR is not a permit and CEQA does not mandate that a proposed project be approved or denied. CEQA's purposes are to ensure that public agencies make a good faith effort at disclosing the potential environmental impacts of projects to decision-makers, the public, and other agencies, and implement actions that will reduce or avoid potential significant impacts (i.e., mitigation), when feasible. A project may be approved despite having significant and unavoidable impacts (Section 15043 of the State CEQA Guidelines).

The County Board of Supervisors will use the Final EIR to inform itself of the project's impacts before taking action. It will also consider other information and testimony that will arise during deliberations on the project before making their decision.

Purpose of this Document

This Final EIR (State Clearinghouse No. 2013022044) has been prepared according to CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) to evaluate and disclose the potential environmental impacts associated with implementation of the CEDHSP. This project would implement a specific plan guiding the development of the Serrano Westside and Pedregal planning areas (see Chapter 2 of the Draft EIR, *Project Description*). The County may adopt all or portions of the project after certifying the Final EIR.

Document Format

The format of this Final EIR is outlined below to assist the reader's review of the document.

- **Chapter 1** is this introduction to the Final EIR. The discussion reflects the CEQA process through completion of the Final EIR. It is also new to the Final EIR.
- **Chapter 2** contains the comments received on the Draft EIR and RDEIR and the county's responses to those comments, as well as master responses. Supporting materials submitted with the comments can be reviewed at the County Community Development Agency, Planning Services Public Counter at 2850 Fairlane Court, Placerville. They can also be viewed online at the County's website: http://www.edcgov.us/Government/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx
- **Chapter 3** contains the changes made to the Draft EIR and RDEIR. Changes are indicated using underline for added text and strikeout for deleted text and an explanation of the reason for the text change is provided.
- **Chapter 4** contains references that are new, that is, not previously included in the Draft EIR or RDEIR.
- **Appendices** contains additions to Appendix C, Appendix D, Appendix F, and Appendix L of the Draft EIR. Due to the length of the addition to Appendix L, additions to appendices are appended to this Final EIR.
- **The Draft EIR**, prepared in November 2015, is part of this document but is provided under a separate cover.
- **Partial Recirculated Draft EIR**, prepared in April 2016, is part of this document but is provided under a separate cover.

Intended Use of this Document

This Final EIR is a three-part document, consisting of the Draft EIR, the RDEIR, and this document, which contains the comments received on the Draft EIR and RDEIR, the responses to those comments, and the errata or revisions made to the Draft EIR and RDEIR. The Final EIR as a whole will be considered by the County Board of Supervisors prior to taking final action on the project.

Chapter 2
Comments and Responses to Comments on the Draft EIR and the Partial Recirculated Draft EIR

This chapter lists the comments received on the Draft EIR and Partial Recirculated Draft EIR (RDEIR), provides copies of the individual comments, and responds in turn to each comment related to environmental issues. Some of the comments received raised similar issues about the project and its environmental impacts. The County has prepared a number of master responses to address the most frequently raised issues. When an individual comment raises an issue discussed in a master response, the response to that individual comment will cross-reference to the appropriate master response (e.g., "see Master Response 1").

The Master Responses address the following topics:

- Master Response 1: Water Supply
- Master Response 2: 2015 El Dorado Hills Community Services District Advisory Measure E
- Master Response 3: Naturally-Occurring Asbestos (NOA)
- Master Response 4: Mitigation Monitoring and Reporting Program (MMRP)

Comment Letters Received

Table 2-1. Comment Letters Received on the Draft EIR and the Partial Recirculated Draft EIR

Comment Letter Number	Name	Date of Letter
Individual Parties		
I-1	Robert Brannam	11/24/2015
I-2	Sherrie Bunk-Petersen	12/10/2015
I-3	Charlet Burcin	2/8/2016
I-4	John Burns	2/18/2016
I-5	John Cordova	11/23/2015
I-6	John Crockett	12/1/2015
I-7	Terry Crumpley	2/19/2016
I-8	Wayne Haug	12/9/2015
I-9	Alan Hockenson	2/19/2016
I-10	Mark Holloway	12/15/2015
I-11	Thomas Infusino	2/18/2016
I-12	Hillary Krogh	1/13/2016
I-13	Christine Librach	12/7/2015
I-14	Jeanette Manchester	1/19/2016
I-15	Shannon Merryman	1/18/2016
I-16	Nola Mulligan	12/24/2015

Comment Letter Number	Name	Date of Letter
I-17	Donn Neher	1/17/2016
I-18	Deb Ozdinski	1/18/2016
I-19	Leonard Patane	2/8/2016
I-20	Merrilee Posner	1/5/2016
I-21	Merrilee Posner	1/5/2016
I-22	Bruce Quinn	1/18/2016
I-23	John Raslear	1/14/2015
I-24	Dan Rausch	2/16/2016
I-25	Joan Rene	12/2/2015
I-26	William Sturch	2/1/2016
I-27	Robert Swenson	12/3/2015
I-28	Tim White	12/14/2015
I-29	Anonymous	12/2/2015
I-RECIRC-1	Lisa Burkhard	5/20/2016
I-RECIRC-2	Zachary Caldwell	5/18/2016
I-RECIRC-3	Mark and Lori Christensen	6/5/2016
I-RECIRC-4	Wayne Haug	4/22/2016
I-RECIRC-5	Alan Hockenson	6/6/2016
I-RECIRC-6	Doug Lindvig	5/20/2016
I-RECIRC-7	William MacKean	5/20/216
I-RECIRC-8	Barbara Narez	6/6/2016
I-RECIRC-9	Judi Oswald	5/21/2016
I-RECIRC-10	Stanley Price	6/6/2016
I-RECIRC-11	Bruce Quinn	5/13/2016
I-RECIRC-12	Chad Randolph	6/6/2016
I-RECIRC-13	Timothy White	6/3/2016
I-RECIRC-14	Anonymous	Undated
Local Agency		
L-1	EL Dorado County Area Planning Advisory Committee, Ellison Rumsey	2/19/2016
Organization		
O-1	El Dorado Hills Townhouses Association, Richard Harris	1/12/2016
Regional Agencies		
R-1	El Dorado County Environmental Management Division, Robert Lauritzen	2/19/2016
R-2	El Dorado County Environmental Management Division, Robert Lauritzen	1/4/2016
R-3	El Dorado County Environmental Management Vector Control, Fred Sanford	12/16/2015
R-4	El Dorado Hills Community Services District, Kevin Loewen	12/4/2015
R-5	El Dorado Hills Community Services District, Kevin Loewen	11/20/2015
R-6	El Dorado Hills Fire Department, Marshall Cox	2/18/2016
R-RECIRC-1	EDCTC, Woodrow Deloria	6/6/2016
R-RECIRC-2	Kevin Loewen	5/19/2016
R-RECIRC-3	El Dorado Hills Community Services District, Kevin Loewen	6/3/2016
R-RECIRC-4	El Dorado Hills Fire Department, Marshall Cox	6/6/2016

Comment Letter Number	Name	Date of Letter
State Agencies		
S-1	CALFIRE-Amador El Dorado, Darin McFarlin	12/9/2015
S-2	Caltrans, Eileen Cunningham	2/19/2016
S-3	Central Valley Regional Water Quality Control Board, Stephanie Tadlock	12/18/2015
S-RECIRC-1	SCH, Scott Morgan	6/7/2016
Tribal Organization		
T-1	United Auburn Indian Community, Gene Whitehouse	12/15/2015

Master Responses

Master Response 1. Water Supply

Several commenters expressed concern about the availability of water supplies to serve the Project, particularly in light of recent drought conditions and water restrictions imposed by El Dorado Irrigation District (EID). As noted in the EIR, the County is not the purveyor of water. Water for the project would be provided by EID through its entitlements and facilities. EID is responsible for evaluating its water supplies and making determinations as to their availability to serve both existing and future demands within its service area. As such, it is not within the County's authority to determine whether EID supplies are adequate to serve the Project. However, it is the County's responsibility, as lead agency, to evaluate water supply availability in accordance with CEQA law and regulations. The source of that information is the water supply assessment (WSA) for the Project, which was incorporated into the impact analysis in Impact PSU-6 on pages 3.12-50 through 3.12-60 in the Draft EIR. The WSA is included in the Draft EIR in Appendix K.

The WSA approved by EID in August 2013 determined EID has sufficient water supplies to serve the proposed Central El Dorado Hills Specific Plan (CEDSHP). Although three notable circumstances have occurred since the 2013 WSA approval, as discussed below, none affects the prior findings of the WSA. These circumstances are: EID's recently adopted Urban Water Management Plan (UWMP), the recent drought and corresponding EID conservation mandates, and the El Dorado County Water Agency's 2014 West Slope Update to the 2007 Water Resources Development Plan.

Long-Term Water Supply Sufficiency Determination Consistent with new UWMP

On June 27, 2016, EID adopted its updated Urban Water Management Plan (EID 2015 UWMP). Although EID reflected some variations in the characterization of total demands and supplies when compared to the August 2013 WSA, the variations do not change the resulting conclusions of the CEDHSP WSA. Specifically, the EID 2015 UWMP modified its representation of existing and projected water supply assets to: (1) reflect a more conservative representation of federal Central Valley Project (CVP) contract supplies to align with restrictions placed on the CVP supplies during 2015; and (2) align the growth in recycled water supplies to be more consistent with expected growth in recycled water demands (because recycled water can only be used for a limited set of irrigation demands). Based upon coordination with County staff, the EID 2015 UWMP also modified projected water demands to reflect slower growth throughout the planning horizon. However, the demands of the proposed project, along with the other projects that simultaneously underwent WSA analysis and approval (the Lime Rock Valley Specific Plan [LRVSP], Village of Marble Valley Specific Plan [VMVSP], and Dixon Ranch Residential Project), were maintained in the EID 2015 UWMP as represented in the WSAs adopted in August 2013. The demand reduction in the EID 2015 UWMP to reflect the County's slower growth projections were applied only to the category of "other planned uses" (see Appendix K), resulting in a lower overall projected demand, but maintaining the demand of the CEDHSP.

Overall, as reflected in the supply/demand integration tables presented in the EID 2015 UWMP, EID still shows existing and planned supplies exceed forecast demands, which remains consistent with the findings of the 2013 WSA.

EID Water Supply Conditions during the Recent Drought

Following two consecutive dry years (2012 and 2013), EID implemented its Drought Action Plan. On February 4, 2014, the EID Board of Directors declared a Stage 2 Water Warning, and on April 22, 2014, the EID Board implemented mandatory watering restrictions called for under Stage 2 drought conditions, intended to conserve 30% of normal use (El Dorado Irrigation District 2014c).

On April 1, 2015, Governor Brown issued the fourth in a series of Executive Orders on actions necessary to address California's severe drought conditions, which directed the State Water Board to require mandatory water reductions in urban areas to reduce potable urban water usage by 25% statewide. The State Water Board placed water providers into one of nine tiers that mandate cutbacks ranging from 4% to 36%. EID was required by the State Water Board to achieve a Districtwide cutback of 28% from 2013 usage. EID achieved this objective.

On May 9, 2016, Governor Brown issued another executive order extending the emergency regulations for urban water conservation through January 2017 and making some water use restrictions permanent (El Dorado Irrigation District 2016). The executive order, however, amended the State Water Board's emergency regulation to use locally-developed, rather than state-developed, standards to more accurately reflect each urban water agency's individual water supply circumstances (El Dorado Irrigation District 2016; California State Water Resources Control Board 2016). The regulation requires each urban water supplier to self-certify the reliability of its water supply for three additional years of drought, by identifying its own conservation standard as well as the data supporting that standard, including each source of water and the quantity of water available from that source, and submitting the results to the State Water Board (California State Water Resources Control Board 2016). Under the revised regulation, each water supplier would, beginning June 1, 2016, be required to meet its identified conservation standard each month, compared to the amount used in the same month in 2013 (California State Water Resources Control Board 2016). The results of EID's self-certification demonstrated that EID no longer has a conservation target in place for the remainder of 2016 through February of 2017. The EID Board unanimously rescinded the Stage 2 Water Warning and lifted the mandatory watering restrictions at its May 9, 2016 meeting (El Dorado Irrigation District 2016). EID regularly monitors water supply through a variety of methods, and each year the agency prepares a water resources and service reliability report, which presents information on supply and demand.

2014 West Slope Update to the 2007 Water Resources Development Plan

The Draft EIR (pages 3.12-53 and 3.12-54) included a description and an explanation how the conclusions of the EID Board-approved CEDHSP WSA and the El Dorado County Water Agency

(EDCWA) 2014 West Slope Update to its 2007 Water Resources Development Plan differ. The following summarizes the information presented in the Draft EIR for ease of reference and for completeness of this master response.

The EDCWA document includes analysis and comparison of future water supply and demand conditions within the EID urban water service area and areas that may be annexed to EID in the future. The 2014 Update is an EDCWA planning document that evaluates "the adequacy of existing and planned future public water supplies of the County, including its West Slope region, to meet projected future demand, based on the land use densities. EDCWA's planning for the water supply needed for the County must look beyond the 20- to 25-year planning horizon to the total build-out capacity of the 2004 General Plan that will develop over many decades." Though not a water purveyor, EDCWA's objective with this planning is to identify, initiate and support water supply planning activities needed by water purveyors such as EID for demands that far exceed those assessed in the shorter-term by EID. The conclusions presented in Section 7 of the 2014 Update identify "additional water supply need" for EID to meet estimated build-out water demands.

Unlike the long-range planning nature of EDCWA's work, EID's water plans are used for a shorter-term, 20- to 25-year planning horizon for capital and infrastructure development. These plans are updated regularly and capture changing land use conditions in a timely manner for those purposes. The CEDHSP WSA (Appendix K in the Draft EIR) identifies sufficient water to meet estimated water demands in 2035. The WSA is an EID analysis required under California Water Code Section 10910, et seq., and follows strict statutory requirements. The WSA, based on EID's data and projections, determines that there is adequate water available for the proposed project, along with existing and other planned future uses, over the 20-year horizon required by WSA statute (through 2035 for purposes of the Draft EIR). The 2014 Update, which is a West Slope-wide document, contemplates significant annexations into the EID service area over time, demand for which was appropriately not included in the CEDHSP WSA, because EID is not obligated to provide service to these areas.

As a result, many assumptions and characterizations can and do differ between the CEDSHP WSA and the EDCWA 2014 Update – with both documents appropriately developing conclusions based upon those differing conditions and differing responsibilities of the two agencies. While there are several other assumptions and characterizations that explain differences in these two documents, these three—different future horizons (2035 versus build-out), different service area assumptions, and different assumptions of available water supply—are primary reasons why the conclusions may appear different.

Master Response 2. 2015 El Dorado Hills Community Services District Advisory Measure E

Measure E was placed on the ballot for the November 2015 elections by the governing body of El Dorado Hills Community Services District (District) pursuant to District Resolution 2015-12 as an advisory election to obtain public input on the following statement:

> Should the El Dorado County Board of Supervisors re-zone the approximately 100 acres of the former executive golf course in El Dorado Hills from its current land use designation as "open space recreation" to a designation that allows residential housing and commercial development on the property?

The result was 8.94% of voters in favor of Measure E and 91.04% of voters against. This was an advisory election by an agency without land use power over the project site and does not prevent the proposed project from being accepted for consideration by the County in accordance with County policy and state law.

Some comment letters made reference to CSD Advisory Measure E in relation to the proposed project and suggested that a “Measure E Alternative” should have been evaluated in the EIR.

CEQA Requirements for Alternatives Analysis

As discussed on Draft EIR page 4-1, CEQA requires that an EIR include a reasonable range of feasible alternatives to the project that meet the basic project objectives while reducing or avoiding one or more significant impact of the project. According to State CEQA Guidelines Section 15126.6(f), the range of alternatives required in an EIR is governed by a “rule of reason” that requires an EIR to set forth only those alternatives necessary to allow a reasoned choice. An EIR need not consider every conceivable alternative to a project. Instead, the discussion of alternatives must “focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project.”

CEQA establishes no categorical legal imperative as to the scope of alternatives to be analyzed in an EIR. Each case must be evaluated on its facts, which in turn must be reviewed in light of the statutory purpose. An EIR for any project subject to CEQA review must consider a reasonable range of alternatives to the project, or to the location of the project, which: (1) offer substantial environmental advantages over the project; and (2) may be ‘feasibly accomplished in a successful manner’ considering the economic, environmental, social and technological factors involved.” (Goleta II, supra, 52 Cal.3d at p. 566, 276 Cal.Rptr. 410, 801 P.2d 1161.)

Draft EIR pages 4-1 through 4-7 describe the screening criteria (ability to meet project objectives, impact avoidance, and feasibility) that was utilized to develop the range of alternatives evaluated.

Consideration of CSD Advisory Measure E as an EIR Alternative

The Draft EIR No Project Alternative, which would not involve the development of the 100 acres of the former executive golf course in El Dorado Hills, would be considered a CSD Advisory Measure E compliant alternative. The No Project Alternative is described and analyzed on Draft EIR pages 4-9 through 4-21 (see also Draft EIR Figure 4-1) and would consist of 312 dwelling units and 106 acres of developed area as compared to the proposed project that consists of 1,000 dwelling units, 11 acres of limited commercial use, 16 acres of park use and 173 acres of developed area. While the No Project Alternative was identified as environmentally superior to the proposed project, it would not meet half of the 15 project objectives.

The No Project/CSD Advisory Measure E Alternative would fail to meet several of the Project objectives identified in Section 2.2 of the EIR, including:

- Assist in meeting future Regional Housing Needs Allocations. This Alternative would limit development to single-family housing, limiting the County’s ability to demonstrate its ability to accommodate its share of the regional housing need by providing lower-cost, multi-family housing to meet the housing demand for lower-income residents.
- Broaden the housing stock in El Dorado Hills. This Alternative would be largely single-family residential rather than offering the mix of densities proposed by the project.

- Improve connectivity of the regional roadway network. This Alternative would preclude the extension of Park Drive to Silva Valley Parkway (potential parallel capacity to US 50).
- Create a new non-motorized transportation system. This Alternative would not include the Class 1 bicycle paths and pedestrian facilities that are included in the project.
- Improve north-south pedestrian and bicycle connectivity. This Alternative would not include the Class 1 bicycle path adjoining El Dorado Hills Boulevard and the bicycle and pedestrian overcrossing of US 50 that are included in the project.
- Provide opportunities for recreational facilities in El Dorado Hills. This Alternative would eliminate the park land proposed under the project and would not include park land. The open space provided in the Pedregal Planning Area acts as a buffer between residences and would not be available for recreational use. The closed golf course would not provide recreational facilities.
- Maintain characteristics of natural landscape. This Alternative would allow future development of Lots C and D, resulting in the loss of natural landscape. The project would leave Lots C and D as open space.
- Minimize impacts on oak woodlands. Existing oak woodlands on Lots C and D would be available for development under this Alternative. While policies in the existing El Dorado Hills Specific Plan would preserve some of these trees, this alternative would result in the loss of trees that would otherwise be preserved in open space under the project.

The No Project Alternative already provides a CSD Advisory Measure E compliant alternative. As described above, this alternative fails to meet many of the project objectives and is rejected from detailed analysis in the Draft EIR for that reason.

Master Response 3. Naturally-Occurring Asbestos (NOA)

Some commenters expressed concern regarding the Draft EIR's description of naturally occurring asbestos (NOA) hazards and the evaluation of potential impacts. The Draft EIR has fully disclosed the potential NOA impacts of the proposed project and presented appropriate and feasible mitigation to address the potentially significant impact identified in the Draft EIR (Impact AQ-4d on p.3.2-32 and Mitigation Measure AQ-4 on p. 3.2-33). The following provides background information about NOA, describes the information presented in the Draft EIR environmental setting and impact analysis, and explains how the mitigation measure will ensure compliance with the El Dorado County Air Quality Management District (EDCAQMD) Rule 223-2 pertaining to NOA. The requirements of Rule 223-2 were summarized in the Draft EIR (pages 3.2-5 and 3.2-22 – 3.2-23). The complete text of Rule 223-2 has been added to Appendix D of this Draft EIR for completeness and ease of reference.

As stated on page 3.2-11 in the Draft EIR, NOA most commonly occurs in ultramafic rock (i.e., igneous and metamorphic rock with low silica content) that has undergone partial or complete alteration to serpentine rock (or serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, is associated with ultramafic rock, particularly near geologic faults. Bands of NOA, trending in a north-south direction occur in western El Dorado County.

Construction activities in ultramafic rock deposits may be a source of asbestos emissions if NOA is present. Exposure and disturbance of rock and soil that contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos can result in a human health hazard when airborne. The inhalation of asbestos fibers into the lungs can result in a variety of adverse health effects, including inflammation of the lungs, respiratory ailments (e.g., asbestosis, which is scarring of lung tissue that results in constricted breathing), and cancer (e.g., lung cancer and mesothelioma, which is cancer of the linings of the lungs and abdomen).

The potential for NOA to occur in El Dorado Hills is well-documented. Investigations of the presence of NOA in ambient air in El Dorado Hills began in 1999, when the California Air Resources Board (CARB) collected samples at several locations as part of a larger study of NOA that included El Dorado County. The CARB also collected samples in 2000 and 2003. Little information was provided in the CARB results tabulation on the rationale for choosing locations for ambient monitoring, but it is likely that sampling was targeted to areas of concern or with a higher likelihood for having NOA (ATSDR 2010). The U.S. Environmental Protection Agency (USEPA) began its involvement with NOA testing and evaluation when construction of the soccer field at Oak Ridge High School north of the CEDHSP project area disturbed a vein of amphibole asbestos. The El Dorado Union High School District implemented several measures to reduce student and public exposure. In 2005, the USEPA released a report outlining the results of its 2004 investigation regarding the extent of NOA in the soil and air in El Dorado Hills.

In 2005, the County published its "Asbestos Review Areas Western Slope" map.[1] In El Dorado Hills, the West Bear Mountains fault zone roughly parallels El Dorado Hills Boulevard north of US 50, and there are areas with ultramafic rocks. The map identifies the location of the West Bear Mountains fault zone and locations where NOA has been found as well as a one-quarter mile buffer around areas where NOA has been found. The map also depicts "areas more likely to contain asbestos" (based on the California Geological Survey's Open-File Report 2000-002, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*) and a one-quarter-mile buffer around the "areas more likely to contain asbestos" or fault line. The 2005 map is the County's most current map.

The Draft EIR included a map (Figure 3.2-1, "Naturally Occurring Asbestos in the Planning Area") that was developed by overlaying the project area boundary on the County's 2005 Asbestos Review Area map. Figure 3.2-1 accurately depicts the West Bear Mountains fault zone location, areas where NOA has been found, areas most likely to contain asbestos, and the one-quarter-mile buffer area corresponding to the information presented on the County's 2005 Asbestos Review Area map. As illustrated by Figure 3.2-1, all of the Serrano Westside planning area and a portion of the Pedregal planning area are within an area where NOA must be considered during the planning process.

As described on page 3.2-11 in the Draft EIR, Youngdahl Consulting Group completed an assessment of NOA for the Serrano Westside and Pedregal planning areas. Traces (less than 0.25%) of NOA were found in 4 of 11 samples of rock and soil collected from test pits in the Pedregal planning area. NOA traces (less than 0.25%) also were identified in 6 of 14 samples of rock and soil collected from the test pits in the Serrano Westside planning area. Some commenters appear to have misinterpreted the results of the Youngdahl assessment to mean that additional testing would not be required or that only certain locations in the project site could have NOA.

Commenters suggested more testing for NOA should have been performed and the results presented in the Draft EIR. The results of the Youngdahl assessment are adequate for purposes of the Draft EIR impact analysis. A scientifically sound testing program that would yield statistically valid results for the presence NOA must necessarily be based on site-specific geologic conditions and likely areas of

[1] The County's Asbestos Review Areas map is available online at https://www.edcgov.us/Government/AirQualityManagement/Asbestos_Review_Map.aspx.

disturbance. Until the exact areas that would be graded are identified on improvement plans approved by the County, the testing locations and number of samples that need to be collected cannot be determined. It is important to note neither the Draft EIR nor the Youngdahl report eliminated any location in the project site as a potential source of NOA during construction. Additional testing would not change the conclusions of the Draft EIR that NOA impacts would be potentially significant, requiring mitigation. The County's geologist has concurred with the Draft EIR's analysis of potential impacts and mitigation measure requiring compliance with EDCAQMD Rule 223-2 ("Fugitive Dust – Asbestos Hazard Mitigation"). The County geologist's letter is included in this Final EIR (Letter R-1).

Although Rule 223-2 provides for exemptions to the ADMP requirement, they do not apply to the proposed CEDHSP. The proposed project would include a substantial amount of grading and is within the County's NOA review area map and therefore would not be exempt from Rule 223-2. In addition, because NOA testing was performed and trace amounts were found, the exemption from Rule 223-2 would also not apply. The applicant will be required to submit an Asbestos Dust Mitigation Plan (ADMP) to the EDCAQMD for approval and to implement the actions specified in the plan during construction. Mitigation Measure AQ-4 on page 3.2-33 has been revised as follows to clarify the requirement for the applicant to comply with Rule 223-2:

> **Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan <u>in accordance with EDCAQMD Rule 223-2</u>~~and perform naturally occurring asbestos evaluations during site grading as necessary~~**
>
> ~~If in a NOA area and required by EDCAQMD, t~~<u>T</u>he project applicant shall prepare and submit an Asbestos Dust Mitigation Plan to EDCAQMD prior to the start of any construction activity, consistent <u>with all requirements of</u> EDCAQMD Rule 223-2. All earthwork activities will be periodically observed by a geologist experienced in the visual assessment for NOA or for conditions likely to contain NOA. Additional NOA evaluation will be performed by a certified engineering geologist during grading to allow for the determination of possible capping requirements.

The Asbestos Dust Mitigation Plan required by the EDCAQMD under Rule 223-2 must be submitted to the EDCAQMD for review and approval prior to the start of any construction activity. The ADMP is required to identify all the dust mitigation measures to be implemented before, during, and after any dust-generating activity. The ADMP must contain a plot plan showing the type and location of each project, the total area of land surface to be disturbed, expected start and completion dates, actual and potential sources of dust emissions, paved and unpaved roads, entrances and exits where carryout/trackout may occur, and traffic areas. Best Management Practices (BMPs) for controlling dust must be described for construction, material handling (including placement of excavated soils), carryout/trackout management, and blasting activities. Tables 1 through 6 in Rule 223-2 contain an extensive list of BMPs for controlling NOA dust emissions. The potential for NOA to become airborne is controlled through specific soil management techniques that include, among others, controlling visible emissions as specified by Rule 223-2, wetting disturbed soils and/or application of chemical dust suppressants prior to, during, and after grading.

Some individuals were of the opinion the Draft EIR should have included the ADMP required by Mitigation Measure AQ-4 and Rule 223-2. Approval and enforcement of the ADMP is the responsibility of the EDCAQMD, and the ADMP contains performance standards pertaining to controlling dust potentially containing NOA. The applicant is requesting approval of a specific plan, which shows land use designations and basic infrastructure. Until a tentative map and improvement plan is approved by the County for each project under the specific plan, the exact locations where construction activities that could generate dust are unknown. It would therefore be speculative and inappropriate to develop a site-wide ADMP at this time. Further, there is no requirement that the ADMP be submitted to the public for review. The EDCAQMD does not require that the ADMP be developed for use in a CEQA document. The performance standards for the content of an ADMP are set out in Rule 223-2 and, by reference in Mitigation Measure AQ-4. The Draft EIR has not impermissibly deferred mitigation.

There were also comments that air sampling and reporting be performed during construction activities. EDCAQMD does not typically require air quality monitoring and based on available information, is not expected to impose this requirement on the proposed project. By requiring an ADMP, the EDCAQMD assumes NOA may be present, and by controlling dust emissions through the use of BMPs that are identified in the ADMP and required by subdivision 6 of Rule 223-2 (i.e., 223.2.6), there is not a compelling reason to require air monitoring. EDCAQMD's Rule 223.2 and required ADMP are some of the most stringent NOA dust control requirements in the state. While air quality monitoring is not expected to be required, AQMD staff will frequently conduct observations at the site during routine dust patrol.

The EDCAQMD's Senior Air Pollution Control Specialist surveyed all of the air districts in California for their NOA regulations and found that the majority don't do any more than what is required by the California Air Resources Board's Airborne Toxic Control Measures (ATCMs - 17 CCR 93105). In fact, there were only 3 other districts that have a NOA-specific rule: Lake County Rule 467 (the ATCM is more restrictive); Placer County Rule 228; and South Coast Rule 1414 (the ATCM is more restrictive).

EDCAQMD Rule 223.2 is more restrictive than the ATCM in many ways. An ADMP is triggered under Rule 223.2 when 20 cubic yards of earth or more are disturbed, whereas the ATCM only applies when 1 acre or more is disturbed. Rule 223.2's visible emissions test is 0% opacity at property line and 25 feet from the point of origin and no more than 20% at the point of origin while ATCM is just no visible emissions at property line. Rule 223.2 requires warning signs be posted at site while ATCM does not. Under Rule 223.2, the ADMP must be kept on-site whereas ATCM does not require that. Trackout must be removed immediately under Rule 223.2, but the ATCM only requires removal at end-of-the-day or once-a-day. Disposal of soil removed from the site must be documented and covered with 2 feet of soil or hardscape under Rule 223.2, whereas the ATCM has no such requirement. Both Rule 223.2 and the ATCM require vegetative cover and 3 inches of non-NOA material post construction, but Rule 223.2 requires 12 inches in residential areas with NOA >0.25%. Rule 223.2 requires large operations of 50 or more acres to document daily dust control measures taken, have a dust supervisor onsite or available within 30 minutes, while the ATCM has no requirement. Additionally, every ADMP is required to test for NOA either before (required for pools) or after unless they assume that NOA is >1% and they mitigate in the various ways allowed by Rule 223.2. The ATCM does not explicitly require testing. There are no areas of the ATCM that are stricter than EDCAQMD Rule 223.2.

Master Response 4. Mitigation Monitoring and Reporting Program (MMRP)

There were several comments that requested more information on how the County intends to ensure the project applicant complies with the mitigation measures in the EIR. Concerns were also expressed by some individuals regarding the County's past record of monitoring mitigation compliance for approved projects. While the latter is not a comment on the adequacy of the analysis and conclusions in the Draft EIR and RDEIR for the CEDHSP, it is addressed herein to inform the decision-making process. The County's responses to each of these topics are addressed below.

CEQA Requirement for Mitigation Monitoring and Reporting Program

CEQA Section 21081.6(a) requires lead agencies to adopt a Mitigation Monitoring and Reporting Program (MMRP) to describe measures that have been adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. An MMRP is required for the CEDHSP project because the EIR has identified significant adverse impacts, and measures have been identified to mitigate those impacts. The MMRP lists the mitigation measures identified in the EIR and specifies the implementation and monitoring responsibilities for each of those measures. As the lead agency, the County of El Dorado will be responsible for monitoring compliance with all mitigation measures. The MMRP required by CEQA is not required to be included in the EIR. It is a stand-alone document that will be adopted by the Board of Supervisors in conjunction with project approvals. Any mitigation measures adopted by the County as conditions for approval of the project will be included in an MMRP to verify compliance. The MMRP shall be recorded with the County Recorder's and shall remain in effect until the completion of the project.

The CEDHSP document itself recognizes that mitigation measures from the EIR will need be implemented, and it establishes the mechanism for compliance with the mitigation measures. As set forth in Section 9.2.5 in the Implementation and Administration chapter of the CEDHSP, the County will review all subsequent project entitlement applications for consistency with the CEDSHP and ensure the implementation of the EIR mitigation measures pursuant to the Mitigation Monitoring and Reporting Program approved by the Board of Supervisors. Adopted mitigation measures from the MMRP will either be incorporated into the policies and implementation provisions of the CEDHSP or will be appended to the CEHDSP.

County Process for Ensuring Compliance with Mitigation Measures

To ensure the effectiveness of the mitigation measures, the County will continue to apply current practices in enforcing each measure from the adopted MMRP for CEDHSP. A master copy of the MMRP and all related documentation shall be maintained continuously in verification of the progress and status of the mitigation measures implementation. Applied as condition of approval, each measure shall be monitored, coordinated, and verified by County staff during the review and prior to the approval/issuance of the specified development/permitting phase (e.g., review of Tentative Map, Planned Development, Improvement Plans, Grading Permit, or Final Map). Completion of each mitigation measure shall be documented and signed off by an authorized County staff. The MMRP shall be recorded and filed with the County Recorder's Office. For this project, an MMRP fund may be established requiring a deposit to sufficiently cover the continuous staff effort in maintaining an effective implementation and enforcement of the mitigation measures.

Comments and Responses—Individual Parties

LETTER I-1

From: **Brannam, Robert J** <robert.brannam@rocket.com>
Date: Tue, Nov 24, 2015 at 1:28 PM
Subject: [cedhsp] Central El Dorado Hills Specific Plan
To: "cedhsp@edcgov.us" <cedhsp@edcgov.us>

Mr. Pabalinas,

I oppose the proposed Central El Dorado Hills Specific Plan. As a life-long resident of El Dorado County, I am disappointed by the excessive development and its impact on our rural lifestyle. When I look around my current home in El Dorado Hills, I can see many acres of hillside already being developed. I know the traffic will continue to get worse, and I know that there is already not enough water to satisfy the needs of the existing residents of our county. I therefore oppose the proposed plan and any similar plan that increases the population of the county. Thank you for your time. I-1-1

Rob Brannam

6021 Ventura Way

EDH, CA 95762

Response to I-1, Robert Brannam, 11/24/2015

I-1-1: The commenter expresses his opinion on the merits of the proposed project, but does not address the analysis or conclusions of the Draft EIR. The commenter also expresses concerns regarding development, impact on rural lifestyle, traffic, water availability, and population increase as a result of the proposed project. Development is addressed in Section 3.9, *Land Use* and Section 3.11, *Population and Housing* of the Draft EIR. Visual impacts are addressed in Section 3.1 and traffic is discussed in Section 3.14, *Traffic and Circulation* of the Draft EIR. A water supply assessment (WSA) was conducted for the project and approved by the El Dorado Irrigation District (EID). The results of this study are summarized in Section 3.12, *Public Services and Utilities* of the Draft EIR. Population increase is discussed in Section 3.11, *Population and* Housing of the Draft EIR. All of these topics have been addressed, and the comment does not include new information or suggest additional analysis that should have been considered. Therefore, no further response is necessary.

LETTER I-2

From: **'Craig Petersen' via DS-Central El Dorado Hills Specific Plan-m**
<cedhsp@edcgov.us>
Date: Thu, Dec 10, 2015 at 1:52 PM
Subject: [cedhsp] CEDHSP Public Comment
To: cedhsp@edcgov.us

Please see attached public comment on the CEDHSP DEIR.

Sherrie Bunk-Petersen
916-933-1048

LETTER I-2

Rommel Pabalinas
Senior Planner El Dorado County Community Development Agency
Long-Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

Topic: CEDHSP Draft EIR Comments

I am a 33 year resident of El Dorado Hills. This communication is to address the negative impact the proposed CEDHSP project will have on air quality, traffic, community aesthetics and biological resources.

Changing the zoning of the El Dorado Hills golf course, which is current zoned for recreation, to allow 1,000 dwelling units to be built along El Dorado Hills blvd, will add approximately 2,000 new residents and cars. The proposed CEDSP project will decrease open space, increase traffic on Hwy 50 and El Dorado Hills Blvd, decrease opportunities for greater recreation, and strain an already limited water supply during drought years. None of these issues are resolved in the DEIR for this project. After reading the draft EIR, I feel that Parker Development's proposed mitigation measures (MM) on the issues addressed below, are inadequate. I-2-1

Aesthetics
Substantial adverse effect on scenic vista.
MM: Apply aesthetic design treatments to building.
El Dorado Hills will experience substantial damage to our scenic resources, including but not limited to the trees, rock outcroppings, scenic hillside vista, seasonal creeks and ponds on the 341 acres. History has shown the residents of El Dorado Hills that Parker Development's view of "aesthetic design" is not consistent with our vision for the community. Parker Development's view of aesthetic design has turned El Dorado Hills into Daly City. This MM is too broad. It allows too much interpretation of what is aesthetic. I-2-2

Air Quality
Exposes community to substantial increase in carbon monoxide and ozone precursors during operation.
Exposes community to substantial increase in diesel particulate matter during construction.
MM: None I-2-3

Biological Resources
Loss of riparian woodlands, oak woodland habitats and canopy, and seasonal wetland.
MM: Install construction bearers and compensate for loss
How is Parker Development going to compensate the community for the loss of 341 acres of oaks, seasonal creeks, ponds, wetland, riparian woodlands, wildlife habitat and bird nesting sites? I-2-4

Traffic
Conflict with measures of effectiveness for performance of the circulation system.
MM: Funds to improve various intersections.
Improvement of the intersections noted in the DEIR will not affect traffic flow to any significant degree as these Intersections have already substantially improved.

Conflict with applicable congestion management, level-of-service standards and travel demands measures by the county congestion management for designated roads and highways. I-2-5

MM: No Impact
Adding 2,000 more cars on to El Dorado Hills blvd/Hwy 50 during peak hours will impact measure Y policies that prohibit residential development projects of five or more units causing, or worsening, Level of Service (LOS) F traffic congestion during weekday, peak-hour periods. El Dorado Hills blvd already has bumper to bumper traffic at peak hours. I-2-6

Regards,

Sherrie Bunk-Petersen
El Dorado Hills Resident

Response to I-2, Sherrie Bunk-Petersen, 12/10/2015

I-2-1: The commenter states that allowing 1,000 dwelling units on the El Dorado Hills golf course will add approximately 2,000 residents, resulting in a decrease of open space, an increase of traffic and a strain on the water supply in a drought. As noted in the project description and the Central El Dorado Hills Specific Plan (CEDHSP), 1,000 dwelling units are proposed for the entire plan area, which includes both the Serrano Westside and the Pedregal properties. A total of 763 dwelling units are proposed for the Serrano Westside property, which includes the former golf course. Impacts related to traffic are discussed in Section 3.14, *Traffic and Circulation* in the Draft EIR and in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR, and all impacts were found to be less than significant with mitigation. Impacts related to water supply are discussed in Section 3.12, *Public Services and Utilities* under Impact PSU-6, which was determined to be less than significant as adequate water supplies are available for the project under normal water year and drought year conditions. Impacts on recreation are less than significant as discussed in Section 3.13, *Recreation*. Open space is also addressed in discussions related to visual resources (Section 3.1, *Aesthetics*) and biological resources (Section 3.3, *Biological Resources*) and these impacts are less than significant with mitigation incorporated. The comment includes a general statement that the proposed mitigation measures are inadequate, but no suggestions for how the measures could be improved are provided. Additionally, CEQA does not require that all impacts be mitigated, only that they be mitigated where possible and, where not possible, they be disclosed (Section 15126.2 of the CEQA Guidelines).

I-2-2: Aesthetics impacts are evaluated in Section 3.1, *Aesthetics*. The commenter expresses the opinion that Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas, on page 3.1-12, is inadequate, that the developer's idea of aesthetic design is not consistent with that of the community, and that the measure is too broad. The mitigation measure identifies specific shades for building facades and roofs that are intended to reduce visibility. This measure has been revised in the Final EIR to include enforcement in the Conditions, Covenants and Restrictions (CC&Rs), and inclusion of these design standards in the CEDHSP (see Response to Comment **I-11-10**). Prior to building permit issuance, the County would require documentation that the design standards and/or CC&R requirements for design have been incorporated into site plan. The commenter does not provide any examples of how the mitigation measure could be improved, so no further response can be provided. County staff agrees with the commenter that aesthetic design is a matter of opinion. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process.

I-2-3: The commenter notes there is no mitigation for certain air quality impacts. The Draft EIR evaluates impacts related to carbon monoxide (CO), ozone precursors, and diesel particulate matter (diesel PM) in Section 3.2, *Air Quality*. The proposed project would not result in CO emissions that would exceed El Dorado County Air Quality Management District (EDCAQMD) standards, as stated in Impact AQ-4c on page 3.2-31 of the Draft EIR, and as analyzed using 2017 traffic data (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this Final EIR). Therefore, the impact would be less than significant, and mitigation measures are not required. Impacts related to ozone precursors during operation are evaluated in Impact AQ-2b on pages 3.2-25 through 3.2-27. As stated on page 3.2-27, CEDHSP policies would contribute to substantial ROG and NOx reductions. The policies included in the CEDHSP are consistent with EDCAQMD-recommended strategies to reduce operational criteria pollutants. However, as determined in Impact AQ-2b, because there are no feasible mitigation measures available that would reduce the impacts to less-than-significant levels, the impact would remain significant and unavoidable. Diesel PM impacts are evaluated in Impact AQ-4a on page 3.2-29. This impact has been revised in Chapter 3 of this document to clarify that mitigation measure AQ-2b would reduce this impact to a less-than-significant level as indicated in the text.

CEQA does not require that all impacts be mitigated, only that they be mitigated where possible and, where mitigation is not possible, they be disclosed (Sections 15126.2 and 15126.4 of the CEQA Guidelines). The Draft EIR complies with this requirement. A statement of overriding considerations is necessary where a significant impact cannot be mitigated (Section 15093 of the CEQA Guidelines), such as for ozone precursors.

I-2-4: The commenter asks how Parker will compensate for the loss of 341 acres of biological resources. Section 3.3, *Biological Resources*, includes thorough discussions of impacts on wildlife, wildlife habitat, and sensitive biological communities. As discussed in Chapter 2, *Project Description*, and shown in Table 2-2 on page 2-8 of the Draft EIR, the proposed plan area encompasses 341 acres and includes 130 acres of open space. Therefore, the project would not result in the loss of 341 acres of any biological resource. Temporary and permanent impacts on all biological resources are identified in Section 3.3.2, beginning on page 3.3-31. The Draft EIR discusses impacts for the following resources and identifies mitigation measures that conform to agency requirements to avoid, mitigate, or compensate for habitat and species impacts.

- Riparian woodland: Impact BIO-2 on page 3.3-38 states that up to 2.40 acres of riparian woodland would be removed for construction (a permanent impact). Mitigation Measure BIO-2 on page 3.3-39 states that the applicant may either purchase offsite credits or prepare and implement a riparian restoration plan, or implement a combination of these approaches.
- Jurisdictional wetlands: Impact BIO-3 on page 3.3-40 states that up 0.072 acre of seasonal wetland, 0.130 acre of seasonal swale, and 0.126 acre of seep would be filled as a result of construction, resulting in a loss of 0.328 acres of jurisdictional wetland. Mitigation Measure BIO-3b on pages 3.3-41 and 3.3-42 states that the applicant would compensate through a combination of mitigation bank credits and restoration/creation of habitat.
- Other waters of the United States: Impact BIO-4 on pages 3.3-42 and 3.3-43 states that up to 0.039 acre of perennial creek, up to 0.236 acre of intermittent drainage, up to 0.077 acre of drainage/roadside ditch, and up to 2.261 acres of pond would be permanently affected by construction of the project. Mitigation Measure BIO-4, on pages 3.3-43 and 3.3-44 states that the applicant would compensate through a combination of mitigation bank credits and restoration/creation of habitat.
- Special-status plants: Impact BIO-5 on pages 3.3-44 and 3.3-45 indicates that no known special-status plants were located within the plan area, but Mitigation Measures BIO-5a and BIO-5b require additional surveys and avoidance of, and compensation for impacts on, special-status plants. Mitigation Measure BIO-5b on pages 3.3-45 and 3.3-46 requires that the applicant compensate by transplanting or seeding in appropriate habitats within open space areas if avoidance is not possible.
- Listed vernal pool branchiopods: Impact BIO-17 beginning on page 3.3-62 discloses the potential for impacts on these species as a result of offsite improvements. Mitigation measures are provided to avoid and minimize this potential impact. Mitigation Measure BIO-17b on page 3.3-63 requires the applicant to purchase credits at an approved mitigation bank if listed vernal pool branchiopods are present in offsite improvement areas and avoidance is not possible.

Specific details on mitigation, including compensation, are provided in the Draft EIR as noted above. All other impacts on biological resources are anticipated to avoided or minimized.

I-2-5: The commenter states her opinion that the improvements identified in Mitigation Measures TRA-1a (Francisco Drive/El Dorado Hills Boulevard) and TRA-1b (US 50/El Dorado Hills Boulevard and US 50/Silva Valley Parkway interchanges) in the Draft EIR would not affect traffic flow at these intersections because the intersections have already been substantially improved. An updated traffic impact study was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives (see Chapter 3, *Changes and Errata to the Draft EIR and Partial Recirculated Draft EIR*). The 2017 updated traffic impact study included a near-term transportation impact analysis to the year 2027. The 2017 study indicated that the Francisco Drive/El Dorado Hills Boulevard operates at an acceptable level of service under existing and near-term conditions. The commenter appears to be referring to the payment of Traffic Impact Mitigation (TIM) fees as mitigation for impacts on intersections that have been or will be improved by the time the project is constructed. Both of these improvements have been completed. Analysis, as revised by this Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and Partial Recirculated Draft EIR*) indicates that both of these intersections operate at acceptable levels of service with the improvements, and do not require mitigation that would require additional physical improvements beyond those already completed. The applicant is obligated only to pay its fair share towards the already-constructed improvements, which is handled through the County's TIM fee program and is a condition of approval on the project.

The County has no congestion management plan or travel demand measures and therefore the project cannot conflict with them.

I-2-6: The commenter asserts that adding 2,000 cars to the El Dorado Hills Boulevard/Hwy 50 interchange will conflict with Measure Y policies (as adopted in 2008) and notes that there is no mitigation measure for this impact. Measure Y has been incorporated into the County General Plan under Goal TC-X as Policy TC-Xa, as revised by Voter Initiative Measure E (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*). As shown in Table 3.14-7 on page 3.14-25, Table 3.14-8 on pages 3.14-26 and –27, and Table 3.14-9 on page 3.14-28 of the Draft EIR, the only locations on El Dorado Hills Boulevard that reach LOS F are the El Dorado Hills Boulevard/Francisco Drive intersection and the Latrobe Road/Town Center Boulevard intersection in evening peak hour. These impacts are discussed in Impact TRA-1 on pages 3.14-24 and 3.14-27 of the Draft EIR, respectively, as revised in this Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR)*. Results of the 2017 updated traffic analysis, which includes an analysis of near-term (2027) conditions, indicate that these intersections operate acceptably with the recently completed improvements, which are described in the EIR, and Mitigation Measures TRA-1a and TRA-1b described in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Because the project does not cause or worsen LOS F traffic, the provisions of Measure Y policies, as revised by Voter Initiative Measure E are not applicable. However, both measures require payment of TIM fees, which would be required for the project. Other than speculation, the commenter does not provide any data or analysis that contradicts the conclusions of the Draft EIR regarding these two intersections.

LETTER I-3

Central El Dorado Hills Specific Plan EIR

Comment Card

Informational Open House · December 2, 2015 6:00 PM

Air Pollution Concerns

Comments

Please analyze the effect on children and adults ~~of~~ from the greenhouse gas emissions caused by traffic on HWY 50 near the proposed park and also from building high density homes along Silva Parkway. Please show short and long term effects. Emissions caused by traffic Consist of carbon Dioxide, carbon monoxide, nitrogen oxides, VOC, and small dust particles. I-3-1

Please provide statistics on air pollution from cause and the effect of consumers in these high density areas who will be using paints, cosmetics VOC is released and pet fertilizer and cleanser use cause ammonia emissions I-3-2

Name

Charlet Burcin

Address

2650 Mormon Island Drive

EDH 95762

If you would like to mail your comments, please send them to:

Mel Pabalinas, Senior Planner
El Dorado County Community Development Agency
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
Fax: 530-642-0508
E-mail: Rommel.Pabalinas@edcgov.us

Comments (continued from front):

Also, what is the analysis of the effect of air pollutants upon residents from smokers who emit carbon dioxide and carbon monoxide in this increase of high density, new residents. I-3-3

Dust particles derive from traffic. Please analyze the amount to be released from the increased traffic flow in EDH and how long it will take to cause summers smog and cause upper, serious, respiratory tract problems. I-3-4

I moved here due to the smog and high contaminants in the Bay area. As a consequence from living there, I developed asthma. My asthma has been declining here and I am concerned about the above. Thank you!

Response to I-3, Charlet Burcin, 2/8/2016

I-3-1: The commenter requests that effects of emissions on children and adults be analyzed. Sections 3.2, *Air Quality*, and 3.6, *Greenhouse Gases*, (as revised in the Partial Recirculated Draft EIR), analyze criteria pollutant and greenhouse gas (GHG) emissions associated with construction (short-term) and operation (long-term) of the proposed project and their potential impact on sensitive receptors (including children and adults). As discussed in Impact AQ-2a beginning on page 3.2-22 of the Draft EIR, construction-related criteria pollutant emissions would not exceed the EDCAQMD significance thresholds with implementation of Mitigation Measures AQ-2a through AQ-2c. The potential for sensitive receptors to be exposed to increased health risks during construction is evaluated in Impact AQ-4a on page 3.2-29. Construction emissions would be spread among multiple construction sites and, therefore, would not be concentrated at a single receptor location. Moreover, construction emissions would be short-term and mitigated through the implementation of best available control technologies (pursuant to Mitigation Measure AQ-2b, page 3.2-25 of the Draft EIR and as described in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR). Accordingly, construction activities are not anticipated to result in an elevated cancer risk for exposed persons or exceed the EDCAQMD significance thresholds.

Once the project becomes operational, reactive organic gases (ROG) would exceed the EDCAQMD pollutant threshold of 82 pounds per day. Particulate matter (PM) emissions may also exceed EDCAQMD's concentration-based significance criterion. The CEDHSP includes several policies that would reduce operational criteria pollutant emissions. These policies are consistent with EDCAQMD-recommended strategies to reduce operational criteria pollutants. However, as determined in Impact AQ-2b, because there are no feasible mitigation measures available that would reduce the impacts to less-than-significant levels, the impact would remain significant and unavoidable. The potential for operational ROG increases to cumulatively affect the formation of tropospheric ozone, which can have corresponding public health impacts, is assessed in Impact AQ-3, which concludes that operation of the project would result in a cumulatively considerable impact. Additional information on potential health effects from exposure to criteria pollutants has also been added to Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR. Please also refer to Response to Comment **I-11-38.**

With respect to GHG emissions, Impact GHG-1a on page 3-15 of the Recirculated Draft EIR (RDEIR) indicates that construction emissions would not exceed the regional draft threshold of 1,100 metric tons carbon dioxide equivalent (CO_2e per year). Once the project is operational, long-term CO_2e emissions may exceed this threshold, as well as the adopted 2035 efficiency indicator. Mitigation Measure GHG-1 identifies CEDHSP polices that would be expanded to reduce operational GHGs, although project emissions would still contribute to a cumulatively considerable impact.

I-3-2: The commenter requests statistics on consumer-generated ROG emissions. As discussed in Response to Comment **I-3-1**, the operational emissions analysis estimates ROG generated by area sources, which include consumer product. Total operational ROG emissions would exceed the EDCAQMD pollutant threshold of 82 pounds per day, as noted in Impact AQ-2b beginning on page 3.2-25 of the Draft EIR. Because the majority of ROG emissions are generated by personal consumer products and architectural coatings on private residences, there is no additional feasible mitigation to reduce emissions. Please refer to Appendix C, *Air Quality Model Output (Construction Output/Emissions)* in the Draft EIR, for the operational modeling outputs, which include ROG emissions by individual source category (e.g., consumer products, landscaping equipment).

I-3-3: The commenter requests an analysis of air pollutants from smokers. Analysis of cigarette use on private property is outside the scope of CEQA analysis. State and local regulations related to second-hand smoke in public areas would apply to the project area.

I-3-4: The commenter requests an analysis of particulate matter from increased traffic and expressed concern about health impacts. As discussed in Response to Comment **I-3-1**, the operational emissions analysis estimates criteria pollutants from mobile sources, including re-entrained road dust from increased vehicle miles traveled. Table 3.2-8 on page 3.2-26 of the Draft EIR presents the results of the emissions modeling and indicates that PM emissions may exceed EDCAQMD's concentration-based significance criterion. The CEDHSP includes several policies that encourage alternatives to single-occupancy vehicle trips. These policies would reduce operational emissions, including re-entrained road dust, from mobile sources. Potential cumulative air quality and human health effects from increased regional PM emissions are assessed in Impact AQ-3 beginning on page 3.2-28 of the Draft EIR and Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR. The analysis concludes that, even with mitigation, operation of the project would result in a cumulatively considerable impact. No additional mitigation measures are feasible. The commenter's concern is noted and will be considered by the Board of Supervisors during the decision-making process.

LETTER I-4

February 18, 2016

16 FEB 19 PM 12: 02

RECEIVED
PLANNING DEPARTMENT

John F. Burns
3203 Ridgeview Drive
El Dorado Hills, CA 95762

Rommel Pabalinas

Long Range Planning Division

El Dorado County Community Development Agency

2850 Fairlane Court, Building C

Placerville, CA 95667

Subject: Comments on the Central El Dorado Hills Specific Plan Area

Dear Mr. Pabalinas:

There are so many problems with this flawed document it is hard to know where to start. Please have your consultant firm answer my questions explicitly and completely; a simple "comment noted" is not adequate.

1. First, who came up with the idea of jumbling two totally non-related projects into a single specific plan? Was it the developer's idea, hoping to sneak something through the process, and hoping the public would be so overwhelmed by 600 plus pages of text that you would not get many comments?
2. Each of the two project areas (the Golf Course and Pedregal) has unique issues; it does a huge disservice to all to not investigate each area separately and prepare separate analyses. Can you rationally explain the creation of this combined project entity for the document when the developer himself held meetings on separate projects a couple of years ago? I-4-1
3. Proximity of the two separate projects is not valid as a reason for mixing apples and oranges. What is the reason for this mystifying joining of separate projects? Could this not be regarded as inherently deceptive? Please explain in detail how combining these two separate projects is appropriate and meets EIR requirements.
4. Traffic is the biggest issue of all—why should the developer not pay for all the infrastructure improvements needed for now and in the future? Adding thousands of more daily trips to this small area with one main road seems to be a prescription for even more gridlock. Should not consideration be given to widening EDH Boulevard and patching up roads in the area Roads in the area I-4-2

are severely deteriorated and the traffic is horrendous, particularly in the mornings. I-4-2 cont.

5. Does not adding two thousand (roughly two cars per proposed household) more vehicles to an already overburdened EDH Blvd irrevocably alter the quality of life for current residents? What is the effect on property values? Existing values will be negatively affected if residents cannot easily access the freeway, and that's what will happen as existing homes will be further from the freeway than the proposed large number of new homes. How are existing home owners going to be compensated for the negative effect on their property values? What traffic plans are you proposing to fully mitigate the enormous effects of increased traffic on EDH Blvd and connecting streets? I-4-3
6. I see no discussion of the effect of the noise caused by the freight flights into Mather. These flights go directly over the project area several times a day, disrupting the sleep and other activities of residents. Why was this issue not analyzed? Since the County gave in on the noise issue and did not work toward getting the flights and freight moved to Sacramento International Airport, the impact of these flights should be considered as the number of proposed flights increases. In the Christmas season, one can be expected to be awakened in the early morning several times. What effect will that have on the proposed new residents? Are the developers planning to disclose the noise information to all new residents? Everyone in the Central EDH Specific Plan Area will be affected by the noise—why did the environmental document not analyze this impact? I-4-4
7. The entire slope comprising the Pedregal project portion is one of the last tracts of intact oak woodland left in this area. What will be done to replace it?
8. What will happen to the abundant wildlife in the project area? Are the wildlife populations to be eliminated? Are there not endangered species included in the area? What are plans to handle any endangered or protected wildlife? Past development projects in the region have adversely affected wildlife? Is this project going to have the same result? I-4-5
9. The entire Pedregal area is a huge system of wetlands, with many springs and seeps. The small drainages are numerous, and the overall tally of wetlands needs to reflect the entire area. Roadways across the project area will damage this system irreparably. How do you justify the overall impacts to the system? What will be done to preserve these important wedlands?
10. The plan for the Pedregal area seems to be an attempt at piecemealing -- in other words, getting approval for part of your planned development, ruining the wetland system and negatively affecting other resources with the development proposed, then claiming it is okay to do the rest because the system is so damaged. Why is the entire plan for Pedregal not shown? Can this EIR be properly evaluated when much of the plan is unknown? I-4-6
11. We all know that many additional residences are planned in Pedregal—we have a 2013 map showing what the developer plans to do to the entire site. Is it not disingenuous to fail to discuss future impacts on the environment now for

everything planned, instead of ostensibly pretending this is all that the developers are doing? In fact, does not the failure to reveal future plans for the property invalidate this analysis? What specifically does the developer plan for the rest of the Pedregal site? Is there a change from the 2013 plan? Why is this not explicit? I-4-6 cont.

12. What does the US Army Corps of Engineers say about this attempt at piecemealing and its effect on the permit process? At what point will the Corps be told about the rest of the plans for development? This is one agency, unlike the local ones, that does look at a bigger picture and will likely disallow this shallow attempt at under-representing the impacts to the wetlands and other resources. Rest certain that the Corps will be informed of all attempts that may be made to circumvent the appropriate and detailed process, and they are certain to request that you do a valid analysis. Why isn't this complete analysis done now? Shouldn't this document be withdrawn and resubmitted only when the analysis is adequately informative and complete? I-4-7
13. Where is a list of what part of this document each participant from your consultant firm prepared, as well as a full description of their education and experience as it relates to this part of northern California? ICF is an international firm. Were people brought in from their Little Rock or Burlington offices (or possibly their office in Nairobi) who do not have local experience in this geographical area, nor the correct degrees for the sections they wrote?
14. Indeed, why was the whole document managed by an archeologist and not a firm principal with an advanced degree in planning or environmental science? Might it not seem very lightweight and unprofessional to use someone from a specific sub discipline to manage a large project with important issues in many areas outside of this person's probable expertise. How is this person qualified to manage the overall project? I-4-8
15. Did this document cost the developer a lot less by using lower level staffers? Are your archaeologists and other social science staff experts in all areas and can be assigned to any task, adequately handling this complex project here in California with no local experience or training? This entire document seems poorly done, is rife with errors, and is woefully incomplete. Where is the list of each staffer who worked on this document? What are the specific qualifications and experience of each person who worked on this document and what section did they prepare? Is the document inadequate due to the use of unqualified personnel? Maybe all the right people were used to do the work and are highly qualified with good local training, but who could ever tell?
16. In 1992, the previous landowner was told that several of the cultural sites were significant and needed to be fenced off before any work occurred on the property. Why is fencing not still the recommendation? Too many accidents occur even with a monitor. Monitoring is not adequate protection for NRHP/CRHR eligible sites. Active measures for long term protection and preservation need to be included in this document. Why aren't they? I-4-9

17. Parker's predecessor company signed off on an MOA and management plan for all cultural resources on their Serrano property in the mid-1990s. This is what seems to be proposed now—do a plan, sign it off at some unknown point in the future. Could we get some idea of when this plan would be done and will it be for all sites on the property? Will it occur before any part of the project begins? If so then the developer needs to disclose his future plans and timing for all future development. The timing of the management plan is also a big question. Again, the vagueness of the cultural section makes it impossible to judge the adequacy of the measures proposed. I-4-10
18. What would be interesting is to see how well Parker followed through on his previous agreement for Serrano? Did he do all monitoring promised? Are the sites he promised to protect still protected? In the local community, people talk about things discovered and removed from Serrano while hiking Carson Creek. A good test of whether Parker would do the right thing might be disclosure of all efforts he has made under previous agreements with agencies for Serrano. Can he be trusted? Did he fulfill his responsibilities?
19. The cultural resource efforts are especially poor, considering the overall project manager is an archaeologist. The canned background for prehistoric background (page 3.4-6) is the wrong one; this project lies in the foothills, not the Sacramento Valley. If the document preparers can't be trusted to use the right pre-written background section in their corporate files, how can they be trusted to understand and present the proper evaluations and management for the cultural resources present?
20. For example, there are errors in their description of the Kyburz cabin, actually the Murphy cabin first (page 3.4-8). Kyburz did not build the place; it is on older maps as "Murphy's" cabin. Try again—do some real research? I-4-11
21. Again, an example of sloppiness—page 3.4-15, last line, says to submit the report to the Northwest Information Center. Why? This is not one of their counties of concern. This is simply wrong and calls into question every conclusion or proposed action in this document. What quality control measures were employed? Why are these errors allowed?
22. Same comment for page 3.4-16, Mitigation Measure CUL-1d. The Information Center covering the counties for the North Coast Range could care less about issues in El Dorado County. Did those who prepared this document not bother to do any editing? This degree of sloppiness suggests that the firm also works in the Northwest Information Center's area, and so it uses canned sections from other reports without taking time to edit or even review the applicability of the canned text to this specific project. To suggest this is poor work is an understatement.
23. Mitigation Measure CUL-1a: Again, more detail in needed about their proposed HPTP. And why an oral history? This could be considered laughable. Who would this be conducted with that knows anything about the sites? The sites have been on the property of non-Indians since the 1860s; who are you I-4-12

proposing to interview that would have any knowledge of value? Is there some 150-year old individual you have found to interview? Why can't the promised protocols be stated now? How will resources be protected? This is not enough information. I-4-12 cont.

24. The ethnographic area is identified in your text as Nisenan territory. Page 3.4-11, in the paragraph beginning "In addition to the…" there is another error of concern and contradiction. Addressing the eligibility of the "district," you state that the eligibility for the district is based on affiliation with the Miwok, "a federally recognized tribe." Who are you talking about? This is clearly not Miwok territory; it is Nisenan territory without doubt (one thing you had right in the background sections). With recent lawsuits over the tribal land ownership and group names in the region, it is important to be extremely careful about tribal designations. The person preparing this report used the wrong group name in the synopsis, and so there is a need to carefully re-write this section. A review of the ethnographic literature shows that only a small bit of El Dorado County lies in Miwok territory, along the Cosumnes River near Highway 49. The CEDHSPA lies quite a number of miles away from Miwok territory. I-4-13
25. The discussion of off-site improvements is woefully incomplete and vague, lacking sufficient detail to even begin to understand the scope or effect of these actions. Without knowing the off-site improvements and their potential impacts on cultural resources, this document is very premature and clearly represents a rush to develop. Why the hurry? Why is this document not complete? Why was it submitted with so many incomplete areas? Does this rushed submission have anything to do with the agenda for the Marble Valley project? I-4-14

Overall, there are numerous other errors and problems with this obviously rushed, vague and poorly written document. This document should be completely rewritten, with the errors and omissions addressed, and all of the issues completely discussed. I-4-15

Sincerely,

John F. Burns

Response to I-4, John Burns, 2/18/2016

I-4-1: The commenter expresses concern that two unrelated projects are being combined. As described in Section 2.3.2 of the Draft EIR, the proposed project was submitted to the County as one project with two planning areas: Serrano Westside (which includes more than the former golf course) to the east of El Dorado Hills Boulevard, and Pedregal to the west of El Dorado Hills Boulevard. CEQA defines a project as "an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (PRC 21065) and further defines a "private project" as "a project which will be carried out by a person other than a governmental agency, but the project will need a discretionary approval from one or more governmental agencies" (CEQA Guidelines 15377). CEQA does not provide restrictions on the adjacency of project components or direction on breaking up an applicant's proposed project into multiple parts for separate consideration.

Because both planning areas are considered part of the proposed project, inclusion of both planning areas in the Draft EIR is required under CEQA. Please see also Response to Comment **I-4-6** regarding the requirement to assess the whole of the project in the EIR.

The Draft EIR provided analysis for the entire project, including both planning areas. The comment does not include new information or suggest additional analysis that should have been considered. Therefore, no further response is required.

I-4-2: The commenter states that traffic is a big issue and suggests the developer pay for all necessary infrastructure. The Draft EIR addresses traffic and evaluates the project's traffic impacts in Impact TRA-1 (page 3.14-24) and in Section 5.2 (beginning on page 5-25), which identifies cumulative impacts. The traffic study was updated in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The results of the updated 2017 traffic study are presented in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. The updated traffic study indicates that the project would contribute to cumulative impacts. Mitigation Measure CUM-A, as revised in this Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*), require physical improvements to mitigate this impact, and the traffic analysis (Appendix L in the Draft EIR, as revised by the 2017 updated analysis and included in this Final EIR) shows that the improvements would result in acceptable levels of service.

Funding for improvements is on a fair-share basis. The process to establish mitigation fees is established in the State's Mitigation Fee Act (Government Code 66000 et seq.), which requires a technical analysis to demonstrate a nexus between the fee and the impact generated from projected future development. The County's TIM fee program was created to ensure that development fully pays for its fair share of impacts. Charging the project above and beyond its fair share would be contrary to Government Code Section 66000 and case law.

I-4-3: The commenter expresses concern about the effect of traffic on property values. Assessment of effects of changes in traffic volumes on property values is outside of the scope of an EIR under CEQA. Quality of life is a social concern and not an effect subject to CEQA analysis (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560). To the extent that the project-related traffic could result in physical effects on the environment, such as traffic conditions on local roadways, vehicle emissions, and noise, the Draft EIR provides a comprehensive evaluation of those impacts in full compliance with CEQA.

I-4-4: The commenter asserts that the Draft EIR did not address noise related to Mather Airport's freight flights; however, the Draft EIR evaluates noise impacts related to Mather Airport cargo aircraft flights in Impact NOI-5 on page 3.10-27. This impact addresses noise from overflight of flights to and from Mather Airport. Mitigation measures are identified, and the impact is stated to be significant even with implementation of the mitigation measures. Mitigation Measure NOI-5 requires notification to residents affected by noise from overflights. A statement of overriding considerations is necessary where a significant impact cannot be mitigated (Section 15093 of the CEQA Guidelines), and the County would need to adopt Findings of Fact supporting this determination and a statement of overriding considerations for this impact.

I-4-5: Biological resources and impacts are presented in Section 3.3, *Biological Resources*, including a specific description of seeps occurring in the Pedregal planning area. Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat discusses the project's permanent and temporary impacts on oak woodlands. Oak woodland is protected by policies in the County General Plan. For this project under General Plan policy 7.4.4.4, the County policy requires the retention of 80.15 acres of oak woodlands canopy and replacement for the loss of up to 14.15 acres of oak woodland canopy at a 1:1 ratio. This would be achieved through the implementation of the Important Habitat Mitigation Plan (IHMP) for the project. Should the Oak Resources Management Plan be in effect at the time development entitlement applications are submitted, the applicant would be required to implement at least one of the following options for oak woodlands: 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; In-lieu fee payment; Replacement planting on-site within an area subject to deed restriction or conservation easement; or Replacement planting off-site within an area subject to a conservation easement.

Impact mitigation requirements for individual native oak trees and Heritage Trees include: replacement planting on-site within an area subject to a deed restriction or conservation easement; replacement planting off-site within an area subject to a conservation easement or acquisition in fee title by a land conservation organization; in-lieu fee payment; or a combination of the options listed above. For the complete mitigation measure please see full text of Mitigation Measure BIO-1d in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*.

Please see Response to Comment **I-2-4** regarding impacts on special-status and other wildlife species. Cumulative impacts on special-status and other wildlife species are evaluated in the Draft EIR in Section 5.2.2 (pages 5-11 and 5-12). The Draft EIR is not required to "justify" wetlands impacts, but it is required to evaluate what the impacts would be and to identify mitigation. Wetlands impacts are presented in Impact BIO-3, and illustrated in Figure 3.3-1. Mitigation Measures BIO-1a, -1b, -1c, and -3a would avoid and minimize impacts on wetlands, and Mitigation Measure BIO-3b would compensate for the loss of wetlands resulting from project construction.

I-4-6: The commenter asserts that the plan for Pedregal should be considered an attempt at piecemealing and that the entire plan for Pedregal was not included in the EIR. As shown in Figures 2-2 through 2-7 in Chapter 2, *Project Description* of the Draft EIR, the entire Pedregal planning area was included in the project description and analysis. The Draft EIR (pages 2-7 through 2-9) provides specific details on the Pedregal planning area component of the proposed project. Table 2-1 on page 2-3 in the Draft EIR identifies the current land use designations and zoning for the Pedregal area. The Pedregal planning area was also specifically called out in the discussion of the project in the Notice of Availability and associated figures available on the County's website. The proposed project analyzed in this EIR represents a proposed change in the land use designations for the Pedregal planning area. While there are approved development designations for the Pedregal area, the current proposed project would change those designations to reduce the amount of development at that portion of the project site. Under the proposed project, the amount of development that would be allowed to occur in the Pedregal planning area (237 units, see Table 2-2 in the Draft EIR) would be less than the maximum General Plan development potential (624 units, see Table 2-1 in the Draft EIR). As required under CEQA, the Pedregal planning area is included in the Draft EIR to avoid the appearance of piecemealing (see Response to Comments **I-4-1** and **I-4-7**).

I-4-7: The commenter asks whether the U.S. Army Corps of Engineers (USACE) has been informed of the proposed project and its potential effects on the permit process and pertinent resources. USACE has been informed regarding the scope and extent of the project. As a Responsible Agency (meaning "a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration… [including] all public agencies other than the Lead Agency which have discretionary approval power over the project" [CEQA Guidelines 15381]), USACE has been consulted throughout the CEQA process to ensure that this EIR would serve their needs to issue/modify permits.

In March 2014, ECORP Consulting, on behalf of the applicant, submitted a Section 404 Individual Permit application for the entirety of the CEDHSP project area. Since then, the project manager at USACE has requested that the applicant revise the application to apply for a Nationwide 29 Permit (NWP) for the Pedregal planning area and an Individual Permit for the Serrano Westside planning area. The application modifications have been completed. ECORP has also had a number of meetings with the USACE Project Manager, and as a result of a June 2016 meeting, received an updated preliminary jurisdictional determination (PJD) for Serrano Westside, which includes those areas identified as offsite infrastructure. The approved PJD for Serrano Westside was granted on December 27, 2017. A PJD for the Pedregal property was received June 7, 2011. A request for a PJD covering the offsite wetlands associated with the Pedregal planning area was made in May 2016 in the NWP application and is expected to be granted during this process.

The Draft EIR evaluates the impacts on USACE-regulated wetlands. The analysis is based on numerous technical studies, including wetland delineations prepared in compliance with USACE requirements. All of the studies are listed in Table 3.3-1 on page 3.3-11 in Section 3.3, *Biological Resources*. As shown in that list, wetland delineations were prepared for the Pedregal planning area. Information pertaining to Pedregal was presented on page 3.3-16 through 3.3-19. Those reports were submitted to USACE, and USACE would use the information contained in this Draft EIR in conjunction with issuance of permits (see, for example, pages 1-5 and 2-14 in the Draft EIR where USACE's role is noted). Impacts on USACE-regulated wetlands and waters of the United States/waters of the State are analyzed in Impacts BIO-3 and BIO-4, respectively (page 3.3-40 through 3.3-43). This includes acres of permanent direct impacts and temporary and indirect impacts on wetlands and other waters.

The comment does not include new information or suggest additional analysis that should have been considered. Therefore, no further response is required.

I-4-8: The commenter requests a list of the preparers with qualification, education, and contribution. Chapter 6, *Report Preparers*, as revised in the Final EIR (see Chapter 3 of this document) presents the requested detail on preparers' qualifications. Each preparer's years of experience, education, and pertinent certifications or licenses have been included. This information does not affect or change the conclusions of the Draft EIR.

The commenter questions the qualifications of ICF's project manager and contributing staff. There are no requirements in CEQA for education or specialties of preparers of environmental documents, nor are there any requirements for residence or location. However, the ICF project manager has more than 10 years of experience managing multidisciplinary projects, the ICF project director holds an advanced degree in planning, and all preparers of the Draft EIR work in Northern California offices, primarily in Sacramento.

The commenter asserts the Draft EIR is poorly done, contains errors, and is incomplete. The Draft EIR has been revised to correct minor technical errors in response to this comment letter (see Response to Comment **I-4-11**) as well as other revisions that can be found in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*. The Draft EIR describes the proposed project, contains information on existing (baseline) conditions, discloses the impacts of the proposed project and identifies mitigation measures where required, discusses cumulative impacts and other topics required by CEQA, and includes an analysis of alternatives to the proposed project.

The comment does not include new information or suggest additional analysis that should have been considered. Therefore, no further response is required.

I-4-9: The commenter asks why fencing archaeological sites is not a recommendation. Fencing is included in Mitigation Measure CUL-1a (page 3.4-15 of the Draft EIR) under the third bullet point. Monitoring during construction is a widely accepted measure and common practice for potentially unknown resources. Long-term protection and preservation are included in Mitigation Measure CUL-1c on page 3.4-16.

I-4-10: The commenter asks about the timing of a plan for treatment of cultural resources. As discussed in Impact CUL-1 and Mitigation Measure CUL-1a in Section 3.4, *Cultural Resources* (pages 3.4-13 through 3.4-15), a Historic Properties Treatment Plan (HPTP) would be needed prior to issuance of the first grading permit for development in the Pedregal Archaeological District. The HPTP would be prepared as part of the Section 106 process that would be required in order to obtain a permit from USACE. The County would also require the HPTP to be completed in order for the applicant to obtain a grading permit. HPTPs would be prepared for all historic properties.

The County's plan for ensuring that mitigation measures are implemented is presented in the Mitigation Monitoring and Reporting Plan (MMRP) for the project, which is provided with the Final EIR. See also Master Response 4 (Mitigation and Monitoring).

I-4-11: The commenter asserts that the cultural resources discussion is poor, that the prehistoric background is incorrect, and that the discussion of the Kyburz cabin is incorrect, and points out typographical errors. The description of cultural resources on the project site and the evaluation of impacts presented in Section 3.4, *Cultural Resources*, are based on numerous site-specific, technical investigations and studies, which are listed on page 3.4-1 in the Draft EIR, as well as additional materials included in Section 7.2.4, *References: Cultural Resources*. These studies were prepared by professional consulting firms and/or individuals with expertise in archaeological, prehistoric, and historic resources following professional standards.

The project area is located in the Sacramento Valley subregion of the Central Valley archaeological region. These subregions are used to discuss prehistoric cultural patterns and this discussion is based on *California Archaeology* by Michael Morrato, which outlines patterns for the Sacramento Valley subregion and the Sierra Nevada Region. The Sacramento Valley subregion encompasses portions of the foothills of the Sierra Nevada, which includes the project site Therefore, the Draft EIR's description on page 3.4-6 is correct.

The commenter is referring to John Murphy's house, which, on historic maps, was in the southwest quarter of Section 34, T10N, R8E. It is different from Samuel Kyburz's house, which is at the southeast quarter of Section 34, T10N, R8E. The Draft EIR's description of the location of Samuel Kyburz's house (page 3.4-8) is correct.

The typographical error referring to the Northwest Information Center has been revised in the Final EIR to read "NCIC" (the acronym for North Central Information Center), matching references to the information center earlier in the section. This is a minor revision, which does not affect the analysis or conclusions in the Draft EIR.

I-4-12: The commenter questions the value of oral history as mitigation. Oral histories are routinely conducted as part of historical and ethnographical scholarly research. Individuals alive today can provide information passed down from generation to generation. As indicated in the Response to Comment **I-4-13**, below, the Shingle Springs Band of Miwok Indians have already provided some information on this area.

I-4-13: The commenter asserts that the Miwok affiliation in the area is erroneous. Native American consultation included discussions with the Shingle Spring Band of Miwok Indians and the United Auburn Indian Community (UAIC), who represent the Maidu (or Nisenan) as well as the Miwok tribe. During consultation, the Shingle Springs Band of Miwok Indians indicated that the area was used extensively by tribal members prior to the arrival of Euroamericans and the area was used prehistorically for habitation and resources procurement. The Shingle Springs Band of Miwok Indians also indicated a direct connection to the site by one of their tribal members. Note, as documented in the Prehistoric Background section on page 3.4-6 in the Draft EIR, Miwok expansion to this area occurred from about 1000 B.C. to A.D. 400 and Nisenan moved to this area between A.D. 400 to A.D. 1400. The Draft EIR's description of the ethnographic area is correct.

I-4-14: The commenter states that the discussion of off-site improvements is inadequate and vague. A description of the offsite improvements is provided in Section 2.3.3, *Project Features*, on pages 2-11 and 2-12 of the Draft EIR and illustrated in Figure 2-9. As indicated in Section 15146 of the CEQA Guidelines, "The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." The offsite improvements are addressed to the extent possible to disclose impacts of the project to the fullest degree possible. However, the exact locations of the improvements have not been determined and access to properties has not been obtained. The impacts of the offsite improvements are identified in the topical sections of the EIR to the extent possible given the level of detail available. For cultural resources, a records search and a sensitivity analysis was conducted. As noted in the description of fieldwork in Section 3.4.1 (page 3.4-10), the exact locations of the offsite improvements have not been established and access to the properties has not been obtained; therefore, it was not possible to survey these areas for cultural resources. Impact CUL-4 on page 3.14-17 discusses the potential impacts on cultural resources in the offsite improvement areas and mitigation measures to conduct surveys when alignments have been determined, perform construction monitoring, and stop work in case of accidental discovery of cultural resources or human remains are provided.

LETTER I-5

From: **john** <financialservices@sbcglobal.net>
Date: Mon, Nov 23, 2015 at 1:04 PM
Subject: build out in el dorado county
To: rommel.pabalinas@edcgov.us
Cc: Tea Party Patriots El Dorado Hills <tppedh@gmail.com>

I am 22 year resident of el dorado hills, 2563 Pendleton Dr. El Dorado hills.

I have an MBA in finance. I have taught Economics, Accounting, Finance, and other Business classes at various community colleges and universities in the area. I am Vietnam Veteran. I was raised in Colorado on a very large cattle ranch. I am qualified to discuss water issues and building issues.

I am troubled that the BOS and EID and the Planning commission failed to take the advice or the auditors of the 2000 comprehensive financial report and the 2009 report regarding water supply. In those reports it was recommended that you control building. It was brought to your attention in the audits that there will not be enough water to meet demands by 2020 under the current building growth and current projections. The audit and report in 2000 for 1999 was based on NO drought as we are experiencing now. IN the 2009 report it was stated that there is a problem with the supply of water to meet demands in a drought… There is no contingency plan for extreme droughts and what the county should do with respect to building. You are ignoring the obvious signs that demand will outstrip supply. You are ignoring the fact that federal government can demand that stored supply of water be released to Sacramento County and any entity that can show they have beneficial rights to the water that was stored from riparian water ways. You are obviously aware that the state is now on a path to control well drilling and pumping because of dwindling supply of surface and ground (aquifer) water. You ignored and miscommunicated facts regarding this case law. You failed to tell the public that the state can and the federal can force the distribution of the water.

I-5-1

You also failed to let the public know that increases in residential buildings and commercial buildings will create a demand for sewer and water treatment and that current residents will have to pay for those increases. This is witnessed in all the audited comprehensive financial reports.

You must place a moratorium on all building that has not begun and stop all future building permits from being issued until it can be determined that there will be enough water to meet demands in a severe drought and there will be enough water to meet demands by the year 2025.

John Cordova USMC 1964-1968

Response to I-5, John Cordova, 11/23/2015

I-5-1: The commenter is concerned about water supply and references the results of a 2000 comprehensive financial report and a 2009 report regarding water supply as they relate the County's procedure for approving development.

The Draft EIR evaluates water supply availability for the proposed project (Impact PSU-6 on pages 3.12-50 through 3.12-60 in Section 3.12, *Public Services and Utilities*). The analysis incorporates the results of a water supply assessment (WSA) specific to the proposed project prepared in compliance with California Water Code Section 10910, which requires a determination of whether projected supplies for the next 20 years will meet the demand for the project plus the existing and planned future uses. The WSA was included in the Draft EIR as Appendix K. The WSA concluded sufficient supplies are available under normal and drought-year conditions. See also Master Response 1 (Water Supply).

As noted in the discussion of Wastewater Treatment under Impact PSU-3 on page 3.12-40 of the Draft EIR, the proposed project would generate 0.21 mgd of wastewater, which when added to current demand (2.65 mgd) would not exceed the current capacity of the El Dorado Hills WWTP (4.0 mgd).

The commenter expresses concerns about the fiscal impact of providing water and sewer service to the proposed project. Fiscal impacts are addressed in the Specific Plan review process but are not a part of the requirements for evaluation under CEQA.

LETTER I-6

From: **John Crockett** <johnhcrockett@gmail.com>
Date: Tue, Dec 1, 2015 at 9:43 AM
Subject: Draft EIR Comments
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Mel:
When we bought in Serrano we were told of the two golf courses and other amenities of the community. These assurances of community amenities aided our decision to move here. Now that the community is largely built out and Parker Development instead of moving on to other projects appears to be considering ways to monetize assets for uses that were never allowed for in the zoning or planning of the community. I am for all uses that fall within the current zoning of the property. If they don't want to operate a golf course, ok but don't allow them to substitute other uses that require a rezone. As for myself and many other residents of this community, we do not want zoning changed to allow development requiring different zoning. I-6-1
Thanks, John

John H. Crockett
Cell 916-365-3493
johnhcrockett@gmail.com

Response to I-6, John Crockett, 12/1/2015

I-6-1: The commenter expresses his opposition to changes to zoning, particularly of the former golf course. This comment does not address environmental issues or the adequacy of the Draft EIR. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is necessary in the EIR.

From: **Terry Crumpley, CPA** <tlccpas@sbcglobal.net>
Date: Fri, Feb 19, 2016 at 4:45 PM
Subject: [cedhsp] Comments on the CEDHSP DEIR
To: cedhsp@edcgov.us
Cc: tlccpas@sbcglobal.net

Mr. Mel Pabalinas,

Attached you will find a full PDF file of my comments with attachments. Also included is the Word document of my remarks, without attachments.

I-7-1

I have blind copied the Board of Supervisors and the El Dorado County Planning Commissioners, as this issue is near and to my heart and to 91.04% of the EDH community. Nothing will negatively affect our community as detrimentally as this will.

Thank you,

Terry Crumpley, CPA

530.306.3748

LETTER I-7

El Dorado County
Development Services Department
Planning Division
2850 Fairlane Court
Building C
Placerville, CA 95667
C/O Rommel Pabalinas

Email: CEDHSP@edcgov.us

February 19, 2016

RE: CEDHSP DEIR Comments

Let's begin this comment discussion by addressing the elephant in the room.

Measure E was placed on the November 3, 2015 ballot by the El Dorado Hills Community Services District Board of Directors. This Measure was placed on the ballot by request of the community. There is a deep love and kinship with the ~ 100 acre Old Executive Golf Course which is in the heart of the CEDHSP/The El Dorado Hills community. Many have played on this golf course. This iconic Executive Gold Course was designed by Robert Trent Jones, one of the most prolific American golf course designers.

The El Dorado Hills community feel that if this particular portion of the CEDHSP is approved to be rezoned and developed, it would change the character and the open space available in the El Dorado Hills community forever. Measure E asked the following simple question: I-7-2

Should the El Dorado County Board of Supervisors re-zone the approximately 100 acres of the former Executive Golf Course in El Dorado Hills from its current land use designation as "open space recreation" to a designation that allows residential housing and commercial development on the property?

A copy of the results are attached, but I will share them here as well. Per the El Dorado County Elections website http://www.edcgov.us/elections/election/102/102.pdf as of November 10th, the Final result was an astounding 91.04% voted NO – that is, to NOT rezone the Old Executive Golf Course property, with an overwhelming non-election year turn-out of 40.7% of the eligible El Dorado Hills voters.

Many of the reasons why voters likely voted this way can be addressed through the CEQA document. Sadly, no one has the time required to fully cover this 1,200 page document that was released Thanksgiving week with comments going through the holiday time period. Frankly, the timing is curious and indicates that comments on the project are not truly desired. I-7-3

When will the will of the People be considered as opposed to the will of the developers? There is great history with the Central EDH area with the intent to always keep the ~ 100 acres of the golf course area Open Space, for the use of future generations to enjoy green space and recreation. What about the people who live here? Our community has spoken. Will anybody listen? I-7-4

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 of the basic objectives of the I-7-5

Project, but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives." I-7-5 cont.

Of great concern is **The Alternative Analysis** for this project – that is, of the largest Specific Plan in EDH in 20 years.

This section of the DEIR is perhaps the most egregious in ridiculousness and dishonesty. Section 4.1 of the DEIR does NOT "describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most of 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."

How can '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" even happen?

This CEDHSP also includes an already approved portion of the EDHSP! Now we are combining Specific Plans and moving the pieces around? How does this affect the CEDHSP? How does this affect the already approved EDHSP? And how does this affect the community in which this is proposed to occur? Please explain the thought process behind this in more detail.

The EDHSP Village D-1 Lots C and D swap is a threat to the community that if this Specific Plan is not approved, development of Village D-1, Lots C and D, **dubbed Asbestos Ridge** will then be built. This is not appropriate mitigation, nor is it appropriate to begin swapping already approved specific plans. I-7-6

Please explain, is EDHSP Village D-1 Lots C and D included in the Open Space calculations in this DEIR? If so, this is dishonest as this property contains an asbestos Tremolite Vein that would impede the developer from building on EDHSP Village D-1 Lots C and D in a cost effective manner, or without the community showing up with pitchforks. NOA will be addressed later in the comments.

Again, is the open space that is created from this swap in Specific Plan areas included in the Open Space calculation? If so, please explain how current Open Space from a different Specific Plan (EDHSP) can be included as Open Space in this Specific Plan (CEDHSP).

A No-Project Alternative should be just that, NO Project. No project will prevent 341 acres of asbestos laden property from being developed and will also maintain our quickly decreasing level of Open Space. Our views and vistas are beautiful and we have the Open Space to recreate. Not so if this project is approved. Most egregious is the request to rezone the 100 acres at the center of the community. This specific acreage is where the EDH community has its heartburn when considering losing this Open Space forever – and to medium and high density housing, no less. More of these issues will be discussed later in these comments. I-7-7

The No-Project Alternative analysis blurs and diminishes the impacts by insufficiently analyzing impacts in a manner that is fair and transparent. Please provide a more exhaustive array of alternative analyses which could feasibly be considered as a part of the project moving forward, rather than selective "either-or" options.

Alternate options could include:

- No project – which means, NO project. Maintaining the Open Space and Recreation as intended by General Plan, the EDH founder and original owner of the property Allen Lindsay and desired by the community as previously mentioned by the voting results of Measure E. I-7-7 cont.
- Reducing the density drastically. It is incredibly inappropriate to put medium and high density housing on what has always been Open Space Recreation for future generations.
- Increasing the open space and park areas. (Not Tremolite laden open space and not substandard aprk areas.)
- Reducing traffic issues to acceptable levels so that people may be able to ride bikes and walk and not be killed by the massive increase in traffic.

The DEIR does not accurately analyze **Recreation opportunities**. Approximately 100 acres of the proposed project site is currently zoned as Open Space and has a use of Recreation Facilities. Although the developer proposes some active parkland and some open spaces, the 100 acres within this proposed site is contiguous – only bisected by Serrano Parkway, and there is an under street passing large enough for pedestrians, golf carts, and large vehicles to utilize. I-7-8

More explicitly stated, 100 acres of contiguous open space / recreational facilities will be impacted by this project, yet it is not adequately analyzed in this DEIR. Given the Measure E Ballot results it is absolutely incredible that other feasible alternatives for the Recreation element of the DEIR Alternative Analysis were not considered.

The Recreation Reduced-Density Alternative indicates that there would be no public parks. Such an assertion appears punitive to the community of El Dorado Hills. Further explanation as to why no public parks in the plan area for this alternative is even considered must be described and explained. The DEIR analysis for the Recreation element is selective and inadequate. I-7-9

The DEIR mentions the **aesthetics** of the project area in Section 3.1-15 which states "the combination of potential viewer sensitivity, permanent visual changes resulting to the site, and nature of existing, undeveloped scenic vista views toward the project site would result in impacts that would be significant." I-7-10

Then please explain why it states in AES-4 that it is "less than significant with mitigation." Please explain this magical mitigation to result in the very significant impacts to suddenly be "insignificant". Again, the DEIR analysis is inadequate.

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. I-7-11

The approximately 102-acre Pedregal planning area would include residential neighborhoods of approximately 265 dwelling units, which may or may not be gated.

From Pages 4 and 5 of the Appendix from the Notice of Preparation and Comment Matrix:

"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: o 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 County of El Dorado Central El Dorado Hills Specific Plan Central El Dorado Hills Specific Plan NOP February 20, 2013 5 ICF 00668.12 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). O **Amend General Plan Land Use Map designation of transferred lands within AP-EDHSP as Open Space (OS).** • Rezoning to: o 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).
O 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." I-7-11 cont.

Why do we have a voter approved General Plan? How about we stick to our voter-approved General Plan? Please explain why we even have a voter-approved General plan? This is typical with all of the projects being approved. Amend this, rezone that. Please stop and follow the voter-approved General Plan. I-7-12

The DEIR briefly discusses **Naturally Occurring Asbestos (NOA).** First, the map used in the DEIR is not up to date and is not accurate. Included as an attachment is a more recent map of the serious situation of asbestos in the EDH community. Oak Ridge High School is built on asbestos, this is a known fact and highly problematic. There is also a Youngdahl Consulting analysis which was done on the NOA in EDH, in conjunction with this project. The report stated I-7-13 that the NOA is changing and evolving to more asbestos continually. Whatever the levels are, they are continually getting worse. The map in the DEIR is not current or correct. On the attached, and more accurate map, you will see the Tremolite Veins and asbestos areas in El Dorado County – "Asbestos Review Areas, Western Slope, County of El Dorado, State of California". Please describe in great and specific detail how this ever changing, and very toxic level of naturally occurring asbestos will be adequately mitigated. I-7-13 cont.

Will it be buried in the ground? Will it be hauled off by trucks? What are the health consequences? How will the very real and life-threatening issue of asbestos contamination be mitigated? Specifically and realistically?

The mitigation mentioned in the DEIR is extremely inefficient and will be highly ineffective. Who will control the asbestos? What will the children do for health purposes as they play in the neighboring schools and parks while rocks are being crushed and asbestos fibers are flying everywhere?

Noise as mentioned in Section 3.10 of the DEIR is highly suspect. How are the children and the neighbors to deal with the high level of noise generated by crushing rocks, blasting and other construction noises, and for an ongoing period of time? The mitigation in this DEIR is extremely inadequate. Please explain realistically how the noise will be mitigated?

The mitigation measures provided on page 3.10-18 "Mitigation Measures NOI-1a: Employ Noise Reducing Construction Practices":

"The construction contractor shall employ noise-reducing construction practices so that construction noise does not exceed construction noise standards specified in the County General Plan, Table 6-3 (Table 3.10-7) to the extent feasible." I-7-14

What does that even mean? Who determines this? What is feasible? Please explain who will monitor the use of the "noise-reducing practices". How often will this monitoring take place, how the information will be recorded and how and where will that information will be available?

Measures are listed that can be used, but what measures MUST be used and what measures WILL be required? What if these practices are not implemented? How is this mitigation enforced? What is the specific mitigation? Please describe the specific mitigation measures as those contained in the DEIR are inadequate.

The lack of specifics seems to be a common thread in this entire DEIR. Please explain all of the mitigation being utilized more specifically throughout this entire DEIR.

Mitigation in General. Mitigation needs to be within the district from which the negative impacts occur. How does mitigation in other areas outside the area affected help to mitigate any impact to the area?

How can mitigation be done on already mitigated areas. Developer does not have a positive history regarding mitigation. (Take a look at the dead baby oak trees on El Dorado Hills Boulevard between the Fire Department at the Bowman's Range area). No one determines if the mitigation occurs or if it is successful. And if any mitigation is not policed and/or enforced, then what is the point of analyzing and requiring any mitigation at all? Please adequately describe how will the mitigation be policed and/enforced? I-7-15

Lastly, but very importantly, are the **Other CEQA Considerations**

Cumulative impacts. All of the developments and Specific Plans approved and waiting to be approved are not included in the DEIR nor are the Cumulative Impacts addressed adequately in this DEIR. There are numerous projects on the verge of being built, including:

- Bass Lake Hills Specific Plan (1015 lots, 1458 dwelling units, 1196 acres)
- Village of Marble Valley (3236 residential units – NOT 398 as stated in the DEIR) , 1281 acres)
- Lime Rock Valley (800 residential units, 314 acres of open space)
- Carson Creek (1700 dwelling units, 710 acres)
- Saratoga Estates (316 unit residential development – a 122 acre undeveloped parcel of land)
- Dixon Ranch (from NOP, 280 acres into 709 small-lot single-family detached residential units, 5 large-lot single-family detached residential units, one of which contains the existing Dixon Family residence)
- El Dorado Hills Specific Plan (6162 dwelling units, 3646 acres)
- Promontory (1100 dwelling units, 1000 acres)
- Valley View (2837 acres, 2840 dwelling units)
- Blackstone
- And so much more just down the hill and just up the hill.

The cumulative impacts and even all of the developments and specific plans are incredibly inadequately addressed.

I-7-16

From DEIR Page 5-8 and 5-9. "The proposed project would contribute to the transformation of undeveloped, natural open space areas with mixed-use, suburban developments and associated infrastructure and alter the existing visual character and quality of the site. However, the proposed project is located in an area that is already highly developed; the project retains much of the project site in open space, and uses design measures to reduce impacts on onsite natural resources that also serve as a visual amenity. In addition to CEDHSP policies that address design review and Specific Plan Appendix B Site Design Guidelines, implementation of Mitigation Measure AES-2 would reduce the visual prominence of the proposed project, making it blend better within its existing visual environment. Therefore, while a cumulative impact related to open space conversion does exist, the project's contribution is minimal. Visual impacts resulting from the proposed project would not result in a cumulatively considerable contribution to the existing cumulative visual impact. The cumulative impact would be less than cumulatively considerable with implementation of Mitigation Measures AES-2 and AES-4 and because the project is an infill site and would complement existing development conditions within the El Dorado Hills area."

Says who? Since when is medium and high density housing on an Open Space Old Executive Golf Course considered "infill"? How is EDH "suburban"? El Dorado County doesn't even have a definition for "infill". Where in the voter-approved General Plan is "infill" EVER mentioned?

Perhaps after this project, and especially after the cumulative impacts of all the projects, I imagine then we will be suburban.

I-7-17

There is absolutely NO way that this CEDHSP – all in itself, then including the other developments and Specific Plans will not make a major negative impact on the amount of open space, aesthetics, recreation, traffic, recreation, air quality and on and on.

The community has voted against developing the ~ 100 acres included in the Serrano Westside project, voting NO on rezoning the Golf Course property at 91.04%. I-7-18

We deserve excellent mitigation measures and excellent alternatives to this project. This DEIR is woefully lacking in specific mitigation measure and has a plan for a plan for a plan. The DEIR must include far more specificity.

This DEIR is completely inadequate and does not reduce any of the impacts and does not reduce any of the significant mitigation it claims to mitigate.

The **Cumulative impacts** of this project are incredibly significant. I-7-19

The increased building on Open Space property and the 341 acres in total will:

- **Decrease Air Quality**. This cannot be mitigated. And the mitigation suggestion is not adequate. Asbestos mitigation is inadequate and insufficient. I-7-20
- **Greenhouse gas emissions** will increase. This cannot be adequately mitigated. This is not adequately discussed. I-7-21
- **Water resources** will be negatively affected as we are currently in a drought and forced to conserve water as our water rates increase dramatically. Where is all this new water going to come from for 1028 homes? This mitigation is not adequately addressed. I-7-22
- **Noise and vibration** will be a disaster for the residents and the mitigation measures are not specific and are inadequately explained. I-7-23
- **Recreation** will be negatively affected as the ~ 100 acres in the center of the Specific Plan was always meant to be open Space Recreation for future generations. Once this land is built on, it will NEVER be open Space again. Where is the community to recreate and enjoy green spaces? This is why we live here and it is being taken away from us. I-7-24
- **Visual Resources** – the aesthetics will forever be negatively altered and this DEIR tries to deny and/or minimize that significant negative impact. This is egregious and deserves much deeper and more reasonable explanations. I-7-25
- **Traffic circulation** is a significant negative impact that cannot be mitigated. I-7-26

Please provide a proper analysis with the above mentioned explanations and explain the mitigation for each section much more clearly. I-7-27

With Respect,

Terry Crumpley, CPA
El Dorado Hills

LETTER I-7

COUNTY OF EL DORADO
CONSOLIDATED DISTRICTS ELECTION
TUESDAY, NOVEMBER 3, 2015
OFFICIAL FINAL REPORT

Date:11/10/15
Time:13:16:58
Page:1 of 1

Registered Voters 33440 - Cards Cast 12302 36.79%

Num. Report Precinct 18 - Num. Reporting 18 100.00%

Tahoe Paradise Resort Improvement District Director Full Term	Total	
Number of Precincts	1	
Precincts Reporting	1	100.0 %
Vote For	2	
Times Counted	605/2779	21.8 %
Total Votes	954	
JUDY CLOT	288	30.19%
DIANE VERWOEST	235	24.63%
B JORDAN-GRIFFITH	68	7.13%
VICTOR BABBITT	362	37.95%

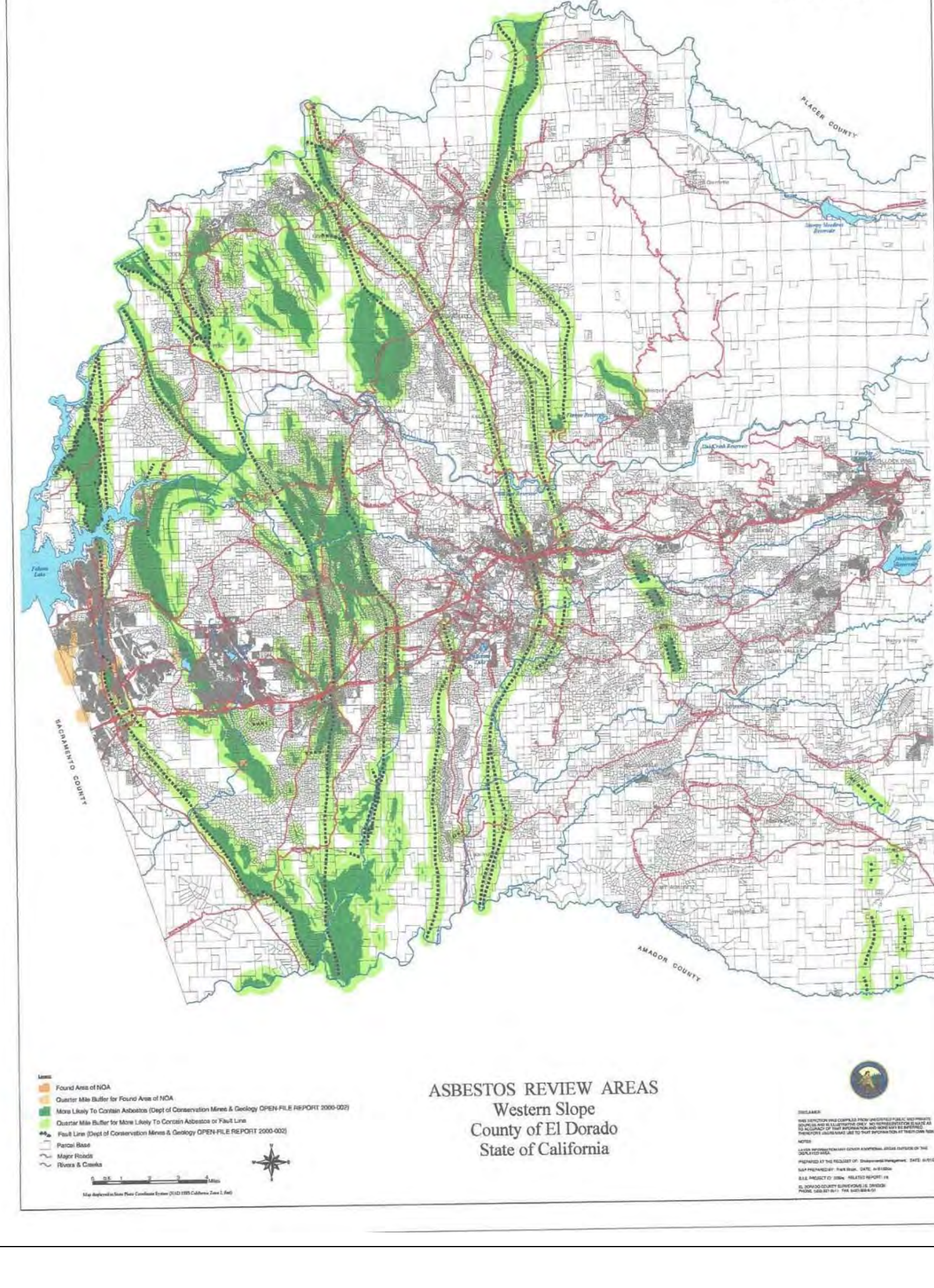
Tahoe Paradise Resort Improvement District Director Unexpired Short Term	Total	
Number of Precincts	1	
Precincts Reporting	1	100.0 %
Vote For	2	
Times Counted	605/2779	21.8 %
Total Votes	1024	
JOSEPH CARDINALE	297	29.00%
PETER J NELLIGAN	313	30.57%
FRANKLIN C JONES	211	20.61%
JAN B ROMAN-GONZALES	202	19.73%

Placerville USD Measure B 55% to pass	Total	
Number of Precincts	7	
Precincts Reporting	7	100.0 %
Vote For	1	
Times Counted	2543/8220	30.9 %
Total Votes	2535	
BONDS YES	1414	55.78%
BONDS NO	1121	44.22%

Cosumnes River CSD Measure D 2/3 to pass	Total	
Number of Precincts	1	
Precincts Reporting	1	100.0 %
Vote For	1	
Times Counted	97/201	48.3 %
Total Votes	97	
YES	57	58.76%
NO	40	41.24%

El Dorado Hills CSD Measure E Advisory	Total	
Number of Precincts	9	
Precincts Reporting	9	100.0 %
Vote For	1	
Times Counted	9057/22240	40.7 %
Total Votes	9047	
YES	811	8.96%
NO	8236	91.04%

LETTER I-7


PLACER COUNTY
SACRAMENTO COUNTY
AMADOR COUNTY
Found Area of NOA
Quarter Mile Buffer for Found Area of NOA
More Likely To Contain Asbestos (Dept of Conservation Mines & Geology OPEN-FILE REPORT 2000-002)
Quarter Mile Buffer for More Likely To Contain Asbestos or Fault Line
Fault Line (Dept of Conservation Mines & Geology OPEN-FILE REPORT 2000-002)
Parcel Base
Major Roads
Rivers & Creeks
0 0.5 1 2 3 4 Miles
ASBESTOS REVIEW AREAS
Western Slope
County of El Dorado
State of California
DISCLAIMER
NOTES

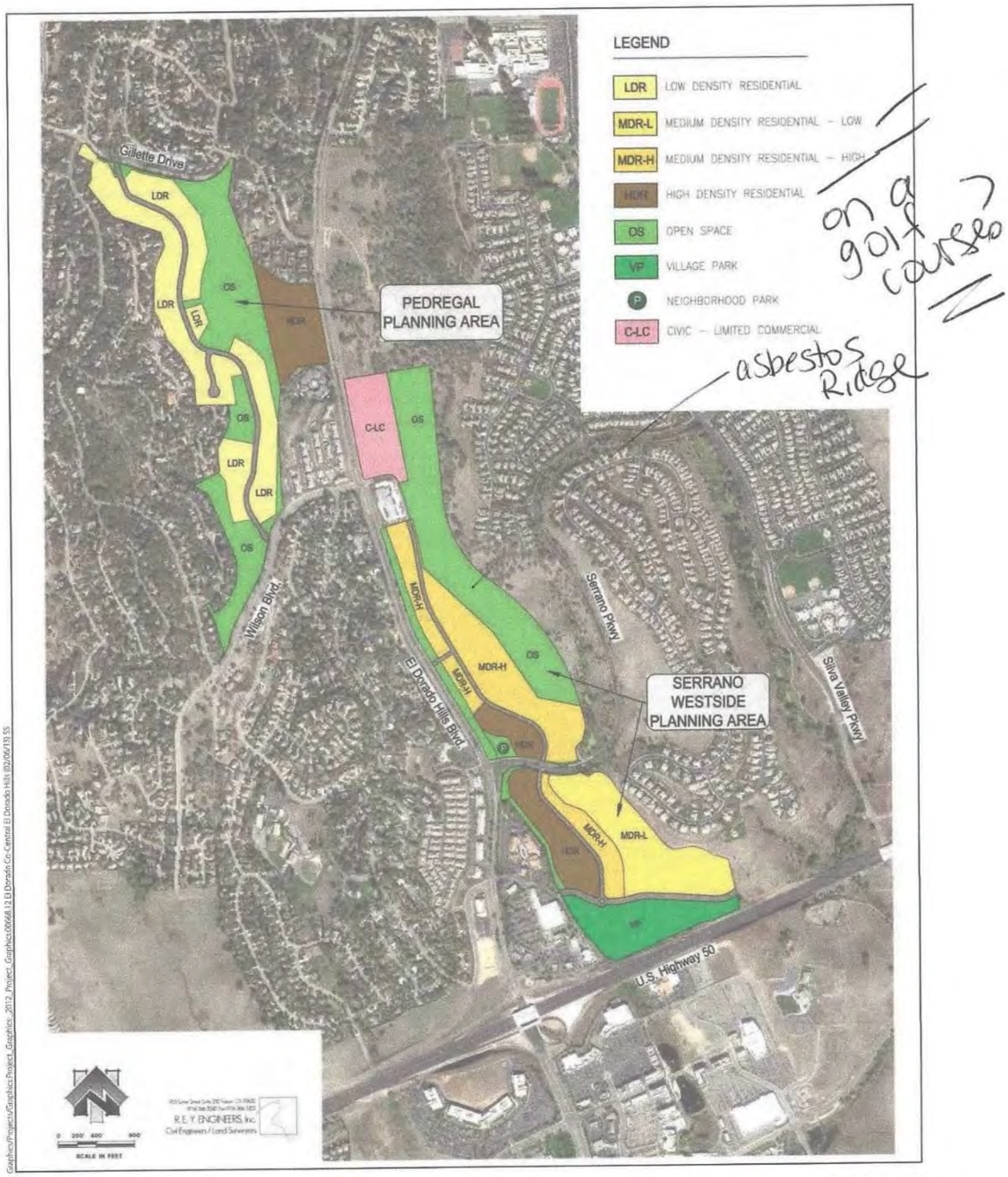


Figure 3
Proposed Land Use Designations

ICF INTERNATIONAL

APPROVED PROJECT INFORMATION

Friday , January 22 , 2016 8:04:36 PM

Select Another List of Projects

Project	SP 92 0001 - **BASS LAKE HILLS SPECIFIC PLAN**		
Project Type	SPECIFIC PLAN	**Status:** [Definitions]	APPROVED
Planner	GINA PAOLINI	**District Supervisor:**	RON MIKULACO
Plan Area	NONE SPECIFIED		
Number of Lots	1015	**Vicinity Map:**	Not Available at this time
Project Description	BASS LAKE HILLS SPECIFIC PLAN TO ACCOMMODATE A MAXIMUM OF 1,458 DWELLING UNITS WITHIN 18 SEPERATE VILLAGES.		
Project Location	SOUTH OF BASS LAKE ROAD, NORTH OF HIGHWAY 50 BETWEEN THE UNINCORPORATED AREAS OF EL DORADO HILLS AND CAMERON PARK		
Situs	3670 BASS LAKE RD		
APN(s)	119-100-07-100		
Owner Information	EDH COUNTY WATER DISTRICT 990 LASSEN LN EL DORADO HILLS , CA 95762		
Applicant Information	EL DORADO COUNTY 2850 FAIRLANE COURT PLACERVILLE , CA 95667 (530) 621-5355		
Developer Information	, ( ) -		

Related Projects

Note: Any project approved after 9/11/08 should contain a PDF file(s) with approved conditions, findings, and any other relevant documentation. If the information is not present, please notify the department at (530) 621-5355.

Related Documents:

19644

Home | I Want To | Government | Doing Business | Living | Visiting

Planning Services

Home > Government > Planning

APPLICATION STATUS

Thursday , January 21 , 2016 9:47:39 PM

Select Another List of Projects

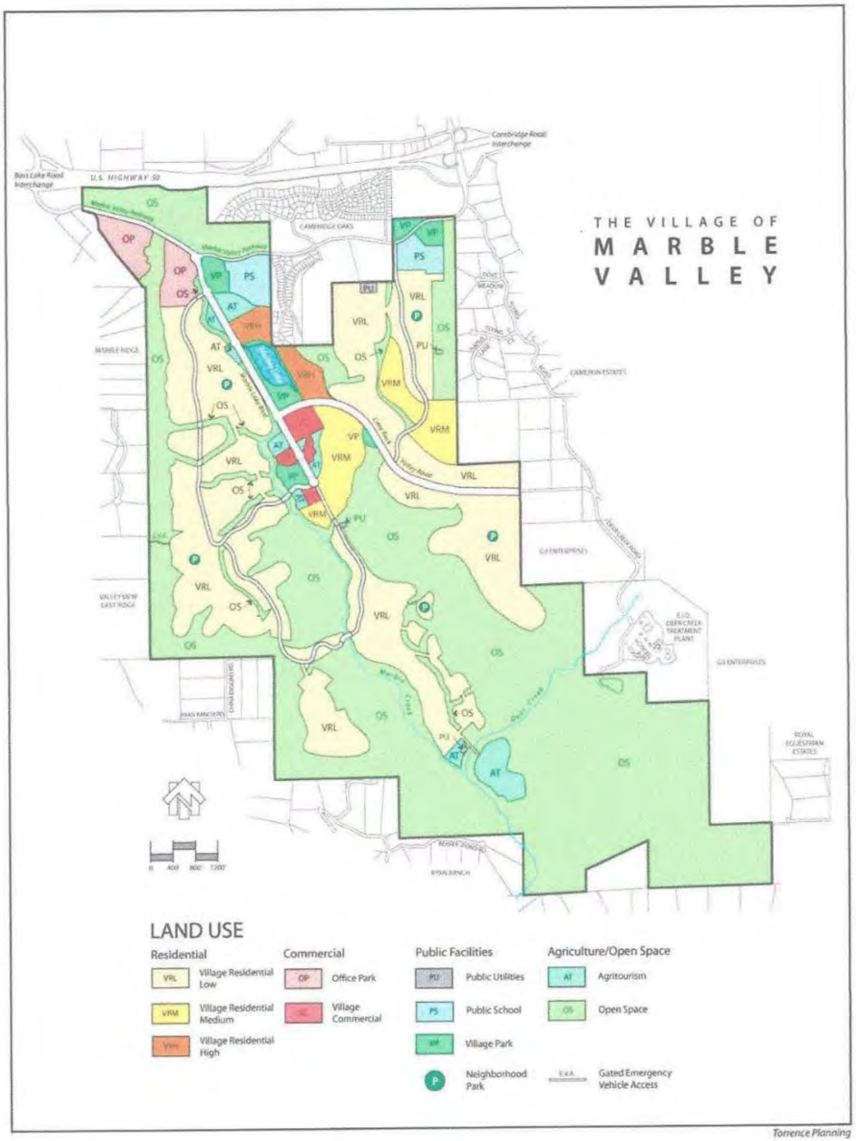
Project	SP 12 0003 - **VILLAGE OF MARBLE VALLEY SP**		
Project Type	SPECIFIC PLAN	**Status:** [Definitions]	PROCESSING
Planner	ROMMEL PABALINAS	**District Supervisor:**	SHIVA FRENTZEN
Plan Area	NONE SPECIFIED		
Number of Lots	3236	**Vicinity Map:**	Not Available at this time
Project Description	PROPOSED VILLAGE OF MARBLE VALLEY SPECIFIC PLAN INCLUDING APPROXIMATELY 3,236 RESIDENTIAL UNIT S, 475,000 SQUARE FOOT OF COMMERCIAL, AND 1,281 ACRES OF OPEN SPACE WITHIN 2,342-ACRE PROJECT SITE.		
Project Location	SOUTH OF US 50 HIGHWAY 1000 FEET SOUTHEAST OF US50/BASS LAKE ROAD.		
Situs	0		
APN(s)	087-200-74-100 119-020-56-100 119-020-57-100 119-030-13-100 119-030-14-100 119-030-15-100 119-030-16-100 119-030-17-100 119-030-18-100 119-030-19-100 119-330-01-100		
Related Projects	SP 12 0002 DA 14 0002 TM 14 1516 Z 14 0005 A 14 0004 Z 14 0006 PD 14 0004		

Related Documents:

2/26/2013 Notice of Preparation/Notice of Scoping Meeting

19359

Village of Marble Valley Specific Plan
Land Use Map (DRAFT, November 2013)



Lime Rock Valley Specific Plan
Land Use Map (DRAFT, November 2013)

Figure 3.1 – Land Use

LETTER I-7

Lime Rock Valley Specific Plan

Project Site Aerial Photo and Surrounding Uses (DRAFT, November 2013)

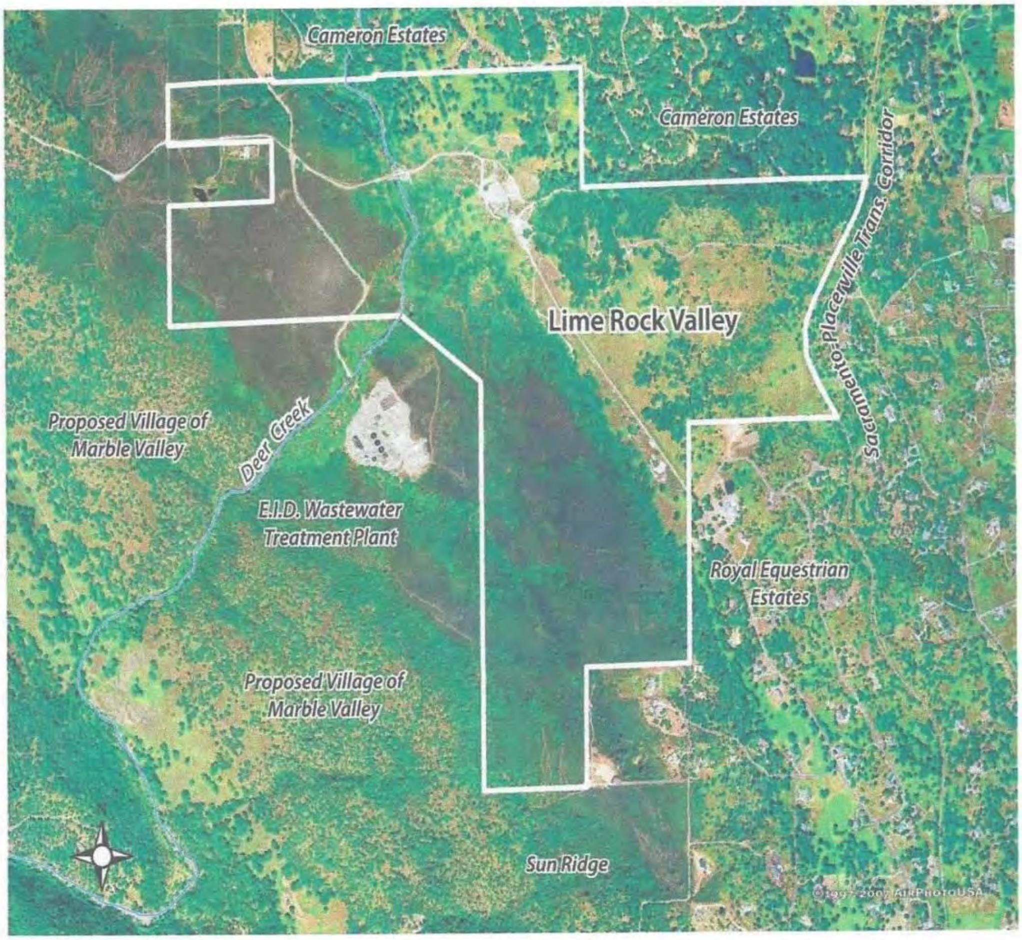
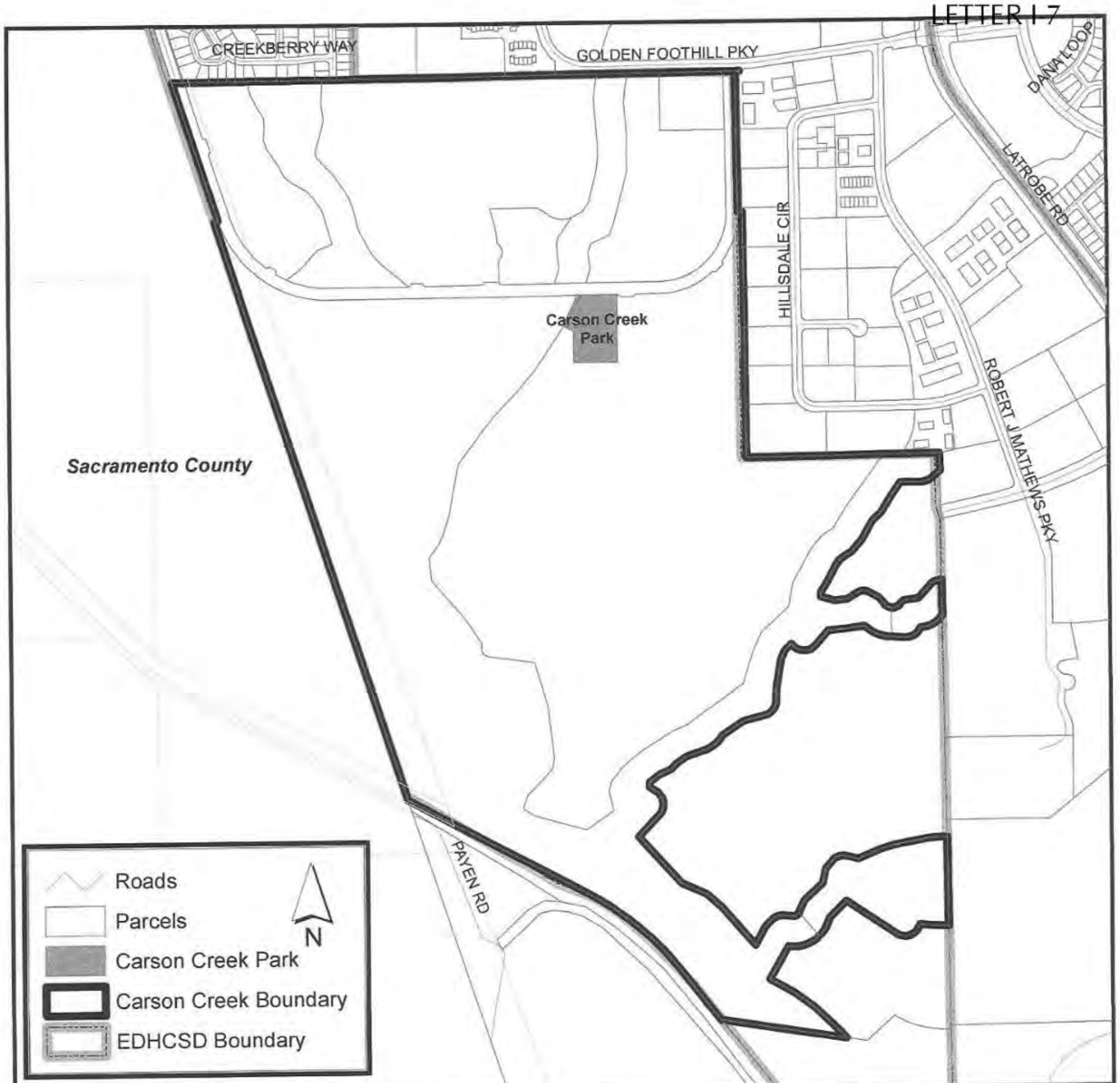


Figure 2.3 – Specific Plan Setting

LETTER I 7



NOTE: REFERENCE IS HEREBY MADE TO THE MAPS AND DEEDS OF RECORD IN THE OFFICE OF THE ASSESSOR OF THE COUNTY OF EL DORADO FOR A DETAILED DESCRIPTION OF THE LINES AND DIMENSIONS OF ANY PARCELS SHOWN HEREIN. THOSE MAPS SHALL GOVERN FOR ALL DETAILS CONCERNING THE LINES AND DIMENSIONS OF SUCH PARCELS. EACH PARCEL IS IDENTIFIED IN SAID MAPS BY ITS DISTINCTIVE ASSESSOR'S PARCEL NUMBER.

FILED AND RECORDED IN THE OFFICE OF THE SECRETARY OF THE BOARD OF THE EL DORADO HILLS COMMUNITY SERVICES DISTRICT, COUNTY OF EL DORADO, CALIFORNIA, THIS ______ DAY OF ________________, 2015.

____
SECRETARY OF THE BOARD

AN ASSESSMENT WAS CONFIRMED AND LEVIED BY THE BOARD OF DIRECTORS OF THE EL DORADO HILLS COMMUNITY SERVICES DISTRICT ON THE LOTS, PIECES AND PARCELS OF LAND ON THIS ASSESSMENT DIAGRAM ON THE ______ DAY OF ________________, 2015 FOR THE FISCAL YEAR 2015-16 AND SAID ASSESSMENT DIAGRAM AND THE ASSESSMENT ROLL FOR SAID FISCAL YEAR WERE FILED IN THE OFFICE OF THE COUNTY AUDITOR OF THE COUNTY OF EL DORADO ON THE __________ DAY OF ____________, 2015. REFERENCE IS MADE TO SAID RECORDED ASSESSMENT ROLL FOR THE EXACT AMOUNT OF EACH ASSESSMENT LEVIED AGAINST EACH PARCEL OF LAND.

____
SECRETARY OF THE BOARD

FILED THIS _____ DAY OF ________________, 2015 AT THE HOUR OF ______ M. IN THE OFFICE OF THE COUNTY AUDITOR OF THE COUNTY OF EL DORADO, STATE OF CALIFORNIA AT THE REQUEST OF THE BOARD OF DIRECTORS OF THE EL DORADO HILLS COMMUNITY SERVICES DISTRICT.

____
COUNTY AUDITOR, FOR THE COUNTY OF EL DORADO,
STATE OF CALIFORNIA

SCI Consulting Group
4745 Mangels Blvd, Fairfield, CA 94534

El Dorado Hills Community Services District
Carson Creek Park Landscaping & Lighting Assessment District #39
Assessment Diagram

LETTER I-7

NOTICE OF PREPARATION
of a Draft Environmental Impact Report

Date:	March 25, 2015
To:	Agencies and Interested Parties
From:	Joe Prutch, Associate Planner, El Dorado County Planning Services
Subject:	**Notice of Preparation of a Draft Environmental Impact Report for the Proposed Saratoga Estates Project (TM14-1520, PD14-0006, and Z14-0007)**
Review Period:	March 26 to April 27, 2015

This Notice of Preparation (NOP) initiates the environmental review process in accordance with the California Environmental Quality Act (14 California Code of Regulations [CCR] Section 15082) for a land development project in El Dorado County. El Dorado County will be the Lead Agency and will prepare the Environmental Impact Report (EIR). The purpose of an NOP is to provide sufficient information about the proposed project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (State CEQA Guidelines 14 CCR Section 15082[b]). The project description, location, and probable environmental effects of the Saratoga Estates Project are briefly described below. For more information and continued updates, please visit the following website: http://edcapps.edcgov.us/Planning/ProjectInquiryDisplay.asp?ProjectID=20149.

PROVIDING COMMENTS

El Dorado County is soliciting comments from public agencies, private organizations, and individuals regarding the scope and content of the environmental documentation. Because of time limits mandated by State law, comments should be provided no later than 5:00 PM on **April 27, 2015.** Please send all comments to:

Joe Prutch, Associate Planner
County of El Dorado Development Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: joseph.prutch@edcgov.us

Agencies that will need to use the EIR when considering permits or other approvals for the proposed project should provide the name of a contact person, phone number, and email address in their comment. Comments provided by email should include "Saratoga Estates NOP Comment" in the subject line, and the name and physical address of the commenter in the body of the email.

PUBLIC SCOPING MEETING

A public scoping meeting will be held by the County to inform interested parties about the proposed project, and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location are as follows:

April 9, 2015 (Weds.)
6:00 p.m. to 7:30 p.m.
El Dorado Hills Fire Department – Station 85
1050 Wilson Blvd., El Dorado Hills, CA 95762

The meeting space is accessible to persons with disabilities. Individuals needing special assistive devices will be accommodated to the County's best ability. For more information, please contact Joe Prutch (at the contact information above) at least 48 hours before the meeting.

PROJECT LOCATION

The Saratoga Estates Project is proposed on an approximately 122-acre undeveloped parcel of land (Assessor's Parcel Number 120-070-02) within the unincorporated community of El Dorado Hills in western El Dorado County. The property is immediately north of US Route 50, and is generally bounded on the north, east, and west by existing residential developments (Exhibit 1). A designated open space area abuts the western boundary of the project site, separating it from the Empire Ranch development in the City of Folsom. Wilson Boulevard, Saratoga Way, and Iron Point Road currently terminate at the project site (Exhibit 2).

PROJECT DESCRIPTION

Renasci Development proposes to construct a 316-unit residential development. The single-family, detached residential units would be constructed on individual lots generally ranging between approximately 6,000 and 9,000 square feet with the exception of several larger lots (up to approximately 24,000 square feet) bordering the east project site boundary. The project would extend Wilson Boulevard to Saratoga Way and extend Saratoga Way to Iron Point Road in Folsom, thus completing the east-west road connection between El Dorado Hills Boulevard and East Bidwell Street. The project features approximately 41 acres of open space areas, which includes public parks, a trail system, landscaping, and open space areas surrounding the creek corridor (Exhibit 2). The project would also include on-site and off-site infrastructure to serve the development. The El Dorado County General Plan land use designation for the project site is High Density Residential (HDR). The parcel containing the project site is currently zoned R1 (one-family residential district) and OS (open space). The project includes a proposal to change the zoning on the project site to R1-PD (one-family residential, planned development) and OS-PD (open space, planned development).

POTENTIAL ENVIRONMENTAL IMPACTS

The EIR will describe the direct and indirect potentially significant and significant environmental impacts of the proposed project. The EIR also will evaluate the cumulative impacts of the project when considered in conjunction with other related past, present, and reasonably foreseeable future projects. The County anticipates that the proposed project could result in potentially significant environmental impacts in the following topic areas, which will be further evaluated in the EIR: Land Use Compatibility, Population, Employment, and Housing, Hydrology and Water Quality, Biological Resources, Cultural Resources, Aesthetics and Visual Resources, Transportation and Circulation, Air Quality, Climate Change, Noise, Geology and Soils, Hazards and Hazardous Materials, Public Services, and Utilities and Energy Conservation.

LETTER I-7

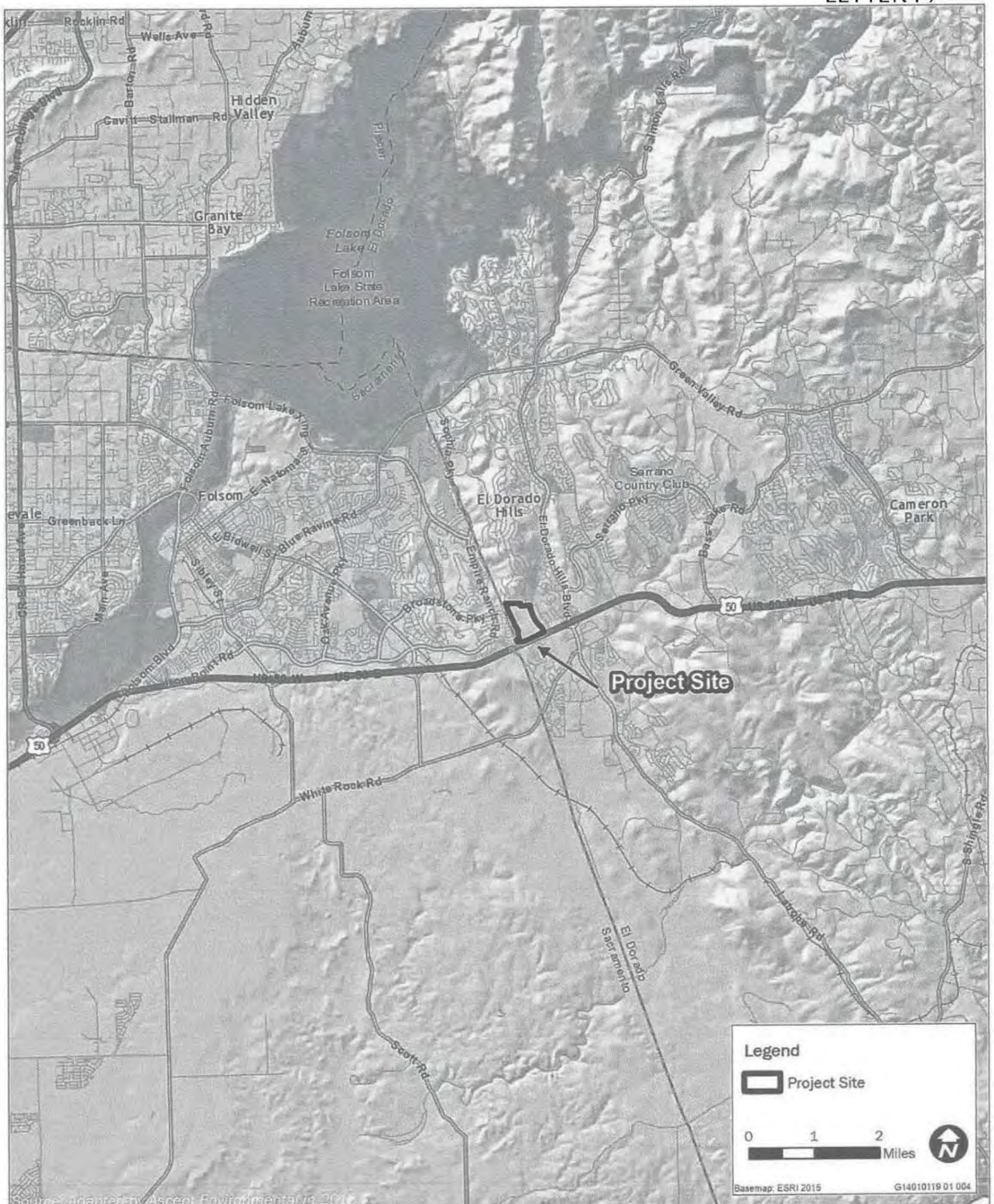


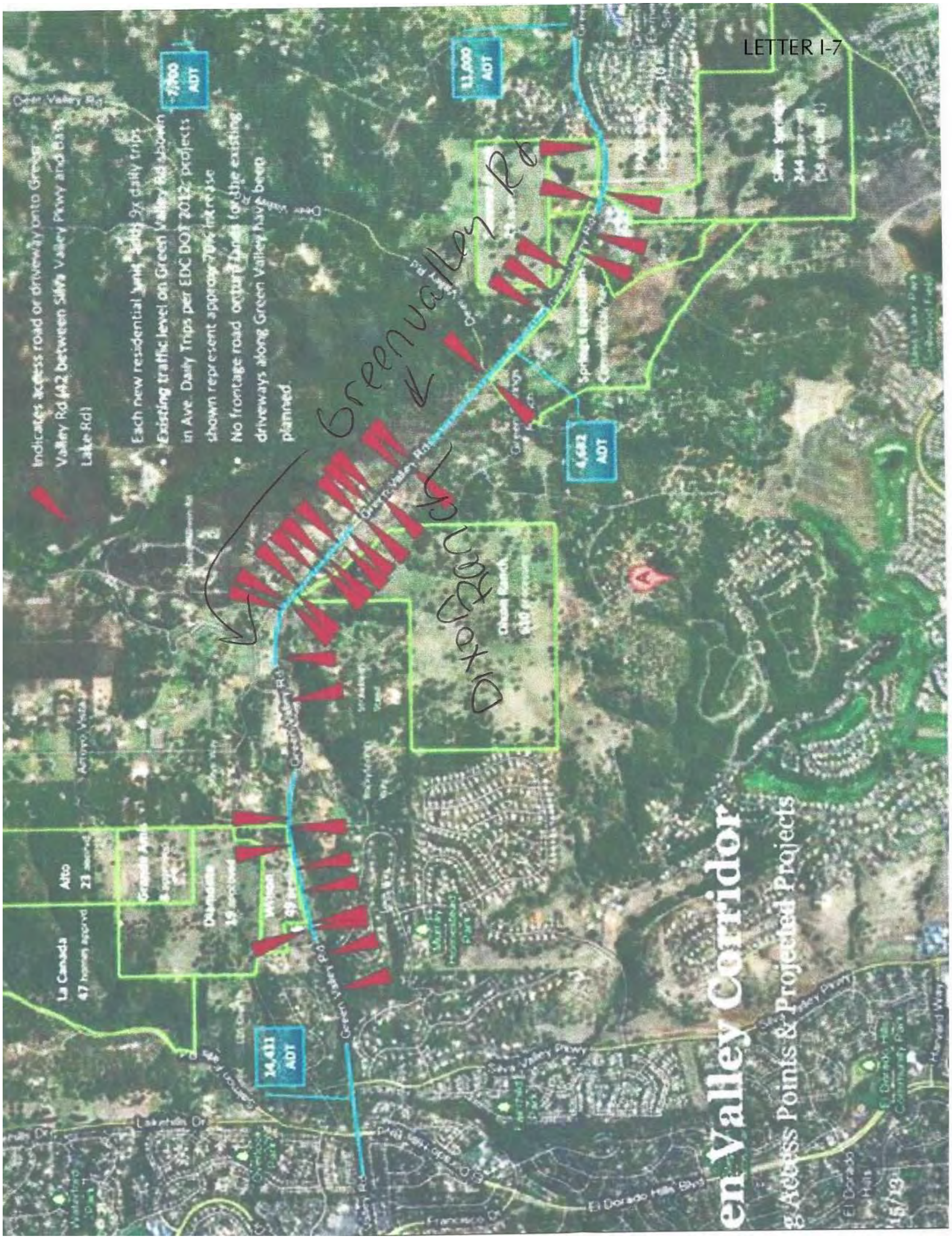
Exhibit 1 **Regional Location**

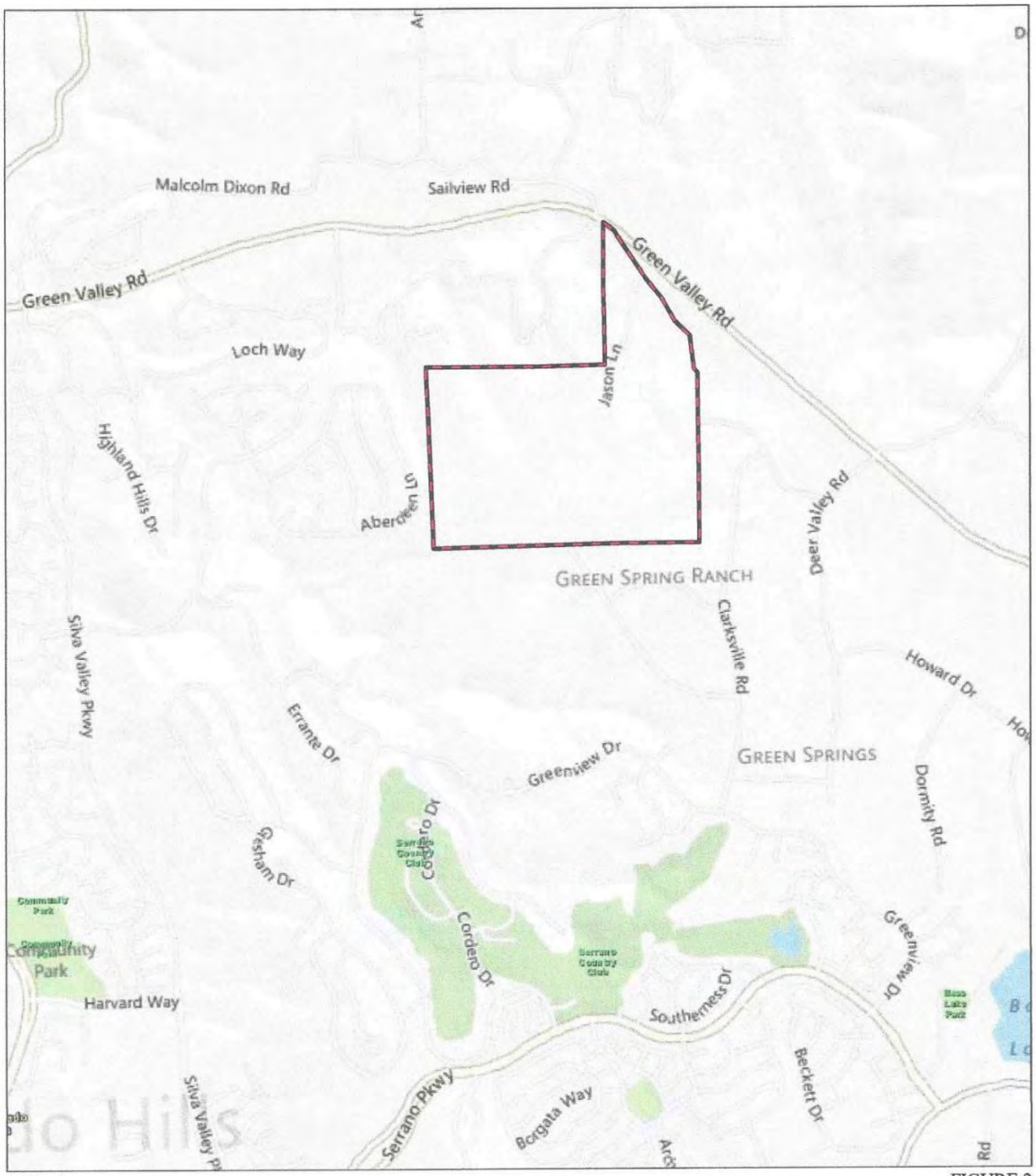
ASCENT ENVIRONMENTAL

LETTER I-7

Exhibit 2 **Conceptual Site Plan** ASCENT ENVIRONMENTAL

LETTER I-7


Indicates access road or driveway onto Green Valley Rd (42 between Silva Valley Pkwy and Bass Lake Rd)
Each new residential unit adds 9x daily trips
Existing traffic level on Green Valley Rd shown in Ave. Daily Trips per EDC DOT 2012; projects shown represent approx 70% increase
No frontage road or turn lanes for the existing driveways along Green Valley have been planned.
Greenvalley Rd
Dixon Ranch
14,411 ADT
7,700 ADT
11,000 ADT
4,682 ADT
La Canada
47 homes apprvd
Alto
23 apprvd
Diamante
19 approved
Wilson
Dixon Ranch
Green Valley Rd
en Valley Corridor
g Access Points & Projected Projects
Silver Springs
244
Lakehills Dr
El Dorado Hills Blvd
Silva Valley Pkwy
Deer Valley Rd



LSA

FIGURE 2

LEGEND

Project Area

0 1000 2000
FEET

SOURCE: Microsoft Bing Map - Roads (2010)

I:\EDC1101\GIS\fig2_prj_vic.mxd (5/24/12)

Dixon Ranch
El Dorado Hills, El Dorado County, California

Project Vicinity Map

Central El Dorado Hills Specific Plan Land Use Summary								
Land Use Designation		Planning Area	Density Range	Area (Ac)	% of Total Area	Residential Units	% Res. Total	Commercial Area (SF)
Residential								
LDR	Low Density Residential	[2]	1 Du/Ac	43.4	17%	65	6%	
MDR-L	Medium Density Residential - Low	[1]	5 - 8 Du/Ac	23.2	9%	123	12%	94%
MDR-H	Medium Density Residential - High	[1]	9 - 14 Du/Ac	35.7	14%	310	30%	
HDR	High Density Residential	[1]	15 - 24 Du/Ac	15.4	6%	330	32%	
HDR	High Density Residential	[2]	15 - 24 Du/Ac	12.9	5%	200	19%	
	Subtotal			130.6	51%	1,028	100%	
Civic - Limited Commercial								
C-LC	Civic-Limited Commercial	[1]		11.7	5%			50,000
	Subtotal			11.7	5%			50,000
Public Facilities								
VP	Village Park	[1]		15.3	6%			
	Subtotal			15.3	6%			
Open Space								
OS	Open Space	[1] [3]		45.8	18%			
OS	Open Space	[2]		39.1	15%			
	Subtotal			84.9	33%			
Road Right-of-Way and Landscape Lots								
	Road Right-of-Way & Landscape Lots	[1]		7.7	3%			
	Road Right-of-Way & Landscape Lots	[2]		6.2	2%			
	Subtotal			13.9	5%			
Total				**256.4**	**100.0%**	**1,028**	**100%**	**50,000**

[1] Serrano Westside Planning Area
[2] Pedregal Planning Area
[3] Includes a 1.2 acre neighborhood park

LETTER I-7

gov.us/government/planning/BAE_Report.aspx

https://www

Hmm, we can't reach this page.

Try this

- Make sure you've got the right web address: https://edgov.us
- Refresh the page
- Search for what you want

The link provided on pag 5-3 of DEIR.

Response to I-7, Terry Crumpley, 2/19/2016

I-7-1: The commenter notes that additional attachments are included after the commenter's letter. Attachments include the results of the 2015 election (including CSD Advisory Measure E); a figure showing asbestos review areas; Figure 3 from the CEDHSP Notice of Preparation (NOP) with annotation; status sheets from the County webpage for Bass Lake Hills Specific Plan and Village of Marble Valley Specific Plan; land use figures from Village of Marble Valley and Lime Rock Valley Specific Plans NOPs; figure from Lime Rock Valley Specific Plan NOP showing surrounding land uses; figure illustrating Carson Creek Park; NOP for Saratoga Estates Project; annotated aerial showing Dixon Ranch; Dixon Ranch project vicinity map; annotated CEDHSP land use summary table; and screenshot showing unable to reach link for BAE report. (This link has since been repaired.) These attachments are not referenced further in the comment letter and do not contain any information specific to the proposed project's analysis that require a response. The commenter expresses the opinion the project will negatively affect the community. For response to the commenter's specific comments, please see the Responses to Comment **I-7-2** through **I-7-27**.

I-7-2: CSD Advisory Measure E was a non-binding advisory measure placed on the November 2015 ballot by the El Dorado Hills Community Services District (EDHCSD). See Master Response 2 (CSD Advisory Measure E). The former Executive Golf Course designed by Robert Trent Jones ceased operation in 2007, and natural vegetation has reestablished throughout the area. It is not a playable golf course. As noted in the CEDHSP (page 2-8), the project applicant and the El Dorado Hills Community Services District independently hired NGF Consulting to investigate the long- term operational feasibility of the golf course. NGF Consulting, determined that the golf course operation was economically infeasible. Although the General Plan designates the former golf course area as Open Space, it is not publicly accessible open space because it is privately owned.

The results of the CSD Advisory Measure E vote do not require evaluation in the Draft EIR, nor does it involve an environmental issue that would be relevant to the analysis of the proposed project's environmental impacts. The commenter states that the project "would change the character and the open space available in the El Dorado Hills community forever." Community character is a social issue and as such is not a topic requiring CEQA analysis (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560). The "All Parks and Open Space Alternative" is discussed in Section 4.5.3 on page 4-47 of the Draft EIR. It was dismissed from further consideration because it would not meet the project objectives. Impacts related to changes in open space are discussed in Sections 3.1, *Aesthetics*; 3.3, *Biological Resources*; 3.9, *Land Use Planning and Farmland*; and 3.13, *Recreation*. The Draft EIR recognizes that the loss of open space through changes in land use would result in a Significant Irreversible Environmental Change (see Section 5.5 on page 5-47).

I-7-3: The commenter indicates that the review period for the EIR was not sufficient. The Draft EIR was available for a 60-day public review and comment period beginning November 20, 2015, and at the request of the public, the County extended the review period another 30 days, ending February 19, 2016. This 90-day review period was twice as long as the minimum standard 45-day review period required in Section 15087 of the State CEQA Guidelines. Section 15105 of the CEQA Guidelines states that the public review period should not be longer than 60 days, except under unusual circumstances. Although the project is not unusual, the County did extend the review period to allow additional time for review and comments. In addition, the RDEIR was available for public review and comment for 45 days, beginning April 22, 2016 and ending June 6, 2016.

I-7-4: The commenter is expressing their opinion regarding the choice to approve or disapprove the project. This is not a comment on an environmental issue and no response is necessary. See also Response to Comment **I-7-2** – the former golf course area is privately owned and is not available for public recreation.

I-7-5: The commenter is expressing their opinion regarding the adequacy of the range of alternatives analyzed in the Draft EIR. The range of alternatives analyzed in an EIR is governed by the "rule of reason," which provides that the EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines Section 15126.6[f]) CEQA Guidelines Section 15126.6(a) provides that "[a]n EIR need not consider every conceivable alternative to a project." The alternatives evaluated in an EIR must (1) be feasible, (2) meet most or all of the project objectives, and (3) substantially reduce one or more of the project's significant effects. (CEQA Guidelines Section 15126.6) The commenter does not provide information to support the assertion that the range of alternatives is inadequate and does not suggest an alternative in addition to those evaluated in the Draft EIR that should have been evaluated.

I-7-6: The commenter is expressing their opposition to the project's proposed transfer (referred to by the commenter as "land swap") within the El Dorado Hills Specific Plan (EDHSP) and concern over "combining Specific Plans." The project is not combining specific plans; it is proposing the creation of a new CEDHSP planning area that would be adjacent to the existing EDHSP. The two specific plans would not overlap or be combined. The transfer of acreage and density in Serrano Village D-1 Lots C and D currently in the EDHSP to the CEDHSP would occur as part of the proposed amendments to the El Dorado County General Plan and EDHSP.

The commenter raises the issue of whether the transfer is a "threat" that would result in future development on naturally occurring asbestos (NOA) deposits that underlie EDHSP Village D-1 Lots C and D should the project be denied. The occurrence of NOA is an existing condition, not an impact of the project. As explained in Section 2.1.2, Table 2-1, Village D-1 Lots C and D are currently zoned R-1-PD (Single-Unit Residential-Planned Development) and OS (Open Space), and a corresponding tentative map subdivision has been filed (but not approved) on each site. As shown on EIR Figure 2-3a, the project would designate Lots C and D as Open Space on the proposed CEDHSP. As a result, the project would greatly reduce the potential for the future development of Lots C and D. However, if the CEDHSP is not approved, then Lots C and D could be developed in accordance with the EDHSP. Development on Lots C and D, if it were to occur, would be subject to the County's NOA regulations. See Master Response 3 (Naturally Occurring Asbestos).

I-7-7: The commenter objects to the No-Project Alternative analyzed. The No-Project Alternative analyzed in the Draft EIR conforms to the provisions of Section 15126.6 of the State CEQA Guidelines. As explained in Section 4.3.1 on page 4-9 of the Draft EIR, evaluation of the No-Project Alternative allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No-Project Alternative assumes that the proposed project would not be implemented and, as provided in Section 15126.6(e)(2), examines "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

The No-Project Alternative is not the baseline for the impact analyses in this Draft EIR. That is, the analyses of the project's impacts, and determination of their significance, are based on the extent of changes from existing conditions that would result from implementation of the project.

The commenter suggests several "alternate options" as follows:

- No Project, in which the project site would remain in its current state. This alternative is infeasible because it would not meet the project objectives. Further, it would not accurately reflect the site's development potential under existing land use plans and zoning. That would conflict with CEQA Guidelines Section 15126.6. This is similar to the "All Parks and Open Space Alternative" discussed in Section 4.5.3 on page 4-47 of the Draft EIR. The reasons for rejecting that alternative are described in detail there.
- Reducing the density drastically by not placing medium- and high-density housing on the site. This is similar to Alternative 2 – Reduced Density, analyzed in Section 4.3.2 beginning on page 4-21 of the Draft EIR. That alternative includes substantial low-density residential development, eliminates all medium-density (8–14 du/ac) units and decreases high-density (14–24 du/ac) units from 530 to 200. The range of alternatives analyzed in the EIR is governed by the "rule of reason," which provides that the EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines Section 15126.6[f]) CEQA Guidelines Section 15126.6(a) provides that "[a]n EIR need not consider every conceivable alternative to a project." This suggested alternative need not be considered because it is similar to Alternative 2 – Reduced Density.
- Increasing open space and park areas, while excluding from these areas any area underlain by NOA or "substandard park areas" (sic). The commenter has not provided sufficient detail regarding what would constitute this alternative in order for its suitability for analysis to be determined. Key to this is the question of whether this proposed alternative would propose the area underlain by NOA for residential development as allowable under the existing EDHSP. If that is the case, then the proposed alternative is similar to the No-Project Alternative. CEQA Guidelines Section 15126.6(f)(3) states that "[a]n EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." This suggested alternative is rejected for that reason.
- Reducing traffic to acceptable levels "so that people may be able to ride bikes and walk and not be killed by the massive increase in traffic" The commenter has not provided sufficient detail regarding what would constitute this alternative in order for its suitability for analysis to be determined. This suggested alternative is not needed in order to avoid conflicts between cyclists and vehicles because no impact was identified in the Draft EIR. The project includes provisions for safe bicycle travel and improves existing bicycle circulation. As set out in Draft EIR Figure 2-7 (see Chapter 2, *Project Description*), the proposed project would provide a Class I bike path along project frontage on the east side of El Dorado Hills Boulevard. This bike path would turn east away from the boulevard then, using the existing bicycle undercrossing at Serrano Parkway, and continue along the west side of the project site to a potential new bicycle and pedestrian overcrossing at Highway 50 (as indicated in the Development Agreement, the project proposes to reserve right-of-way for this overcrossing and contribute financially to the improvement). A Class I bike path is separated from vehicular traffic and provides a safe means of bicycle travel. The project would create a new safe route for bicycle travel to El Dorado Town Center that avoids having to cross roads. In addition, the project proposes new Class II bike lanes along Serrano Parkway, the west side of El Dorado Hills Boulevard, and Saratoga Way. These would improve safety for bicyclists along these streets.

I-7-8: The commenter states that recreational opportunities are not accurately analyzed. CEQA Guidelines Section 15125(a) states that the "environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." The environmental setting consists of "the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published…" The area described by the commenter is not currently a recreational facility (see Responses to Comments **I-7-2** and **I-7-4**). The existing EDHSP is not a suitable baseline for environmental analysis. (*Environmental Planning & Information Council v. County of El Dorado* (1982) 131 Cal. App. 3d 350). However, it is appropriate for the No-Project Alternative (see Response to Comment **I-7-7**). Although the former golf course area would be developed with housing and village park, the project would still retain 130 acres of contiguous designated open space in the Serrano Westside planning area. The Draft EIR evaluates a reasonable range of alternatives, and the results of the CSD Advisory Measure E vote are not relevant to the alternatives analysis or the provision of open space in the specific plan. See Master Response 2 (CSD Advisory Measure E).

I-7-9: The commenter objects to the characterization of the Reduce-Density Alternative as "punitive." As explained in Section 4.3.2 of the EIR: "No public parks are proposed for the Reduced-Density Alternative, as many of the proposed housing units would be located within the Serrano Westside planning area, where amenities have already been completed, and residents would have access to those facilities." Because of existing facilities, Alternative 2 would meet County standards for the provision of parks and recreation facilities.

I-7-10: The commenter states that the analysis of aesthetic impacts is inadequate. The conclusion the commenter refers to is the result of the implementation of mitigation measures identified in the EIR, where the mitigation measures would reduce the significant impact to a less than significant level. The reasons for finding the aesthetic impact to be less than significant are explained in the EIR under Impact AES-4. In addition to numerous policies in the proposed CEDHSP that would reduce the aesthetic impact, the discussion under Impact AES-4 includes two mitigation measures that would be applied to the project: Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas, and Mitigation Measure AES-4: Design proposed noise barriers to be visually consistent with existing noise barriers in the project vicinity). Mitigation Measure AES-2 requires that building facades and roofs be of shades that will blend with the surrounding area. This approach has been extensively studied by the U.S. Bureau of Land Management and determined to reduce the visibility of projects in natural environments. See the Bureau of Land Management website (http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS/3.html) for further details of these studies and results. Mitigation Measure AES-4 requires that noise barriers include earthen berms and landscaping to reduce the visual impact of walls. These barriers would be consistent with those already in place on Serrano Parkway and along segments El Dorado Hills Boulevard north of the CEDHSP planning area. These mitigation measures are described in full under Impact AES-2 and Impact AES-4, respectively. However, County staff acknowledges that aesthetic design is a matter of opinion. The commenter's concern is noted and will be considered by the Board of Supervisors during the decision-making process.

I-7-11: This comment describes the proposed project and appears to be based on the NOP, which was published in 2013. The commenter's description contains two errors: the total number of residential units proposed is 1,000, not 1,028, and the project includes 184 acres of public parks and open space, not 85 acres. Although the number of units and park acreage was revised after the release of NOP, CEQA has no requirement that the project described in the NOP precisely match the project described in the Draft EIR. Chapter 2, *Project Description*, accurately describes the proposed project evaluated in the Draft EIR. This comment does not raise any environmental issues requiring a response.

I-7-12: The commenter suggests there should be no changes to the General Plan. California law (Government Code Section 65358) authorizes the County to amend its General Plan up to four times yearly. The El Dorado County General Plan was adopted by the Board of Supervisors on July 19, 2004. Subsequent to adoption, a referendum measure that would affect implementation of the plan was filed with the County. On March 8, 2005, the voters upheld the Board's July 2004 adoption of the new general plan. The affirmation of the General Plan by referendum does not restrict the Board of Supervisors, in its role as the elected legislative body of the County, from amending the General Plan consistent with Government Code Section 65358 when it finds the amendment to be in the public interest. In addition, the proposed project is consistent with numerous elements of the General Plan, including the Land Use, Transportation and Circulation, Housing, Public Services and Utilities, and Conservation and Open Space elements. The proposed project's consistency with the General Plan's goals and polices is discussed in Appendix B of the Draft EIR. The commenter's opinion regarding general plan amendments and rezoning is noted and will be considered by the Board of Supervisors during the decision-making process.

I-7-13: The commenter asks for additional explanation about the mitigation of impacts related to naturally occurring asbestos. The Draft EIR evaluates NOA impacts. See Master Response 3 (Naturally Occurring Asbestos). Figure 3.2-1 presents the known current information. Further, a site-specific examination for NOA was performed by Youngdahl Consulting Group. The information from that report is included in the discussion of existing conditions under *Naturally Occurring Asbestos* and was considered in the impact analysis. In addition, a geologist would be present during grading activities, as required under Mitigation Measure AQ-4.

The commenter suggests that NOA changes and evolves to more asbestos and that NOA levels are increasing. The commenter does not present laboratory data or air monitoring results to support this assertion. NOA is present in rock. There are many forms of asbestos in rock, and the type of asbestos fibers is a function of specific chemical and physical parameters when the mineral formed in relation to geologic processes and long-term geologic processes (on the order of several hundred million years). Over the lifetime of the project, NOA that is present in rock and/or soil in the project area is not expected to transform itself into some other type of NOA, nor would it be likely that the levels would increase.

The Draft EIR contains Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading as necessary. Mitigation Measure AQ-4 ensures that EDCAQMD Rule 223-2, Asbestos Hazard Mitigation would be imposed on the project. This rule has been in effect since 2005 and is an accepted means of reducing public health risk where NOA-containing rock or soil is present and may be disturbed by construction activities such as grading. It contains requirements for the removal of soil, control of inactive and storage areas, disposal of excavated soils, offsite transport requirements, and standards for the preparation of a project-specific asbestos dust mitigation plan that would be subject to approval by the Air Pollution Control Officer. The specific means of complying with this rule would be determined as construction plans are finalized, and would include those measures described in Appendix D (EDCAQMD Dust Control) of the Draft EIR.

In addition, the County has had the following policy and ordinance in effect since 2004 and 1997, respectively for to reduce the potential for exposure to NOA. Both would be applied to the proposed project. For purposes of clarification, the following descriptions have been added to the regulatory setting of the Final EIR:

- General Plan Policy 6.3.1.1 (requires 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 have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods).

El Dorado County Code

The following code addresses NOA.

- Chapter 8.44 of the County Code, including Sections 8.44.030 (General Requirements for Grading, Excavation and Construction Activities), 8.44.050 (General Procedures for Abatement and Penalties), and 8.44.060 (Real Estate Transfer Disclosure).

I-7-14: The commenter questions the noise analysis and proposed mitigation. Potential impacts from blasting are discussed in Section 3.10, *Noise*, under Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels, which states that vibration and noise levels could exceed County standards. Mitigation Measure NOI-2: Employ measures to reduce airblast and vibration from blasting, identifies mandatory requirements, including standards for airblast, that would be imposed on contractors during construction to minimize airblast and noise to County noise standards. Further, Mitigation Measure NOI-1a: Employ noise-reducing construction practices, requires the contractor to minimize construction noise. The commenter misinterprets this measure. It is a mandatory requirement that the County would ensure is included on project grading and improvement plans when it reviews and approves those plans. The applicant's contractor(s) would be responsible for complying with the mandatory requirements, which would be monitored for implementation by the County (see Master Response 4 [Mitigation and Monitoring]). The list of "measures that can be used to limit noise" identifies a number of methods that can be used to reduce construction noise. The exact measures used would be determined based upon specific construction methods, locations, equipment, and conditions to most effectively reduce noise to meet County standards. The County may impose additional measures as needed to meet County standards. The mitigation measure is the standard approach used to reduce construction noise and Mitigation Measure NOI-2 requires that the contractor retain a qualified blasting specialist to monitor airblast and ground vibration in order to keep blast-related vibration at offsite locations as low as possible with a maximum psi/dB limit of 0.013-psi (133-dB). The measure complies with all existing regulations and would ensure that potential impacts of blasting are reduced to within required thresholds.

I-7-15: The commenter requests an explanation of all proposed mitigation presented in the Draft EIR. The mitigation measures are described in detail in Draft EIR Sections 3.1 through 3.14. The comment is not specific about what mitigation measures' "lack of specifics" concerns the commenter. Offsite mitigation can be appropriate, for example, for some biological resources because the impact to be mitigated is on the species or resource as a whole. Depending upon the General Plan policy in place at the time development entitlement applications are submitted, mitigation for heritage oak, oak woodlands, and/or oak canopy impacts would be accomplished in compliance with General Plan policy 7.4.4.4 or the County Oak Resources Management Plan, as described in Mitigation Measure BIO-1d as revised in this Final EIR (see Chapter 3, Section 3.3) This study outlines methods for planting and mitigation monitoring and reporting and provides success criteria. It also identifies potential on site oak mitigation areas based on factors such as existing canopy and soil type. Please see Response to Comment **I-4-5**.

I-7-16: The commenter provided a list of projects "on the verge of being built" with unit counts and acreages. Some of the information provided by the commenter (e.g., Village of Marble Valley) is incorrect. The correct information is presented in the Draft EIR in Table 5-1 ("Approved Projects – 2004 County General Plan" page 5-3) and Table 5-2 ("Other Projects" page 5-5). The only project listed by the commenter that is not specifically included in either Table 5-1 or Table 5-2 is Blackstone. The Blackstone development is the marketing name for the West Valley Village portion of the approved Valley View Specific Plan. The Valley View Specific Plan is included in Table 5-1 of the Draft EIR. Therefore, all the projects that the commenter listed are considered in the cumulative impact analysis.

The Draft EIR has fully complied with the requirements for an adequate cumulative impact analysis. The commenter is of the opinion the Draft EIR's analysis of cumulative impacts is inadequate but did not provide specific examples or technical data that should have been considered, so no further response can be provided.

I-7-17: The commenter questions the analysis of cumulative aesthetic impacts. The analysis of the project's aesthetics impacts is described in Section 3.1, *Aesthetics*. The cumulative contribution of the project is described in Section 5.2.2. The project site is surrounded on all sides by existing development. The term "infill" is generically defined as: "The use of vacant land and property within a built-up area for further construction or development" (The Free Dictionary). As illustrated by Draft EIR Figure 2-2, the project site is surrounded by existing residential development within El Dorado Hills (including Highway 50 and the El Dorado Town Center to the south). El Dorado Hills is one of the urban/suburban areas of the County.

The El Dorado County General Plan does not define infill, but the use of the term in the Draft EIR is in a generic manner. It is not intended to mean that the site would qualify as an "infill project" as that term is defined in CEQA. If that had been the intent of the reference, the Draft EIR would have made that clear, referencing Section 21159.24, which discusses exemptions from CEQA. Clearly, this project is not exempt from CEQA.

I-7-18: The commenter summarizes their comments in the rest of the comment letter. Impacts on air quality, recreation, and traffic are addressed in Sections 3.2, 3.13, and 3.14, respectively. Open space is addressed in both Section 3.1, *Aesthetics*, and Section 3.3, *Biological Resources*.

The November 2015 ballot measure is not binding on El Dorado County; it was placed on the ballot by the independent El Dorado Hills Community Services District. The ballot measure is not relevant to the environmental analysis. See Master Response 2 (CSD Advisory Measure E) and Response to Comment **I-7-2.**

I-7-19: The commenter expresses an opinion regarding the level of cumulative environmental impact that would result from the project, but did not provide any analysis or data that contradicts the conclusions of the Draft EIR or what analysis should have been performed. See Response to Comment **I-7-16**.

I-7-20: The commenter notes that the project would decrease air quality. Air quality impacts are evaluated in Section 3.2, *Air Quality*, and in Chapter 5, *Other CEQA Considerations*, beginning on page 5-9. Please see Responses to Comments **I-3-2** and **I-3-4** pertaining to impacts related to ROG and PM. The Draft EIR contains several mitigation measures to reduce impacts, including measures to reduce impacts during construction (Mitigation Measures AQ-2a, AQ-2b, and AQ-2c). The Draft EIR evaluates NOA in Impact AQ-4d. See Response to Comment **I-7-13** and Master Response 3 (Naturally Occurring Asbestos) regarding NOA. Because the commenter does not provide specific examples how the proposed mitigation measures are inadequate and insufficient, or recommendations for how they could be improved, no further response is necessary.

I-7-21: The commenter states that GHG emissions will increase. Section 3.6, *Greenhouse Gas Emissions* (as revised in the RDEIR), concluded that the project would have a significant impact on GHG emissions, despite the application of Mitigation Measure GHG-1: Revise CEDHSP policies to include additional measures to further reduce operational GHG emissions.

I-7-22: The commenter opines that water resources would be negatively affected. The WSA prepared for the project and approved by the El Dorado Irrigation District accounts for current conditions (drought) and explains why water supply is sufficient and this impact would be less than significant. The water supply is discussed in EIR Section 3.12, *Public Services and Utilities* and the WSA is included in the EIR as Appendix K. See also Master Response 1 (Water Supply).

I-7-23: The commenter opines that noise and vibration impacts "will be a disaster for the residents" and that the mitigation measures are not sufficiently specific. See the Response to Comment **I-7-14** regarding blasting noise. Section 3.10, *Noise and Vibration*, of the Draft EIR discloses that some types of noise would be significant and unavoidable if the project is approved.

I-7-24: The commenter opines that recreation will be negatively affected. Recreation impacts are discussed in Draft EIR Section 3.13, *Recreation*, which explains that the project would exceed the County standard for parks and recreation facilities (i.e., the project would provide more parks than required by County policy), and Chapter 2, *Project Description*, which discloses that the project includes 184 acres of parks and open space. The CEDHSP would result in more open space than is currently zoned. As noted in Response to Comment **I-7-2**, the site of the former golf course, although designated open space, is private property and it not public open space.

I-7-25: The commenter opines that visual resources will be adversely affected by the project. See the Response to Comment **I-7-10**.

I-7-26: The commenter opines that traffic circulation will be a significant and unavoidable impact. The commenter does not provide any technical analysis or data to support the assertion that traffic impacts would not be mitigated. Traffic impacts are discussed in detail in Section 3.14, *Traffic and Circulation*, and cumulative impacts are evaluated in detail in Section 5.2, *Cumulative Impacts*. Updated traffic impact studies were prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The results of the updated 2017 traffic studies are presented in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document and the studies have been added to Appendix L. The analysis, conclusions, and mitigation measures are based on the traffic analysis prepared by Fehr & Peers Transportation Consultants. The analysis concluded that, with the implementation of Mitigation Measures TRA-1a and TRA-1b, project-level impacts would be less than significant. With implementation of Mitigation Measure CUM-A, as revised in this Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*), the project's cumulative impact would be less than significant.

I-7-27: The comments have been responded to in Responses to Comments **I-7-1** through **I-7-26**.

From: **'Wayne Haug' via DS-Central El Dorado Hills Specific Plan-m** <cedhsp@edcgov.us>
Date: Wed, Dec 9, 2015 at 2:01 PM
Subject: [cedhsp] Central El Dorado Hills Specific Plan Project File Nos. A14-0003, SP12-0002, SP86-0002-R-2, Z14-0005, PD14-0004, TM14-1516, DA14-0003
To: "cedhsp@edcgov.us" <cedhsp@edcgov.us>
Cc: david.defanti@edcgov.us, "rich.stewart@edcgov.us" <rich.stewart@edcgov.us>, "gary.miller@edcgov.us" <gary.miller@edcgov.us>, "tom.heflin@edcgov.us" <tom.heflin@edcgov.us>, "dave.pratt@edcgov.us" <dave.pratt@edcgov.us>, "brian.shinault@edcgov.us" <brian.shinault@edcgov.us>, "bosone@edcgov.us" <bosone@edcgov.us>, "bostwo@edcgov.us" <bostwo@edcgov.us>, "bosthree@edcgov.us" <bosthree@edcgov.us>, "bosfour@edcgov.us" <bosfour@edcgov.us>, "bosfive@edcgov.us" <bosfive@edcgov.us>

Due to the length and technical content of the DIER for the subject project I respectively request an additional 90 days from the January 19, 2016 to April 18, 2016. I believe this is not an unreasonable request for more time since the depth of analysis required to adequately comment on the project requires this extension. I-8-1

Your prompt reply granting this request is appreciated.

Wayne H. Haug

Law Office of Wayne H. Haug 3720 Mesa Verdes Drive El Dorado Hills, CA 95762 (916) 933-6549 The information transmitted is intended solely for the addressed individual or entity. This document may contain confidential and/or legally privileged material and/or information. Any review, retransmission, dissemination or other use of or taking action in reliance upon this information by persons or entities other than the intended recipient(s) is prohibited. If you have received this email in error, please contact the sender and delete the material from any computer.

Response to I-8, Wayne Haug, 12/9/2015

I-8-1: In response to this commenter's request to extend the Draft EIR review period, the County extended the comment period an additional 30 days beyond the original January 19, 2016 date to February 19, 2016. See also Response **I-7-3**.

LETTER I-9

From: **'Alan Hockenson' via DS-Central El Dorado Hills Specific Plan-m**
<cedhsp@edcgov.us>
Date: Fri, Feb 19, 2016 at 3:27 PM
Subject: [cedhsp] Central El Dorado Hills Specific Plan
To: cedhsp@edcgov.us

Attached are comments in Word format by:

Alan Hockenson, resident
1212 Terracina Drive
El Dorado Hills, CA

LETTER I-9

Comments on the Central El Dorado Hills Specific Plan, Draft Environmental Impact Report

Provided by El Dorado County Resident:

Alan Hockenson

1212 Terracina Drive

El Dorado Hills, CA 95762

I attended the Public Information session provided at Oak Meadow Elementary School on December 2, 2015 and asked a number of questions. I came away with the following specific pieces of information.

1. There is nothing wrong with the current plan that has been adopted. The reason for this process is that the developer wishes to propose a different configuration for the use of the land. In short, the amount of acreage to be developed and the amount to be preserved as open space would remain about the same, just reconfigured.
2. The number of dwelling units would increase by about 400, and to accomplish this, the density of the housing units would increase.
3. An additional athletic field area (think soccer fields) would be added close to US 50.
4. A potential new road paralleling US 50 to connect Silva Valley Road and El Dorado Hills Blvd could be added.
5. The current open space being the Raley's shopping center, formerly the El Dorado Hills executive golf course, would be developed in exchange for open space in other places.

I-9-1

My comments are as follows:

1. There is nothing wrong with the existing, already approved plan. This modification is simply being pursued because the developer is interested in developing something other than what was previously approved. The true question is whether the balance of the modifications represents an acceptable improvement compared what has been previously approved. In my opinion, the net benefits of this new plan do not warrant its approval.

2. When projects of this type are considered, individuals are affected differently. Some will view the changes as a benefit and others as a detriment. Let me group the parties into winners and losers. First the winners would be: the developer (more profit, ease of construction), local government (more property taxes and earlier received), some village residents that live adjacent or near the area (less construction impacts and avoided future residential traffic), those interested in additional athletic fields, and those that could use an additional access from Silva Valley Road. Then, the losers would be: individuals already faced with extreme traffic on El Dorado Hills Blvd in the mornings and afternoons, individuals that fear an increase in crime that usually accompanies high density housing development, and those 90+% of the voters that resoundingly expressed their view on aesthetics when they rejected Measure E, the only issue on the local ballot of the November 2015 election.

I-9-2

3. The General Plan is a social contract between the local jurisdiction (in this case the County) and the residents that choose to buy or construct homes within the planning area. All too often, these plans get modified and the result is a configuration that is substantially different than originally envisioned. In the 1970's the Greenhaven/Pocket area of Sacramento was being planned with beltways, bicycle paths, and other attractive amenities. After the core of the area had been developed, a series of amendments were approved that increased the density of the housing substantially, including a large number of apartment complexes. Longstanding residents voiced their objections to the Sacramento City Council to no avail. In particular, a senior citizen complex was constructed behind the shopping center on the southeast corner of Florin Road and Greenhaven Drive. Due to the increased amount of crime, the perimeter behind the shopping mall that is adjacent to the senior citizen complex sports a very high fence with razor wire on top. We don't want to see this in our community.

4. After living in the Sacramento region for almost 40 years and my wife for over 50 years, we've seen the results of the planning concepts touted by the Sacramento Area Council of Governments (SACOG). They espouse smart growth planning and support infill projects with high density housing and public transit and have a hatred for urban sprawl. In truth, I understand their concepts and the values they represent but their implementation in the Sacramento region has been a travesty. Over and over again, SACOG rubber stamps developer's desires and actually attempts to strong-arm fringe locations like El Dorado Hills to build more affordable and high density housing. It is as if they desire to export the poor quality of life in Sacramento to other areas to share in the blight they have created. I fully expect SACOG to support this project but it has none of the elements that they strive for except for high density housing could apply in this case. Except for the El Dorado Hills bus line to downtown Sacramento for state workers or the casino bus to Red Hawk Casino, there is no public transit – certainly not enough to warrant an additional 400 residences from the original plan. The proposed business additions do not create job opportunities to support the 400 additional residences. This area is far too large to be considered an infill location. Therefore, as a preemptive comment, I wholehearted discount any support SACOG may offer for this project, to the extent it should be considered valueless.

I-9-2 cont.

5. Additional high density housing has been added recently in the region, south of White Rock next to the El Dorado Hills Town Center, between Valley View Parkway and Latrobe Road. How has that been working out? It doesn't appear that business has improved as vacancy rates in Town Center don't appear to have been approved. My understanding is that crime has increased. Would that be the case on the north side of US 50 if this project with the proposed high density housing is approved?

6. It is a matter of fact that the makeup of the El Dorado Hills residents is changing. Many people have lost their homes initiated by the bank inspired mortgage economic depression that began in 2007. Since there is no commercial business growth in the region to speak of, the new

I-9-3

residents fall into three categories. First, there are the retirees selling homes in the San Francisco region that can afford to buy homes for cash. Second, there are immigrants, mostly from Asia that, for some reason, can also buy homes for cash. Finally, there are companies that buy housing, in mass, and rent homes for ridiculously high rents to people who should be able to afford homes (and likely lost them in the 2007 depression) but can't buy due to the much tighter lending rules. Albeit, some of this last group choose to not buy homes even if they could because they simply don't want to take the risk of home ownership again. I-9-3 cont.

7. Since moving to this area in 2004, the traffic intersection in front of the Raley's getting on and off of US 50 has been a traffic nightmare. Improvements have been made but traffic engineers struggle to make it better. Timing mechanisms have been adjusted but improvements have not been noticed and sometimes the problems have gotten worse. I have little faith that traffic engineers will get the problem solved by the time the additional 600 residences that have been already approved are constructed – let alone, another 400 proposed by this amended plan. I-9-4

In summary, the negative probable impacts associated with the new plan are 1) aesthetics, 2) compounding of existing trunk line traffic problems, 3) potential for increased crime, and 4) the political dissatisfaction of the 90+% voters advising against this development voiced on Measure E. I-9-5

Response to I-9, Alan Hockenson, 2/19/2016

I-9-1: This comment provides the commenter's interpretation of portions of the project. The characterization of project elements is consistent with the Draft EIR and does not raise any issues about the adequacy of the Draft EIR. No further response is necessary.

I-9-2: This comment offers various opinions that are directed to the merits of the proposed project, and none addresses the adequacy of the Draft EIR. See Master Response Measure 2 (CSD Advisory Measure E).

I-9-3: The commenter asked about the potential impact of high density housing on crime and vacancy rates. Crime and vacancy rates are social issues, not environmental impacts addressed by CEQA; therefore, they are not addressed under CEQA. No further response is necessary.

I-9-4: The commenter expresses concerns about increased traffic at the US 50 on-ramp due to the project. Impacts on traffic are discussed in Section 3.14, *Traffic and Circulation*, where mitigation is discussed. Impact TRA-1 addresses potential impacts on traffic circulation, including levels of service at the US 50/El Dorado Hills Boulevard interchange, which is specifically discussed on page 3.14-27 of the Draft EIR and illustrated in table 3.14-9. Updated traffic impact studies were prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The updated 2017 traffic analysis, which takes into account recent improvements, indicates that all freeway facilities would operate at acceptable levels of service. See also Response to Comment **I-2-6**. Additionally, traffic in the future, under cumulative conditions is discussed in Section 5.2.2 and further mitigation is provided. Freeway facilities are discussed beginning on page 5-39 of the Draft EIR and in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR* of this document. Table 5-7 on page 5-40, as amended in the final EIR, indicates that all on- and off-ramps at the El Dorado Hills/Latrobe Road/US 50 interchange would operate at acceptable levels of service under cumulative plus project conditions.

I-9-5: The commenter anticipates potential negative impacts associated with aesthetics, traffic on US 50, increased crime, and political dissatisfaction as indicated by the CSD Advisory Measure E vote. Crime and political dissatisfaction area not environmental impacts addressed by CEQA; therefore, no response to this portion of the comment is necessary. Please see Response to Comment **I-7-2** and Master Response 2 (CSD Advisory Measure E) regarding CSD Advisory Measure E. Visual impacts are discussed in Section 3.1, *Aesthetics*, which identifies mitigation to reduce impacts to a less-than-significant level where possible. Regarding traffic, please see Response to Comment **I-9-4**.

LETTER I-10

From: **Mark & Jean Holloway** <hollowayfam97@gmail.com>
Date: Tue, Dec 15, 2015 at 8:52 AM
Subject: Environmental Impact Report for the Central El Dorado Hills Plan
To: cedhsp@edcgov.us
Cc: rommel.pabalinas@edcgov.us

Dear CDA,

After spending considerable time reviewing the DEIR for the Central El Dorado Hills Plan, I'm struggling to find any logical reason why this development is good for our community.

It could be argued additional residences will generate more taxes. However given we are not an incorporated city, El Dorado Hills receives pennies on every tax dollar as most of the the tax revenue goes to the county and spent outside of El Dorado Hills. It could also be argued we will have better bike paths. As an avid runner and cyclist, getting around our community is fine and safe and I didn't see anything in the plan that was compelling enough to significantly increase the value of the existing bike paths. The last argument that could be made is in addition to the residences, a park will be developed at southernmost section of the development bordering Hwy 50. I for one am in favor of additional usable sports fields (soccer, baseball, etc.) but adding this park at the expense of the housing developments is a poor trade-off. Here are my concerns of the plan: I-10-1

1. Traffic: The current traffic on El Dorado Hills Blvd is unbearable at times, especially during high peaks in the weekday morning and to a lesser extent in the late afternoon. Just factoring in an average of two additional cars for every housing unit will add 2000 cars along the 1.25 mile stretch of the El Dorado Hills Blvd corridor where the housing units are proposed. With no plans or capabilities to widen El Dorado Hills Blvd, this additional vehicle traffic, to an already congested main artery in EDH, makes no sense. I-10-2
2. Hillside Impact: One of the reasons we moved here in 2002 was due to the scenic openness of the community. We understand communities expand as can be seen south of Hwy 50 and also in Serrano. However in our immediate community, the eastern section of El Dorado Hills Bvld, including the flat-land and hillside, is the last open area left in EDH that hasn't been molested by development. I heard a number of times by county associates at the Open House on December 2nd that this plan will keep the hillside open. True. However while driving on El Dorado Hills Blvd and having to look over high density housing to see what remains of our untouched hillside is not a solution. As an exercise, try driving on Silva Valley Parkway and look up over the homes to see the hillside. Does this truly enhance the scenic value of our community? I-10-3
3. Oak Ridge High School: I'm sure adding 1000 more residential units and the students that come with that have been factored into the already near-capacity ORHS classrooms. If there were capacity, then I would need to understand why all of the students in the Blackstone community (in EDH) are having to be bused to Union Mine High School nearly 25 minutes east from ORHS. Perhaps there's a plan but after speaking with the county representatives, nobody was aware of any student capacity planning with ORHS. I-10-4

So my last question that I asked and nobody was able to answer was....what's in it for me? By adding 1000 housing units along the busiest corridor in EDH, what's in it for me? What value do I get out of it? Why, with the housing market sill in flux and hundreds of homes constantly on the market in EDH (see Zillow.com), why do we need more housing units? And why would we add homes that would potentially dilute existing home prices (see a demand a supply curve)? I-10-5

Why would I ever support this? I wouldn't for all the reasons mentioned.

Regards,

Mark Holloway

Response to I-10, Mark Holloway, 12/15/2015

I-10-1: The commenter expresses an opinion on the merits of the project. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is necessary in the EIR.

I-10-2: The commenter expresses concerns about traffic on El Dorado Hills Boulevard in the context of the merits of the proposed project. Although the comment does not directly address the Draft EIR analysis, the following is provided to inform the decision-making process. Project impacts on El Dorado Hills Boulevard are evaluated in Impact TRA-1 on pages 3.14-24 through 3.14-26 in Section 3.14, *Traffic and Circulation*, and in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, in this document. Table 3.14-7, as amended in the Final EIR, shows the project's impacts on El Dorado Hills Boulevard. Based on the technical analysis presented in the project's Transportation Impact Analysis (included in Appendix L of the Draft EIR) and updated 2017 analysis (added to Appendix L in this document), the project would not result in an impact requiring mitigation along El Dorado Hills Boulevard because the improvements necessary to reduce the level of this impact disclosed in the Draft EIR have already been constructed and, therefore, this impact would be less than significant. Revisions to the Draft EIR remove mitigation to address this impact (see Chapter 3 of this Final EIR). Although the project would add traffic to El Dorado Hills Boulevard, the addition of project traffic would not exceed the County's policies for roadway segments. The commenter's concern about traffic conditions will be considered by the County during the decision-making process.

I-10-3: The commenter is of the opinion that zoning the hillside in the Serrano Westside planning area will not enhance the scenic value of the community. Visual impacts are addressed in Section 3.1, *Aesthetics*, of the Draft EIR. Figures 3.1-3 through 3.1-7 provide visual simulations of the proposed project from various locations. Impact AES-4 discusses the visual impacts of development of the proposed project and finds that with mitigation, the impact would be less than significant.

I-10-4: The commenter expresses concern about capacity of schools. Project impacts on schools, including Oak Ridge High School, are presented in Impact PSU-1 on page 3.12-37 in Section 3.12, *Public Services and Utilities*, in the Draft EIR. Table 3.12-11 on page 3.12-38 identifies the existing capacity at Oak Ridge High School and additional students that would be generated by the proposed project. As stated on page 3.12-38, increased enrollment is not a significant environmental effect, but is rather a social effect. School impact fees levied on development projects is full and complete mitigation as provided by State law (California Government Code Section 65995 et seq.). It is not within the County's jurisdiction or discretion to determine which high school students attend. That decision is made by the school district.

I-10-5: This comment is directed to the merits of the proposed project and does not address the adequacy of the Draft EIR.

LETTER I-11

Comments on the

CENTRAL EL DORADO HILLS SPECIFIC PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT

Submitted by

Parks not Parker 2.0

2/18/16

Thomas P. Infusino. Esq.
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February 18, 2016

Mr. Rommel (Mel) Pabalinas
Long Range Planning Division
El Dorado County Community Development Agency
2850 Fairlane Court, Building C
Placerville, CA 95667
CEDHSP@edcgov.us

Dear Mr. Pabalinas:

The attached document is a public comment on the EDHSP Draft EIR, made on behalf of both Parks not Parker 2.0, and the individual contributors listed below. We appreciate the extended time frame for public comment that has better allowed us to review the Draft EIR, ask questions, and provide feedback that we hope will be constructive.

We look forward to the County's response to our comments, and hope it will result in both a better project and Final EIR. I-11-1

We also request that the contributors, as listed on the following page, receive any future notices regarding the project, and that a copy of the Final EIR be sent to Wayne Haug at the address provided below.

Please retain a copy of these comments for the administrative record.

Sincerely,

Thomas P. Infusino

Mailing Address for Final EIR:

Wayne Haug on behalf of Parks not Parker 2.0

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Table of Contents

Section 3.1 – Aesthetics

The description of the local and regional environmental setting must be sufficient to provide an understanding of the significant effects of the proposed project and its alternatives. (CEQA Guidelines, sec. 15125.) An EIR must describe the physical conditions and environmental resources within the project site and in the project vicinity, and evaluate all potential effects on those physical conditions and resources. (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952 [91 Cal.Rptr.2d 66].) Impacts of the project must be measured against real conditions on the ground. (*Save our Peninsula Committee v. Monterey County Board of Supervisors* (App. 6 Dist. 2001) 87 Cal.App.4th 99.)

Without accurate and complete information pertaining to the setting of the project and surrounding uses, it cannot be found that the EIR adequately investigated and discussed the environmental impacts of the development project. (*Cadiz Land Co., Inc. v. Rail Cycle, L.P.* (2000) 83 Cal.App.4th 74, 92, 99.) "A conclusory statement 'unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind' not only fails to crystallize issues [citation] but 'affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives.'" (*People v. County of Kern* (5th Dist. 1974) 39 Cal.App.3d 830, 841-842, quoting *Silva v. Lynn* (1st Cir. 1973) 482 F.2d 1282, 1285.) A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.) I-11-2

As explained below, the setting discussion in this section of the DEIR is not accurate, and is not supported by evidence in the record or on the ground.

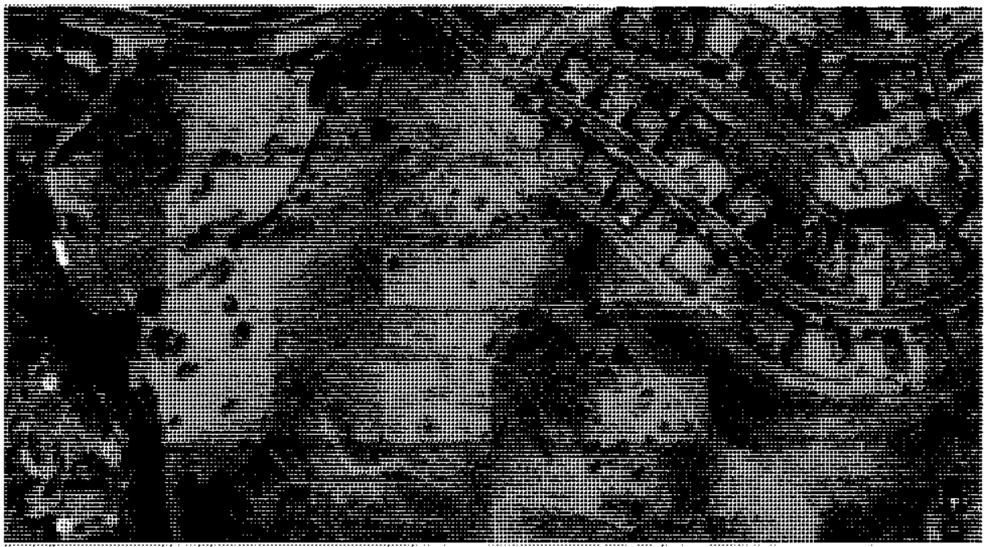
On page 3.1-7, the DEIR states, "Both planning areas are surrounded primarily by medium- to high-density residential and mixed-use development interspersed with open space land uses and remnant oak woodlands and riparian vegetative communities." I-11-3

However, the Serrano Westside planning area is bounded by the existing Serrano Village D2 on its entire eastern edge. Village D2 is best described as low to medium density. **In the Final EIR, explain the factual basis for asserting that this area is <u>surrounded</u> by medium- to high-density development?**

On page 3.1-8, the DEIR states, "The vicinity is well-lit at night and ambient sky glow currently radiates from the area."

The western border of Village D2 of Serrano is well within the .5 mile vicinity. Serrano was marketed as being of rural character and the ability to the see the night stars. In fact, there is no street lighting in Serrano specifically to reduce night-time light pollution. **What measurements have been conducted in Village D2 of Serrano to support the statement in the DEIR? What were the lux levels of the measurements? What is the expected lux levels post-development?** I-11-4

On page 3.1-8 the DEIR states, "Residential homes surrounding the planning areas are generally tucked into the oak woodland canopy and do not have views of the project site due to terrain and trees that limit such views."



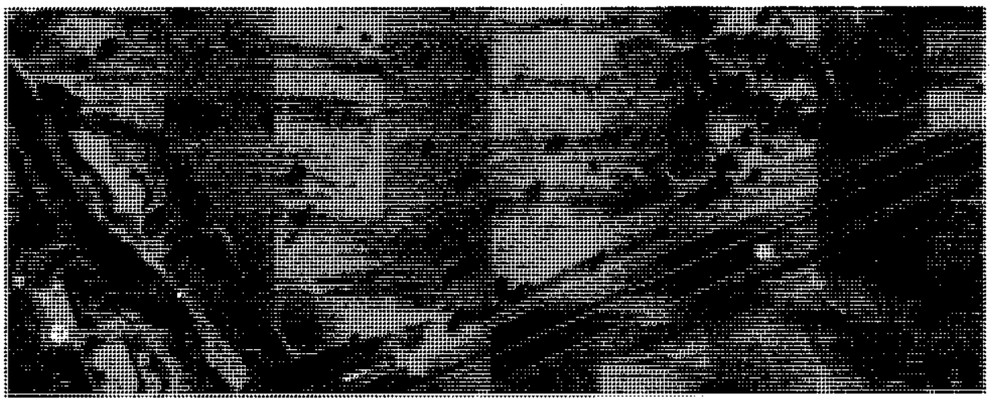
I-11-5

In light of the aerial view above, what is the factual basis for asserting that the homes closest to the Serrano Westside planning area on Penela Way are tucked into an oak woodland which limits views to the project site?

On page 3.1-8 the DEIR states, "Given the density of rural residential areas, the number of recreationists with views of the site is anticipated to be small."

On the prior page it was stated that the surrounding area was composed of medium and high density housing. How then does this now translate to an implied low density and small number of recreationists? What is the raw data being analyzed to make these incongruent assertions, or are they completely arbitrary?

On page 3.1-8 the DEIR states, "Their views toward the site are largely obscured by the rolling terrain and trees, except when breaks in topography and vegetation allow views or when an elevated vantage point affords views."



Referencing the above aerial photo, how can it be maintained that the view of the site is largely obscured when the breaks in vegetation are large enough to pilot an oil tanker through?

Furthermore, motorists using the Silva Valley interchange, Serrano Parkway, or exiting Highway 50 at EDH Boulevard all share an elevated vantage point and will be confronted with a diminished view at NE corner of Hwy 50 and EDH Blvd. Does the usage of the word "except" adequately acknowledge the scope of the diminished views? I-11-5 cont.

On page 3.1-8 the DEIR states, "Viewers on this scenic portion of US 50 would have moderate sensitivity to their surroundings because while scenic views of the undeveloped foothills and the Sacramento Valley horizon are of a higher quality"

Actually, those headed towards Sacramento, do not see the Sacramento Valley horizon at the point in question. All they see is a highway ramping upwards through a deep cut in a hill. There is no scenic view of the Sacramento Valley until cresting over this hill about one quarter mile prior to the E. Bidwell exit. **What location specifically does "this scenic portion of US 50" reference with alleged views of Sacramento Valley?**

Regarding the thresholds of significance, on page 3.1-10, the DEIR states, "In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area."

It is important to note that, "[T]he significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area." (CEQA Guidelines, sec. 15064, subd. (b); *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1026.) Given that the scenic qualities of Serrano are such a key part of its attractiveness and value, the conclusions of the DEIR as to the significance of the impact make no sense. I-11-5 cont.

Why is the substantial adverse effect on the scenic vistas enjoyed by residents in village D2 (Souza, Penela Way) and, to the west of EDH Blvd, homes at the peak of La Cesta Village not classified as significant? In the Final EIR, please reconsider the assessment of these impacts and propose additional mitigation measures.

Why is the destruction of an historic golf course, along a scenic highway, designed by the iconic Robert Trent Jones not classified as significant? In the Final EIR, please reconsider the assessment of this impact and consider an alternative. I-11-6

As a private, gated community, Serrano has always been marketed as an upscale neighborhood. The incorporation of high density housing at its front door would clearly degrade the visual quality and character it is known for. **Why is the substantial degradation of the high standards of the award-winning gated community of Serrano not classified as significant?** In the Final EIR, please reconsider the assessment of this impacts and propose additional mitigation measures. I-11-7

Adding approximately 800 residences and several lighted ball fields at the base of the existing community would create a permanent evening glow that would irreparably harm the nighttime views Serrano was built around. **Why is the substantial light pollution of nearly 800 new units adjacent to a blacked out community not considered significant? What are the metrics or guidelines employed to make this determination, or are they completely arbitrary?** A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.) In the Final EIR, please reconsider the assessment of this impact and propose additional mitigation measures. I-11-8

On page 3.1-10 the DEIR states, "Construction activities on the site would be familiar because similar construction is commonly occurring just outside the vicinity, in other portions of El Dorado Hills, so viewers would be less sensitive to construction at the site." I-11-9

If multiple DEIR reports cite other construction as the basis for exemptions, how does this differ from circular reasoning?

On page 3.1-11 the DEIR goes on to state, "Because the area is highly developed, viewers are accustomed to seeing construction in the area"

Is the intent to assert that highly developed areas should be subject to less scrutiny despite construction having a greater cumulative effect on travel impediment and quality of life issues stemming from noise?

Furthermore, the idea that a degraded existing environment raises threshold for significant impacts has been thoroughly rejected by the courts. In fact, the courts have determined that the opposite is the case. The more severe the existing environmental problems are, the lower the threshold for treating the project's cumulative impacts as significant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 718-721; *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025 – 1026; *Communities for a Better Environment v. California Resources Agency* (3d Dist. 2002) 103 Cal.App.4th 98, 117-121.) In the Final EIR, please reconsider the assessment of these impacts and propose additional mitigation measures. I-11-9 cont.

Therefore, the fact that construction activity is occurring just outside the vicinity makes it more likely the cumulative impact of additional construct is significant. In the Final EIR, please reconsider the assessment of these impacts and propose additional mitigation measures.

"A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since the existing setting and the impact analyses in this section are so flawed, we respectfully request that the County prepare a Revised DEIR that includes the proper aesthetic impact analyses, and circulate that RDEIR for public comment.

On page 3.1-12 the DEIR states, "Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas Buildings associated with the proposed project that are to be located in oak woodland and grassland areas will be designed to blend with the surrounding built and natural environments so that these structures complement the visual landscape. The following measures will be applied." I-11-10

What control mechanism is in place to prevent the eventual owners of these residences from re-painting their homes a lighter color? There appears to be an acknowledgement here that these homes could have a "substantial adverse effect on a scenic vista". But this mitigation is short-term, at best.

On page 3.1-15 the DEIR states, "As specified in Mitigation Measure NOI-1b and shown on Figure 3.10-2 in Section 3.10, Noise and Vibration, noise barriers may be needed to lessen the impacts associated with noise."

How will noise barriers be deployed without substantially degrading the existing character of the surrounding community? This is wholly inconsistent with the design philosophy of the immediate area (Serrano). Serrano employs very fine asphalt to favor appearance (providing a sheen) over traction. It rejected a pedestrian "no crossing" barrier at the intersection of Village Green and Serrano parkway to maintain its visual standards. A noise barrier is the antithesis of the standards set for Serrano by the very developer now seeking its usage. In the Final EIR, please consider a feasible alternative that avoids noise impacts without barriers. I-11-11

On page 3.1-15 the DEIR states, "The combination of potential viewer sensitivity, permanent visual changes resulting to the site, and nature of existing, undeveloped scenic vista views toward the project site would result in impacts that would be significant." I-11-12

Agreed. **Why then is it stated that the Impact AES-4 is "less than significant with mitigation"**?

On page 3.1-16 the DEIR states, "Mature vegetation in the area would aid in reducing the amount of glare from these sources. These features would be similar to the existing sources of glare and new sources would be minimal and in keeping with existing conditions."

Given the previously referenced aerial view of Penela Way, what quantifying calculations were performed to assess the efficacy of the mature vegetation in reducing glare? What assessment was performed in the existing Serrano Village D2 to establish that the additional light output would be "in keeping with existing conditions"? A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.) I-11-13

On page 3.1-17 the DEIR states, "As roadway users continue to travel west and drop in elevation, vistas and views of the Sacramento Valley are obscured by the hilly terrain to the west of El Dorado Hills Boulevard/Latrobe Road as they pass by where the Silva Valley Parkway overcrossing is being constructed and head toward the low point." I-11-14

Why does this statement completely contradict an earlier assertion about the scenic views of Sacramento valley as one passes the planned sites in question in a westbound direction?

The DEIR includes Figure 3.1-5.

Why in a comparison of before and after aesthetics, is the view hindered by a giant utility pole in the middle of the field of view? What prevented taking the picture from a slightly different position? This does not seem to be an objective comparison. The Lead Agency is responsible for the adequacy and objectivity of the draft EIR. (CEQA Guidelines, sec. 15084, subd. (e).) In the Final EIR please do not rig the analysis to arrive at a desired conclusion. I-11-15

The DEIR includes Figure 3.1-7.

Why does the rendered photo of the proposed project show a dense grove of mature 20 year old trees? What existing Serrano villages were sampled to determine an appropriate density model? Will the project be planting mature trees? How long will it take for the planted trees to reach the depicted level of maturity?

Even if the project will eventually include such a grove, it is inappropriate to fail to disclose the interim level of aesthetic impacts. "An EIR stating that in 20 or 30 years the project will improve the environment, but neglecting, without justification, to provide any evaluation of the project's impacts in the meantime, does not "giv[e] due consideration to both the short-term and long-term effects" of the project (Cal. Code Regs., tit. 14, § 15126.2, subd. (a)) and does not serve CEQA's informational purpose well." *(Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (August 5, 2013) 57 Cal.4th 439.) In the Final EIR, please make a "good faith effort at full disclosure" of the impacts. (CEQA Guidelines, sec. 15151.) I-11-16

Section Chapter 3.2 - Air Quality

1. Page 3.2-2. Nonroad Diesel Rule. "The EPA established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks...".''New construction equipment used to implement the proposed project... will be required to comply with the emission standards."

a.) In the FEIR, please provide, in detail, a copy of the EPA's increasingly strict emission standards for the construction equipment and trucks to be used to implement the proposed project. "The courts have favored specificity and use of detail in EIRs." (*Whitman v. Board of Supervisors* (2d Dist. 1979) 88 Cal.App.3d 397, 411.)

h.) In the FEIR, please provide, in detail and with as much specificity as possible, a list of construction equipment and trucks to be used to implement the proposed project and evidence that such equipment and trucks will comply with the required EPA emission standards. It is worthy to note that the Sacramento Metropolitan Air Quality Management District generally (and accurately) assumes that there will be a mix of ages of equipment used. Upon project implementation, the mix of equipment used and the hours of use are identified. Mitigation fees are charged based upon the emissions from the equipment. The mitigation fees are then used to purchase emissions offsets. I-11-17

c.) Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.) In the Final EIR (FEIR) and/or the mitigation monitoring and reporting program, please provide a copy of the monitoring plans in place to ensure that the equipment and trucks used will meet the required EPA emission standards. Please specify which outside third party will monitor compliance, how often such monitoring will take place, how the information from such monitoring will be recorded and how and where such monitored information will be available to the public for review. If no monitoring plans are in place, please explain why not.

d.) "Because an EIR cannot he meaningfully considered in a vacuum devoid of reality, a project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR." (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 420.) In the FEIR, please indicate in detail and with specificity the past history of the County's air quality impact mitigation monitoring. How many staff are allocated to this task? How many site visits did they make to each construction site in the last five years? Did they or others identify any mitigation violations? How serious were the violations? Were the developer's mitigation failures intentional, negligent, or unavoidable? Has mitigation monitoring and effectiveness improved or declined over time? I-11-18

e.) Given the lack of County monitoring staff, we encourage the County to consider contracting for monitoring staff at the project applicant's expense. We encourage the County to use such contract staff to hold tailgate-trainings with workers on the job site to convey the mitigation requirements to them. We encourage the County to post the monitoring efforts and data on their website so that the public can be confident that these mitigation measure are being effectively implemented. Neighboring Alpine and Amador counties have contracted for monitoring staff who post their results on a public website for construction-related mitigation on the site of the Kirkwood Specific Plan.

f.) PLEASE NOTE- In selecting air quality thresholds, please remember that "the significance of an activity may vary with the setting." (Guidelines, § 15064, subd. (b).) Also remember that the more degraded the existing setting, the lower the threshold for determining that an additional impact is significant. (Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1025 – 1026.) There are 2 elementary schools, 1 middle school and 1 high school, with a combined attendance of over 4700 students, within between 100 feet and 1500 feet of the Project Area (see DEIR Table 3.2-4). There are also senior and elderly only facilities, a public library and a preschool located less than 900 feet from the Project Area. Such schools and facilities are more likely than not to be populated by "sensitive receptors"-people that may experience adverse effects from unhealthful concentrations of air pollution. Regulated emissions, even at levels deemed "safe" for adults, can have adverse health consequences for children, teenagers and senior citizens. I-11-19

2. Page 3.2-3. Radon Action Level.

a.) In the FEIR, please provide a copy of the referenced EPA indoor action level for radon exposure, and explain how the project applicant or the County will monitor such levels during and after construction. Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.) I-11-20

b.) In the Final EIR, please provide a copy of the referenced EPA recommendations for corrective measures to reduce exposure to radon gas, and a copy of the project applicant's plan to implement such recommendations during construction. If no plan is in place, please explain why not. Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.)

3. Page 3.2-3. State Tailpipe Emission Standards.

a.) In the Final EIR, please provide a copy of the referenced ARB established "series of increasingly strict emission standards for new engines".

b.) In the Final EIR, please provide, in detail, and with as much specificity as possible, a list of construction equipment and trucks to be used to implement the proposed project, and evidence that such equipment and trucks will be outfitted with new engines meeting the requisite ARB emission standards.

c.) In the FEIR and/or the mitigation monitoring and reporting program, please provide the monitoring plans in place to ensure that the construction equipment and trucks to be used to implement the proposed project will be outfitted with new engines meeting the requisite ARB emission standards. Please specify which outside third party will monitor compliance, how often such monitoring will take place, how the information from such monitoring will be recorded and how and where such monitored information will be available to the public for review. If no monitoring plans are in place, please explain why not. Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.) I-11-21

d.) How has this existing regulatory system performed to date in El Dorado County? Has it proven effective or is it assumed effective? What steps are heing taken to ensure its effectiveness? Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.) I-11-21 cont.

4. Page 3.2-4. Toxic Air Containment Regulation. The last sentence in this section states, "The proposed project would be required to comply with applicable diesel control measures."

a.) Please specify how the project applicant's compliance with the applicable diesel control measures will be monitored, who will do the monitoring, how often such monitoring will take place, how the information from such monitoring will be recorded, and how and where such information will be available to the public for review. Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.) I-11-22

b.) How has this existing regulatory system performed to date in El Dorado County? Has it proven effective or is it assumed effective? What steps are being taken to ensure its effectiveness? Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.)

5. Page 3.2-4. LOCAL REGULATIONS. El Dorado County General Plan. Reference is made in the DEIR to the goals, objectives and policies regarding air quality set forth in the Public Health, Safety and Noise Element of the El Dorado County General Plan.

a.) Please address any changes to Goal 6.7 and the Objectives relative to such Goal, as a result of the December 15, 2015 amendments to the El Dorado County General Plan, adopted by the EDC Board of Supervisors.

b.) Please set forth in detail the actions that the project applicant proposes to take, with respect to the proposed project, to meet the listed Objectives and implementing Policies. "The courts have favored specificity and use of detail in EIRs." (*Whitman v. Board of Supervisors* (2d Dist. 1979) 88 Cal.App.3d 397, 411.)

c.) How has this existing regulatory system performed to date in El Dorado County? Has it proven effective or is it assumed effective? What steps are being taken to ensure its effectiveness? Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.) I-11-23

6. Page 3.2-5. LOCAL REGULATIONS. El Dorado County General Plan. Reference is made to Goal 6.3, Geologic and Seismic Hazards, and certain Objectives and Policies relating thereto.

a.) Please address any changes to Goal 6.3 and the Objectives and Policies relating thereto, as a result of the December 15, 2015 amendments to the El Dorado County General Plan, adopted by EDC Board of Supervisors.

b.) Please set forth in detail the actions that the project applicant proposes to take, with respect to the proposed project, to meet the listed Objectives and Policies relating thereto.

c.) How has this existing regulatory system performed to date in El Dorado County? Has it proven effective or is it assumed effective? What steps are being taken to ensure its effectiveness? Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.) I-11-23 cont.

7. Page 3.2-5. LOCAL REGULATIONS. EDCAQMD. "The rules most pertinent to the proposed project are briefly described below."

a.) This statement implies that there are rules developed and adopted by the EDCAQMD that, while still pertinent to the proposed project, are not "most" pertinent. This is a value judgment. Please list and describe all the Rules that are pertinent to the proposed project. "A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 712.)

b.) Please set forth in detail how the project applicant will follow or comply with the Rules adopted by the EDCAQMD, who will monitor applicant's compliance with the Rules, how often such monitoring will take place, how the information from such monitoring will be recorded and how and where such monitored information will be available to the public. I-11-24

c.) How has this existing regulatory system performed to date in El Dorado County? Has it proven effective or is it assumed effective? What steps are being taken to ensure its effectiveness? Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.)

8. Page 3.2-8. EXISTING AIR QUALITY CONDITIONS. "Given the distinct meteorological conditions in the LATB that can influence pollutant concentrations, PM10 data from the Sacramento-Branch Center Road monitoring station in Sacramento County are used as representative data for the project area." "Table 3.2-2 summarizes ozone and PM10 levels.... As shown in Table 3.2-2, the Placerville-Gold Nugget Way station has experienced frequent violations of the ozone standards."

a.) Table 3.2-2 contains data from two different sources. This is unnecessarily confusing. It should be clearly indicated in the Table from which source the data is derived.

b.) The PM10 data is taken from the monitoring station that is located in Sacramento County which is approximately 16 miles from the project area. Please explain how a monitoring station 16 miles away from the project area, has any relevant data, wheu, to quote from the DEIR on Page 3.2-6, "The topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin." The topography and meteorology of the project area is significantly different (altitude, temperature, and wind, among other things) than that from where the data has been derived, and that in itself calls into question whether such data is relevant to this DEIR. The Sacramento basin is different than the foothills of El Dorado Hills. A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.) In the Final EIR, please provide specific local project area derived ozone and PM10 data. I-11-25 c.) "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since the local ozone and PM10 data was not provided in the DEIR, we respectfully request that the County prepare a Revised DEIR that includes these air quality analyses, and circulate that RDEIR for public comment. I-11-25 cont

9. Page 3.2-10. Table 3.2-3 Federal and State Attainment Status for the Project Area.
a.) The table does not indicate from where the data shown is derived. It is not the project area. Is it from the Sacramento monitoring station 16 miles to the west? Is it from the Placerville monitoring station 14 miles to the east? Is the data an amalgamation of both? In the FEIR, please provide specific local project area derived data for the 10 Criteria Pollutants set forth in Table 3.2-3. As noted in comment 8 b.) above, the topography and meteorology of the project area differs significantly from that of the Sacramento basin and the Placerville area. I-11-26

10. Page 3.2-11. Naturally Occurring Asbestos.
a.) Please provide a copy of the referenced Youngdahl Consulting Group Assessment of NOA for the project area.
b.) Was the referenced Youngdahl Assessment paid for by the project applicant? We're the results verified and confirmed by an independent entity? In the last 5 years how many times has the applicant or any related entity of the applicant employed Youngdahl Consulting Group? Remember that, "The Lead Agency is responsible for the adequacy and objectivity of the draft EIR." (CEQA Guidelines, sec. 15084.)
c.) Remember that, "[A] project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR." *(Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 420.) In the FEIR, please be specific as to how air quality with respect to NOA will be monitored at all times and in all project areas while excavating is occurring. Other recent projects in the area (i.e. the new Silva Valley Parkway Highway 50 Interchange, where there are no records of any air quality testing being done near Oak Meadow Elementary School during construction) have sidestepped this issue by stating that "determination made air testing not required". Among the relevant aspects of the environmental setting, the lead agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 874.) In the FEIR, please specify how NOA has been managed in past projects in El Dorado County, and how exactly air quality with respect to NOA will be kept safe as the proposed project is constructed. I-11-27

11. Page 3.2-11. Radon.

a.) The last 2 sentences in this section conclude that "... radon exposure in the project area is not anticipated to represent a significant concern ... Accordingly, radon is not discussed further in I-11-28 this analysis." Please provide a copy of the referenced CDHP Radon sampling database indicating that out of 31 tests, only 3 had reported concentrations in excess of 4 pCi/L. Where were these test sites? Were any in the project area? If not, why not?

b.) Please see the attached Chart, titled El Dorado County Radon Information. The Chart indicates that the average indoor radon level of residences in El Dorado County is 3.8 pCi/L, and that 33% of tested residences in El Dorado County had radon levels in excess of 4 pCi/L. These numbers are disturbing, since as the project applicant states earlier, radon exposure is the leading cause of lung cancer among non-smokers in the United States. The project applicant must be required to do more analysis on the issue of radon gas in the project area. In the Final EIR, please provide at a minimum what preventative and corrective (installation of radon detection devices, etc.) the project applicant will take to reduce exposure to the invisible radioactive gas that is radon to the residents of the proposed 1000 residences the applicant is planning to build. Remember, CEQA requires agencies to adopt feasible mitigation measures in order to substantially lessen or avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).) I-11-28 cont

12. Page 3.2-12. Sensitive Receptors. There are 11 facilities identified as "sensitive receptors" within 1000 feet of the project area, including 2 schools that are within 200 hundred feet of the project area (see Table 3.2-4). The children and teenagers in those schools are more susceptible to unhealthful concentrations of air pollutants, as are the children and senior citizens in the other facilities identified in Table 3.2-4. In the Final EIR and/or mitigation monitoring and reporting program, list what monitoring measures will mandated and implemented on a daily basis to protect the air quality of the children closest to the project area specifically, and to those children and senior citizens in the other sensitive receptor facilities as well. "A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 712.) I-11-29

13. Page 3.2-13. Odors. "EID will be installing an aluminum primary clarifier cover, upgrading the existing biofilter, installing foul odor duct work, and removing two equalization tank odor scrubbers to minimize odor generation." In the Final EIR, please provide a schedule from EID showing the timeframe for the work to be done. Is it likely that a substantial portion of the project area will be occupied prior to the completion of the mitigation work? "Even when a project is intended and expected to improve conditions in the long term—20 or 30 years after an EIR is prepared—decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement. These costs include not only the impacts involved in constructing the project but also those the project will create during its initial years of operation." *(Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.) I-11-30

14. Page 3.2-13. Construction. Reference is made to the "guidance published by ARB (2000) and the Office of Environmental Health Hazard Assessment (OEHHA) (2003) regarding the I-11-31

relationship between exposure duration and adverse effects". Have these two guidance documents been updated since their respective dates of publication? Are they the most current guidelines available? Are they "state-of-the-art"? Given the potential adverse health effects from inhaling DPM, it would be beneficial to use guidelines that are not approximately 16 and 13 years old. The use of outdated information to evaluate environmental impacts does not reflect, "[A] reasoned and good faith effort to inform decisionmakers and the public." (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344. 1367.) I-11-31 cont

15. Page 3.2-15. Operation.

a.) Reference is made to the project applicant using "CO concentrations from EDCAQMD's 2002 Guide to Air Quality Assessment, etc." Have the EDCAQMD CEQA 2002 Guidelines been revised or updated since their enactment or publication? If not, why not? Do the 2002 Guidelines conform to the latest federal and state laws and rules with respect to air quality? Are the 2002 Guidelines "state-of-the-art". Do they reflect up-to-date scientific and health standards? The use of outdated information to evaluate environmental impacts does not reflect, "[A] reasoned and good faith effort to inform decisionmakers and the public." (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344. 1367.) I-11-32

b.) " The proposed project itself is not expected to represent a significant operational source of DPM, because DPM- generating equipment and activities... Would be limited under proposed project operations." This is a self-fulfilling statement without clear support. In the FEIR, please identify the "proposed project operations" that will limit DPM?

c.) You can't measure DPM emissions from the project in a vacuum – as if no other sources existed in the area. What will be the cumulative DPM emissions not only from this project but other EDC approved and proposed projects within a 1 mile radius of the project area?, within a 5 mile radius of the project area? "'An agency may not ... [treat] a project as an isolated 'single shot' venture in the face of persuasive evidence that it is but one of several substantially similar operations .... To ignore the prospective cumulative harm under such circumstances could be to risk ecological disaster.'" (*Whitman v. Board of Supervisors* (2d Dist 1979) 88 Cal.App.3d 397, 408, quoting *Natural Resources Defense Council v. Callaway* (2d. Cir. 1975) 524 F.3d 79, 88.) I-11-33

d.). Reference is made in this section and in other sections following to "Baughman pers. comm A, Baughman pers. comm B, Baughman pers. comm C, and on Page 3.2-17 to Otani pers. comm. In the Final EIR appendices, please provide copies of such pers. comms, as well as any other communications, in either hard copy or email, between either project applicant and/or ICF International, and the EDCAQMD and any staff member of the EDCAQMD, in connection with or related to the proposed project. Such technical details that are needed to permit a full assessment of significant impacts by reviewing agencies and the public belong in the EIR appendices. (CEQA Guidelines, sec. 15147.) I-11-34

16. Page 3.2-17. Construction-Generated Ozone Precursors. "In 2002, EDCAQMD , adopted a fuel-based screening threshold for criteria pollutant emissions...".

a.) Have those screening thresholds been revised or updated since 2002? If not, why not? Do the 2002 screening thresholds conform and comply with the latest federal and state laws with respect to pollutant emissions? Are the 2002 screening thresholds state-of-the-art, reflecting up-to-date scientific and health studies and standards? The use of outdated information to I-11-35 evaluate environmental impacts does not reflect, "[A] reasoned and good faith effort to inform decisionmakers and the public." (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344. 1367.) I-11-35 cont

b.) In the footnote a sentence starts with the words "Due to the short-term nature of construction..." There is no "short-term nature of construction" with respect to the proposed project. Look at Table 3.2-5 and it is very clear that significant construction will take place for over 10 years! I-11-36

17. Page 3.2-18. Operations-Generated CO and PM10. The footnote states that "The EDCAQMD's (2002) CEQA Guidelines also consider SO2,Pb, sulfates, hydrogen sulfide, vinyl chloride, and visibility particulate to be significant... these pollutants are TYPICALLY (capitalization added) associated with industrial sources,...". With respect to these pollutants, "typically" means "often are" but does not preclude that these pollutants "might not" be generated during the construction of the project. The project applicant should be required to do a complete analysis of the above mentioned pollutants because they very well "might be" generated during construction. I-11-37

18. Page 3.2-18. Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern. "[A]ll criteria pollutants that would be generated by the proposed project are associated with some form of health risk...Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables(e.g., CUMULATIVE CONCENTRATIONS, LOCAL METEOROLOGY AND ATMOSPHERIC CONDITIONS (capitalization added)..." This section concludes with the statement that "minor increases in regional air pollution from project- generated ROG and NOx would have nominal or negligible impacts on human health.", and there is then a footnote referencing a 2008 Bay Area AQMD model and study, and the concluding statement in the footnote that "Although this example is specific to the Bay Area, similar model limitations would be observed in the Sacramento Valley."

a.) Given that the DEIR recognizes that cumulative concentrations and local meteorology and atmospheric conditions are the cause of adverse health effects, then how can the project applicant justify using Bay Area standards, models and studies when the topography, and local meteorology and atmospheric conditions of the lower Sierra Foothills, where the project is located, is completely different than those that exist in the Bay Area? The proposed project will be located in El Dorado Hills, and as the proposed project will have a significant effect on air quality in El Dorado Hills and immediately surrounding areas, then all air quality tests, models and analysis should be done in close proximity of the proposed project site. The project applicant has the ability and financial resources to do so, and the relevant results will be as site specific as possible. I-11-38

b.) The DEIR completely ignores the adverse health effects resnlting from concentrations of project-generated pollutants when cumulated with pollutants generated from other projects in the area. It is like saying "My pollutants won't hurt you, but when combined with the pollutants generated from other projects in the area, you will be hurt." "Consideration of the effects of a project or projects as if no others existed would encourage the piecemeal approval of several projects that, taken together, could overwhelm the natural environment and disastrously overburden the man-made infrastructure and vital community services. This would effectively defeat CEQA's mandate to review the actual effect of the projects upon the environment." (*Las*

Virgines Homeowners Federation, Inc. v. County of Los Angeles (2d Dist. 1986) 177 Cal.App.3d 300, 306.) The County should be required to do an analysis of the cumulative effects on air quality in the project area for his proposed project and for currently approved and proposed projects in the El Dorado Hills area, including but not limited to the proposed 10,000 residences approved by the Folsom City Council for the area south of Highway 50. The County's own studies indicate that given local weather conditions, including wind, many of the pollutants generated from that Folsom project will end up polluting the air quality in the project area, with adverse health effects on the residents, particularly sensitive receptors. Please include this analysis in the Final EIR.

c.) "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since cumulative air quality analysis noted above was not provided in the DEIR, we respectfully request that the County prepare a Revised DEIR that includes these air quality analyses, and circulate that RDEIR for public comment. I-11-38 cont

d.) Focusing only on the human health effects of localized pollutants completely ignores that applicant's proposed project's generated pollutants are mixed into the pot with pollutants from other nearby current and proposed projects. This may be "consistent with the current state-of-art practice and published guidance", but is it the best the project applicant can do? With matters relating to human health, shouldn't the project applicant be held to the highest standard?

e.) Footnote 10 states that, "Although SO2 and lead may also concentration locally (SIC), the project does not represent a significant source of these pollutants. According, they are not discussed or evaluated further." This is a conclusive statement without facts to back it up. "A conclusory statement 'unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind' not ouly fails to crystallize issues [citation] but 'affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives.'" (*People v. County of Kern* (5th Dist 1974) 39 Cal.App.3d 830, 841-842, quoting *Silva v. Lynn* (1st Cir. 1973) 482 F.2d 1282, 1285.) The project applicant should be required to test for the presence of these pollutants in the project area, provide the test results for public review, and discuss the potential health effects of those pollutants on the nearby residents and sensitive receptors. Please include such an analysis in the FEIR. I-11-39

19. Page 3.2-19. Diesel Particulate Matter. Again, reference is made to a Bay Area AQMD standard, because "EDCAQMD CEQA Guidelines do not identify a cumulative threshold for cumulative exposure." In the FEIR, please explain why EDCAQMD has not adopted its own standard for cumulative exposure, and why relying on a standard from the Bay Area AQMD, which as stated above has very different weather and topography conditions than those that exist in the project area, is justifiable. I-11-40

20. Page 3.2-20. Change to Land Use Designation. The project applicant proposes to build 50,000 square feet of civic-limited commercial space in connection with the proposed project, with slightly increased employment resulting therefrom. Please explain why a change in land use allowing for an additional 50,000 square feet of retail/commercial space is needed, particularly I-11-41

when there is currently available empty commercial and retail space in the El Dorado Hills Center and in the commercial/retail developments at the corner of Francisco and Green Valley streets? In the Final EIR, please provide a fact-based model of exactly how many jobs will be created hy proposed occupants of the proposed 50,000 square feet of retail space, and what compensation levels those employees might receive. If retail jobs, many of those positions will be minimum wage positions- does the project applicant expect that such job holders will be able to buy any of the 1000 new residences that the project applicant wants to build? The results of this study are needed to determine if the commercial/retail component of the project will reduce trips to the area (and air pollution from them) as a result of a jobs/housing halance, or will increase trips as a result of a mismatch between the cost of the housing and the salaries from the local jobs. Economic analyses are included in EIRs for this purpose. (CEQA Guidelines, sec. 15131, subd. (b); *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099.) I-11-41 cont

ALTERNATIVE ANALYSIS. Applicant has not considered an alternative to the proposed project that would eliminate the commercial/retail component of the proposed 50,000 square feet of civic-limited commercial/retail space. Why not? Doing so would significantly reduce impacts on the aesthetics, air quality, greenhouse gas emissions, water quality and water resources, noise and traffic and circulation of the proposed project. In the Final EIR, please complete an analysis of the effects on the above mentioned areas if no commercial/retail space is built. I-11-42

21. Page 3.2-22. Conclusion. "...the proposed project COULD (capitalization added) conflict with the 2009 Ozone Plan for the SFNA. This impact would be significant and unavoidable, and no additional mitigation is available to reduce the impact to a less-than-significant level."

a.) At best, this is a disingenuous statement, at worst, it is a complete falsehood. The proposed project WILL conflict with the 2009 Ozone Plan. As stated in the first paragraph on Page 3.2-23, " As shown in Table 3.2-6, construction of the proposed project WOULD (capitalization added) exceed the EDCAQMD's threshold for ROG In 2019 through 2024, 2029 and 2030. These emissions and exceedances correspond to the application of architectural coatings. The proposed project WOULD (capitalization added) also exceed EDCAQMD's NOx threshold in 2016 through 2019...". "Based on the results presented in Table 3.2-6, construction-related combined emissions of ozone precursors WOULD (capitalization added) be considered a significant impact for 2019, 2020, 2022, 2023, 2029, and 2030." I-11-43

b.) What alternatives to the proposed construction schedules and/or construction materials has the project applicant considered so that the proposed project would be in compliance with all air quality standards? If the project applicant has not considered alternatives, why not? What architectural coating or coatings is the project applicant proposing to use that will cause it to violate EDCAQMD's threshold for ROG in the years mentioned above? Has the project applicant considered coatings that would not exceed EDCAQMD thresholds? If not, why not? Are there lower ROG coatings that are available for the project applicant's use? If so, please identify such coatings. I-11-44

23. Page 3.2-23. "The EDCAQMD CEQA Guidelines consider dust impacts to be less than significant for projects that implement best management practices (BMPs). Mitigation Measnre AQ-2c outlines these BMPs..." I-11-45

a.) Has the project applicant committed, in writing, to implementing, BMPs? A lead agency "shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures" (Public Resources Code, sec. 21081.6, subd. (b).) Please make compliance with these BMP's an enforceable condition of project approval.

b.) What BMPs is the project applicant planning to implement? Please include the dust control plan in the FEIR. The project applicant should be required to list all BMPs that will be implemented at all stages of construction, the source of such BMPs, and proof that such BMPs are, in fact, BMPs. "Formulation of mitigation measures should not be deferred until some future time." (Guidelines, § 15126.4(a)(1)(b).) I-11-45 cont

c.) The project applicant should be required to post a bond, in an amount of not less than $1 million dollars, to ensure that the project applicant does implement BMPs throughout all stages of construction, and to ensure that as BMPs evolve and change over time, the project applicant adheres to the most current BMPs standards.

d.) The project applicant should be required to file an annual report with the EDCAQMD attesting to the above.

e.) Reference is made to Mitigation Measure AQ-2c, where the project applicant will incorporate "all feasible and practicable fugitive dust control measures." Fugitive dust may include dust containing NOA. Please set forth in detail the "feasible and practicable" measures the project applicant proposes to control fugitive dust. What other measures are there that the project applicant has concluded are not "feasible and practicable"? Why are these other measures not "feasible and practicable"?

"Numerous cases illustrate that reliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decision making; and consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental assessment. (See, e.g., *Gentry v. Murrieta* (1995) 36 Cal.App.4th 1359, 1396 (*Gentry*) [conditioning a permit on "recommendations of a report that had yet to be performed" constituted improper deferral of mitigation]; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275 [deferral is impermissible when the agency "simply requires a project applicant to obtain a biological report and then comply with any recommendations that may be made in the report"]; *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 794 ["mitigation measure [that] does no more than require a report be prepared and followed, . . . without setting any standards" found improper deferral]; *Sundstrom* , *supra* , 202 Cal.App.3d at p. 306 [future study of hydrology and sewer disposal problems held impermissible]; *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1605, fn. 4 [city is prohibited from relying on "postapproval mitigation measures adopted during the subsequent design review process"].)" (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70) I-11-46

Has the project applicant (or any related entity to the project applicant in connection with other projects) complied with the requirement that it submit a Fugitive Dust Control Plan to the EDCAQMD prior to the start of construction on such other projects? If not, why not? What measures does the EDCAQMD have in place to ensure that the project applicant does and will submit the Fugitive Dust Control Plan to EDCAQMD prior to the start of construction? What review and approval process does EDCAQMD go through when it receives the Fugitive Dust I-11-47

Control Plan from the project applicant? Please explain these procedures in the Final EIR. "The EIR serves not only to protect the environment, but also to demonstrate to the public that it is being protected." (CEQA Guidelines, sec. 15003, subd. (b).)

24. Page 3.2-25. Mitigation Measure AQ-2b. The first 2 paragraphs start with the assurance that "The project applicant WILL ENSURE (capitalization added)..." This is a promise but how is enforcement of this promise done or monitored? Who monitors that the project applicant is using the correct equipment to control construction-related NOx emissions? How often is the monitoring done? Who does it? Is the monitor selected by EDCAQMD independently of any input from the project applicant? Where is the monitoring information filed or recorded, and is it available for public review? A lead agency "shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures" (§ 21081.6, subd. (b)) fn. 4 and must adopt a monitoring program to ensure that the mitigation measures are implemented (§ 21081.6, subd. (a)). The purpose of these requirements is to ensure that feasible mitigation measures will actually be implemented as a condition of development, and not merely adopted and then neglected or disregarded. (See § 21002.1, subd. (b).) fn. 5" (*Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1260 - 1261.) I-11-47 cont.

25. Page 3.2-27. Impact AQ-2c. The 2nd sentence of the 3rd paragraph states "There is no feasible mitigation beyond Mitigation Measures AQ-2a and AQ-2b and CEDHSP policies to reduce these emissions (ROG and NOx) below EDCAQMD's threshold.", and then concludes in the following sentences that "the impact on air quality resulting from ROG and NOx ... would be SIGNIFICANT AND UNAVOIDABLE (capitalization added). The impact of PM10 emissions would also be SIGNIFICANT AND UNAVOIDABLE (capitalization added). This is a conclusion of the project applicant without any factual basis! There is NO feasible mitigation? Knowing and acknowledging that mitigation measures won't work to meet the required standards, and that the impact on air quality is SIGNIFICANT AND UNAVOIDABLE, the project applicant would like to proceed with construction and build-out as set forth in this document. Has the County considered extending the construction timeframe so that the impact on air quality is anything less than SIGNIFICANT AND UNAVOIDABLE? If not, why not? CEQA requires agencies to adopt feasible mitigation measures in order to substantially lessen or avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).) I-11-48

26. Page 3.2-29. Impact AQ-3. The DEIR concludes that the proposed project would have a SIGNIFICANT AND UNAVOIDABLE impact on cumulative air quality, but no additional mitigation is available to reduce the impact to a less-than-significant level. Again, this is a self-serving conclusion without a factual basis! Has the County given any consideration to extending the construction timeframe for the proposed project so that the impact on cumulative air quality will be reduced to a less-than-significant level? If not, why not?

27. Page 3.2-29. Impact AQ-4a. This impact, and the concluding sentence, "Consequently, construction-related DPM emissions impacts would be less than significant with mitigation", are based on the absurd assumption that any cancer health risks to sensitive receptors will initiate I-11-49

only from such receptors presence during construction. It completely ignores the possibility that sensitive receptors with health issues such as asthma or emphysema, or other chronic health issues, may be hurt or injured by the short term exposure of 2-3 years to DPM emissions that the project applicant estimates will have the greatest potential for DPM emissions. The County should model and study the potential effects to sensitive receptors of short term exposure to DPM emissious. An agency must produce rigorous analysis and concrete substantial evidence to support a determination that the project's impacts are insignificant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692.) I-11-49 cont.

28. Page 3.2-30. Impact AQ-4b. Reference is made to the SJVAPCD [2007] Guidance for Air Dispersion Modeling. SJVAPCD stands for the San Joaquin Valley Air Pollution Control District. Why did the project applicant choose to use this Guidance Model? It is a 2007 version- is it the state-of-the-art, best practices modeling guide available? If not, then why was it chosen? It is a modeling guide that is almost 9 years old- certainly there are better and more appropriate modeling guides that the project applicant should have chosen. I-11-50

29. Pages 3.2-32 and 3.2-33. The project applicant states that portions of the proposed project lie within areas known to contain asbestos.

a.) Since we know that construction will occur and NOA containing dust will be generated, the project applicant should be required to file an Asbestos Dust Mitigation Plan as part of this DEIR, as that would allow it to be available for public review and comment. . "The CEQA process demands that mitigation measures timely be set forth, that environmental information be complete and relevant, and that environmental decisions be made in an accountable arena." (*Oro Fino Gold Mining Corporation v. County of El Dorado* (3d Dist. 1990) 225 Cal.App.3d 872, 884-885.) Please include the plan in the FEIR.

b.) "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since the detailed NOA mitigation plan was not provided in the DEIR, we respectfully request that the County prepare a Revised DEIR that includes this mitigation plan, and circulate that RDEIR for public comment. I-11-51

c.) The DEIR states that if "required by EDCAQMD, the project applicant shall prepare and submit an Asbestos Dust Mitigation Plan to EDCAQMD ..." Under what circumstances would the project applicant NOT be required to file a plan? Why would EDCAQMD NOT require a mitigation plan in all circumstances where NOA containing dust is generated?

d.) As part of the proposed mitigation measures the DEIR states that "All earthwork activities will be periodically observed by a geologist experienced in the visual assessment for NOA or for conditions likely to contain NOA. Additional NOA evaluation will be performed by a certified engineering geologist during grading to allow for the determination of possible capping requirements." Who will hire the geologist and the certified engineering geologist? Is it the project applicant? Is it EDCAQMD? How can it be ensured that these 2 geologists are independent third parties not under any other obligation to the project applicant? How is it ensured that there is no conflict-of-interest between the chosen geologists and the project applicant? How often will the periodic monitoring be done? Is a visual assessment the best management practice for determining the presence or likely presence of NOA in the soil? If not, what is? And why isn't that being used? I-11-51 cont.

LETTER I-11

El Dorado County Radon Information

STATE RADON OFFICER

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(800) 745-7236
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Radon Program(Indoor Radon)
PO Box 997377
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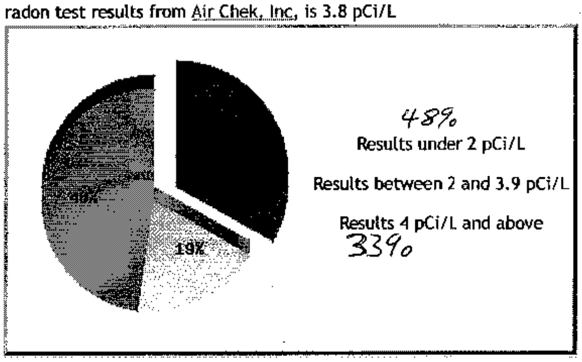
Site Menu

- Local Information
- Radon Inspectors
- See other counties
- Nearby Counties
- Local Radon News
- Links & Resources
- Order Test Devices
- See other states

ABOUT RADON LEVELS
IN EL DORADO COUNTY

The average national indoor radon level is 1.3 pCi/L. (What is a picocurie?)
The average indoor radon levels of El Dorado County, as determined by radon test results from Air Chek, Inc. is 3.8 pCi/L



Additional information about radon levels in El Dorado County may be available through this website

RADON RESOURCES

Department of Environmental Management

Section 3.4 Cultural Resources

1. On page 3.4-6, the cultural sequence the DEIR attempts to use is wrong. We are in the foothills, not the Sacramento Valley subregion. Please correct this in the Final EIR. "If the description of the environmental setting of the project site and surrounding area is inaccurate, incomplete or misleading, the EIR does not comply with CEQA. (*San Joaquin Raptor, supra,* at p. 729.) 'Without accurate and complete information pertaining to the setting of the project and surrounding uses, it cannot be found that the FEIR adequately investigated and discussed the environmental impacts of the development project.' (*Ibid.*)" (*Cadiz Land Co., Inc. v. Rail Cycle, L.P.* (2000) 83 Cal.App.4th 74, 87.) I-11-52

2. On page 3.4-8 the DEIR is in error. Kyburz took over someone else's place and did not build his own house.

3. On page 3.4-10, the DEIR indicates that, due to uncertainty regarding the offsite improvements, no analysis was done on segment alignments or off-site improvements. This is a serious flaw. Suppose they select a burial site for their offsite improvements? How would the public be afforded opportunity to comment on the destructive impact? I-11-53 "An accurate, stable, and finite project description is the sine qua non of an informative and legally sufficient EIR." (County of Inyo v. City of Los Angeles (3d Dist. 1977) 71 Cal.App.3d 185, 193.) "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decisionmakers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (i.e. the 'no project' alternative) and weigh other alternatives in the balance." (Id. at pp. 192-193.) A "curtailed, enigmatic or unstable project description draws a red herring across the path of public input." (Id. at pp. 197-198.) I-11-54

4. The archeological resources are significant, and in the early 1990s, the landowner was told fencing before construction was needed. Monitoring is a less effective method of protecting sites. While the fencing may have an adverse aesthetic impact, it is the only way of protecting resources as you add access and more people to the surrounding area. CEQA requires a lead agency to adopt feasible mitigation measures in order to substantially lessen or avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a0; CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).) I-11-55

3.10 Noise and Vibration

We have several questions regarding the methodology of noise projections and the adequacy of the noise mitigation measures described in the Draft EIR.

On page 3.10-16, **Impact NOI-1a: Expose persons to or generate noise levels in excess of standards established in the General Plan as a result of construction activities** is considered significant and unavoidable. However, the mitigation measures for Impact NOI-1a are not adequately described. On DEIR page 3.10-18 it states,

> **"Mitigation Measure NOI-1a: Employ noise-reducing construction practices.**
>
> The construction contractor shall employ noise-reducing construction practices so that construction noise does not exceed construction noise standards specified in County General Plan Table 6-3 (Table 3.10-7) to the extent feasible."

Who determines what is "feasible"? How will the feasible mitigation practices be conveyed to the many contractors and sub-contractors who will work on these construction sites? And who monitors the use of noise-reducing practices by the contractors? Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure mitigation compliance during project implementation. (Pub. Resources Code, sec. 21081.6.)

In the FEIR and/or the mitigation monitoring and reporting program, please identify who will monitor the noise-reducing practices, how often the monitoring will take place, how the monitoring information will be recorded, and how and where that information will be available to the public for review? I-11-56

Given the lack of County monitoring staff, we encourage the County to consider contracting for monitoring staff at the project applicant's expense. We encourage the County to use such contract staff to hold tailgate-trainings with workers on the job site to convey the mitigation requirements to them. We encourage the County to post the monitoring efforts and data on their website so that the public can be confident that these mitigation measure are being effectively implemented. Neighboring Alpine and Amador counties have contracted for monitoring staff who post their results on a public website for construction-related mitigation on the site of the Kirkwood Specific Plan.

Also on page 3.10-18, as part of Mitigation Measure NOI – 1a: "Measures that can be used to limit noise include, but are not limited to, those listed below." All the measures that follow are described as practices that "can be used". However, there is no clear commitment to requiring any one or more of the mitigation measures. In the EIR, for this significant impact, please identify which specific measures **must** be used by the contractor. Which measures will actually be required? Also, for each of the specific practices required, please identify the consequences if the measures are not fully implemented at all times. If local residents observe that practices are not being implemented, to whom may they report their concerns, and what actions will be taken to respond? "[T]he agency 'shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures' (§ 21081.6, subd. (b)) fn. 4 and must adopt a monitoring program to ensure that the mitigation measures are implemented (§ 21081.6, subd. (a)). The purpose of these requirements is to ensure that feasible mitigation measures will actually be implemented as a condition of development, and not merely adopted and then neglected or disregarded. (See § 21002.1, subd. (b).) fn. 5" (*Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1260 - 1261.)

We also have questions about the bulleted specific measures that "can be used", listed on 3.10-18.

> "Prohibiting noise-generating construction activity between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and 5:00 p.m. to 8:00 a.m. on weekends and federally recognized holidays."

Because the impact is judged significant and unavoidable, and construction is expected to last several years, this practice is not sufficient. We request that a **required** mitigation be to limit construction activities to weekdays between 8:00 am and 5:00 pm. I-11-56 cont.

> "Locating equipment as far as feasible from noise sensitive uses." (page 3.10-18)

Who will check the location of equipment, and how often?

> "Requiring that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. (page 3.10-18)

> "Prohibiting gasoline or diesel engines from having unmuffled exhaust." (page 3.10-18)

Again, this raises the question of who will monitor implementation of this practice. Please also note in the EIR that these practices **do not actually reduce** the projected significant impact, since the values used in Table 3.10-13 to project the construction noise presumably include the sound-control devices provided by the manufacturer and a muffled exhaust.

Mitigation NOI-1b seems to be merely a plan to have a plan. On page 3.10-20,

> **"Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses.**
> The applicant shall prepare a design-level operational noise control plan that identifies all project features and treatments that will be implemented to be in compliance with County noise standards listed in County General Plan Tables 6-1 and 6-2 (Tables 3.10-8 and 3.10-9 in this Draft EIR)." I-11-57

The lack of a specific noise control plan with features and treatment in place to review is of great concern. I am not able to review the design features and treatments with the information provided here in the Draft EIR. The Draft EIR states that the features "… will ensure that exterior and interior noise levels at new proposed uses are in compliance with the noise standards." Yet this plan does not exist to review. What designs will be included in this specific project and how will they decrease the noise levels within acceptable standards? Unless a detailed plan – not just a plan for a plan – is provided in the EIR, how will the public be able to review these features to ensure the treatments will be in compliance with the noise standards?

"Numerous cases illustrate that reliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decision making; and consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental assessment. (See, e.g., *Gentry v. Murrieta* (1995) 36 Cal.App.4th 1359, 1396 (*Gentry*) [conditioning a permit on "recommendations of a report that had yet to be performed" constituted improper deferral of mitigation]; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275 [deferral is impermissible when the agency "simply requires a project applicant to obtain a biological report and then comply with any recommendations that may be made in the report"]; *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777 , 794 ["mitigation measure [that] does no more than require a report be prepared and followed, . . . without setting any standards" found improper deferral]; *Sundstrom* , *supra* , 202 Cal.App.3d at p. 306 [future study of hydrology and sewer disposal problems held impermissible]; *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597 , 1605, fn. 4 [city is prohibited from relying on "postapproval mitigation measures adopted during the subsequent design review process"].)" (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92-93.) I-11-57 cont.

The Draft EIR states the noise control plan will be submitted for review and approval at the tentative map stage. When is the tentative map stage during the approval of this project? What mechanisms exist for the public to review this plan if it is not submitted until the tentative map stage? "The CEQA process demands that mitigation measures timely be set forth, that environmental information be complete and relevant, and that environmental decisions be made in an accountable arena." (*Oro Fino Gold Mining Corporation v. County of El Dorado* (3d Dist. 1990) 225 Cal.App.3d 872, 884-885 [274 Cal.Rptr. 720].) Isn't it likely that a tentative map for subsequent development within the specific plan will be exempt from future CEQA review pursuant to CEQA Guidelines, sec. 15182? Isn't it likely that noise plan will not be evaluated in a streamlined review of the tentative map pursuant to CEQA Guidelines, sec. 15183 (Consistent Zoning) or 15183.3 (Infill Development)? Under these circumstances, how and when will the noise control plan decisions be made in an accountable arena?

With regard to page 3.10-21, bullet 3, what are the maximum setback or barrier distances on lots facing the Village Park? I-11-58

With high and medium density housing having multi-storied buildings, how does noise mitigation affect noise levels in the upper stories as the height moves above landscaped berms, setbacks, and noise walls? What detailed noise control plans are incorporated into the specific plan that would meet the noise standards for the residents of the upper floors? I-11-59

On page 3.10-21,

> **Impact NOI-1c: Expose persons to or generate noise levels in excess of standards established in the General Plan for stationary or non-transportation noise sources during project operation (less than significant with mitigation)**
>
> "Depending on the size of the equipment, HVAC equipment can produce sound levels in the range of 70 to 75 dBA at 50 feet (Hoover & Keith 2000). Because the project calls for Civic-Limited Commercial areas to be located within 200 feet of existing residential uses (the Sterling Ranch and Copper Hills Apartments), stationary sources, if any, associated with those uses could result in noise that exceeds the County's compatibility standards for stationary noise sources." I-11-60

What assurances are there is this plan that the correct HVAC equipment will be installed to meet the County Noise Standards? What recourse would an existing resident have if the noise levels exceed County Standards?

Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels (less than significant with mitigation) (page 3.10-22)

> "The project may require the use of a rock ripper to remove rock…Specific data on the vibration generated by a rock ripper is not available…" (page 3.10-22 and -23)

Please locate specific data on the vibration generated by the rock ripper so that this impact can be adequately assessed and mitigated. The administrative record must contain substantial evidence supporting the agency's view that the measures will mitigate the impacts. "A clearly inadequate or unsupported study is entitled to no judicial deference." (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 422 & 409 fn. 12.)

There is no information on blasting or analysis of blasting that is specific to this site and project.

> "Blasting may be required to prepare the project site for construction. The need for blasting would depend on site-specific conditions and engineering considerations that are not known at this time. Accordingly, no information on the location, type, or extent of blasting is known. Noise and vibration generated by blasting is a complex function of the charge size, charge depth, hole size, degree of confinement, initiation methods, spatial distribution of charges, and other factors. This information is not currently available." I-11-61

Since it is known that blasting will be a part of this project, I don't understand how saying there is no information available can be considered a thorough analysis of the environmental impact. It seems that this analysis misses the mark in more than one way.

First, an accurate and complete project description is necessary to fully evaluate the project's potential environmental impacts. *(El Dorado County Taxpayers for Quality Growth v. County of El Dorado* (App. 3 Dist. 2004) 122 Cal.App.4th 1591.) A description of the project is an indispensable component of a valid environmental impact report under CEQA. (*Western Placer Citizens for an Agricultural and Rural Environment v. County of Placer (App. 3 Dist. 2006)* 144 Cal.App.4th 890.) Without a description of the blasting that will take place, the EIR has an inadequate project description.

Second, an EIR must describe the physical conditions and environmental resources within the project site and in the project vicinity, and evaluate all potential effects on those physical conditions and resources. (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952.) Without a description of where the blasting will occur on the site, there is no way to evaluate the effects on the resources on the project site and in its vicinity. How close will it be to natural areas, to existing slopes or retaining walls, to neighboring sensitive receptors? There is no way to tell.

Third, an agency must produce rigorous analysis and concrete substantial evidence to support a determination that the project's impacts are insignificant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692.) The administrative record must contain substantial evidence supporting the agency's view that the measures will mitigate the impacts. "A clearly inadequate or unsupported study is entitled to no judicial deference." (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 422 & 409 fn. 12.) "CEQA's informational purposes are not satisfied by an EIR that simply ignores or assumes a solution to the problem." *(Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova (Sunrise Douglas Property Owners Assn.)* (2007) 40 Cal.4th 412, 431.) Without an analysis of the blasting component of the project, the DEIR has no basis for the assumption that the impacts will be fully mitigated. In the FEIR, please provide specific and detailed information regarding the location, type, and extent of blasting this project will require. I-11-61 cont.

Mitigation Measure NOI-2 (page 3.10-24) is again a plan to develop a plan:

> **Employ measures to reduce airblast and vibration from blasting**
>
> Contractors shall retain a qualified blasting specialist to develop a site-specific blasting program report to assess, control, and monitor airblast and ground vibration from blasting. The report shall be reviewed and approved by the County prior to issuance of a blasting permit. The report shall include, at minimum, the following measures.

Again, without specific and detailed information regarding the location, type, and extent of blasting this project will require, the effectiveness of the required mitigation is unknown. Please provide this in the EIR along with a site-specific blasting program report.

"A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since the detailed blasting analysis was not provided in the DEIR, we respectfully request that the County prepare a Revised DEIR that includes this analysis, and circulate that RDEIR for public comment.

As stated on page 3.10-24:

> "Blasting shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and 5:00 p.m. to 8:00 a.m. on weekends and federally recognized holidays."

As part of the mitigation measures, we request that blasting be prohibited between the hours of 5:00 pm and 8:00 am on weekdays and that blasting be prohibited entirely on weekends. I-11-61 cont.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (less than significant with mitigation) I don't understand how the predicted traffic noise values in Table 3.10-17 (page 3.10-25) were computed. Page 3.10-22 states:

> "Traffic noise in the project area vicinity was modeled using P.M. peak-hour traffic volumes and the Federal Highway Administration's (FHWA) Traffic Noise Model (Federal Highway Administration 2011)."

Can you please explain this process in more detail? When I read Appendix L, *The Central El Dorado Hills Specific Plan Transportation Impact Analysis*, from March 2015, I see in **Table 7: Trip Generation – Serrano Westside** (page 40) that an additional 7,075 daily trips will be generated by just one part of the proposed project. **Table 10 – Intersection LOS and Delay – Existing Plus Project Conditions** (page 48) show significant impacts at many intersections. I realize that these are not noise analyses, but I need more information to understand how such significant impacts on traffic do not also result in a significant increase in traffic *noise*. I-11-62

"'It is vitally important that an EIR avoid minimizing the cumulative impacts. Rather it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them.' [Citation.] A cumulative impact analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of a project, the necessity for mitigation measures, and the appropriateness of project approval. [Citation.] An inadequate cumulative impact analysis does not demonstrate to an apprehensive citizenry that the governmental decisionmaker has in fact fully analyzed and considered the environmental consequences of its action." (*Citizens to Preserve Ojai v. County of Ventura* (2d Dist. 1985) 176 Cal.App.3d 421, 431, quoting *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1st Dist. 1984) 151 Cal.App.3d 61, 79.) I-11-63

In the FEIR, please provide additional information on how the Existing Plus Project values were computed for Table 3.10-17 on page 3.10-25. I-11-64

Section 3.11– Population and Housing

Table 3.11-2 El Dorado County Population Growth Projections 2010-2035

The last entry representing 2035 erroneously shows a decrease in the cumulative change from 30% to 27%. This should be 37%! Such a glaring error causes one to wonder if anyone reviewed this data for accuracy. Without accurate and complete information pertaining to the setting of the project, it cannot be found that the EIR adequately investigated and discussed the environmental impacts of the development project. (*Cadiz Land Co., Inc. v. Rail Cycle, L.P.* (2000) 83 Cal.App.4th 74, 92, 99.) Please correct this error in the FEIR. I-11-65

The DEIR indicates that a potential impact may result if the project would induce substantial population growth in an area. 3.11-6 Parker's website indicates a total acreage of 341: 239 for Serrano Westside and 102 for Pedregal. The population for the county is projected to increase from 184k in 2015 to 220k in 2025. Of this 36k increase, it is proposed that these compact 341 acres off EDH Boulevard absorb over 2,600. Let's assume a project timeline of ~8 years for these sites to reach build out by 2025. El Dorado County is estimated to be 1.144 million acres in total. Consequently this represents 7% of the growth in an area that represents .029% of the total land mass. How does concentrating this level of future growth onto this small a site equate to a "less than significant" impact? Certainly a good case can be made that this increase in development capacity on the site will "*Induce substantial population growth in an area*".

While the DEIR quantifies the population growth accommodated by the proposed development, the DEIR analysis provides no quantitative threshold for determining when a development's growth inducement to an area is significant. It simply jumps to the conclusion that in this instance the impact is insignificant. "A conclusory statement 'unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind' not only fails to crystallize issues [citation] but 'affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives.'" (*People v. County of Kern* (5th Dist 1974) 39 Cal.App.3d 830, 841-842 [115 Cal.Rptr. 67], quoting *Silva v. Lynn* (1st Cir. 1973) 482 F.2d 1282, 1285.) A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.) Please identify such a threshold in the FEIR. I-11-66

In selecting a threshold, please remember that "the significance of an activity may vary with the setting." (Guidelines, § 15064, subd. (b).) Also remember that the more degraded the existing setting, the lower the threshold for determining that an additional impact is significant. (Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1025 – 1026.) Thus, in an area like El Dorado Hills, that has already borne a substantial share of the County's population growth, even more population growth is more likely to pose a significant impact.

Section 3.14 - Traffic

This is a technical review of the traffic analysis contained in the CEDHSP Draft EIR. I, Peter Eakland, am currently a licensed traffic engineer in the State of California. My expertise and experience over a 25-year period includes the extensive analysis of traffic methodologies utilized in the document. I-11-67

My review focuses on the project elements located on the east side of El Dorado Boulevard as traffic issues for the proposed development on the west side accessed by Wilson Boulevard are relatively straight-forward from a capacity and safety perspective. I-11-68

A brief note on overall land use policies related to the project. Generally, infill development providing walking and biking amenities close to employment, public facilities, and retail development with good access to public transit is encouraged as it reduces vehicle-miles of travel. Reducing the distance between origins and destinations is reduced, and alternative modes of transportation are more feasible. The proposed rezoning meets this overall objective, but challenging constraints to provide an effective and efficient transportation exist for development on the east side of El Dorado Boulevard, especially between Serrano Parkway and I-50. I-11-69

Traffic Review Summary

My review has documented serious deficiencies for the analyses of all scenarios, including the mitigations proposed for Cumulative+Project conditions; and the need for additional mitigations based on the proposed traffic circulation for projects both north and south of Serrano Boulevard and east of El Dorado Boulevard.

For project elements north of Serrano Parkway, all potential traffic impacts can be addressed with minor mitigations. For the development east of El Dorado Boulevard and north of the parkway, the only recommended revisions are removal of the road connection to the Parkway, which will address safety issues, and construction of a signalized intersection at the proposed T-intersection between Wilson Boulevard and Serrano Parkway that provides all movements. The current proposal does not provide outbound left turns. I-11-70

For development south of Serrano Parkway, the unsignalized intersection on Serrano Parkway should be retained. The vital need for a second access point, small traffic volumes, and lesser safety issues compared to the proposed intersection on the other side of the road for the northern development makes this intersection acceptable.

For the second access point for the southern development, the Saratoga Way/Park Drive intersection, the review has found shortcomings for the Draft EIR traffic analysis for both Baseline and Cumulative scenarios with and without the proposed project. Figure 1 shows the current layout of the intersection. The baseline traffic volumes have not included adequate adjustments for traffic growth that will occur from the year of traffic counts to the year when significant occupancy occurs. The I-11-71 result is that unacceptable congestion at the Saratoga Way/Park Drive intersection on El Dorado Boulevard is likely to occur before planned changes to El Dorado Boulevard between the Serrano Parkway and Park Drive will be implemented. The result is that mitigations for the Park Drive access route based on Cumulative scenarios, to the extent possible, may have to be advanced to Baseline conditions of approval. I-11-71 cont.

For the Cumulative scenarios, inbound and outbound trips to the shopping center were found to be significantly less than these trips for the Baseline+Project scenario. This inconsistency requires redoing the traffic analysis for these scenarios since no reason exists for these trips to decrease over time. My review based on adjusted volumes to correct this inconsistency results in LOS F conditions occurring at the northern Park Drive intersection for both Cumulative and Cumulative+Project scenarios.

The signalized intersection on El Dorado Blvd. at northern Park Drive would experience LOS F for both Cumulative and Cumulative+Project scenarios without mitigations. My review agrees with the Draft EIR that the proposed mitigations at the intersection would reduce the overall average delay below LOS F, but the absence of their detailed layouts and the existence of unacceptable queues on all approaches poses serious concerns regarding the feasibility of the mitigations. Despite the considerable effort to prepare the traffic section, these shortcomings make the mitigations only unproven concepts. Given the importance of the traffic mitigations at this intersection for a major part of the proposed project, additional analysis and documentation is required. An agency must produce rigorous analysis and concrete substantial evidence to support a determination that the project's impacts are insignificant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692.) I-11-72

The final issue for the southern access point is inadequate analysis of traffic conditions within the shopping center's internal circulation system. The Draft EIR traffic analysis did not include any internal traffic counts. An analysis is required to address both capacity and queuing issues. The closing of the southern Park Drive intersection and the major increase in traffic on Saratoga Way due to its future connection to Iron Point Road will result in LOS F conditions at the intersection even without project trips. Based on rough estimates of shopping center traffic flows, my review included an assessment of the proposed all-ways stop intersection serving Project traffic and found that this strategy resulted in more congestion than the existing intersection. In fact, for the Cumulative+Project scenario, this intersection would operate at LOS F. My review of the existing internal circulation system includes a concept that resolves obvious constraints with an emphasis on providing adequate storage for expected queuing.

Based on my review, an amended Draft EIR would be required to address the serious shortcomings of the current document that I have identified and to provide for adequate public review of any revisions. "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." An example of this is when the treatment of an issue in the DEIR, "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines, sec. 15088.5) Since the traffic analysis within the shopping center was completely missing from the DEIR, we respectfully request that the County prepare a Revised DEIR that includes this traffic analyses, and then circulate that RDEIR for public comment. I-11-72 cont.

Description and Review of Project Access and Egress Locations

The development north of Serrano Parkway has three access points, as follows: (1) a signalized intersection at Wilson Boulevard that allows for all movements; (2) an unsignalized residential street connection from El Dorado Boulevard where only right-turns in and out and left-turns in will be allowed to the primary north-south access road to residences, and (3) an unsignalized intersection on Serrano Boulevard midway between the other two access points where only right-turns in and out would be allowed. The absence of all turning movements at two of the three intersections creates inefficient routing on either the inbound or outbound trip except for residents close to the Wilson Boulevard signalized intersection. I-11-73

The Serrano intersection presents safety issues for the proposed unsignalized intersection serving right turns in and out Westside development north of Serrano Parkway. The curve to the east creates a sight distance problem for outbound right turns. Compounding the issue are the downhill grade that increases travel speed and the absence of an acceleration lane for entering traffic. Strong consideration should be given to removing the Serrano Parkway intersection from the project and instead to changing the proposed unsignalized intersection on El Dorado Blvd. between Wilson Boulevard and Serrano Parkway to a signalized intersection allowing all movements. The 0.6 mile distance between Wilson and Serrano Boulevards makes this option feasible from a traffic operations perspective.

For the development south of Serrano Boulevard, two access points on arterials are proposed for baseline traffic conditions. Currently, the proposed connecting road to the internal circulation system of the adjacent shopping center provides access to the two Park Drive signalized intersections on El Dorado Boulevard. The southern intersection does not allow inbound left turns and eventually will be removed as part of improvements to the I-50 interchange. With the current external road system, the northern intersection, which allows for all turning movements, would handle approximately 60% of all inbound and outbound traffic to the development. With closure of the southern Park Drive intersection, this percentage would increase to 94%. Adding to traffic volumes at this intersection for the Cumulative (2035) traffic scenario, traffic to and from Saratoga Parkway on the west side would increase substantially with a connection to Iron Point Road. I-11-74

The access point on the east side of Serrano Parkway faces similar although less severe constraints to those for the access point on the north side of the road for the northern development to the north. It should be retained, given that only two access points exist for this part of Westside development. Outbound left-turns will not be allowed, but use of the existing inbound left turn pocket will be retained. The uphill grade for outbound right turns and good sight distance to the west result in safer turning movements although a deceleration and acceleration lane on the parkway are recommended. I-11-75

The southern development includes a connection to the shopping center's internal circulation system that serves as the primary access and egress point for the development containing 135 residences, public playing fields, and a park-and-ride lot becomes the obvious focus of the traffic analysis. According to the Draft EIR, the Park Drive/Saratoga Way intersection on El Dorado Boulevard is the only intersection on the arterial that without mitigation will reach Level of Service (LOS) F in both Cumulative No Project and With Project scenarios. Precedents exist for use of shopping center internal circulation systems and residential access, but such connections almost always are carefully considered during the initial planning for the shopping center, which was not done in this case. The shopping center design is based on current zoning and did not have to consider the possibility of a residential development being created immediately to the east.

The Draft EIR refers to the connection link on the development land to be a collector street but clearly the section of the route to and from the signalized intersection and the project boundary does not currently meet the standards for a residential collector street. Park Drive can be considered a collector road for the shopping center, being a loop between two signalized intersections on El Dorado Boulevard, but such a designation does not make it suitable for serving through traffic from a large residential project.

The combination connecting link and Park Drive section has the following issues: I-11-76

- Park Drive is designed solely for trips to and from shopping center locations and is not designed for through traffic.
- The proposed route within the shopping center has five curb cuts and an unsignalized intersection with a stop sign for outbound residential traffic. The first curb cut encountered by inbound traffic is only 170 feet from El Dorado Boulevard. With a median opening in front of this curb cut, all movements are allowed. The number of conflicting vehicle movements in this one-eighth section is staggering. Existing traffic flows will be significantly affected not only at the signalized intersection but for all internal curb cuts and intersections within the shopping for traffic travelling to and from the northern Park Drive intersection.
- The shopping center's internal circulation system is designed primarily for vehicle travel. Without any changes, there would not be a sidewalk the full-length of the access route and no bike facilities. No changes are proposed on the shopping center link until cumulative traffic conditions in 2035. Even with changes for Cumulative + Project conditions, no facilities are provided for bicycles. Only one curb cut for that scenario is eliminated and is replaced with a four-way stop intersection that would present serious capacity issues and increases congestion for shopping mall customers. Queuing issues become important for internal circulation roads as aisles and curb cuts often are blocked even when level of service appears to be adequate.
- It is unclear what the shared responsibility is for improvements and for the resolution of operational issues between the residential developer and the shopping center owner. The Draft EIR does not indicate to what extent the shopping center has agreed to the proposed short-range and long-range traffic circulation concepts. They could seriously compromise vehicle traffic generated by both the project and the shopping center. The Draft EIR indicates

that the residential developer would only be responsible for "fair share" cost of improvements to the route, but it is clear that any needed changes would be caused primarily by the residential developer.

- The Draft EIR only examined capacity issues at the El Dorado Boulevard intersection. It did not examine or even acknowledge potential capacity or queuing issues at intersections within the shopping center along the route to and from the project.
- The opportunity to mitigate future capacity issues within the shopping center is limited without major changes to existing roadway and building layouts. Without providing for an alternative that better addresses the major increase in traffic, focusing solely on the Park Drive option could eventually be a fatal flaw without the opportunity for implementing any mitigation measures. Please acknowledge this in the Final EIR, and consider an alternative that better addresses the major increase in traffic.

I-11-76 cont.

Analysis of Short-Range and Long-Range Traffic Operations for the Park Drive Access Route

The Draft EIR included capacity analysis at the El Dorado Boulevard intersection with Park Drive/Saratoga Way for both the Existing (baseline)+ Project and the Cumulative (2035) + Project scenarios for the weekday AM and PM peak hours. For a Specific Plan, cumulative analyses are generally given equal emphasis to short-term analyses. Analyses in this review adds review of the unsignalized intersection where Park Drive meets the proposed connecting link was included, which as noted was not included in the Draft EIR. The level of service analysis was performed with Synchro 7, which was also utilized by the EIR traffic consultant. The traffic calculation printouts, although referenced as being part of the traffic report were not included in the Draft EIR appendix made available on-line by the El Dorado Planning Department even though such printouts are generally included as part of Draft EIR documentation. My decision was to utilize only information made available to the general public on the County's website. The absence of the printouts makes it virtually impossible to exactly replicate calculations, but I was able to achieve adequate consistency with Draft EIR results based on traffic volumes and lane configurations contained in the document. My assumptions included a consistent peak hour factor (phf) of 0.85. My conclusions are unlikely to be affected by any discrepancies with the consultant's assumptions. I have attached all of my level of service printouts from Synchro 7 at the end of this document. The summary of my level of service calculations in Table 1 contains page references to this attachment.

I-11-77

- **Baseline+Project Scenario Traffic Operations**

The capacity analysis for the El Dorado intersection (intersection#13 in the Draft EIR) that I derived is generally consistent with results in the EIR, as shown in Table 1 for the Baseline+Project scenario. This level of consistency provides validity for all other level of service results in my review. Level of service would be E in the AM peak hour and D in the PM peak hour, which are acceptable for existing El Dorado County thresholds. My review for this scenario, as indicated, included the current internal intersection with stop sign control for the project's outbound trips. Turning movements at this intersection related to shopping center traffic were estimated on the relative size of parking spaces in each section of the center. Given the absence of accurate traffic flows within the shopping

I-11-78

center, this analysis should be considered to represent an order-of-magnitude level of service analysis but able to identify likely capacity issues. Figures 2 and 3 show the existing lane configurations and turning movement volumes for the two intersections analyzed in my review. The internal intersection was also found to operate at an acceptable level of service. I-11-78 cont.

Although the level of service calculations by themselves are not in dispute, issues exist for development of baseline traffic volumes. Generally, the short-term or baseline analysis of project conditions is based on background traffic for the year when full occupancy of the proposed project would occur. Baseline traffic, therefore, would not be based on traffic counts but would consider standard-practice adjustments for the following: (1) date of existing traffic counts; (2) currently approved but not constructed projects; (3) likely background traffic growth to the year when the project would be fully occupied, and (4) occupancy of the shopping at the time that counts were made. The Draft EIR does not contain any information related to these potential adjustments. The date of the traffic counts is not mentioned although footnotes to results for level of service analysis cite a "2014" date but this could be only for the analysis and not for the counts. The Baseline+Project baseline traffic for the AM peak hour do include minor baseline traffic increases for El Dorado Blvd. through movements, 2% for El Dorado Blvd. northbound through traffic and 4% for southbound through traffic, but no mention is made for the source of these adjustments. For the PM peak traffic volumes for this scenario, no adjustments were made for any turning movement counts. In regards to shopping center occupancy, discussion with residents suggests that occupancy the past few years has only been at 60-70% occupancy. One could logically assume that occupancy would improve in future years as population in the area increases. I-11-79

As the validity of the Baseline+Project traffic volumes are in question given information in the Draft EIR, a sensitivity test was done to see what level of increases in El Dorado Blvd. through traffic would result in Level of Service F conditions. The results, as shown in Table 1, indicate that a 6.0% increase in both northbound and southbound through traffic at the intersection would result in the Level of Service F threshold of 80 sec/veh being exceeded in the AM peak hour. The increase would be from 67 to 83 sec/veh. Assuming possible approval of the project in 2016 and a three-year construction period, this increase would occur with only a 1.2% average annual growth rate in traffic over a 5-year period (2014-2019). This result suggests that significant congestion at the intersection is likely to occur before capacity improvements on El Dorado Boulevard can be implemented. The proposed project would add a third through lane between Lassen Lane and Saratoga Way in the southbound direction. As this improvement definitely will be required well before 2035, it probably should be recognized as a required mitigation for the Baseline+Project scenario.

The existing intersection on Park Drive that would serve the connection to the proposed project would operate at acceptable levels of service for the Baseline + Project scenario with Level of Service B for the stop-sign movement in both the AM and PM peak hours, as shown in Table 1.

- **Cumulative and Cumulative+Project Scenarios**

For these scenarios, my analysis reflected scheduled improvements to the areawide roadway network and project mitigations contained in the likely to be implemented by 2035. The addition of a third southbound through lane to the northern Park Drive intersection has been mentioned. Other roadway improvements result in significant shifts of traffic to the intersection. A connection of Saratoga Way to the Sacramento County border will increase traffic to and from roadway, and the closure of the southern Park Drive intersection will move all shopping center traffic to the northern Park Drive intersection. I-11-79 cont.

A major issue related to traffic movements into and out of the shopping center was identified when flows for the Existing + Project scenario was compared to the Cumulative + Project scenario. The project trips would be assumed to remain the same, and the shopping center trips logically could be assumed at least to remain at current levels and certainly would not decrease. Nevertheless, the Draft EIR's Cumulative+Project total inbound and outbound turning movements contains major decreases compared to the same values for the Existing+Project scenario.

Consistent analysis for both project and shopping center traffic volumes into and out of the shopping center vitally important to achieve a valid analysis for the Cumulative+Project scenario, given the role of this intersection in serving the primary connection to the project elements south of Serrano Parkway. Table 2 compares the inbound and outbound vehicle movements contained in the Draft EIR for the Cumulative + Project with Baseline+Project trips. For the Cumulative+Project scenario, trips at the southern Park Drive intersection have been moved to the northern intersection with appropriate adjustments to through movements. The comparison shows a surprising decrease in volume for both AM and PM peak hours for inbound and outbound traffic. For inbound trips, the decrease is 267 vehicles in the AM peak hour and 402 in the PM peak hour. Corresponding traffic volumes for outbound trips are 224 vehicles in the AM peak hour and 324 in the PM peak hour. The Draft EIR's inconsistency likely is due to relying on traffic model forecasts for the trips to and from the shopping center rather than on the existing counts. Such a decision might not be an issue if the shopping center did not share access points with a future development, but in this case the sharing of the major access point requires traffic volume consistency for both developments. I-11-80

As shown in Table 1, the analysis for unmitigated conditions with adjusted inbound and outbound turning movement volumes results in significant differences compared to the Draft EIR analysis for both Cumulative and Cumulative+Project conditions at the Saratoga Way/Park Drive intersection. Figures 4 and 5 show the revised turning movements with proposed mitigations for AM and PM peak hours, respectively, for the Cumulative+Project scenario.

For the Cumulative scenario, the revised traffic volumes for the northern Park Drive intersection into and out of the shopping center increases the average to 122 sec/veh in the PM peak hour, which is considerably more than the LOS F threshold of 80 sec/veh. For the Cumulative+Project scenario, the level of service in the AM peak hour compared to the Cumulative scenario changes from D to E with a 17 second increase in vehicle delay from 45 to 61 sec/veh. The increase is even more dramatic in the PM peak hour. It increases 43 sec/veh from the Cumulative value of 122 sec/veh to 165 sec/veh, which is considerably higher than the Draft EIR value of 115 sec/veh. The shopping center for this scenario will be unable to accommodate even its existing traffic levels given current assumptions for approved road projects. Please correct these DEIR inaccuracies in the Final EIR. "An inadequate cumulative impact analysis does not demonstrate to an apprehensive citizenry that the governmental decisionmaker has in fact fully analyzed and considered the environmental consequences of its action." (*Citizens to Preserve Ojai v. County of Ventura* (2d Dist. 1985) 176 Cal.App.3d 421, 431, quoting *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1st Dist. 1984) 151 Cal.App.3d 61, 79.)

The unsignalized intersection, with stop control only on the westbound approach, remains at an acceptable level as the volumes are assumed to be the same as for Existing+Project conditions but with a slightly different mix of turning movements because of the single access point on El Dorado Boulevard.

The Draft EIR contains text descriptions of mitigations for the Cumulative+Project scenario designed to reduce impacts to a less than significant level and are as follows and shown in Figure 6: I-11-80 cont.

- 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 eastbound and westbound, and optimize traffic signal timings to accommodate the revised intersection lane configurations.

As shown in Table 1, acceptable levels of service for both the Draft EIR and my revised analysis given the same mitigations although my AM peak hour LOS is E compared to D for the draft EIR, which is not unexpected given my higher volumes entering and leaving Park Drive.

Despite these results, the Draft EIR analysis has serious shortcomings that need to be addressed before the mitigations can be considered feasible. Except for the westbound approach within the shopping center (see Figure 2-10 in Draft EIR), figures to scale showing the proposed layout of the mitigations, including curves and length of storage lanes, are missing from the document. It does not even contain a figure displaying peak hour volumes and allowable turning movements by lane that has been provided for all other scenarios. Despite the considerable effort undertaken to prepare the traffic analysis, the following issues for the mitigations proposed need to be adequately addressed I-11-81 before the mitigations can be accepted as resolving "Significant Impacts". The administrative record must contain substantial evidence supporting the agency's view that the measures will mitigate the impacts. "A clearly inadequate or unsupported study is entitled to no judicial deference." (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 422 & 409 fn. 12.) An EIR is inadequate if it simply ignores or assumes a solution to the problem, or simply states that information will be provided in the future. (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412.)

- Major changes have been made from lane configurations and signal phasing approved as part of future road projects. Without any detailed description of how these changes will be implemented, it is difficult to establish their impact on the approved projects. The revised west approach adds a third output lane within the same roadway width by narrowing the one inbound lane and the median. The inbound lane must still accommodate semi-trailers delivering goods to Raley's. The narrow lane clearly is inadequate for this function, and the approach must be widened to approximate the lane's current width, based on Figure 2-10. The additional width can be accommodated but will be costly due to the need for utility modifications.

  The number of lanes on the northern approach, is one greater than what currently exists but is the same as assumed for the Cumulative scenario. A separate right-turn lane has been added and the second left-turn lane has been removed. No length is given for this storage lane. The currently proposed double left-turn lanes assumes a second outbound lane at Saratoga Way, which is consistent with the description of the proposed improvement project to provide two lanes in each direction. Without any diagram for the intersection, the Draft EIR does not answer the question whether or not two outbound lanes are still being provided.

  The eastbound approach for the Cumulative scenario retains the current lane configuration of a left-turn lane, a through-left lane, and a right-turn lane. The proposed mitigation adds a fourth lane, which is necessary to handle the left-turn movements and change from split to protected left signal phasing. Given the sharp curve entering the intersection and with development of both sides of the road, creating a new eastbound lane with adequate storage for both the right-turn lane and the second left-turn lane will be difficult. And the need possibility exists for a second lane for outbound traffic. I-11-82

- Analysis does not include necessary changes for the shopping center's internal circulation system to achieve efficient movements for both project and shopping center traffic. Although the Draft EIR mitigation measures appear to provide acceptable overall results for the Cumulative+Project scenario at the single intersection serving the shopping center in the future, my review clearly shows that the links serving the proposed development will reach significant levels of congestion. Figure 2-10 shows a new all-ways stop within the shopping center that serves traffic to and from the major businesses to the north and south as a proposed mitigation. However, this change is not mentioned as a mitigation, and no analysis occurred whether or not it would improve traffic operations. The analysis of this change for the Cumulative+Project scenario indicates that it would create worse congestion compared to the current layout with an average intersection delay of 57 sec/veh. Park Drive, the northbound link, would have a delay of approximately 70 sec. This intersection virtually doubles the vehicle delay at the signalized intersection for both project and shopping center traffic. The first driveway on the south side of Park Drive certainly needs to be closed. Based on a 60-

minute SimTraffic run, the Draft EIR configuration results in long queues for either the left-turn or right-turn lane blocking the two other lanes and occasionally backing up to the unsignalized intersection. Figure 7 shows proposed revisions to the roadway with elimination of three driveways and a second westbound lane from the unsignalized intersection to the beginning of the three approach lanes.

- Lane additions do not consider constraints of adjacent land use and large downslopes next to the roadway. This issue, discussed above, applies to additional lanes included as mitigations on the west, east, and south sides of the intersection. It can only be addressed by providing mitigation layouts on scaled aerial drawings (Google Earth OK).

- Queues for storage lanes have not been addressed for their adequacy. The major shifts in traffic to the eastbound and westbound approaches because of future roadway modifications require appropriate storage lengths for turn lanes. The feasibility of the proposed mitigations to mitigate queues to an acceptable degree has not been demonstrated in the Draft EIR as these lengths have not been provided in text, figures, or calculation sheets. Queuing issues are discussed above for the westbound approach but they also exist for the other three approaches where LOS F conditions exist for major turning movements. Creation of a less than LOS F solution for the intersection is only a paper solution as actual operating conditions have queuing issues with major delays that often block a through lane. In the AM peak hour, the average queue for the westbound left-turn lane extends into the one-lane approach to the separate turn lanes. The queue in this lane frequently extends to the upstream all-ways stop intersection based on a SimTraffic run (14% upstream blockage with 94 vehicle queuing penalty). The 95th percentile queue at the all-ways stop would extend as far as 200 ft. on Park Drive and 313 ft. on the collector road approach. I-11-82 cont.

  Queuing issues would be even greater in the PM peak hour. On the westbound approach, Synchro estimates the 50th percentile queue for the westbound right lane would be 285 ft., and SimTraffic estimates the 95th percentile queue for the through lane, which includes the one-lane upstream connection, at 480 ft. to be more than 100 ft. greater than the distance of the link. In addition, the eastbound left-turn movement despite having two lanes operates at LOS F with a 50th percentile queue length of 260 ft. according to Synchro. At the unsignalized intersection, the eastbound through-left lane would have an average delay of 91 sec/veh according to Synchro.

Summary of Review Conclusions

Figure 8 shows the major elements of the proposed circulation system related to the project development to the south of Serrano Parkway, which is the primary focus of my traffic review. I-11-83

- **Westside Development North of Serrano Parkway**

My review of this development did not identify any capacity issues for the proposed circulation system. To improve safety, my recommendation is to eliminate the connection to Serrano Parkway and in its place provide a signalized intersection midway between Wilson Boulevard and the parkway. A proposed unsignalized intersection already exists at this location but outbound left turns are prohibited with a median. The location meets the general guideline of having a minimum quarter-mile distance between intersections, and the inclusion of outbound left turns would compensate for the loss of the intersection on Serrano Parkway. Please consider this mitigation measure in the Final EIR. I-11-83 cont.

- **Westside Development South of Serrano Parkway**

The unsignalized intersection on Serrano Parkway should be retained as the development requires a minimum of two access points. Acceleration and deceleration lanes should be provided and a median constructed to prohibit outbound left turns while retaining use of the inbound left turn lane. Please consider this mitigation measure in the Final EIR. I-11-84

Two issues were identified in the review of Draft EIR traffic forecasts for the signalized intersection on El Dorado at Park Drive/Saratoga Way. For the Existing Baseline+Project scenarios, the issue involves whether or not background traffic was adequately adjusted to reflect the year in which project implementation would occur. This issue is important as the widening of El Dorado Boulevard according to the Draft EIR cites "By 2035" as its completion date. The proposed mitigation for the shopping center's outbound approach likely will have to be implemented before all roadway modifications are completed.

The second issue involves forecasts for turning movements into and out of the northern Park Drive signalized intersection for Cumulative scenarios. As shown in Table 2, a comparison of inbound and outbound traffic volumes for the shopping center and the proposed project shows that the volumes for this scenario are too low in the PM peak hour by 402 inbound vehicles and 324 outbound vehicles. No reason exists why trip generation for either the shopping center or the proposed project should be less than exists for the Existing+Project scenario. My review includes revised forecasts to provide consistent results over time. Please correct these DEIR errors in the Final EIR. I-11-85

My analysis has shown that reliance on the proposed mitigations on the route from the north-south residential local street to El Dorado Blvd. at the Saratoga Way/Park Drive intersection carrying virtually all of the trips generated by the project can be considered infeasible, given the Draft EIR information available to the general public. The proposed Draft EIR mitigations are extensive but are only a "paper solution" to reach level of service results that avoid overall LOS F conditions for the AM and PM peak hours. The Draft EIR does not contain adequate information to explain if the mitigations are feasible from either a physical or a traffic operations perspective. It is almost as if this information has been purposely omitted. This is odd given that "The CEQA process demands that mitigation measures timely be set forth, that environmental information be complete and relevant, and that environmental decisions be made in an accountable arena." (*Oro Fino Gold Mining Corporation v. County of El Dorado* (3d Dist. 1990) 225 Cal.App.3d 872, 884-885.) Inadequate storage capacity for turn lanes on the approaches, especially on the west approach but also for eastbound and southbound left-turn movements will create queuing that will extend into adjacent lanes and reduce intersection capacity. Particularly troublesome is the complete absence of any attempt to address congestion issues on the shopping center links that are proposed to be part of the project access route, including no traffic counts for existing traffic flows. The shopping center in its design understandably did not anticipate any future traffic from development to the east and even without project traffic will experience major increases in congestion when the southern Park Drive intersection is removed.

Options for providing an alternative to the proposed access route through the shopping center are limited. The most likely would be construction of a connector road from the project to Silva Valley Parkway to serve as the major access road. Although mentioned in the Draft EIR as a possible project, it has not been included as a required mitigation. It must be included as a condition of project approval to qualify as mitigation. (*Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.) The likelihood of an interchange being added to I-50 for Silva Valley Parkway increases the usefulness of this road project. Vehicle miles of travel would be increased for residents but would reduce traffic into and out of Park Drive and would reduce internal circulation within the shopping center once the southern Park Drive intersection is closed. I-11-85 cont.

Even with a Silva Valley Parkway connection, limited traffic movements between the project and El Dorado Boulevard should be provided for public service vehicles, namely police, fire, public transit, and ambulance movements.

Project traffic would continue to be accommodated at the project access point on Serrano Parkway, given the need for a second access point available to all vehicles. Right turns on red would be prohibited in order to minimize conflicts with vehicles turning right onto the free right turn lane onto the parkway. Finally, safety could be improved if the long channelized right turn lane onto the parkway is removed.

Given the shortcomings of information provided in the Draft EIR, a Revised DEIR must be circulated for the traffic section, and is required to contain at a minimum the following:

1. Prepare a scaled diagram of the layout of proposed mitigation measures on a scaled aerial view to include lane widths, lengths of storage lanes, roadway grades, and identification of any land acquisition required. The details would still be at concept level but would be able to establish the physical feasibility of the proposed mitigations.
2. Provide analysis not only for overall level of service during weekday peak hours but also an analysis of potential queueing issues that could lead to blockage of an adjacent lane or lanes with the use of Synchro and SimTraffic. I-11-86
3. Adjust traffic forecasts for Cumulative scenarios to reflect traffic volumes to and from the shopping center to at least be as high as those for the Baseline scenarios.
4. Provide documentation regarding how existing traffic counts have been adjusted to represent baseline conditions that consider the timing of likely occupancy of the proposed project, likely background growth, and full occupancy of the shopping center.

5. Analyze all likely movements to and from the access route within the shopping center at all driveways and intersections for both Existing+Project and Cumulative+Project conditions;
6. Include a proactive traffic monitoring program of traffic counts at locations where impacts are likely to occur that will be able to accurately estimate when significant traffic issues related to level of service and queuing will occur, given uncertainties related to the implementation of approved roadway projects and the rate of development for the proposed project. I-11-86 cont.
7. Provide easy access to the public of all software calculation sheets for level of service and queuing analyses.
8. Include as part of project conditions of approval the development and implementation satisfactory to the County a binding agreement between the shopping center and the project regarding responsibilities for the timing and share of costs for roadway improvements within the shopping center, including ongoing maintenance.

Table 1
Comparison of EIR Scenario & Review Traffic Levels of Service

Source	Scenario	Attachment Page #s (4)	Peak Period	El Dorado Blvd/ Park Dr North (13) Level of Service	El Dorado Blvd/ Park Dr North (13) Avg. Delay (sec/veh)	Park Dr/ Collector Connection (30) Level of Service	Park Dr/ Collector Connection (30) Avg. Delay (sec/veh)
Draft EIR	Existing (Baseline)	n/a	AM	D	36	Not Analyzed	
		n/a	PM	C	25		
	Existing + Project	n/a	AM	E	62		
		n/a	PM	D	44		
	Cumulative	n/a	AM	C	34		
		n/a	PM	F	112		
	Cumulative + Project	n/a	AM	D	45		
		n/a	PM	F	115		
	Cum+Proj w/ Mitigation	n/a	AM	D	35		
		n/a	PM	D	42		
PBE Traffic	Existing + Project	(#1)/(#2)	AM	E	67	B	11
	6% growth factor (1)	(#3)/(#2)		F	83	B	11
		(#4)/ (#5)	PM	D	39	B	16
	Cumulative No Mitig (2)	(#6)/(#2)	AM	D	50	B	11
		(#7)/(#5)	PM	F	122	B	16
	Cum+Proj No Mitig	(#8)/(#2)	AM	E	61	B	11
		(#9)/(#5)	PM	F	165	B	16
	Cum+Proj with EIR Mitigation (3)	(#10)/(#11)	AM	E	62	C	18
		(#17)/(#18)	PM	D	50	E	48

Note: (1) 6% growth factor only for northbound and southbound thru volumes; (2) Includes revised lane configurations on northbound, southbound, and eastbound approaches based on approved roadway projects; (3) Includes Draft EIR mitigation measures; also added overlap phasing on westbound, eastbound, and northbound approaches, and (4) page numbers in attachment for Synchro/SimTraffic report sheet for signalized and unsignalized intersections being analyzed.

Table 2
El Dorado Blvd/Park Drive Peak Weekday Traffic Volumes
Shopping Center Inbound & Outbound Weekday AM & PM Peak Hours

Scenario	Direction	Movement	Park Drive North (#13) AM(PM)	Park Drive South (#14) AM(PM)	Total AM(PM)
Ex + Proj	Inbound	SB Left	169(179)	73(62)	242(241)
		EB Thru	17(16)	0(0)	17(16)
		NB Right	59(201)	189(344)	248(545)
		Total	245(396)	262(406)	507(802)
	Outbound	WB Left	154(161)	233(202)	387(363)
		WB Thru	9(23)	0(0)	9(23)
		WB Right	110(308)	48(100)	158(408)
		Total	273(492)	281(302)	554(794)
Cum + Proj	Inbound	SB Left	70(100)	0(0)	70(100)
		EB Thru	100(130)	0(0)	100(130)
		NB Right	70(170)	0(0)	70(170)
		Total	240(400)	0(0)	240(400)
	Outbound	WB Left	130(130)	0(0)	130(130)
		WB Thru	120(120)	0(0)	120(120)
		WB Right	80(220)	0(0)	80(220)
		Total	330(470)	0(0)	330(470)
Change	Inbound	SB Left	-99(-79)	-73(-62)	-172(-141)
		EB Thru	83(114)	0(0)	83(114)
		NB Right	11(-31)	-189(-344)	-178(-375)
		Total	-5(4)	-262(-406)	-267(-402)
	Outbound	WB Left	-24(-31)	-233(-202)	-257(-233)
		WB Thru	111(97)	0(0)	111(97)
		WB Right	-30(-88)	-48(-100)	-78(-188)
		Total	57(-22)	-281(-302)	-224(-324)

Source: Central El Dorado Hills Specific Plan, Draft EIR; Nov. 2015

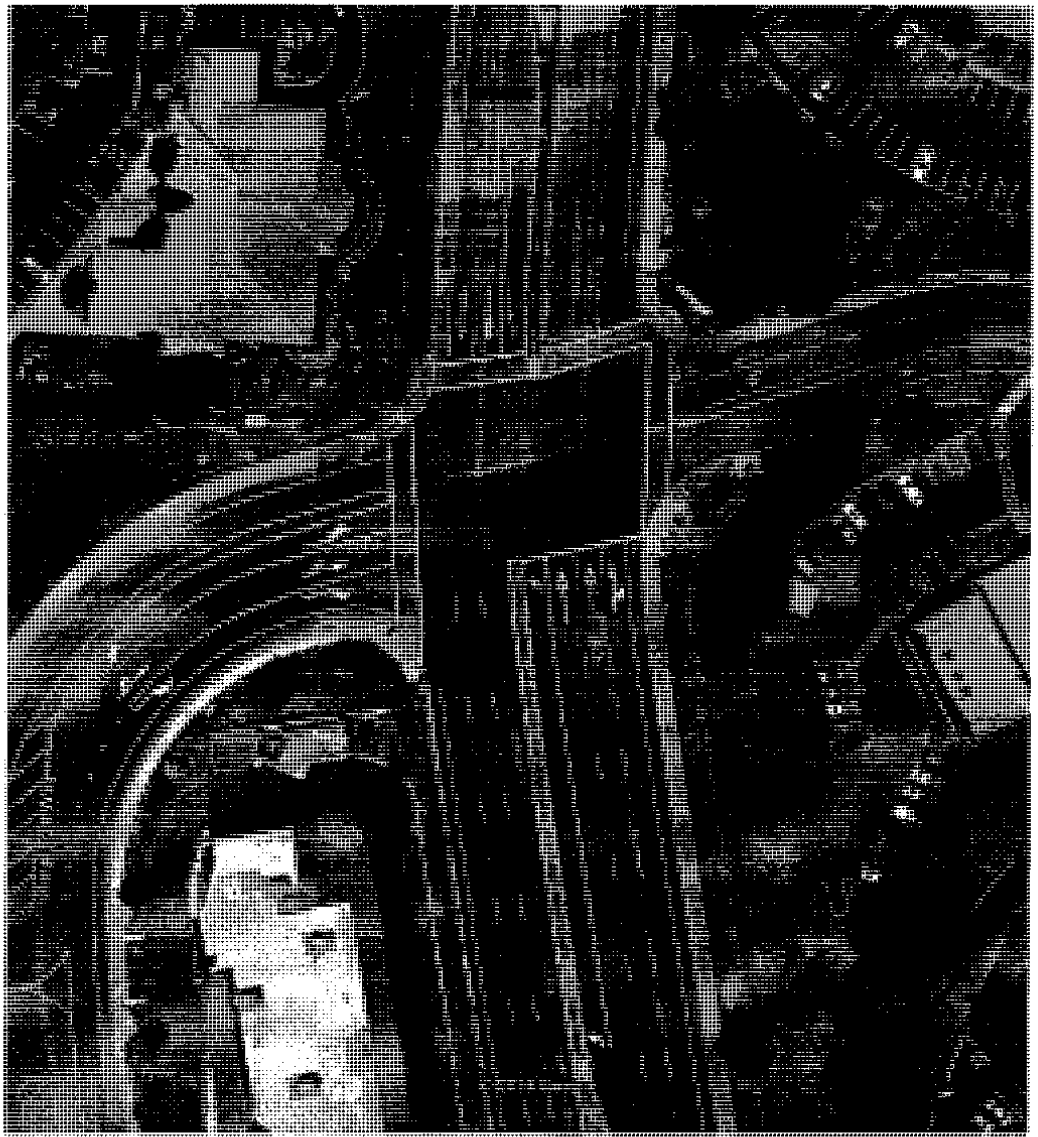


Figure 1. Existing Intersection Layout at El Dorado Blvd/Park Drive/Saratoga Way

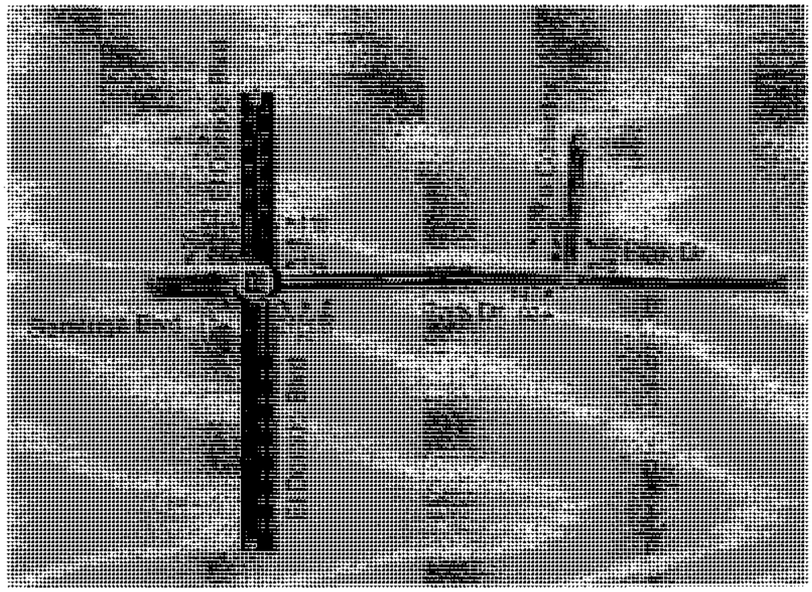


Figure 2. Existing + Project AM Peak

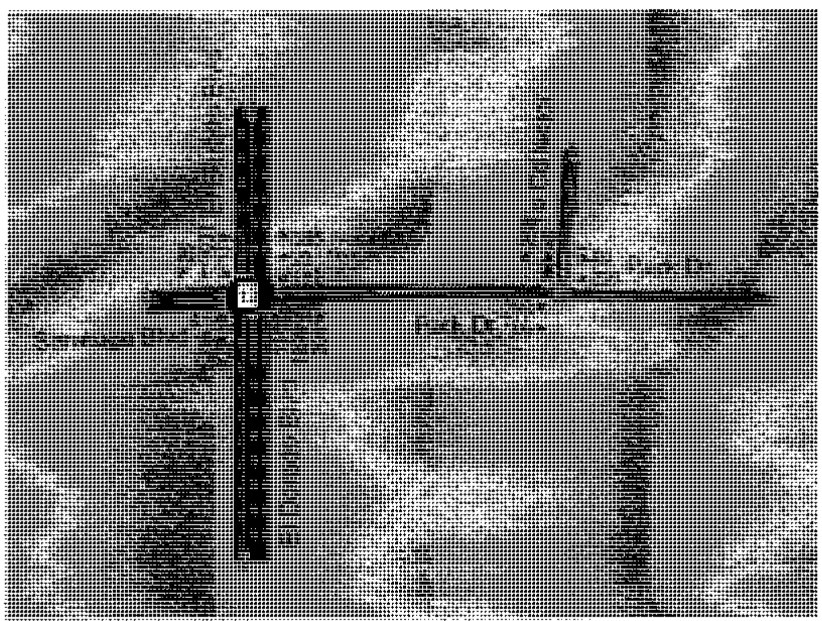


Figure 3. Existing + Project PM Peak

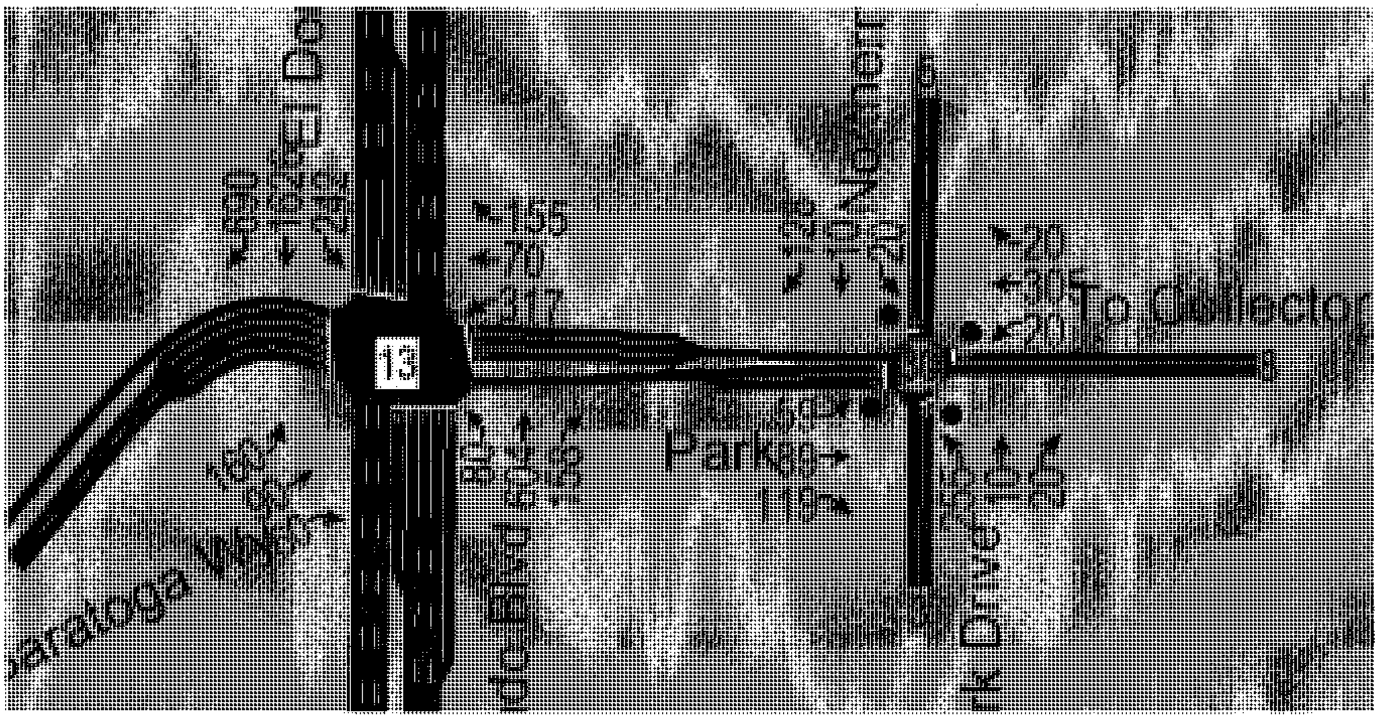


Figure 4. Revised AM Peak Hour Volumes for Cumulative+Project Scenario with Draft EIR Mitigations

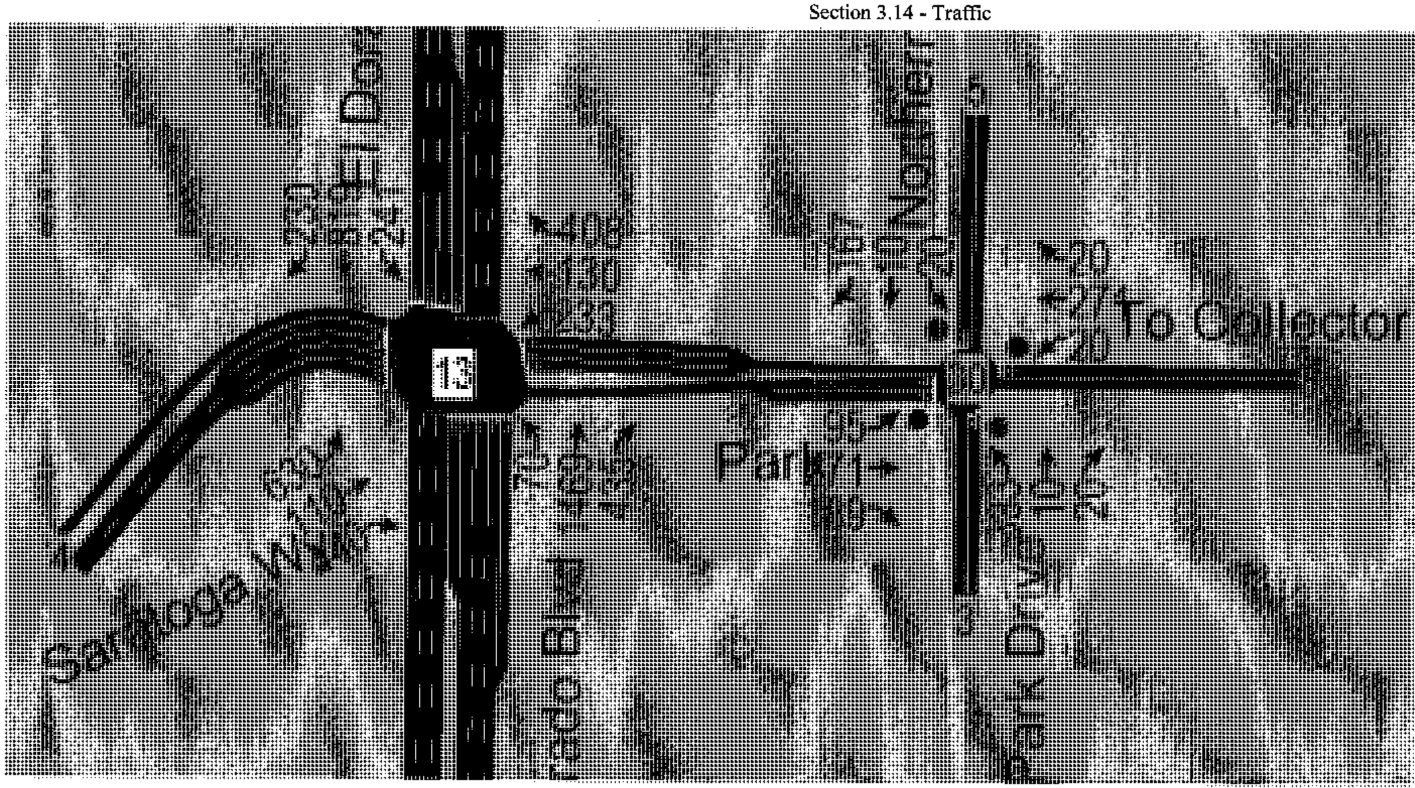


Figure 5. Revised PM Peak Hour Volumes for Cumulative+Project Scenario with Draft EIR Mitigations

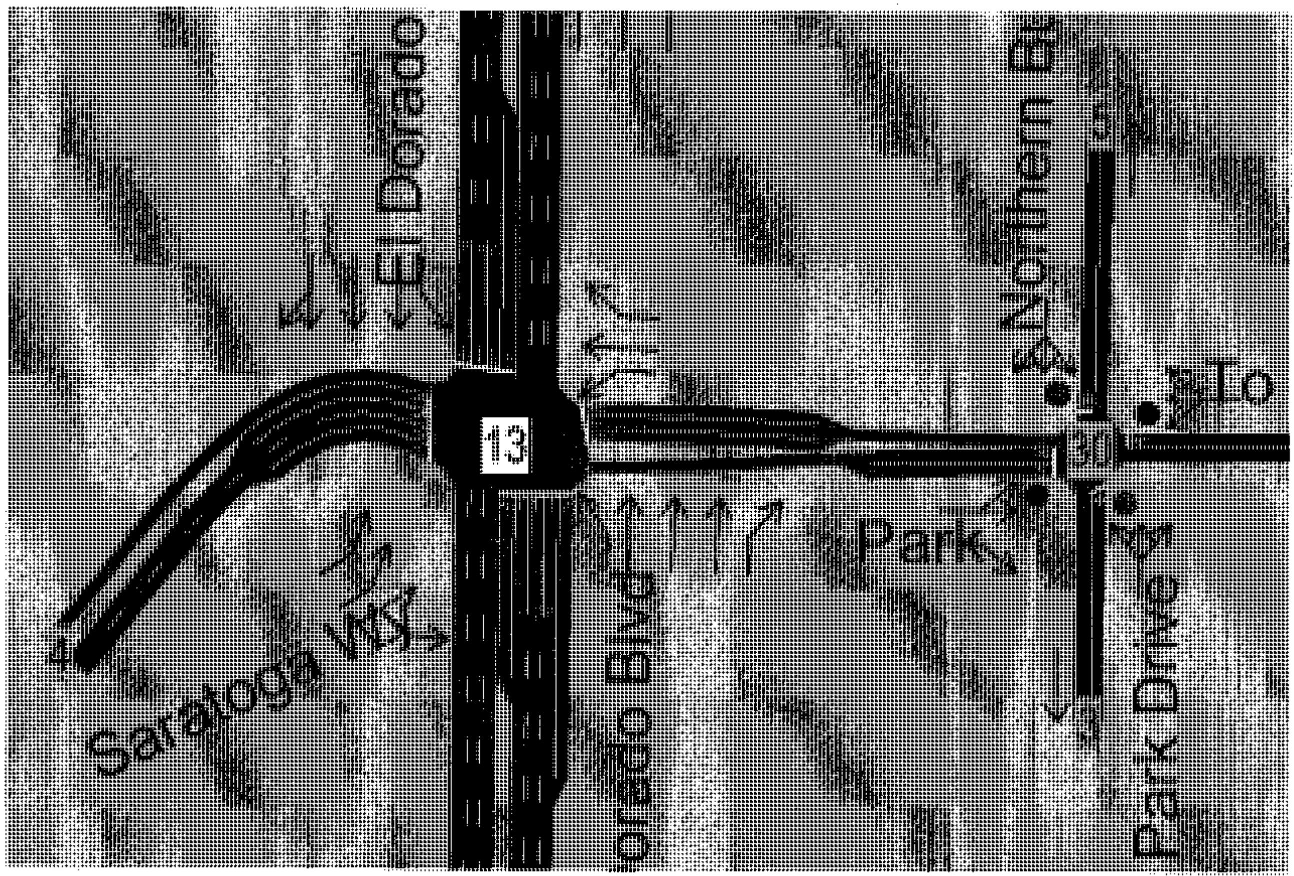


Figure 6. Lane Configurations for Cumulative+Project Scenario with Draft EIR Mitigation

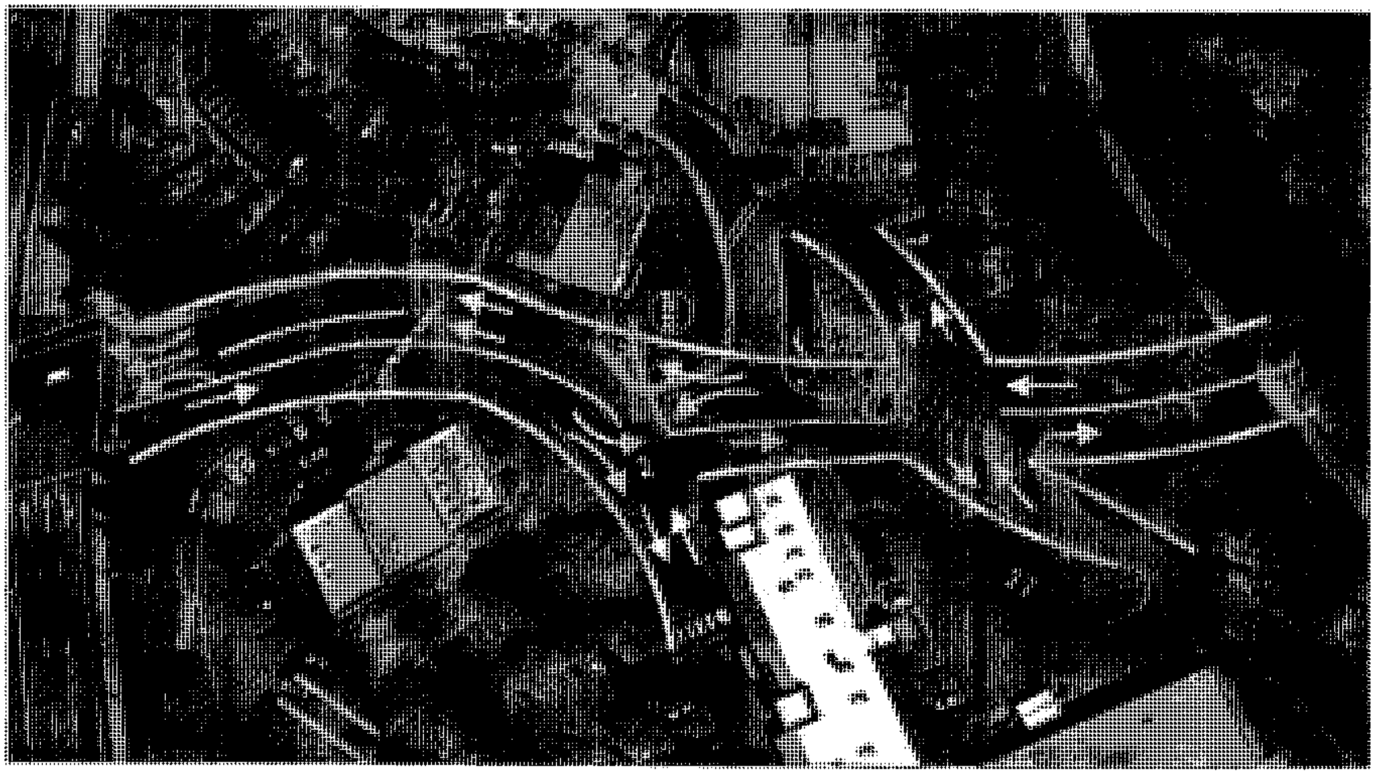


Figure 7. Revised Internal Circulation Concept Improvements

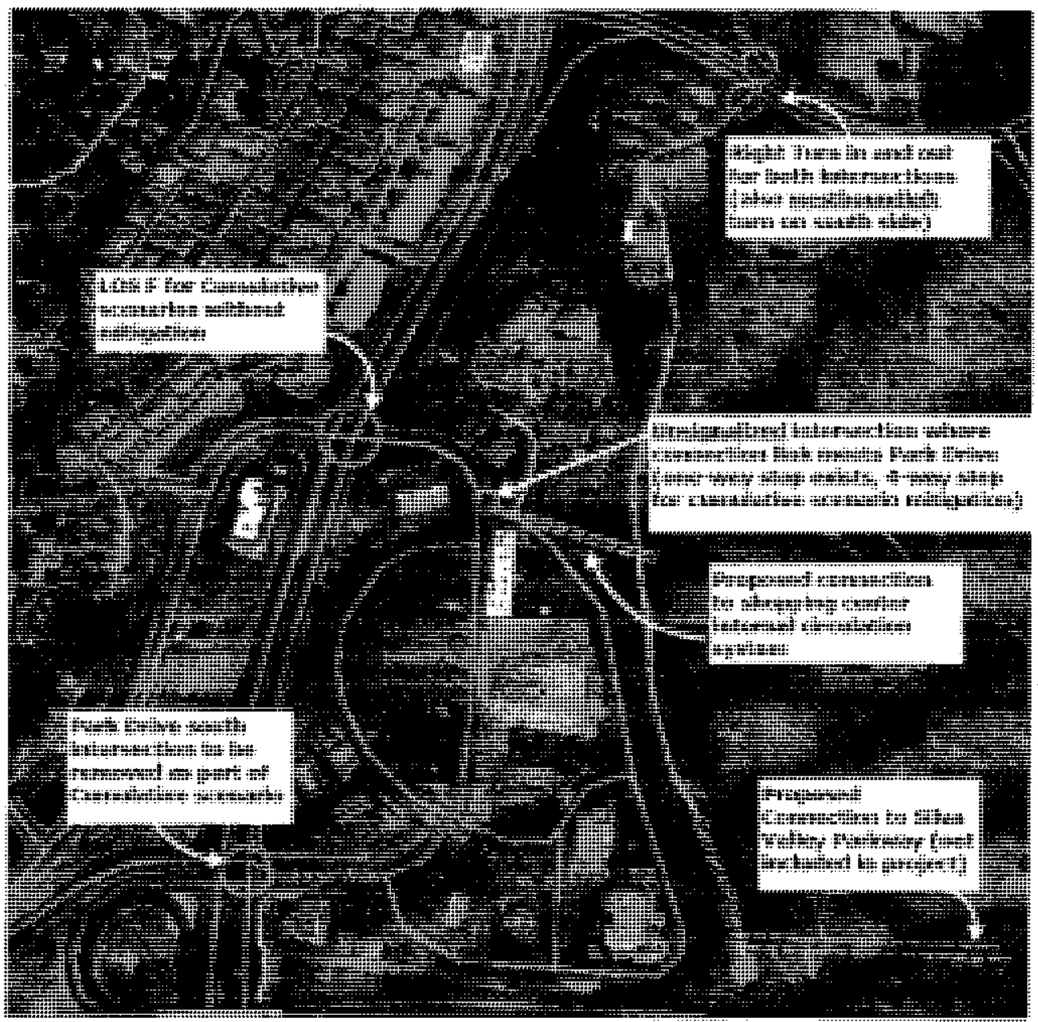


Figure 8. Key Features of Access Roadway for Project Development between Serrano Parkway and I-50

Highway 50 Level of Service

"An EIR must contain an accurate description of the project's environmental setting. An EIR 'must include a description of the physical environmental conditions in the vicinity of the project ... from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.' (Guidelines, § 15125, subd. (a).) There is good reason for this requirement: 'Knowledge of the regional setting is critical to the assessment of environmental impacts.... The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context.' (Guidelines, § 15125, subd. (c).) We interpret this Guideline broadly in order to 'afford the fullest possible protection to the environment.' (*Kings County Farm Bureau, supra*, 221 Cal.App.3d 692, 720.) In so doing, we ensure that the EIR's analysis of significant effects, which is generated from this description of the environmental context, is as accurate as possible." (*Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 874.) I-11-87

Section 3.14.1 describes Caltrans responsibilities relative to measuring traffic Level of Service on U.S Hwy 50. Table 3.14-5 of the DEIR describes the Existing LOS on Hwy 50 during Peak Hours. The last Westbound segment is identified as El Dorado Hills Blvd on ramp, which is reported to be operating at LOS D, which is inconsistent with the Caltrans letter dated September 25, 2013 which notes that "the portion of the segment from the County line to the EDH Blvd interchange operates at LOS F during the peak hour. More recent Caltrans data confirms this LOS F existing condition. Why doesn't the CEDHSP DEIR reflect the Caltrans data for existing conditions? Given the current LOS F status, the additional traffic associated with the approximately 1000 residences in the DEIR will significantly worsen the current LOS F, which is in violation of the EDC General Plan Measure Y provisions. Why does the traffic analysis not define US Hwy 50 mitigation measures required to minimize the impacts (i.e. the completion of the connection of Saratoga Way to Iron Point Road in Folsom) as a required mitigation prior to any CEDHSP construction being allowed?

SYNCHRO 7

LEVEL OF SERVICE

CALCULATION SHEETS

PREPARED BY

PETER EAKLAND, T.E.

PBE TRAFFIC

HCM Signalized Intersection Capacity Analysis
13: Saratoga Blvd & El Dorado Blvd

[illegible]	[illegible]	ETf	ETp	[illegible]	NTf	NTp	CTW	CTf	CTp	[illegible]	yTf	yTp
Wkne u on1gVrktions												
I o(VL e)nB74	66	v-	v2-	v30	8	vv2	33	-2-	38	v98	6v95	62
Idek(F(ow)nB7B(4	v822	v822	v822	v822	v822	v822	v822	v822	v822	v822	v822	v822
Wkne N.dt7	v6	v6	v6	vv	vv	vv	v6	v6	v6	v6	v6	v6
f otk(Wst tiL e)s4	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Wkne Uti(. Fkctor	2.83	2.83	v.22	v.22	v.22		v.22	2.8v		v.22	2.83	
Frt	v.22	v.22	2., 3	v.22	2., 9		v.22	2.88		v.22	v.22	
Ft Protected	2.83	2.88	v.22	2.83	v.22		2.83	v.22		2.83	v.22	
y ktd. F(ow)Brot4	v9, v	v- 3,	v3,.5	v- vv	v336		v- - 2	326-		v- - 2	5350	
F(t PerL itted	2.83	2.88	v.22	2.83	v.22		2.83	v.22		2.83	v.22	
y ktd. F(ow)BerL 4	v9, v	v- 3,	v3, 5	v- vv	v336		v- - 2	326-		v- - 2	5350	
PekSRoVr. 1kctorHPAF	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3	2., 3
Mdj. F(ow)nB74	69	62	v69	v, v	vv	v68	93	, 56	98	v88	6303	60
p f Op. p edVction)nB74	2	2	30	2	vv3	2	2	v2	2	2	2	2
Wkne GroVB F(ow)nB74	65	65	- 6	v, v	63	2	93	, 8v	2	v88	6398	2
f Vrn f hBe	yB(it		PerL	yB(it			Prot			Prot		
Protected P7kses	0	0		,	,		3	6		v	9	
PerL itted P7kses			0									
MctVkted GreenHG)s4	vv.6	vv.6	vv.6	v9.2	v9.2		0.2	53.3		99.9	8, .v	
Effectine GreenHg)s4	vv.6	vv.6	vv.6	v9.2	v9.2		0.2	53.3		99.9	8, .v	
MctVkted g/u p ktio	2.2,	2.2,	2.2,	2.vv	2.vv		2.25	2.60		2.09	2.9,	
u (ekrknce f iL e)s4	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
I e7ic(e Extension)s4	5.2	5.2	5.2	5.2	5.2		5.2	5.2		5.2	5.2	
Wkne GrB u kB)nB74	v52	v59	v66	v, ,	v- v		08	v66,		vv	65, 9	
nls p ktio Prot	2.2v	2.2v		c2.vv	2.26		c2.20	2.v,		2.vv	c2.- 5	
n/s p ktio PerL			c2.23									
n/c p ktio	2.v,	2.v-	2.38	2.89	2.v3		v.55	2.- 5		2.63	v.2,	
UniforL De(khHdv	96.-	96.-	90.,	90.0	3, 3		-2.-	32.0		60.2	65.9	
Progression Fkctor	v.22	v.22	v.22	v.22	v.22		v.22	v.22		v.22	v.22	
IncreL entk(De(khHd6	2.-	2.9	- .2	30.3	2.0		65, .,	6.6		-2.6	05.2	
De(kh)s4	95.0	95.5	- v.,	vv, .,	3, .8		528.0	36.9		60.6	99.9	
Wene(o1y ernice	E	E	E	F	E		F	D		u	E	
MBBrokc7 De(kh)s4		98.9			86.-			98.8			95.3	
MBBrokc7 WOy		E			F			E			E	

Intersection [illegible]			
Aua Mnerkge u ontro(De(kh	9- .0	Aua Wene(o1y ernice	E
Aua I o(VL e to u kBkcith rktio	v.25		
MctVkted u hc(e Wengt7)s4	v03.5	y V. o1(ost tiL e)s4	v9.2
Intersection u kBkcith Uti(izktion	, 8.2%	Iu U Wene(o1y ernice	E
Mnk(hsis Period)L in4	v3		

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Existing + Project Ma PekS
PTE f rk ffic

yhnc7ro - R p eBort
Pkge v

HCM Unsignalized Intersection Capacity Analysis
30: Park Dr & To Collector

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	147	97	48	48	46	186
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	173	114	56	56	54	219
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		634				
pX, platoon unblocked						
vC, conflicting volume	113				545	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				545	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				88	78
cM capacity (veh/h)	1476				441	974

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	287	113	54	219
Volume Left	173	0	54	0
Volume Right	0	56	0	219
cSH	1476	1700	441	974
Volume to Capacity	0.12	0.07	0.12	0.22
Queue Length 95th (ft)	10	0	10	22
Control Delay (s)	5.1	0.0	14.3	9.8
Lane LOS	A		B	A
Approach Delay (s)	5.1	0.0	10.7	
Approach LOS			B	

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
13: Saratoga Blvd & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	17	107	154	9	110	55	707	59	169	2163	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
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	0.95	0.95	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.86		1.00	0.99		1.00	1.00	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1758	1583	1711	1552		1770	5030		1770	3535	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1758	1583	1711	1552		1770	5030		1770	3535	
Peak-hour factor, 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
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	106%	100%	100%	106%	100%
Adj. Flow (vph)	26	20	126	181	11	129	65	882	69	199	2697	24
RTOR Reduction (vph)	0	0	53	0	115	0	0	9	0	0	0	0
Lane Group Flow (vph)	23	23	73	181	25	0	65	942	0	199	2721	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	11.4	11.4	11.4	16.0	16.0		4.0	37.2		64.9	98.1	
Effective Green, g (s)	11.4	11.4	11.4	16.0	16.0		4.0	37.2		64.9	98.1	
Actuated g/C Ratio	0.08	0.08	0.08	0.11	0.11		0.03	0.26		0.45	0.67	
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)	132	138	124	188	171		49	1286		790	2383	
v/s Ratio Prot	0.01	0.01		c0.11	0.02		c0.04	0.19		0.11	c0.77	
v/s Ratio Perm			c0.05									
v/c Ratio	0.17	0.17	0.59	0.96	0.15		1.33	0.73		0.25	1.14	
Uniform Delay, d1	62.7	62.6	64.8	64.5	58.6		70.8	49.6		25.2	23.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.6	7.4	54.5	0.4		238.8	2.2		0.2	69.4	
Delay (s)	63.3	63.2	72.2	118.9	59.0		309.5	51.8		25.3	93.1	
Level of Service	E	E	E	F	E		F	D		C	F	
Approach Delay (s)		69.8			92.8			68.3			88.4	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	83.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
13: Saratoga Blvd & El Dorado Blvd

Aotevent	Epm	EpB	Ep-	Lpm	LpB	Lp-	Wbm	WbB	Wb-	kpm	kpB	kp-
mMhe NonTgOMions												
uoVDv e l1Ry(	)f	f 2	h0	f 2f	05	549	f f	f 969	04f	f h6	f 45h	08
IdeMFVow I1RyRV	f 644	f 644	f 644	f 644	f 644	f 644	f 644	f 644	f 644	f 644	f 644	f 644
mMhe L idty	f 0	f 0	f 0	f f	f f	f f	f 0	f 0	f 0	f 0	f 0	f 0
BotMrost tiv e ls(	) .4	) .4	) .4	) .4	) .4		) .4	) .4		) .4	) .4	
mMhe UtiV FMtor	4.63	4.63	f .44	f .44	f .44		f .44	4.6f		f .44	4.63	
Frt	f .44	f .44	4.93	f .44	4.92		f .44	4.66		f .44	f .44	
FV Protected	4.63	4.69	f .44	4.63	f .44		4.63	f .44		4.63	f .44	
kMd. FVow lRrot(	f 29f	f h5f	f 395	f hf f	f 3) 6		f hh4	34f 0		f hh4	530h	
FV Perv itted	4.63	4.69	f .44	4.63	f .44		4.63	f .44		4.63	f .44	
kMd. FVow lRerv (	f 29f	f h5f	f 395	f hf f	f 3) 6		f hh4	34f 0		f hh4	530h	
PeMa7yoQ TMtor8P, F	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93
Hdj. FVow l1Ry(	) 9	f 6	93	f 96	0h	520	f 5f	0055	052	0f f	f 004	06
- BO- - edCction l1Ry(	4	4	94	4	0h0	4	4	9	4	4	0	4
mMhe GroCR FVow l1Ry(	55	5)	3	f 96	f f h	4	f 5f	0) 2f	4	0f f	f 0) h	4
BOm BSRe	kRW		Perv	kRW			Prot			Prot		
Protected PyMses	)	)		9	9		3	0		f	2	
Perv itted PyMses			)									
HctCMed Green8G ls(	9.0	9.0	9.0	f 2.4	f 2.4		54.0	h3.0		04.6	23.6	
ETectile Green8g ls(	9.0	9.0	9.0	f 2.4	f 2.4		54.0	h3.0		04.6	23.6	
HctCMed g/N - Mio	4.42	4.42	4.42	4.f 0	4.f 0		4.00	4.33		4.f 3	4.) 9	
NVMMnce Biv e ls(	) .4	) .4	) .4	) .4	) .4		) .4	) .4		) .4	) .4	
ueyicV Extension ls(	5.4	5.4	5.4	5.4	5.4		5.4	5.4		5.4	5.4	
mMhe GrR NMRl 1Ry(	f 4f	f 4)	63	04f	f 90		560	0h23		0hf	f h43	
1/s - Mio Prot	4.40	c4.40		c4.f f	4.49		4.4h	c4.) 6		c4.f 0	4.53	
1/s - Mio Perv			4.44									
1/c - Mio	4.55	4.55	4.43	4.6)	4.2)		4.55	4.96		4.h9	4.h5	
UniTorv DeWS8df	2f.)	2f.)	24.)	36.h	3h.)		)).2	02.6		33.3	09.f	
Progression FMtor	f .44	f .44	f .44	f .44	f .44		f .44	f .44		f .44	f .44	
Increv entMVDeWS8d0	f .6	f .9	4.0	) 2.2	h.2		4.3	) .4		f 5.0	f .h	
DeWS ls(	25.5	25.0	24.2	f 42.5	23.4		) 3.f	54.6		29.2	06.9	
me1eVoTk er1ice	E	E	E	F	E		D	N		E	N	
HRRoMcy DeWS ls(		2f .9			h9.3			5f .2			53.)	
HRRoMcy nOk		E			E			N			D	

Intersection kOv v MSry			
, NA H1erMge NontroVDeWS	56.)	, NA me1eVoTk er1ice	D
, NA uoVDv e to NMRMcitS rMio	4.9)		
HctCMed NScVe mengty ls(	f 52.5	kCv oTVost tiv e ls(	f 2.4
Intersection NMRMcitS UtiVzMion	9f .5%	INU me1eVoTk er1ice	D
HnMSsis Period lv in(	f 3		

c NriticMVnMhe GroCR

HCM Unsignalized Intersection Capacity Analysis
30: Park Dr & To Collector

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	290	106	220	49	40	259
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	341	125	259	58	47	305
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		634				
pX, platoon unblocked						
vC, conflicting volume	316				1095	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316				1095	288
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	73				73	59
cM capacity (veh/h)	1244				172	751

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	466	316	47	305
Volume Left	341	0	47	0
Volume Right	0	58	0	305
cSH	1244	1700	172	751
Volume to Capacity	0.27	0.19	0.27	0.41
Queue Length 95th (ft)	28	0	27	49
Control Delay (s)	7.3	0.0	33.7	13.0
Lane LOS	A		D	B
Approach Delay (s)	7.3	0.0	15.8	
Approach LOS			C	

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	90	60	170	70	53	110	594	125	212	1606	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
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	0.95	0.95	1.00	1.00	1.00		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	0.96	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1747	1583	1711	1684		3433	4953		1770	4863	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1747	1583	1711	1684		3433	4953		1770	4863	
Peak-hour factor, 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
Adj. Flow (vph)	176	106	71	200	82	62	129	699	147	249	1889	776
RTOR Reduction (vph)	0	0	62	0	27	0	0	29	0	0	71	0
Lane Group Flow (vph)	139	143	9	200	117	0	129	817	0	249	2594	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	12.7	12.7	12.7	14.4	14.4		4.0	34.2		18.0	48.2	
Effective Green, g (s)	12.7	12.7	12.7	14.4	14.4		4.0	34.2		18.0	48.2	
Actuated g/C Ratio	0.13	0.13	0.13	0.15	0.15		0.04	0.36		0.19	0.51	
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)	224	233	211	259	254		144	1777		334	2460	
v/s Ratio Prot	c0.08	0.08		c0.12	0.07		0.04	0.16		c0.14	c0.53	
v/s Ratio Perm			0.01									
v/c Ratio	0.62	0.61	0.04	0.77	0.46		0.90	0.46		0.75	1.05	
Uniform Delay, d1	39.0	39.0	36.0	38.9	36.9		45.4	23.5		36.5	23.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	4.7	0.1	13.3	1.3		45.1	0.2		8.7	34.6	
Delay (s)	44.3	43.7	36.1	52.2	38.2		90.6	23.6		45.2	58.2	
Level of Service	D	D	D	D	D		F	C		D	E	
Approach Delay (s)		42.4			46.3			32.5			57.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	610	110	450	126	130	357	70	1419	295	201	759	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
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	0.95	0.95	1.00	1.00	1.00		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.89		1.00	0.97		1.00	0.97	
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1710	1583	1711	1603		3433	4954		1770	4914	
Flt Permitted	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1710	1583	1711	1603		3433	4954		1770	4914	
Peak-hour factor, 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
Adj. Flow (vph)	718	129	529	148	153	420	82	1669	347	236	893	259
RTOR Reduction (vph)	0	0	224	0	76	0	0	25	0	0	40	0
Lane Group Flow (vph)	424	423	305	148	497	0	82	1991	0	236	1112	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	26.0	26.0	26.0	30.0	30.0		6.0	45.0		13.0	52.0	
Effective Green, g (s)	26.0	26.0	26.0	30.0	30.0		6.0	45.0		13.0	52.0	
Actuated g/C Ratio	0.20	0.20	0.20	0.23	0.23		0.05	0.35		0.10	0.40	
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)	336	342	317	395	370		158	1715		177	1966	
v/s Ratio Prot	c0.25	0.25		0.09	c0.31		0.02	c0.40		c0.13	0.23	
v/s Ratio Perm			0.19									
v/c Ratio	1.26	1.24	0.96	0.37	1.34		0.52	1.16		1.33	0.57	
Uniform Delay, d1	52.0	52.0	51.5	42.1	50.0		60.6	42.5		58.5	30.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	139.6	129.2	40.2	0.6	171.4		2.9	79.4		183.3	0.4	
Delay (s)	191.6	181.2	91.7	42.7	221.4		63.5	121.9		241.8	30.6	
Level of Service	F	F	F	D	F		E	F		F	C	
Approach Delay (s)		150.0			184.7			119.6			66.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM Average Control Delay	122.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	90	60	317	70	155	80	604	158	242	1626	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
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	0.95	0.95	1.00	1.00	1.00		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	0.97		1.00	0.96	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1744	1583	1711	1614		3433	4927		1770	4858	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1744	1583	1711	1614		3433	4927		1770	4858	
Peak-hour factor, 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
Adj. Flow (vph)	188	106	71	373	82	182	94	711	186	285	1913	812
RTOR Reduction (vph)	0	0	63	0	57	0	0	31	0	0	54	0
Lane Group Flow (vph)	145	149	8	373	207	0	94	866	0	285	2671	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	14.9	14.9	14.9	30.0	30.0		4.0	50.9		27.1	74.0	
Effective Green, g (s)	14.9	14.9	14.9	30.0	30.0		4.0	50.9		27.1	74.0	
Actuated g/C Ratio	0.11	0.11	0.11	0.22	0.22		0.03	0.37		0.20	0.53	
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)	180	187	170	370	349		99	1806		345	2588	
v/s Ratio Prot	c0.09	0.09		c0.22	0.13		0.03	0.18		c0.16	c0.55	
v/s Ratio Perm			0.00									
v/c Ratio	0.81	0.80	0.04	1.01	0.59		0.95	0.48		0.83	1.03	
Uniform Delay, d1	60.6	60.5	55.6	54.5	49.0		67.3	33.8		53.6	32.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.4	20.5	0.1	48.8	2.7		73.2	0.2		14.8	26.6	
Delay (s)	83.0	81.1	55.7	103.3	51.6		140.6	34.0		68.5	59.0	
Level of Service	F	F	E	F	D		F	C		E	E	
Approach Delay (s)		76.9			81.9			44.1			59.9	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM Average Control Delay	60.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	138.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	110	440	233	130	408	70	1469	435	241	819	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
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	0.95	0.95	1.00	1.00	1.00		0.97	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.89		1.00	0.97		1.00	0.97	
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1709	1583	1711	1596		3433	4911		1770	4918	
Flt Permitted	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1709	1583	1711	1596		3433	4911		1770	4918	
Peak-hour factor, 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
Adj. Flow (vph)	741	129	518	274	153	480	82	1728	512	284	964	271
RTOR Reduction (vph)	0	0	154	0	75	0	0	36	0	0	34	0
Lane Group Flow (vph)	430	440	364	274	558	0	82	2204	0	284	1201	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	29.0	29.0	29.0	36.0	36.0		6.9	53.0		16.0	62.1	
Effective Green, g (s)	29.0	29.0	29.0	36.0	36.0		6.9	53.0		16.0	62.1	
Actuated g/C Ratio	0.19	0.19	0.19	0.24	0.24		0.05	0.35		0.11	0.41	
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)	325	330	306	411	383		158	1735		189	2036	
v/s Ratio Prot	0.26	c0.26		0.16	c0.35		0.02	c0.45		c0.16	0.24	
v/s Ratio Perm			0.23									
v/c Ratio	1.32	1.33	1.19	0.67	1.46		0.52	1.27		1.50	0.59	
Uniform Delay, d1	60.5	60.5	60.5	51.6	57.0		69.9	48.5		67.0	34.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	165.3	169.3	113.0	4.1	219.4		2.9	126.4		251.8	0.4	
Delay (s)	225.8	229.8	173.5	55.6	276.4		72.8	174.9		318.8	34.5	
Level of Service	F	F	F	E	F		E	F		F	C	
Approach Delay (s)		207.6			209.7			171.3			87.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	164.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↑↑	↱	↰	↑↑↱	
Volume (vph)	160	90	60	317	70	155	80	604	158	242	1626	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	1863	1583	1711	1801	1531	1770	5085	1583	1770	4858	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	1863	1583	1711	1801	1531	1770	5085	1583	1770	4858	
Peak-hour factor, 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
Adj. Flow (vph)	188	106	71	373	82	182	94	711	186	285	1913	812
RTOR Reduction (vph)	0	0	27	0	0	47	0	0	76	0	54	0
Lane Group Flow (vph)	188	106	44	373	82	135	94	711	110	285	2671	0
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	19.3	13.5	20.5	29.0	23.2	49.9	7.0	52.3	81.3	26.7	72.0	
Effective Green, g (s)	19.3	13.5	20.5	29.0	23.2	49.9	7.0	52.3	81.3	26.7	72.0	
Actuated g/C Ratio	0.14	0.10	0.15	0.21	0.17	0.36	0.05	0.38	0.59	0.19	0.52	
Clearance Time (s)	4.0	4.0	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	3.0	3.0	
Lane Grp Cap (vph)	482	183	262	361	304	600	90	1934	982	344	2544	
v/s Ratio Prot	0.05	c0.06	0.01	c0.22	0.05	0.04	c0.05	0.14	0.02	0.16	c0.55	
v/s Ratio Perm			0.02			0.04			0.05			
v/c Ratio	0.39	0.58	0.16	1.03	0.27	0.22	1.04	0.37	0.11	0.83	1.05	
Uniform Delay, d1	53.7	59.3	51.0	54.2	49.8	30.4	65.2	30.7	12.3	53.2	32.8	
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	0.5	4.4	0.3	56.2	0.5	0.2	107.5	0.1	0.1	15.1	32.7	
Delay (s)	54.3	63.7	51.2	110.5	50.3	30.6	172.7	30.8	12.4	68.3	65.5	
Level of Service	D	E	D	F	D	C	F	C	B	E	E	
Approach Delay (s)		56.4			79.9			40.8			65.7	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	61.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	137.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
30: Park Dr & Northern Buildings

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	59	89	119	20	305	20	255	10	20	20	10	128
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	69	105	140	24	359	24	300	12	24	24	12	151

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	174	140	406	335	186
Volume Left (vph)	69	0	24	300	24
Volume Right (vph)	0	140	24	24	151
Hadj (s)	0.23	-0.67	0.01	0.17	-0.43
Departure Headway (s)	7.4	6.5	6.5	6.8	6.7
Degree Utilization, x	0.36	0.25	0.73	0.63	0.35
Capacity (veh/h)	441	489	520	495	457
Control Delay (s)	13.3	10.5	25.4	20.8	13.2
Approach Delay (s)	12.1		25.4	20.8	13.2
Approach LOS	B		D	C	B

Intersection Summary			
Delay	19.0		
HCM Level of Service	C		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Queues
13: Saratoga Wy & El Dorado Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑	↱	↰	↑	↱	↰	↑↑↑	↱	↰	↑↑↑↱	
Volume (vph)	160	90	60	317	70	155	80	604	158	242	1626	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12
Storage Length (ft)	160		160	180		180	150		230	200		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		440			472			540			380	
Travel Time (s)		12.0			12.9			12.3			8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	106	71	373	82	182	94	711	186	285	2725	0
v/c Ratio	0.39	0.61	0.24	1.03	0.25	0.28	1.03	0.37	0.18	0.82	1.04	
Control Delay	59.2	75.0	30.4	107.0	48.4	15.0	166.0	32.3	2.3	72.0	61.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	59.2	75.0	30.4	107.0	48.4	15.0	166.0	32.3	2.3	72.0	61.0	
Queue Length 50th (ft)	84	92	30	~355	61	57	~90	166	0	245	~946	
Queue Length 95th (ft)	117	#146	69	#523	106	95	#198	212	28	316	#957	
Internal Link Dist (ft)		360			392			460			300	
Turn Bay Length (ft)	160		160	180		180	150		230	200		
Base Capacity (vph)	533	218	301	363	385	717	91	1946	1058	440	2612	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.49	0.24	1.03	0.21	0.25	1.03	0.37	0.18	0.65	1.04	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

SimTraffic Simulation Summary
Cumulative+Proj AM Peak EIR Mitig

2/15/2016

Summary of All Intervals

Start Time	7:57
End Time	9:00
Total Time (min)	63
Time Recorded (min)	60
# of Intervals	2
# of Recorded Intvls	1
Vehs Entered	4277
Vehs Exited	4275
Starting Vehs	80
Ending Vehs	82
Denied Entry Before	1
Denied Entry After	169
Travel Distance (mi)	728
Travel Time (hr)	184.8
Total Delay (hr)	155.4
Total Stops	3763
Fuel Used (gal)	686.5

Interval #0 Information Seeding

Start Time	7:57
End Time	8:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	42[illegible]
Vehs Exited	4275
Starting Vehs	80
Ending Vehs	82
Denied Entry Before	1
Denied Entry After	169
Travel Distance (mi)	728
Travel Time (hr)	184.8
Total Delay (hr)	155.4
Total Stops	3763
Fuel Used (gal)	686.5

SimTraffic Performance Report
Cumulative+Proj AM Peak EIR Mitig 2/15/2016

13: Saratoga Wy & El Dorado Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.8	1.9	0.2	6.0	1.5	0.6	6.0	4.1	0.5	12.3	79.7	31.2
Delay / Veh (s)	55.8	66.0	9.5	69.4	24.5	15.3	225.8	25.0	10.3	233.6	188.8	195.7
Total Stops	163	97	58	312	95	98	169	340	48	217	824	339
Stop/Veh	0.91	0.95	0.84	1.01	0.43	0.69	1.78	0.58	0.29	1.14	0.54	0.59
Travel Dist (mi)	12.6	7.5	5.1	25.1	12.5	11.9	9.2	55.9	15.9	11.8	92.6	34.5
Travel Time (hr)	3.4	2.2	0.4	7.1	2.1	1.2	6.3	6.1	1.1	12.8	83.1	32.9
Avg Speed (mph)	4	3	14	4	6	10	1	9	18	3	6	6
Fuel Used (gal)	11.5	7.2	2.4	26.4	11.1	7.3	16.7	30.7	6.4	33.0	219.8	81.1
Fuel Eff. (mpg)	1.1	1.0	2.1	1.0	1.1	1.6	0.6	1.8	2.5	0.4	0.4	0.4
HC Emissions (g)	1	0	0	2	1	1	2	2	1	1	9	2
CO Emissions (g)	232	130	75	559	338	261	349	1009	260	417	2752	724
NOx Emissions (g)	2	1	1	7	4	3	3	9	2	3	21	4
Vehicles Entered	177	104	69	305	218	143	100	588	167	194	1529	576
Vehicles Exited	183	100	69	313	221	143	90	584	166	187	1509	572
Hourly Exit Rate	183	100	69	313	221	143	90	584	166	187	1509	572
Input Volume	160	90	60	317	216	155	80	604	158	242	1626	690
% of Volume	114	111	115	99	102	92	112	97	105	77	93	83
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	1	10	116	42

13: Saratoga Wy & El Dorado Blvd Performance by movement

Movement	All
Total Delay (hr)	146.6
Delay / Veh (s)	127.1
Total Stops	2760
Stop/Veh	0.66
Travel Dist (mi)	294.6
Travel Time (hr)	158.8
Avg Speed (mph)	5
Fuel Used (gal)	453.4
Fuel Eff. (mpg)	0.6
HC Emissions (g)	22
CO Emissions (g)	7106
NOx Emissions (g)	59
Vehicles Entered	4170
Vehicles Exited	4137
Hourly Exit Rate	4137
Input Volume	4398
% of Volume	94
Denied Entry Before	0
Denied Entry After	169

SimTraffic Performance Report
Cumulative+Proj AM Peak EIR Mitig

2/15/2016

30: Park Dr & Northern Buildings Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.1	0.3	0.2	0.2	3.6	0.2	1.7	0.1	0.2	0.1	0.0	0.5
Delay / Veh (s)	9.0	3.5	5.4	44.7	45.2	34.4	25.5	23.5	17.9	17.9	10.2	14.3
Total Stops	60	84	117	15	281	21	221	9	29	21	11	130
Stop/Veh	1.00	0.30	1.00	0.88	0.97	1.00	0.91	0.90	0.94	1.00	1.00	1.00
Travel Dist (mi)	5.2	17.4	10.1	0.9	15.5	1.1	8.8	0.4	1.1	0.9	0.5	5.9
Travel Time (hr)	0.4	1.1	0.7	0.3	4.3	0.3	2.2	0.1	0.2	0.2	0.1	0.9
Avg Speed (mph)	13	16	14	4	4	5	4	4	5	6	9	7
Fuel Used (gal)	2.4	8.9	4.6	0.7	13.3	0.8	6.8	0.3	0.8	0.5	0.2	3.0
Fuel Eff. (mpg)	2.2	2.0	2.2	1.2	1.2	1.3	1.3	1.3	1.5	1.8	2.1	1.9
HC Emissions (g)	0	1	1	0	1	0	0	0	0	0	0	0
CO Emissions (g)	66	305	165	8	217	12	96	3	9	7	4	54
NOx Emissions (g)	1	4	2	0	2	0	1	0	0	0	0	1
Vehicles Entered	59	278	116	18	287	21	243	10	31	21	11	131
Vehicles Exited	60	277	118	17	292	21	244	10	31	21	11	130
Hourly Exit Rate	60	277	118	17	292	21	244	10	31	21	11	130
Input Volume	59	312	119	20	305	20	255	10	20	20	10	128
% of Volume	102	89	99	85	96	105	96	100	155	105	110	102
Denied Entry Before	0	0	0	0	1	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

30: Park Dr & Northern Buildings Performance by movement

Movement	All
Total Delay (hr)	7.2
Delay / Veh (s)	21.2
Total Stops	999
Stop/Veh	0.81
Travel Dist (mi)	67.8
Travel Time (hr)	10.7
Avg Speed (mph)	7
Fuel Used (gal)	42.2
Fuel Eff. (mpg)	1.6
HC Emissions (g)	3
CO Emissions (g)	945
NOx Emissions (g)	11
Vehicles Entered	1226
Vehicles Exited	1232
Hourly Exit Rate	1232
Input Volume	1278
% of Volume	96
Denied Entry Before	1
Denied Entry After	0

Queuing and Blocking Report
Cumulative+Proj AM Peak EIR Mitig

2/15/2016

Intersection: 13: Saratoga Wy & El Dorado Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	127	126	158	179	205	389	63	174	331	275	207	75
Average Queue (ft)	60	73	74	16	199	311	32	146	141	105	120	39
95th Queue (ft)	109	128	138	69	221	523	62	199	307	182	169	70
Link Distance (ft)		363	363			374			501	501	501	
Upstream Blk Time (%)						14						
Queuing Penalty (veh)						94						
Storage Bay Dist (ft)	160			160	180		180	150				230
Storage Blk Time (%)			1	0	36			37	0			
Queuing Penalty (veh)			0	0	81			75	0			

Intersection: 13: Saratoga Wy & El Dorado Blvd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	225	332	332	351
Average Queue (ft)	175	296	305	331
95th Queue (ft)	261	360	362	340
Link Distance (ft)		317	317	317
Upstream Blk Time (%)		10	12	33
Queuing Penalty (veh)		0	0	0
Storage Bay Dist (ft)	200			
Storage Blk Time (%)	11	28		
Queuing Penalty (veh)	60	69		

Intersection: 30: Park Dr & Northern Buildings

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	97	116	317	196	141
Average Queue (ft)	50	39	155	99	68
95th Queue (ft)	84	72	313	200	121
Link Distance (ft)	374		283	181	236
Upstream Blk Time (%)			16	7	
Queuing Penalty (veh)			0	0	
Storage Bay Dist (ft)		150			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 380

HCM Signalized Intersection Capacity Analysis
13: Saratoga Wy & El Dorado Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	110	440	233	130	408	70	1469	435	241	819	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	1863	1583	1711	1801	1531	1770	5085	1583	1770	4918	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	1863	1583	1711	1801	1531	1770	5085	1583	1770	4918	
Peak-hour factor, 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
Adj. Flow (vph)	741	129	518	274	153	480	82	1728	512	284	964	271
RTOR Reduction (vph)	0	0	55	0	0	2	0	0	114	0	48	0
Lane Group Flow (vph)	741	129	463	274	153	478	82	1728	398	284	1187	0
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	20.0	14.5	31.2	18.4	12.9	27.9	16.7	33.1	51.5	15.0	31.4	
Effective Green, g (s)	20.0	14.5	31.2	18.4	12.9	27.9	16.7	33.1	51.5	15.0	31.4	
Actuated g/C Ratio	0.21	0.15	0.32	0.19	0.13	0.29	0.17	0.34	0.53	0.15	0.32	
Clearance Time (s)	4.0	4.0	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	3.0	3.0	
Lane Grp Cap (vph)	708	278	574	325	240	503	305	1735	906	274	1592	
v/s Ratio Prot	c0.22	0.07	0.14	0.16	0.08	c0.15	0.05	c0.34	0.08	0.16	0.24	
v/s Ratio Perm			0.15			0.17			0.17			
v/c Ratio	1.05	0.46	0.81	0.84	0.64	0.95	0.27	1.00	0.44	1.04	0.75	
Uniform Delay, d1	38.5	37.7	30.1	37.9	39.8	33.9	34.9	31.9	13.9	41.0	29.2	
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	46.6	1.2	8.1	17.7	5.5	27.9	0.5	20.5	0.3	64.2	1.9	
Delay (s)	85.1	38.9	38.3	55.6	45.3	61.8	35.3	52.4	14.3	105.2	31.2	
Level of Service	F	D	D	E	D	E	D	D	B	F	C	
Approach Delay (s)		63.4			57.1			43.4			45.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	50.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	97.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
30: Park Dr & Northern Buildings

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	95	271	189	20	271	20	333	10	20	20	10	167
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	112	319	222	24	319	24	392	12	24	24	12	196

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	431	222	366	427	232
Volume Left (vph)	112	0	24	392	24
Volume Right (vph)	0	222	24	24	196
Hadj (s)	0.16	-0.67	0.01	0.18	-0.45
Departure Headway (s)	8.9	8.0	8.5	8.3	8.7
Degree Utilization, x	1.06	0.49	0.87	0.99	0.56
Capacity (veh/h)	407	435	417	427	393
Control Delay (s)	90.7	17.4	46.9	69.8	22.4
Approach Delay (s)	65.7		46.9	69.8	22.4
Approach LOS	F		E	F	C

Intersection Summary			
Delay	56.7		
HCM Level of Service	F		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Queues
13: Saratoga Wy & El Dorado Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	110	440	233	130	408	70	1469	435	241	819	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12
Storage Length (ft)	160		160	180		180	150		230	200		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		440			472			540			380	
Travel Time (s)		12.0			12.9			12.3			8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	741	129	518	274	153	480	82	1728	512	284	1235	0
v/c Ratio	1.05	0.46	0.83	0.84	0.64	0.95	0.27	1.00	0.51	1.04	0.75	
Control Delay	85.2	44.1	35.5	61.6	52.3	61.7	36.2	54.1	8.1	106.2	32.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	85.2	44.1	35.5	61.6	52.3	61.7	36.2	54.1	8.1	106.2	32.6	
Queue Length 50th (ft)	~260	75	239	162	91	285	43	~392	81	~192	249	
Queue Length 95th (ft)	#354	125	339	#267	146	#431	81	#478	146	#394	293	
Internal Link Dist (ft)		360			392			460			300	
Turn Bay Length (ft)	160		160	180		180	150		230	200		
Base Capacity (vph)	709	308	678	353	297	506	365	1732	1031	274	1638	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.05	0.42	0.76	0.78	0.52	0.95	0.22	1.00	0.50	1.04	0.75	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

SimTraffic Simulation Summary
Cumulative+Proj PM Peak EIR Mitig

2/15/2016

Summary of All Intervals

Start Time	4:57
End Time	6:00
Total Time (min)	63
Time Recorded (min)	60
# of Intervals	2
# of Recorded Intvls	1
Vehs Entered	5352
Vehs Exited	5345
Starting Vehs	82
Ending Vehs	89
Denied Entry Before	5
Denied Entry After	1
Travel Distance (mi)	949
Travel Time (hr)	110.7
Total Delay (hr)	71.2
Total Stops	5964
Fuel Used (gal)	607.5

Interval #0 Information Seeding

Start Time	4:57
End Time	5:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	5352
Vehs Exited	5345
Starting Vehs	82
Ending Vehs	89
Denied Entry Before	5
Denied Entry After	1
Travel Distance (mi)	949
Travel Time (hr)	110.7
Total Delay (hr)	71.2
Total Stops	5964
Fuel Used (gal)	607.5

SimTraffic Performance Report
Cumulative+Proj PM Peak EIR Mitig

2/15/2016

13: Saratoga Wy & El Dorado Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	12.5	1.4	3.2	2.8	2.0	5.2	1.1	15.4	2.6	4.3	5.2	1.5
Delay / Veh (s)	72.3	55.8	25.3	39.6	54.7	43.7	57.8	38.2	21.4	68.8	22.8	22.4
Total Stops	696	79	313	268	154	473	86	1210	253	262	547	182
Stop/Veh	1.12	0.88	0.70	1.05	1.15	1.11	1.23	0.83	0.57	1.17	0.66	0.77
Travel Dist (mi)	43.9	6.6	33.1	20.7	10.9	35.3	6.7	138.0	42.1	13.7	50.3	14.3
Travel Time (hr)	14.5	1.7	4.9	3.8	2.5	7.0	1.4	20.4	4.4	4.8	7.2	2.2
Avg Speed (mph)	4	5	14	5	4	5	6	8	13	3	7	7
Fuel Used (gal)	45.6	5.2	17.1	16.9	10.2	28.0	5.1	87.1	19.5	15.6	32.8	8.3
Fuel Eff. (mpg)	1.0	1.3	1.9	1.2	1.1	1.3	1.3	1.6	2.2	0.9	1.5	1.7
HC Emissions (g)	3	0	2	1	1	2	0	8	2	1	3	1
CO Emissions (g)	727	103	514	362	224	557	143	2378	610	301	942	235
NOx Emissions (g)	8	1	5	5	3	7	1	27	6	3	11	3
Vehicles Entered	621	92	450	252	134	432	71	1450	442	223	830	237
Vehicles Exited	620	88	449	259	134	425	70	1450	444	223	824	236
Hourly Exit Rate	620	88	449	259	134	425	70	1450	444	223	824	236
Input Volume	630	110	440	233	131	408	70	1469	435	241	819	230
% of Volume	98	80	102	111	102	104	100	99	102	93	101	103
Denied Entry Before	0	0	0	0	0	0	0	0	0	2	2	0
Denied Entry After	0	0	0	0	0	0	0	0	1	0	0	0

13: Saratoga Wy & El Dorado Blvd Performance by movement

Movement	All
Total Delay (hr)	57.2
Delay / Veh (s)	39.4
Total Stops	4523
Stop/Veh	0.87
Travel Dist (mi)	415.6
Travel Time (hr)	74.8
Avg Speed (mph)	6
Fuel Used (gal)	291.4
Fuel Eff. (mpg)	1.4
HC Emissions (g)	23
CO Emissions (g)	7095
NOx Emissions (g)	78
Vehicles Entered	5234
Vehicles Exited	5222
Hourly Exit Rate	5222
Input Volume	5216
% of Volume	100
Denied Entry Before	4
Denied Entry After	1

SimTraffic Performance Report
Cumulative+Proj PM Peak EIR Mitig

2/15/2016

30: Park Dr & Northern Buildings Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.4	1.2	0.3	0.1	1.8	0.1	6.4	0.2	0.2	0.1	0.1	0.7
Delay / Veh (s)	15.1	9.3	6.4	18.3	23.9	12.4	60.3	83.3	49.0	10.0	19.7	13.9
Total Stops	105	253	181	24	266	26	353	9	17	23	13	168
Stop/Veh	0.99	0.53	1.06	1.00	0.99	1.00	0.92	0.90	0.94	1.00	1.00	1.00
Travel Dist (mi)	8.8	32.0	14.2	1.3	14.4	1.4	13.8	0.4	0.6	1.0	0.6	7.6
Travel Time (hr)	0.9	2.8	1.1	0.2	2.4	0.2	7.1	0.2	0.3	0.1	0.1	1.1
Avg Speed (mph)	10	11	13	7	6	8	3	2	3	9	6	7
Fuel Used (gal)	4.6	17.4	6.7	0.7	8.7	0.7	19.4	0.6	0.8	0.4	0.3	3.7
Fuel Eff. (mpg)	1.9	1.8	2.1	1.9	1.7	1.9	0.7	0.6	0.8	2.7	1.8	2.0
HC Emissions (g)	0	2	1	0	1	0	0	0	0	0	0	0
CO Emissions (g)	95	644	215	12	197	15	189	5	8	7	5	86
NOx Emissions (g)	1	8	3	0	2	0	2	0	0	0	0	1
Vehicles Entered	105	480	170	24	268	26	384	10	18	23	13	169
Vehicles Exited	107	477	170	24	269	26	380	10	18	23	13	168
Hourly Exit Rate	107	477	170	24	269	26	380	10	18	23	13	168
Input Volume	95	502	189	20	271	20	333	10	20	20	10	167
% of Volume	113	95	90	120	99	130	114	100	90	115	130	101
Denied Entry Before	0	0	0	0	1	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

30: Park Dr & Northern Buildings Performance by movement

Movement	All
Total Delay (hr)	11.6
Delay / Veh (s)	24.8
Total Stops	1438
Stop/Veh	0.85
Travel Dist (mi)	96.2
Travel Time (hr)	16.5
Avg Speed (mph)	7
Fuel Used (gal)	64.0
Fuel Eff. (mpg)	1.5
HC Emissions (g)	4
CO Emissions (g)	1477
NOx Emissions (g)	18
Vehicles Entered	1690
Vehicles Exited	1685
Hourly Exit Rate	1685
Input Volume	1657
% of Volume	102
Denied Entry Before	1
Denied Entry After	0

Queuing and Blocking Report
Cumulative+Proj PM Peak EIR Mitig

2/15/2016

Intersection: 13: Saratoga Wy & El Dorado Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	184	416	125	175	205	389	205	174	395	441	505	265
Average Queue (ft)	168	284	48	56	148	288	192	74	260	278	285	166
95th Queue (ft)	208	438	105	111	214	480	234	164	376	405	441	309
Link Distance (ft)		363	363			374			501	501	501	
Upstream Blk Time (%)		9				6					0	
Queuing Penalty (veh)		0				46					0	
Storage Bay Dist (ft)	160			160	180		180	150				230
Storage Blk Time (%)	17	31		0	4	1	22	0	25		12	0
Queuing Penalty (veh)	55	99		0	24	7	81	0	17		53	1

Intersection: 13: Saratoga Wy & El Dorado Blvd

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	225	332	332	332
Average Queue (ft)	163	155	170	198
95th Queue (ft)	237	284	282	285
Link Distance (ft)		317	317	317
Upstream Blk Time (%)		0	0	1
Queuing Penalty (veh)		0	0	0
Storage Bay Dist (ft)	200			
Storage Blk Time (%)	8	1		
Queuing Penalty (veh)	23	1		

Intersection: 30: Park Dr & Northern Buildings

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	177	175	272	204	189
Average Queue (ft)	102	58	113	167	73
95th Queue (ft)	157	121	200	240	138
Link Distance (ft)	374		283	181	236
Upstream Blk Time (%)			0	47	
Queuing Penalty (veh)			0	0	
Storage Bay Dist (ft)		150			
Storage Blk Time (%)	2	0			
Queuing Penalty (veh)	3	0			

Network Summary

Network wide Queuing Penalty: 411

Queues
13: Saratoga Wy & El Dorado Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	110	440	233	130	408	70	1469	435	241	819	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	12	12	12
Storage Length (ft)	160		160	180		180	150		230	200		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		440			472			540			380	
Travel Time (s)		12.0			12.9			12.3			8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	741	129	518	274	153	480	82	1728	512	284	1235	0
v/c Ratio	1.05	0.46	0.83	0.84	0.64	0.95	0.27	1.00	0.51	1.04	0.75	
Control Delay	85.2	44.1	35.5	61.6	52.3	61.7	36.2	54.1	8.1	106.2	32.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	85.2	44.1	35.5	61.6	52.3	61.7	36.2	54.1	8.1	106.2	32.6	
Queue Length 50th (ft)	~260	75	239	162	91	285	43	~392	81	~192	249	
Queue Length 95th (ft)	#354	125	339	#267	146	#431	81	#478	146	#334	293	
Internal Link Dist (ft)		360			392			460			300	
Turn Bay Length (ft)	160		160	180		180	150		230	200		
Base Capacity (vph)	709	308	678	353	297	506	365	1732	1031	274	1638	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.05	0.42	0.76	0.78	0.52	0.95	0.22	1.00	0.50	1.04	0.75	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-4233
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TTY 711

Flex your power!
Be energy efficient!

September 25, 2013

Kimberly A. Kerr, Acting Director
El Dorado County Community Development Agency
2850 Fairlane Court
Placerville, CA 95667-4197

Dear Ms. Kerr:

Thank you for your letter dated September 13, 2013, wherein you posed a series of questions related to Level of Service (LOS), performance measures, planned state highway improvements, and PeMS data regarding US Highway 50 (US 50) within El Dorado County.

Your questions and our responses are as follows:

1. *How does Caltrans calculate LOS on U.S. Highway 50 (i.e., by use of the Highway Capacity Manual 2010 Planning-level analysis, Design-Level analysis, Operational-level analysis methodologies or other methodologies)? Were HOV and/or Auxiliary lanes and volumes considered? Which performance measure or alternative tools are used in the determination of service flow rates? If a 15-minute analysis period under prevailing conditions was assumed, what peak-hour factor was applied?*

   LOS calculations used in the Caltrans District 3 System Planning Program documents are derived from a *Highway Capacity Manual 2010* freeway planning-level analysis. Highway Capacity Software 2010 is used in conjunction with several data sources, including:

   - Traffic Volumes on California State Highways
   - Annual Average Daily Truck Traffic on California State Highways
   - California Highway Log
   - Caltrans Digital Photolog

   HOV and auxiliary lane volumes are excluded from the mixed flow LOS Calculations, since including the HOV lanes would not provide an accurate indicator of the LOS for the mixed flow lanes. HOV lane LOS calculations are derived separately. Peak Hour Factors are used in the LOS calculations. The *Highway Capacity Manual 2010* states that typical freeway Peak Hour Factors range from 0.85 to 0.98. In our planning level studies, default values from the Highway Capacity Software are used because of data limitations. These values are 0.94 for urban freeways and 0.88 for rural freeways.

2. *What effect, if any, does construction activity on the highway or within Caltrans Right-of-Way have on the LOS measurements or projections? Do temporary delays during such construction factor into the LOS analysis? If LOS is calculated during construction activity is it annotated as such? Does LOS analysis reflect accident/incident history on U.S. Highway 50?*

   Construction activity has minimal or no effect on LOS calculations because the traffic volumes used from the annual *Traffic Volumes on California State Highways* take sample counts, schedule counts to avoid routes with construction activity and make adjustments to compensate for seasonal influence, weekly variations and other variables which may be present. These normalized volumes are then used to calculate LOS.

3. *What has Caltrans determined the LOS to be along U.S. Highway 50 within El Dorado County? Specifically, what is LOS determined to be from the West County line on U.S. Highway 50 to Cameron Park Drive?*

   As part of the Caltrans System Planning Program, every State Highway System route is analyzed on a segment by segment basis based on the Highway Capacity Manual 2010 freeway analysis and plans for the route are summarized in documents entitled "transportation concept reports" (TCRs) and "Corridor System Management Plans (CSMPs)". Route segmentation for both the CSMPs and TCRs is based on political boundaries, geometric changes in the route facility and significant changes in traffic volumes.

   The LOS on US 50 for the segment between the Sacramento/El Dorado County Line and Cameron Park Drive is currently operating at LOS E. However, the portion of the segment from the County Line to the El Dorado Hills Blvd. Interchange operates at LOS F during the peak hour.

4. *What does Caltrans project the LOS to be on Highway 50 through 2035 within El Dorado County?*

   The projected 2035 LOS for segments of US 50 in El Dorado County, as currently indicated in our latest draft US 50 TCR and draft US 50 CSMP, are indicated in the following table:

"Caltrans improves mobility across California"

DRAFT US 50 CSMP				
Location		Current Traffic Data 2012	Future Traffic Data-2035 (No Build)	Future Traffic Data-2035 (Build)
County	Description/Location	LOS	LOS	LOS
ED	SAC/ED County Line to Cameron Park Drive	E	F	F
ED	Cameron Park Drive to Missouri Flat Road	D	E	D
ED	Missouri Flat Road to End of Freeway in Placerville	D	D	E
ED	End of Freeway in Placerville to Bedford Avenue	C	C	C
ED	Bedford Avenue to Cedar Grove Exit	C	C	C
DRAFT US 50 TCR				
Location		Current Traffic Data 2012	Future Traffic Data-2035 (No Build)	Future Traffic Data-2035 (Build)
County	Description/Location	LOS	LOS	LOS
ED	Cedar Grove Exit to 0.67 mi east of Sly Park Road	B	C	C
ED	0.67 mi east of Sly Park Road to Ice House Road	B	C	C
ED	Ice House Road to Echo Summit	E	F	F
ED	Echo Summit to State Route 89 South/Luther Pass Road	E	E	E
ED	State Route 89/Luther Pass Road to State Route 89North/Lake Tahoe Blvd	E	F	F
ED	State Route 89 North/Lake Tahoe Blvd to Nevada State Line	E	F	F

"Caltrans improves mobility across California"

The LOS information above includes both the "Build" and "No Build" scenarios. The "No Build" scenario assumes no improvements are made to US50. The "Build" scenario assumes the construction of the projects indicated in Attachment A.

5. *What population growth rate was assumed by Caltrans in the LOS projection for U.S. Highway 50 in El Dorado County through 2035?*

   The Sacramento Area Council of Governments' (SACOG) SACSIM model was used to determine the growth of traffic volumes and the impact of potential projects on those volumes. The boundary of the SACSIM model ends at the summit, from that point growth factors were developed using a linear regression methodology.

6. *What Caltrans improvements are planned and assumed in the LOS projection for U.S. Highway 50 in El Dorado County through 2035?*

   The improvements indicated in Attachment A are included in our projected 2035 LOS calculations based on the projects' inclusion in the latest financially constrained long-range plans of SACOG, the El Dorado County Transportation Commission (EDCTC) and the Tahoe Regional Planning Agency.

7. *What are the parameters and assumptions used for the PeMS data? How do these parameters and assumptions relate to question #1?*

   In our planning documents, PeMS is used to report various outcome performance measures, including peak hour speeds, peak hour and daily vehicle hours of delay, peak hour and daily vehicle miles of travel and specific bottleneck data. Since these performance measures are used to describe recurrent congestion, we only capture and report data from Tuesdays, Wednesdays and Thursdays.

Your letter also indicated that mention has been made that Caltrans has no plans to provide any improvements to US 50 during the next 20 years. Caltrans does, in fact, have plans to improve US 50 during the next 20 years. These projects are indicated in Attachment A. However, these projects will not prevent certain segments of US 50 from operating at LOS F, as indicated in the table.

Caltrans is currently updating our CSMP and TCR for the entire length of US 50 in California. It is likely that the route segmentation may change from that used in the current Plan to more accurately reflect operating conditions, such as including a separate segment from the County Line to the El Dorado Hills Blvd. Interchange. Also, our *District System Management and Development Plan*, which provides guidance for the System Planning Program, indicates a concept level of service standard (lowest acceptable LOS) of D for rural areas and E for urban areas. At this juncture, we intend to include those standards in our plan for US 50. For those segments of US 50 which are projected to fall below these standards, we will identify the US 50 improvement projects which must be built to maintain the concept LOS standard. We look forward to sharing a draft of this Plan with you in the next few months.

The determination of LOS is a complicated process with many variables. We also fully realize that LOS indicators are a key ingredient in how the El Dorado County Board of Supervisors implements Measure Y and makes other decisions. Therefore, we would like to meet with you, SACOG and EDCTC to come to a consensus agreement on how to mutually determine and report LOS for US 50 in El Dorado County. We will schedule this meeting for as soon as feasible and look forward to continuing our close working relationship.

Meanwhile, if you have any additional questions, please contact Susan Zanchi, Acting Chief, Office of System Management Planning and Project Delivery at (530) 741-4199 or via email at susan.zanchi@dot.ca.gov.

Sincerely,

JODY JONES
District Director

c: David Defanti, El Dorado County CDA Assistant Director
Claudia Wade, El Dorado County CDA Long Range Planning Division
Natalie Porter, El Dorado County CDA Long Range Planning Division
Sharon Scherzinger, EDCTC
Nathan Strong, City of Placerville
Jeff Pulverman, Deputy District Director, Planning & Local Assistance, Caltrans
Nieves Castro, Supervising Transportation Planner, Planning & Local Assistance, Caltrans

JJ/tw

US 50 Planned and Programmed State Highway Projects

County	Rte	Post Mile Limits	Project Lead	Project Name	Project Description	Type of Project	Agency Source	Estimated Total Cost (1,000s)	Proposed Completion Year
ELD	50	18.276	City of Placerville	Western Placerville Interchanges (Ph 1B)	Realign Fair Lane to correct a non-standard curve and construct Class II Bike Lanes, sidewalks and retaining walls	Bike Lanes/ Pedestrian	MTP	$820	2014
ELD	50	18.517	City of Placerville	US 50 Broadway EB signalization and lengthening	Lengthen EB exit ramp of US 50 at Broadway and install traffic signal	Signalization and Ramp Improvements	MTP	$2,000	2035
ELD	50		ELD County	US 50 WB Auxiliary Lane - Silva Valley Parkway to Empire Ranch Rd	Construct new WB auxiliary lane within median of US 50 between Silva Valley Parkway and Empire Ranch Rd future new interchanges.	Auxiliary Lanes	MTP	$2,500	2035
ELD	50	R14.01	ELD County	US 50/El Dorado Rd Interchange Improvements (Ph.1)	Includes signalization and widening of existing ramps	Interchange Improvements	MTP	$3,536	2035
ELD	50	0.00/ 0.86	ELD County	US 50 Widen and WB Auxiliary Lane - El Dorado Hills to Empire Ranch Rd	Widen US 50 and add auxiliary lane to WB US 50 connecting the El Dorado Hills Blvd/ Latrobe Rd Interchange to the future Empire Ranch Rd Interchange located in Folsom. Construction to be concurrent with or after the El Dorado Hills Blvd I/C.	Widen US 50; Auxiliary Lanes	MTP	$3,698	2035
ELD	50	R1.65	ELD County	US 50/Silva Valley Pkwy Interchange (Ph 2)	Final Phase of new interchange: construct EB diagonal and WB loop on-ramps to US 50	New Interchange	MTP	$14,200	2038
ELD	50	4.96/ R8.56	ELD County	US 50 Auxiliary Lane EB - Cambridge to Ponderosa	EB US 50 auxiliary lane between Cambridge Rd and Ponderosa Rd interchanges	Auxiliary Lanes	MTP	$14,550	2035
ELD	50	EB 4.96/6.57 WB 6.57/R3.23	ELD County	US 50 Auxiliary Lane at Cambridge Road	EB US 50 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.	Auxiliary Lanes	MTP	$15,500	2035
ELD	50	0.86	ELD County	US 50/El Dorado Hills Blvd Interchange Westbound ramps	Final Phase: Construct new WB off-ramp undercrossing, improve WB on-/off-ramps with dedicated HOV on-ramp lane, ramp metering and 1,000 ft merge lane.	Interchange Improvements	MTP	$19,160	2015
ELD	50	R15.06	ELD County	US 50/Missouri Flat Rd Interchange Improvements (Phase 2)	Highway and Interchange Improvements for additional traffic capacity needed to accommodate local development projects.	Interchange Improvements	ELD County	$20,000	2035
ELD	50	R1.65/R3.23	ELD County	US 50/ Bass Lake Rd Interchange (Ph. 1); WB Auxiliary Lane	Interchange Improvements: Phase 1, ramp widening, road widening, signals and WB auxiliary lane between Bass Lake and Silva Valley interchanges; Phase 1 assumes bridge replacement	Interchange Auxiliary Lanes	MTP	$20,529	2035
ELD	50	R8.56	ELD County	US 50/Ponderosa Rd North Shingle Rd Realignment	Realign approximately 1/4 mile of Durock Rd to Sunset Ln and signalize new intersection. Durock Rd will be two through lanes with turn pockets at the intersection and center turn lane.	Interchange Improvements	MTP	$5,020	2024
SAC	50	R9.51	City of Rancho Cordova	Mather Field Rd./US 50 Interchange	Interchange Modification: at U.S. 50/Mather Field Rd.	Interchange Improvements	MTP	$5,647	2025
ELD	50	0.86	ELD County	US 50/El Dorado Hills Blvd Interchange Eastbound Ramps	Reconstruct EB diagonal on-ramp and EB loop off-ramp for the ultimate configuration; add a lane to NB El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the EB loop off-ramp); EB diagonal on-ramp will be metered with an HOV bypass.	Interchange Improvements	MTP	$5,904	2035
ELD	50	6.57/ R8.56	ELD County	US 50 Bus/Carpool Lanes (Phase 2B)	Phase 2B. US 50- Cameron Park Dr to Ponderosa Rd Interchange - Add HOV lanes in median. PA&ED completed by Caltrans, and Caltrans advancing project design through Co-Op Agreement with the County. Intergovernmental Agreement between the County and Shingle Springs Band of Miwok Tribe for funding.	Bus/Carpool Lanes	MTP/MTIP	$22,637	2025
ELD	50	R8.56	ELD County	US 50/Ponderosa Rd Interchange Durock Rd Realignment	Realign approximately 1/4 mile of Durock Rd to Sunset Ln and signalize new inter-section. Durock Rd will be two through lanes with turn pockets at the intersection and center turn lane.	Interchange Improvements	MTP	$7,151	2028
ELD	50	R14.01	ELD County	US 50/El Dorado Rd Interchange Improvements (Ph.2)	Construction of left- and right-turn lanes and additional through traffic lanes in all approaches to the interchange	Interchange Improvements	MTP	$7,265	2035
ELD	50	16.29/16.603	City of Placerville	US 50 Western Placerville Interchanges (Ph 1A)	At US 50/Ray Lawyer Dr, Construct WB access ramp from R. Lawyer Dr onto US50, Auxiliary lane between WB access ramp and existing WB off-ramp at Placerville Dr	Interchange Improvements, Operational Improvements	MTP	$9,215	2014

ELD	50	4.98	ELD County	US 50/ Cambridge Rd Interchange Improvements (Ph. 1)	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.	Interchange Improvements	MTP	$10,645	2035
ELD	50	R3.23/4.98	ELD County	US 50 Auxiliary Lane at Bass Lake Road	WB US 50 between Bass Lake Rd and Cambridge Rd Interchanges. Includes additional ramp and road widening.	Auxiliary Lanes	MTP	$23,640	2035
ELD	50	R8.56/R12.19	ELD County	US 50 Bus/Carpool Lanes (Ph 3)	Phase 3: US 50-Ponderosa Road to Greenstone Road	Bus/Carpool Lanes	MTP	$34,730	2035
SAC	50	16.9/ 17.2	CT	Natomas OC Ramp Meter & Widening	Add ramp meter and widen Natomas OC	Transportation Management Systems	SHOPP	$3,240	2020
SAC	50	12.50/21.50	CT	US 50 Auxiliary Lane	Add Aux Lane(s) - EB from Sunrise to Scott	Auxiliary Lanes	CT	$3,500	2025
ELD	50	R8.58	ELD County	US 50/Ponderosa Rd/So Shingle Rd Interchange Improvements	Widen existing US 50 overcrossing to accommodate 5 lanes, and realignment of WB loop on-ramp, ramp widening, and widening of Ponderosa Rd, Mother Lode Dr. and So. Shingle Rd	Interchange Improvements	MTP	$16,339	2028
SAC	50	21.5	City of Folsom	US 50 at Scott Road	Ramp modifications and overpass widening for US 50/East Bidwell/Scott Road Interchange to improve access to development south of US 50.	Capacity Enhancement	MTP	$3,740	2020

Chapter 4. Alternatives Analysis.

This DEIR raises two issues relative to alternatives.

The first issue is the selection of alternatives for analysis in the DEIR. An EIR must evaluate a range of reasonable alternatives to the project capable of eliminating any significant adverse environmental effects of the project, or reducing them to a level of insignificance, even though the alternatives may somewhat impede attainment of project objectives, or may be more costly. (Pub. Resources Code, sec. 21002; CEQA Guidelines, sec. 15126, subd. (f); *Citizens for Quality Growth v. City of Mount Shasta* (3d Dist. 1988) 198 Cal.App.3d 433, 443-445 [243 Cal.Rptr. 727].) "The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decisionmaking." (CEQA Guidelines, sec. 15126.6 subd. (f), emphasis added.) I-11-88

The lead agency must review, analyze, and discuss alternatives in good faith. Failing to analyze a reduced size alternative may result in insufficient evidence in the entire record upon which to find that the alternative was infeasible. (*Preservation Action Council v. City of San Jose (*2006) 141 Cal.App.4th 1336; See also *Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167.) I-11-89

In order to foster meaningful participation and informed decisionmaking, the DEIR needs to include the alternatives that are the subject of public debate, so that the Board of Supervisors can make an informed decision among those options. Measure E was an advisory ballot measure regarding the appropriate land use for the former golf course. The vast majority of the voters wanted to keep that portion of the proposed project open space. A huge part of the public participation around this proposed project has revolved around that part of the project. To foster informed decisionmaking, the EIR needs to analyze a feasible alternative that addresses this issue. Including the concept in an infeasible straw man or poison pill alternative is not a good faith effort at discussing the alternatives.

Similarly, disturbing "asbestos ridge" is a major public health concern associated with this project. Again, the EIR needs to analyze a feasible alternative to addresses this issue. Including the concept in an infeasible straw man or poison pill alternative is not a good faith effort at discussing the alternatives. I-11-90

In addition, ozone precursor air quality impacts (ROG and NOx) are listed as significant and unavoidable. The County needs to make good faith effort to develop feasible alternatives that will address this issue. If there is evidence of one or more potentially significant impacts relating to a proposed project, an EIR must contain a meaningful analysis of alternatives which would lessen the potentially significant impacts. An inadequate discussion of alternatives in an EIR is an abuse of discretion. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692.)

This section of the DEIR identifies 3 viable project alternatives, but does not include an alternative that the Measure E ballot voters would support. Section 4.5.3 identifies an all Parks and Open Space Alternative, which was quickly rejected as not meeting the core project objectives in the analysis. Again, that is not what Measure E sought to achieve. I-11-91

Section 4.3.1 defines the "No project alternative", but speculates on "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services". This specific plan is a collection of various properties, including the 98 Acre Open Space-Recreational use golf course and approximately 41 acres of the previously approved EDHSP (fondly referred to a Asbestos Ridge), as identified on Figure 4-1, the previous Pedregal project Property, and other properties including a purported land dedication for a "Center for the Ages" facility that is proposed to be zoned as Civic-Limited Commercial.

In order to achieve the desires of 91% of the registered voters in El Dorado Hills that voted (41% turnout) on November 3rd 2015, not to allow the rezoning of the 98 acre golf course, two new project alternative should be defined and analyzed. The first is could be titled the 'Measure E alternative'. This alternative would preclude the rezoning of the currently approved 41 acres of the EDHSP. The EDHSP was approved many years ago as an integrated project, it should not be altered-period. Therefore it should be removed from consideration of this new CEDHSP. Secondly, the 98 acre golf course should be removed from the CEDHSP also, as from its origins it was intended to remain as Open Space-Recreation for the entire community of EDH to enjoy. There is significant documentation on this that has been gathered by early residents of EDH and the EDH historical society. Lastly, if the Civic use site on Wilson Blvd, opposite the EDH FD Stn. 85 is being deeded for the creation of the "Center for the Ages", then it should also be removed from this CEDHSP. The remainder property then would become the 'revised' CEDHSP. I-11-91 cont.

The second alternative that should be considered could be titled the 'Measure E Reserve' alternative. This alternative would include the 98 acre golf course as a 'Reserve' area of the CEDHSP, with an associated Development Agreement that would stipulate that if the EDHCSD, or some other EDH community-based group did not purchase the property at its 'fair market price' by January 2035, then the property would revert to the development levels defined by the proposed CEDHSP.

The third alternative component to consider is eliminating the commercial/retail potential of the 50,000 square feet of civic-limited commercial/retail space. Why not? Doing so would significantly reduce impacts on the aesthetics, air quality, greenhouse gas emissions, water quality and water resources, noise and traffic and circulation of the proposed project. The applicant should be required to do an analysis of the effects on the above mentioned areas if no commercial/retail space is built. I-11-92

The fourth alternative component is to consider construction schedules and/or construction materials so that the proposed project would be in compliance with ROG and NOx air quality standards, and reduce ozone standard violations. Smaller phases of construction, spread over a longer period of time, would reduce the project's contribution to ROG and NOx emissions and ozone standard violations. Low or no-ROG architectural coatings could reduce ROG impacts. What architectural coating or coatings is the project applicant proposing to use that will cause it I-11-93 to violate EDCAQMD's threshold for ROG in the years mentioned above? Has the project applicant considered coatings that would not exceed EDCAQMD thresholds? I-11-93 cont.

The second issue we have with this section of the EIR is the level of evaluation of the alternatives. The discussion of alternatives must be "meaningful" and must "contain analysis sufficient to allow informed decision making." (*Laurel Heights Improvement Association v. Regents of University of California (1988)*, 47 Cal.3d 376, 403-404.) CEQA requires a "quantitative, comparative analysis" of the relative environmental impacts and feasibility of project alternatives. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 730-737.) I-11-94

The DEIR is long on qualitative analysis and short on quantitative analysis of the alternatives. With regard to impacts that are subject to quantification, please the compare the proposed project to the alternatives mentioned above. Provide enough analysis so that, when the decision is before the Board of Supervisors, they will be able to choose among these alternatives without requiring supplemental environmental analysis. Please do not make the Board chose between the proposed project that they can adopt immediately, and a proposed alternative that they will have to wait six months to a year to adopt. To do so would severely prejudice the Board's decision among alternatives.

Section 5.3.2 - Population and Housing Growth

This section of the DEIR states,

> "Current entitlements and land use designations for the project site would allow development of up to 312 residential units. The proposed project would allow up to 1,000 units, a difference of 688 additional units. Under current entitlements and land use designations, those units would house an estimated population of 873, compared to 2,618 under the proposed project, a difference of 1,745 people. The proposed project would amend the County General Plan, rezone, and transfer density but would, for the most part, remain consistent with the overall mixed-use plan for the area."

How can a population deviation that's 3 times the baseline possibly be described as remaining "consistent with the…plan"? Again, the DEIR just jumps from the numbers to the conclusion without giving an explanation for the threshold for the level of change that would indicate an inconsistency with the existing plan. Please identify such a threshold in the FEIR. I-11-95

In selecting a threshold, please remember that "the significance of an activity may vary with the setting." (Guidelines, § 15064, subd. (b).) Also remember that the more degraded the existing setting, the lower the threshold for determining that an additional impact is significant. (Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1025 – 1026.) Thus, in an area like El Dorado Hills, which has already borne a substantial share of the County's population growth, even more population growth is more likely to pose a significant impact.

CHAPTER 6. Report Preparers.

CEQA Guidelines, Section 15084, subdivisions d and e identify the optional means for completing a draft environmental impact report, and the need to ensure its objectivity.

> "(d) The Lead Agency may choose one of the following arrangements or a combination of them for preparing a draft EIR. (1) Preparing the draft EIR directly with its own staff. (2) Contracting with another entity, public or private, to prepare the draft EIR. (3) Accepting a draft prepared by the applicant, a consultant retained by the applicant, or any other person. (4) Executing a third party contract or Memorandum of Understanding with the applicant to govern the preparation of a draft EIR by an independent contractor. (5) Using a previously prepared EIR.
>
> (e) Before using a draft prepared by another person, the Lead Agency shall subject the draft to the agency's own review and analysis. The draft EIR which is sent out for public review must reflect the independent judgment of the Lead Agency. **The Lead Agency is responsible for the adequacy and objectivity of the draft EIR.** (Emphasis added.)

The DEIR references the County of El Dorado Environmental Manual for Implementation of the California Environmental Quality Act (hereafter referred to as "the Manual"), adopted by the El Dorado County Board of Supervisors on March 17, 1987, as Resolution No. 61-87.

1. Please confirm that the Manual, as adopted, and as amended on July 27, 1999 by Resolution No. 179-99, and as further amended on December 16, 2014 by Resolution No. 241-2014, is in full force and effect. I-11-96

2. Please state whether ICF International (hereinafter referred to as "ICF") was retained by El Dorado County, as provided by Section 5.3 A. of the Manual, to prepare the DEIR, or was it determined by El Dorado County that the project applicant could select ICF, as provided for in Section 5.3 B. of the Manual.

3. If, pursuant to Section 5.3 B. of the Manual, the project applicant selected ICF, please provide a copy of the approved list of consultants, showing that ICF was on the list. The list should be dated to prove that it was the list in use at the time the selection was made.

4. Section 5.3 C. of the Manual provides that "Consultants with a POSSIBLE (capitalization added) conflict of interest, either direct or indirect, shall not be considered." Please provide a copy of the policies and procedures in place in El Dorado County to determine whether any POSSIBLE conflict of interest existed between either of ICF (and their staff), the project applicant or El Dorado County. Please set forth in detail what questions were asked to determine possible conflicts of interest, who asked the questions, who answered the questions, and who made the determination that no possible conflicts of interest existed. If any possible conflicts of interest were discovered, were they waived, and who waived them?

Response to I-11, Thomas Infusino, 2/18/2016

I-11-1: This is an introduction to the comments that follow. A list of contributors and table of contents is also provided. The commenter expresses appreciation for the extended public review period. The commenter requests that the contributors listed be added to the distribution list to receive any further notifications. The contributors have been added and were included on the mailing list for the RDEIR and would continue to receive future public notices from the County about the project.

I-11-2: This is a general comment that summarizes CEQA Guidelines Section 15125 requirements pertaining to the environmental setting. It also cites a number of court cases pertaining to the environmental setting requirements and judicial standards of review.

The Draft EIR has fully complied with the requirements of CEQA and related case law as they pertain to the description of the existing setting for Section 3.1, *Aesthetics* as described in Responses to Comments **I-11-3**, **I-11-4**, and **I-11-5**.

I-11-3: The commenter asserts that Serrano Village D-2 comprises the entire boundary of the Serrano Westside planning area. Village D-1, to the north of D-2, also adjoins the project area along this boundary. Although the Draft EIR (page 3.1-7) characterizes adjoining land uses as medium- to high-density, the Draft EIR does not contain any statements specific to Village D-2. The commenter disagrees with the Draft EIR's characterization of the D-2 existing residential development to the east of the project and suggests that it is "best described as low to medium density." This is a disagreement with the Draft EIR's statement, but does not affect the adequacy of the analysis. The density of the existing Village D-1 and D-2 lots can be readily discerned in relation to other existing land uses in the aerial photo that makes up Figure 2-3, Existing Conditions, in Chapter 2, *Project Description*. This visual representation allows the reader to understand the level of development surrounding the project.

I-11-4: The commenter reports that the Serrano community was marketed as being of rural character and the ability to see the night stars, and states there is no street lighting in Serrano specifically to reduce night-time light pollution. Marketing statements reportedly made by others in the past do not constitute substantial evidence. The commenter's statement regarding street lighting is incorrect. The residences within the community have outdoor lighting, and major streets such as Serrano Parkway and Silva Valley Parkway have standard streetlights, without cut-off shielding. The level of lighting within the Serrano community, as well as El Dorado Hills in general, can be seen in the evening, particularly when viewed from US 50. As stated on pages 3.1-8 and 3.1-16 in the Draft EIR, the vicinity is well-lit at night and ambient sky glow currently radiates from the area. No quantitative analysis of current light levels is necessary to determine that the existing development is spilling light into the night sky, nor is such data required to determine the project's impacts. The proposed project's contribution to nighttime lighting is evaluated in Impact AES-5 on page 3.1-16 in the Draft EIR, which concluded that the proposed project would not substantially increase nighttime lighting in the area compared with existing conditions. The Draft EIR's description of nighttime lighting and impact evaluation is sufficient, and no additional analysis is required.

I-11-5: The commenter disputes the characterization of the existing conditions in the discussion of aesthetics. Section 3.1, *Aesthetics,* provides a general description of the visual features that characterize the project site (Draft EIR pages 3.1-8 through 3.1-8). This includes "grasslands and remnant oak woodlands." There are no statements in the Draft EIR that homes along Penela Way are tucked into an oak woodland, as the commenter suggests. As is clear from the close up provided in the comment letter, and in Figure 2-3, Existing Conditions, Penela Way adjoins grasslands. The commenter has taken the statement that residences are "generally tucked into the oak woodland canopy" out of context. The residential discussion under "Viewer Groups and Viewer Response" that follows the referenced statement goes on to say that "a number of residents located in these areas have vista views out and over the project site because they are at higher elevations compared to the surrounding terrain and vegetation surrounding the homes is sparse enough to allow for such views." On page 3.1-8 of the Draft EIR, the discussion identifies residents as a viewer group and references "residential homes surrounding the planning areas." Because Panela Way is adjacent to the Serrano Westside planning area, Panela Way is included in the analysis. Therefore, the aesthetics analysis considered the impact on the homes along Penela Way as part of its assessment of general views from the surrounding areas.

The discussion of recreationists under "Viewer Groups and Viewer Response" begins by explaining it is examining the impacts on "people using the local roadways for walking, jogging, running, or cycling or informally accessing and using the project site for similar uses." It is examining the impacts on this segment of people, not on surrounding residences. It is not related to the density of surrounding residential development; therefore, the Draft EIR's assertions are not incongruent.

The analysis properly notes that views by roadway users are "largely obscured by rolling terrain and trees" with some exceptions (Draft EIR page 3.1-8). Existing residences largely block views from local roadways, except where Serrano Parkway crosses the project site. As explained under "Viewer Groups and Viewer Response," views from US 50 are fleeting at highway speeds because of the terrain. Views from the new Silva Valley interchange are obscured by intervening riparian vegetation. The El Dorado Hills Boulevard interchange is not elevated and views are obscured by intervening commercial development at the northeast corner of El Dorado Hills Boulevard and US 50.

The commenter misinterprets the general statement on page 3.1-8 of the Draft EIR that viewers have moderate sensitivity along this portion of US 50 by taking it out of context. The analysis notes that viewers "would have moderate sensitivity to their surroundings because while scenic views of the undeveloped foothills and the Sacramento Valley horizon are of a higher quality, roadway users pass by the site quickly." It is not stating that the Sacramento Valley is visible while passing the project frontage, but rather that the frontage is passed by quickly and viewers tend to focus on the scenic panorama that they are approaching when they crest the hill above Folsom.

The analysis considers the scenic qualities of the Serrano and El Dorado Hills area. The Figure 2-3 aerial photo illustrates the extent of existing development on adjoining lands; the photosimulations in Figures 3.1-3 and 3.1-4 illustrate how existing development has changed historic views. This development is more obvious from US 50, where views toward El Dorado Hills and Serrano include substantial numbers of existing homes. The proposed development would change the views in a similar manner as previous development. While this would be a change from existing, it would be of similar character to the surrounding area.

The analysis supporting the conclusions in Section 3.1, *Aesthetics,* is found under Impacts AES-2: Have a substantial adverse effect on a scenic vista, and AES-4: Substantially degrade the existing visual character or quality of the site and its surroundings. The analysis was undertaken by staff trained in visual impact analysis using the methodology described in Section 3.1.3, Methods of Analysis. County staff acknowledges that aesthetic design is a matter of opinion. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process.

I-11-6: The commenter indicates that the removal of a historic golf course along a scenic highway would be a significant impact. As noted in response to comment **I-7-2**, the former Executive Golf Course designed by Robert Trent Jones ceased operation in 2007, and natural vegetation has reestablished throughout the area. It is not a playable golf course, and as such lacks integrity, and therefore is not a historic resource. As stated on page 3.1-3 in the Draft EIR, which references the California Department of Transportation State Scenic Highways program), US 50 is not a state-designated scenic highway in the El Dorado Hills area. It becomes a scenic highway east of Placerville. Because the project would not destroy a historic golf course along a scenic highway, there would be no impact, and no analysis is required.

I-11-7: See Responses to Comments **I-11-4**, **I-11-5**, and **I-11-8** regarding the visual impact of the project. Community character is a social issue not subject to CEQA consideration (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560)

I-11-8: The commenter asks about the effects of light pollution from residences and parks. As discussed in the Response to Comment **I-11-4**, Serrano contains thousands of existing residences with existing light sources. Development under the project would have less light spill than existing development because it would incorporate County standards that were not in effect at the time the Serrano Community was built. As disclosed in Section 3.1.2, El Dorado Municipal Code section 130.14.170 (Outdoor Lighting), which requires the screening of outdoor lights, would apply to the project. The project's parks would be subject to the County's and El Dorado Hills CSD's Outdoor Lighting Standards (adopted December 15, 2015), which would place lighting curfews on the hours of lighting and requires field lighting to be aimed at the field and avoid "light trespass" or leakage onto adjoining land. The Outdoor Lighting Standards would also require multi-family residential areas of the project to limit light spill. El Dorado Hills is an existing suburban community, the project is effectively surrounded by this community, and its impact would be no greater than the existing lighting coming from this community.

I-11-9: The commenter has included a partial statement from the Draft EIR and questions whether developed areas would be under less scrutiny for noise and traffic impacts. The Draft EIR analyzes impacts in this area similar to all other areas. A more complete excerpt is: "Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks into the viewshed of all viewer groups. However, viewers are accustomed to seeing heavy machinery related with construction in the region associated with roadway improvements and development projects. Construction activities on the site would be familiar because similar construction is commonly occurring just outside the vicinity, in other portions of El Dorado Hills, so viewers would be less sensitive to construction at the site." The intent of this statement in the Draft EIR is to note that there has been construction activity in the area, such as the recent work on US 50 and construction of the Silva Parkway interchange, which has habituated residents to a certain level of disruption. The commenter disagrees with the conclusion in the EIR. The discussion is not incomplete, nor is recirculation required.

I-11-10: The project would be subject to CC&Rs, like those in effect in Serrano, which regulate changes in building color. Mitigation Measure AES-2 has been revised as follows (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*) to clarify that requirement.

Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas

Appendix B, Site Design Standards, of the Central El Dorado Hills Specific Plan shall include Section B.6, Building Design Standards, as follows. These requirements will be adopted as Conditions, Covenants and Restrictions with approval of individual subdivision maps and planned development permits.

B.6 BUILDING STANDARDS

Buildings associated with the proposed project that are to be located in oak woodland and grassland areas will be designed to blend with the surrounding built and natural environments so that these structures complement the visual landscape. The following measures will be applied subject to County review and approval upon issuance of building permits.

- Roofing materials within oak woodlands will be colored using a shade that is two to three shades darker than the general surrounding area.
- Building facades within oak woodlands shall be painted in mid-range to darker earth tones to help buildings blend better within the oak canopy. Lighter beiges and tans, which would make buildings stand out and contrast against the oak canopy, will be avoided.
- Roofing materials within grasslands will use colors that are similar to the mid-range earth toned colors used on existing residences because these colors blend well within grassland areas and provide visual continuity with surrounding development.
- Building facades within grasslands shall be painted in mid-range earth tones to help buildings blend better within grassland areas. Very light off-whites, beiges, and tans that make buildings stand out and contrast against grassland areas, will be avoided.

I-11-11: The commenter has referenced a partial discussion on Draft EIR page 3.1-15 and questions how Impact AES-4 could be found to be less than significant with mitigation. The full discussion, reproduced here, includes consideration of aesthetics impacts from noise walls and includes a mitigation measure to reduce those impacts:

> As specified in Mitigation Measure NOI-1b and shown on Figure 3.10-2 in Section 3.10, Noise and Vibration, noise barriers may be needed to lessen the impacts associated with noise. Mitigation Measure NOI-1b establishes that solid noise barriers and/or landscaped earthen berms may be used and that the final design, including heights, materials, and type of barrier shall be determined during final design when the locations of residences and noise sources are finalized. If the barriers are designed without aesthetic consideration, negative visual impacts could result by degrading the quality of views from local roadways and the surrounding area and by installing a visual barrier. This would result in a significant visual impact. However, Mitigation Measure AES-4 would improve noise barrier aesthetics and ensure that the appearance of noise barriers is consistent with the surrounding project vicinity, reducing impacts to a less-than-significant level.

The commenter states that noise barriers are "the antithesis of the standards set for Serrano"; however, noise reduction berms and walls are already present within the existing Serrano development along Silva Valley Parkway and Serrano Parkway and noise walls have been installed along segments of El Dorado Hills Boulevard (for instance at Harvard Way). Mitigation Measure

AES-4 has been revised (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*) to clarify its implementation, as follows:

> **Mitigation Measure AES-4: Design proposed noise barriers to be visually consistent with existing noise barriers in the project vicinity**
>
> Existing noise barriers in the project vicinity utilize a combination of solid barriers, earthen berms, and landscaping to mitigate the effects of noise and improve site aesthetics. The earthen berms and landscaping not only improve the quality of views along roadways, but also act to screen and reduce the visibility and apparent scale of the solid barrier. Any noise barriers constructed ~~as a result of the proposed project~~along Serrano Parkway, El Dorado Hills Boulevard, and Park Drive Extension (see Figure 3.10-2 in the Draft EIR) within the Central El Dorado Hills Specific Plan shall be designed and constructed in a manner as to complement and blend with nearby existing noise barriers. ~~Therefore, new~~New noise barriers ~~built along Serrano Parkway and El Dorado Hills Boulevard~~ shall be visually consistent with the design of existing ~~and proposed~~ noise barriers in the project vicinity, such as the noise wall at the southeast corner of El Dorado Hills Boulevard and Harvard Way and the shallow berm along Serrano Parkway. The design will include similar dimensions, barrier materials, berm dimensions, and plant species as the existing barriers along El Dorado Hills Boulevard and Serrano Parkway and the barriers proposed to be installed east of the project area.

I-11-12: The commenter has taken the referenced text on page 3.1-15 of the Draft EIR appears to be out of context. The paragraph that follows this statement under Impact AES-4 explains why this impact would be less than significant. The full paragraph is reproduced here:

> However, County policies, zoning ordinances, design review, and the proposed CEDHSP ensure that the implemented proposed project would be well-designed, sensitive to the site's natural and aesthetic resources, and seek to minimize the visual intrusion on the landscape by preserving oak trees and other aesthetic qualities and features of the site to the degree possible and help to reduce the potential for negative visual impacts that could occur as a result of project implementation. The project would preserve open space areas, designated as OS. Mitigation Measure AES-2 would further reduce the appearance of buildings located within oak woodland and grassland areas, as seen in vista views, and would reduce visual impacts associated with the proposed project to a less-than-significant level.

I-11-13: The commenter has taken the referenced text on page 3.1-16 of the Draft EIR out of context. The paragraph that follows this statement under Impact AES-5 explains why this impact would be less than significant. The full paragraph is reproduced here:

> The areas surrounding the site are currently well-lit and ambient sky glow currently radiates from the vicinity. As described above, County policies, zoning ordinances (130.14.170 Outdoor Lighting), design review, and the proposed CEDHSP ensure that the proposed project minimizes lighting impacts to the degree feasible. Specifically, Section 130.14.170 of the County Code requires shielding to avoid impacts on adjoining areas. Because there is already a substantial amount of nighttime lighting in the vicinity, the project site is essentially infill within a highly developed area, and proposed light sources are in keeping with existing conditions, the proposed project would not substantially increase the amount of ambient light in the vicinity or result in visible light pollution compared to existing conditions. Therefore, impacts would be less than significant.

I-11-14: The commenter points out what they believe is an inconsistency within the aesthetic resources analysis. The discussion on page 3.1-17 of the Draft EIR cited by the commenter relates to the proposed pedestrian overcrossing and its potential aesthetic impact on westbound views of the Central Valley available from US 50 as drivers descend from the Bass Lake Road intersection. The analysis of the overcrossing notes that its location at a low point, and where nearby terrain obscures views of the Sacramento Valley, would ensure that the overcrossing would not prevent or intrude upon, but preserve, vistas and views of the Sacramento Valley.

This does not conflict with the prior discussion in Section 3.1, *Aesthetics*. See Response to Comment **I-11-5**.

I-11-15: The commenter questions the presence of a utility pole in a figure, stating that it skews analysis. The utility pole shown in Figure 3.1-5 is located along US 50 at the location of the red #3 in Figure 3.1-1. In order to take a panoramic view from this location, the existing utility pole cannot be avoided. This does not "rig" the analysis; it simply reflects existing conditions and is objective. The width of the utility pole in the photosimulation relative to the rest of the image is small, less than a few percent. From a three-dimensional perspective, it does not hinder views beyond the pole, as suggested by the commenter.

I-11-16: The commenter objects to the use of mature trees in a visual simulation. The trees shown in the photosimulation in Figure 3.1-7 are there to illustrate a likely scenario at project buildout. This includes the reasonable assumption that new residents would plant trees as part of the landscaping of their home, just as existing residents have done. Trees are expected to be planted as young trees, not mature trees, and there would be a period during which the trees mature. The trees in the illustration are not a "grove;" the illustration is of reasonably foreseeable typical residential plantings at maturity. The interim impacts on views are discussed in Impact AES-1.

I-11-17: The commenter requests further detail about the EPA's emission standard and requirements for construction equipment. EPA non-road diesel equipment regulations require that all non-exempt model year 2015 or newer compression-ignition non-road engines be manufactured to "Tier 4" emissions reduction standards (40 Code of Federal Regulations, Part 1039). The California Emissions Estimator Model (CalEEMod), version 2013.2.2, and Sacramento Metropolitan Air Quality Management District's (SMAQMD) Roadway Construction Emissions Model (RCEM), version 7.1.5.1 incorporate the increasingly strict EPA emissions standards into their assumptions. A detailed description of these standards is not necessary to an understanding of the issue and the project's potential for environmental impact.

The stricter EPA standards are being phased in through the manufacture of engines. As each tier phases in, nonroad engines manufactured after that date must meet the stricter tier standards. Monitoring of these standards is not necessary at the local level because compliance is based on the specifications that manufacturers must meet.

Section 3.2.2 (Draft EIR page 3.2-13) discusses the approach to estimating construction impacts. The specific construction equipment to be used at the project is not and cannot be known at this time because the specific construction areas and schedules have not been established, so the air quality analysts made assumptions with assistance from developers and construction engineers as to construction methods, durations, and the type and number of machinery that would be employed by the proposed project based on previous experience in the vicinity. Construction was assumed to follow the phasing pattern described in Table 3.2-5 of the Draft EIR (page 3.2-14). As mentioned under "Construction" in this section, Appendix C, *Construction Outputs*, of the Draft EIR describes the general construction equipment assumptions used in the air quality model. As noted by the commenter, a mix of equipment would be utilized during construction. The air quality models take that assumption into account.

The air quality models assume that as time passes, the equipment fleet would reflect higher numbers of Tier 4 equipment. It does not assume that all equipment used on the project would be Tier 4 compliant, but instead that equipment would reflect a mix of emissions levels based on average engine lifespans. Tier 4 and prior tier emissions standards have been imposed on construction equipment manufacturers under Federal law. All new equipment being manufactured now meets Tier 4 emissions standards. Contractors cannot operate new equipment, manufactured after 2014, that does not meet Tier 4 emissions standards. Older equipment was also subject to prior emissions standards at the time of manufacturing. All engine manufacturers are held to the federal standards. For that reason, no third party or County monitoring of equipment and trucks is necessary.

I-11-18: The commenter questions the County's history of air quality mitigation monitoring and suggests contracting monitoring out. An accounting of the County's past history of air quality mitigation monitoring is not pertinent to this project.

The particular holding of case law cited by the commenter in support of their contention that a project proponent's prior record is a subject for close consideration, is taken out of context. A more complete quote from the California Supreme Court's *Laurel Heights*[1] decision is provided below:

> Because an EIR cannot be meaningfully considered in a vacuum devoid of reality, a project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR. Consideration, however, must also be given to measures the proponent proposes to take in the future, not just to the measures it took or failed to take in the past. In balancing a proponent's prior shortcomings and its promises for future action, a court should consider relevant factors including: the length, number, and severity of prior environmental errors and the harm caused; whether the errors were intentional, negligent, or unavoidable; whether the proponent's environmental record has improved or declined; whether he has attempted in good faith to correct prior problems; and whether the proposed activity will be regulated and monitored by a public entity. In this case, these factors weigh in favor of UCSF (University of California, San Francisco): (1) There is no evidence UCSF's compliance difficulties resulted in any severe danger or adversely affected human health in the slightest degree. (2) There is no evidence of intentional violation. (3) UCSF appears to have attempted in good faith to remedy its problems with radioactive substances. (4) The handling of radioactive substances is closely regulated and monitored, as evidenced by the oversight of UCSF's activities.

If the CEDHSP is approved, El Dorado County would adopt an MMRP to ensure that the mitigation measures that are the County's responsibility would be monitored. No MMRP is required to be prepared prior to certification of the Final EIR (Public Resources Code Section 21081.6). However, the MMRP has been prepared in conjunction with Specific Plan approvals. See also Master Response 4 (Mitigation and Monitoring). In order to clarify the mitigation requirements under Mitigation Measure AQ-2b and ensure that both the County and the EDCAQMD monitor the project, that

[1] *Laurel Heights Improvement Assoc. of San Francisco v. Regents of the University of California* (1988) 47 Cal. 3d 376 [sufficiency of an EIR on the proposed relocation within San Francisco of biomedical research facilities of the UC San Francisco School of Pharmacy]

measure has been revised as (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*) follows:

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions

The project applicant will ensure that the heavy-duty off-road equipment used during construction achieves a project-wide fleet-average reduction of 30% for NO_X and 45% for DPM, compared with the most recent ARB fleet average at the time of construction. This can be achieved by using equipment with EPA Tier 3 or Tier 4 engines, as necessary, or through other means, as described below. The applicant shall provide documentation of compliance with this measure to EDCAQMD and El Dorado County Community Development prior to initiation of any ground disturbing activities.

The project applicant will ensure that the heavy-duty off-road equipment used during construction until ~~from 2016 to~~ 2022 will be equipped with an EPA Tier 3 or cleaner engines, except for specialized construction equipment in which an EPA Tier 3 engine is not available. Consistent with advancements of the statewide fleet average, the project applicant will ensure that all off-road diesel-powered equipment used during construction from 2023 to 2030 will be equipped with an EPA Tier 4. This requirement will ensure construction equipment remains cleaner than the fleet-wide average.

The project applicant may pursue an alternative compliance program to achieve a minimum project-wide fleet-average reduction of 30% for NO_X and 45% for DPM, compared with the most recent ARB fleet average at time of construction. Use of Tier 3 and Tier 4 engines and the ~~30%~~ performance standard are not mutually exclusive, and reductions needed to meet the ~~30%~~ performance standard may be achieved through use of higher tier engines. Other ARB-approved best available control technologies, including lean NO_X catalysts, exhaust gas recirculation, selective catalytic reduction, alternative fuels, and diesel particulate filters, may also be pursued. If the project applicant elects to pursue the ~~30%~~ performance standard, they shall submit evidence to EDCAQMD and El Dorado County prior to the start of construction that the 30% NO_X and 45% DPM performance standard will be met with the selected equipment. The mitigated analysis is currently based on compliance with the latter program (30% NO_X performance standard), because exclusive use of Tier 3 and Tier 4 engines would be sufficient to meet the performance standard. (Tier 3 engines are estimated to achieve a 38% to 39% NO_X reduction relative to Tier 2 engines [current fleet-wide average], and Tier 4 engines are estimated to achieve a 89% to 91% reduction relative to Tier 3 engines [project fleet-wide average in 2023]). Note that the mitigated analysis does not currently account for DPM reductions. Accordingly, actual DPM emissions generated during construction of the plan will be lower than what is presented in the Table 3.2-7 with implementation of this mitigation.

With regard to the EDCAQMD regulations: all applicants must obtain approval of dust and equipment plans from EDCAQMD prior to construction. The EDCAQMD regulations (i.e., Rules) can be found online at: http://www.arb.ca.gov/drdb/ed/cur.htm.

The County Building Department would not issue building permits until EDCAQMD has signed off on the plans. Every project is inspected at least once, and then randomly thereafter. Applicants are required to contact EDCAQMD 48 hours prior to initial grading. Air quality specialists rotate going on "dust patrol" and make the rounds to the larger construction sites and problem sites periodically to ensure compliance. They sign off on the plans themselves as having been inspected. They also respond to complaints if any are received.

With regard to the commenter's concern about staffing, the EDCAQMD has a full-time staff of three Air Quality Specialists (inspectors) and two Air Quality Engineers. In general, projects moving more than 20 cubic yards of earth in an Asbestos Review area as shown on the County's Asbestos Review Area Map are required to obtain EDCAQMD approval of an Asbestos Dust Mitigation Plan (ADMP) prior to construction. EDCAQMD staff attends the preconstruction meeting and periodically inspects the operation during construction. Project managers are required to notify EDCAQMD prior to blasting and all blasts are witnessed. EDCAQMD staff inspects construction projects unannounced and respond to any complaints. EDCAQMD maintains Dust Patrol (except during rainy periods) inspecting all active construction sites. The number of visits depends on many factors, such as the stage of construction, location near sensitive receptors (e.g., existing residences, schools), history of compliance, and history of complaints. EDCAQMD has an after-hours on-call line to respond to complaints outside normal business hours. EDCAQMD staff would issue a Notice of Violation with monetary penalty if a project is not in compliance with the requirements of the ADMP.

In addition, the El Dorado County Department of Transportation routinely monitors dust emission during construction in the County. County inspectors are on the project site periodically, particularly during heavy grading and weekly meetings with developers, inspectors, and construction contractors are implemented.

I-11-19: The commented notes that air quality thresholds should consider children, teenagers, and senior citizens. The Draft EIR clearly describes applicable thresholds for the impact analysis, which are described on pages 3.2-16 through 3.2-20. The Draft EIR's evaluation of potential health effects on sensitive population due to project activities accounts for the schools and senior facilities noted by the commenter. These sensitive receptors are described on page 3.2-12 and listed in Table 3.2-4. The health effects of the project are described in the EIR under Impact AQ-2a: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction, Impact AQ-2b: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operation, Impact AQ-2c: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during combined construction and operation, Impacts AQ-4a: Expose sensitive receptors to substantial diesel particulate matter concentrations during construction; AQ-4b: Expose sensitive receptors to substantial toxic air contaminant concentrations during operation; and AQ-4d: Expose sensitive receptors to naturally occurring asbestos during construction. The measures to avoid potential impacts on sensitive populations are described in those impacts. See also resp Response to Comment **I-11-38** and Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR.

I-11-20: The commenter is concerned about impacts related to radon. The EIR discusses the potential for radon exposure under "Radon" in the Environmental Setting discussion of Section 3.2, *Air Quality*. The EIR found that, based on the project's location, the potential for exposure is low. This is borne out by current information on radon tests within the vicinity of the project. The California Department of Public Health Indoor Radon Program indoor radon test results indicate that of the 283 tests reported in zip code 95762, which includes El Dorado Hills, levels of radon of 4 picocurie[2] per liter of air (pCi/L) or above were found in 10 cases, or about 3.5% of the total (California Department of Public Health Indoor Radon Program 2016). No mitigation measures for radon are required for the project because the project would not result in any impacts requiring mitigation (see Draft EIR page 3.2-12). As stated on page 3.2-12, radon is a house-to-house issue. The County has not identified the El Dorado Hills area as a location requiring additional design considerations with respect to radon.

The commenter also requests that EPA references cited in the Draft EIR be included in the Final EIR. These references consist of basic information related to radon health risks available on-line at the USEPA website. The URL provided in the references is accurate and the information is part of the administrative record available at the County offices and on-line. There is no need to include this information in the Final EIR.

I-11-21: The commenter requests additional details regarding EPA standards. See the Response to Comment **I-11-17**. As explained in that response, the stricter EPA standards are being phased in through the manufacture of engines. As each tier phases in, nonroad engines manufactured after that date must meet the stricter tier standards. The air quality model assumes that increasing numbers of Tier 4 engines would be made available as time passes and older engines are retired from service. As discussed in Response to Comment **I-11-18**, Mitigation Measure AQ-2b will be revised to clarify the roles of the EDCAQMD and El Dorado County in monitoring implementation of the measure.

I-11-22: The commenter requests specific information regarding TAC mitigation measures. See the Responses to Comments **I-11-17** and **I-11-18**.

I-11-23: The commenter notes that the General Plan was updated and presents question regarding the project in relation to the General Plan. The December 2015 Targeted General Plan Amendment revised and added Objective 6.7.1 (Adopt and enforce Air Quality standards to reduce the health impacts caused by harmful emissions) under Goal 6.7. No changes were made to the General Plan policies listed under Local Regulations in Section 3.2, *Air Quality*.

The project would meet all regulatory requirements of the EDCAQMD and its air quality plan, which comply with the requirements of the EPA and ARB (Goal 6.7, *Air Quality Maintenance*; Objective 6.7.2, *Vehicular Emissions*; Objective 6.7.7, *Construction-Related, Short-Term Emissions*). The project's design includes provisions for bicycle and pedestrian connections between the project and nearby commercial areas, including the El Dorado Town Center. These connections would allow residents to access these areas for routine trips without needing to use their autos (Objective 6.7.4, *Project Design and Mixed Uses*). The project does not include long-term sources of emissions, so Objective 6.7.6, *Air Pollution-Sensitive Uses* does not apply.

The proposed CEDHSP includes specific policies that help it meet Objective 6.7.2, *Vehicular Emissions*. These include Policy 8.3 (off-street parking in all Civic-Limited Commercial, Village Park, Village Residential - Medium, and Village Residential - High land use designations to include dedicated public parking spaces for Low-Emitting and Fuel-Efficient Vehicles), Policy 8.4 (providing space for plug in electric vehicles (PEVs) in Civic-Limited Commercial, Village Park, and Village Residential - High designations), and Policy 8.5 (prewiring for PEVs in Village Residential - Low and Village Residential - Medium designations).

[2] A *picocurie* (pCi) is a measure of the rate of radium decay, or radiation. Radium decays at a rate of about 2.2 trillion disintegrations (2.2x1012) per minute. Thus, a picocurie represents 2.2 disintegrations per minute.

The air quality management system has met all requirements. It is assumed to be effective. The case law cited by the commenter does not appear to stand for the proposition that they assert; a review of that decision did not find any of the language they cite.

The 2015 Targeted General Plan Amendment did not change any of the Geologic and Seismic Hazard goals of the General Plan. The project would be subject to regulations which avoid NOA exposure. See Response to Comment **I-7-13** and Master Response 3 (Naturally Occurring Asbestos). These regulations have been successful in minimizing exposure to NOA deposits.

I-11-24: The commenter expresses concerns about local regulations related to EDCAQMD. The Draft EIR identified EDCAQMD rules that are applicable to the project (page 3.2-5). Not all regulations apply (e.g., the project does not involve outdoor burning, so those regulations are not pertinent). The EIR identifies and discusses the regulations that are pertinent to the project. The project would comply with all applicable regulations of EDCAQMD so, in the event a pertinent regulation has inadvertently been left out of this summary, it would nonetheless be enforced. Listing non-pertinent regulations does not provide information necessary to an informed choice about the project. Leaving out non-pertinent regulations is not in any way prejudicial.

The EDCAQMD's regulatory program meets the requirements of the ARB. It has performed adequately in meeting the requirements of state and federal law, by virtue of its approval by ARB.

I-11-25: The commenter expresses concerns about the clarity and accuracy of the data provided regarding air quality monitoring stations. As stated in the discussion under "Existing Air Quality Conditions" in Section 3.2, *Air Quality*, the California Air Resources Board (CARB), as part of their Annual Network Plan (ANP) operates four monitoring stations in El Dorado County. The site locations are selected based in part to meet monitoring requirements set by the U.S. Environmental Protection Agency (EPA). The site locations are selected to sufficiently collect meaningful and representative ambient air quality data for pollutants in which areas are classified as nonattainment or maintenance. Accordingly, not every monitoring station monitors for all criteria pollutants. The only monitoring station in El Dorado County that monitors PM10 levels is in the Lake Tahoe Basin. The meteorology of the Lake Tahoe Air Basin is distinct from the western slope where El Dorado Hills is located. Relying on PM10 data from the Lake Tahoe monitoring station would misstate conditions in the El Dorado Hills area. As an alternative, the air quality analysis uses PM10 data from the Sacramento-Branch Center Road monitoring station located in Sacramento County, approximately 16 miles west of project area. This is more representative of conditions in El Dorado Hills than would be data from the Lake Tahoe station. Absent that data, there would be no indication of the level of existing levels of PM10.

Table 3.2-2 contains information from sources in El Dorado County and Sacramento County; that fact is explained in the text that precedes it. The data presented in the table represent the most recent information that were available at the time of the analysis. Monitoring data through 2018 is now available from CARB (refer to Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*); this information does not require recirculation of the Draft EIR as it would not change any of the impact determinations or conclusions presented in the Draft EIR. The subject of air quality is analyzed extensively using the best representative information available. The analysis is neither inadequate nor conclusory.

I-11-26: The commenter expresses concerns about the attainment status table. See Response to Comment **I-11-25**. The Draft EIR presents data from the closest monitoring stations to the project that are representative of conditions at the site. There is no data for all 10 criteria pollutants available from a monitoring station located in El Dorado Hills. As noted in the discussion under "Existing Air Quality Conditions" in Section 3.2, *Air Quality*, there are no monitoring stations in the county that collect data on CO, PM2.5, or NO_2. Nearby stations monitor only ozone and PM10.

I-11-27: This commenter refers to two reports prepared by Youngdahl Consulting Group that evaluated the potential for NOA to be present in the project sites. These reports ("Pedregal Development Letter Report to Tom Howard Regarding the NOA Assessment" dated July 30, 2012 and "Serrano Westside Development Letter Report to Tom Howard Regarding the NOA Assessment" dated August 2, 2012) are included in the list of references on page 7-3 in the Draft EIR. These reports were made available for public review at the County when the comment period began on November 20, 2015. The reports were paid for by the project applicant. Payment of costs by the applicant is a common practice throughout California and is authorized under Public Resources Code Section 21089(a) ("A lead agency may charge and collect a reasonable fee from any person proposing a project subject to this division in order to recover the estimated costs incurred by the lead agency in preparing a negative declaration or an environmental impact report for the project and for procedures necessary to comply with this division on the project.").

Please see Response to Comment **I-7-13**, and Master Response 3 (Naturally Occurring Asbestos), which elaborates on how NOA is managed during construction projects.

I-11-28: The commenter expresses concerns about radon. See Response to Comment **I-11-20**. The California Department of Public Health website does not provide information on the location of indoor radon testing, other than the tests were performed within zip code 95762. Because the project area is undeveloped, no indoor tests have been performed there. As discussed in Section 3.2, *Air Quality*, under *Radon*, occurrence of radon is not uniform. Evidence from the indoor testing that has taken place in the portion of El Dorado County surrounding the project site indicates that only 3.5% of tests within zip code 95762 met or exceeded the EPA's recommended action level. This does not indicate that radon exposure is a risk at the project site, and no mitigation is necessary.

I-11-29: The commenter requests that the Final EIR list monitoring measures to be implemented on a daily basis. See the Response to Comment **I-11-19**. Daily monitoring is not necessary to ensure compliance with the mitigation measures and regulatory standards. The information presented in the Draft EIR on page 3.2-12 fully discloses the locations of sensitive receptors in order to inform the decision makers and the public. Additionally, the commenter notes that 2 schools are located within 200 feet of the project area as indicated in Table 3.2-4 in the Draft EIR. However, Oak Meadow Elementary School is actually located approximately 1300 feet east of Serrano Westside and this typographical error has been corrected in the final document. Oak Ridge High School is located within 100 feet of area designated for open space, where construction will not take place. Oak Ridge High School is approximately 0.5 mile from the nearest portion of the project area designated for development.

I-11-30: The commenter requests a schedule from EID showing the timeframe for the improvements to the wastewater treatment system to address odors. Odors from EID's existing El Dorado Hills Wastewater Treatment Plant are an impact of the environment on the project. The project does not exacerbate these odors because the project's wastewater would consist of domestic wastewater, the flows would not cause plant capacity to be exceeded, would not result in changes in how the plant treats wastewater, and would not result in the need for plant upgrades that could change how the plant operates. As such, these odors are not subject to CEQA analysis under the California Supreme Court's holding in *California Building Industry Assoc. v. Bay Area Air Quality*

Management District (2015) 62 Cal.4th 369 and no mitigation is required. Nonetheless, EID would be undertaking the improvements to its plant described in Section 3.2, *Air Quality*, to reduce these odors. The information requested by the commenter concerning the timeframe and costs of odor-control upgrades is not relevant to the analysis of the proposed project.

I-11-31: The commenter presents questions about the ARB and OEHHA guidance. The 2000 and 2003 documents referenced on page 3.2-13 in the Draft EIR that provide guidance for how DPM health effects should be evaluated are the most recently available and were used for the analysis. The Draft EIR relies on the most up-to-date regulatory guidance for assessing DPM effects. The commenter does not suggest other technical references, methods, or documents that should have been considered.

I-11-32: The commenter asks if the referenced guidance (EDCAQMD 2002 Guide to Air Quality Assessment) discussed in the air quality assessment methodology on page 3.2-15 has been updated, and if not, why not. It is the current CEQA guidance from the EDCAQMD on the topic of CO thresholds of significance. No outdated information has been used in the air quality analysis. For example, exposure to background DPM concentrations was evaluated through an analysis of nearby stationary and highway sources using screening tables from the SMAQMD's (2011) *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* because no such guidance is available from the EDCAQMD. The commenter does not suggest other technical references, methods, or documents that should have been considered.

I-11-33: The commenter requests additional information regarding the project operations that would limit DPM, and asks about cumulative DPM emissions. Proposed project operations would not be a significant source of diesel PM because operations would not include land uses typically associated with diesel engines and diesel activity (e.g., industrial warehouses, high-volume roadways, transit facilities). No other evidentiary support is necessary to reach this conclusion.

With respect to cumulative impacts, diesel PM emissions are localized, where concentrations and associated health risks dissipate as a function of distance from the source. The EDCAQMD has not published guidance regarding the suggested distance for analyzing cumulative diesel PM sources, other air districts (e.g., Bay Area Air Quality Management District) recommend 1,000 feet. Diesel PM concentrations beyond 1,000 feet are typically dispersed to an extent that they would not contribute to an appreciable health risk. This is consistent with research published by CARB, which finds that "concentrations of traffic related pollutants decline with distance from the road, primarily in the first 500 feet" (California Air Resources Board 2005).

The absence of an EDCAQMD threshold notwithstanding, impacts of diesel PM emissions on the project from cumulative sources are not subject to CEQA analysis under the California Supreme Court's holding in *California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. In that decision, the Court found that, as a general rule, CEQA does not apply to the impacts of the environment on a project, with two exceptions: certain specific uses for which statutes require consideration of impacts of the environment (these relate to school siting and statutory exemptions for certain types of residential development); and where a project would "exacerbate" the existing condition. None of the statutory exceptions applies here. However, to ensure cumulative health risks were not underestimated, the County conservatively elected to include sources within 1 mile of the project area. The air quality analysis presents an analysis of cumulative health risks from exposure to pollution from US 50 and four gas stations (refer to Impact AQ-4b). Potential health risks to new receptors from exposure to diesel PM generated by these sources were estimated using accepted tools and models. The project would contribute only a small amount of new auto and light truck traffic to US 50, which does not represent a significant cancer or health risk (see Table 3.2-10 in the Draft EIR); therefore, the project would not exacerbate the existing diesel PM conditions, and there would not be a cumulatively considerable impact.

I-11-34: The commenter requests that copies of personal communications be included in the Final EIR. The record of contacts with members of EDCAQMD are listed on page 7-4 in Section 7, References, in the Draft EIR. They are part of the administrative record and were available at the County at the beginning of the comment period for the Draft EIR on November 20, 2015. These references do not need to be included in this Final EIR because they are part of the Draft EIR and were available for public review.

I-11-35: The commenter asks if the EDCAQMD's construction-generated ozone precursor thresholds have been updated and if not, why not. The thresholds used are not outdated and are consistent with neighboring air district thresholds. The Placer County Air Pollution Control District construction thresholds for NO_X and ROG are identical to the EDCAQMD thresholds at 82 lbs/day. The SMAQMD NO_X threshold is higher at 85 lbs/day, and there is no construction threshold for ROG. As discussed in Chapter 3.2, Air Quality, EDCAQMD's ozone precursor thresholds have been adopted to assist the Sacramento area in reaching attainment status with the federal and state ozone standards. Over the past 15 years, daily emissions of NO_X and ROG have declined by 49% and 38%, respectively, despite growth in population and vehicle miles traveled (California Air Resources Board 2014). Consequently, there has been no reason for the EDCAQMD to revise the thresholds, and their use in the Draft EIR air quality analysis is appropriate. No other thresholds need to have been considered. Other than suggesting the EDCAQMD's thresholds were questionable, the commenter does not provide examples of other thresholds that should have been used.

I-11-36: The commenter is referring to footnote 5 on page 3.2-17 of the Draft EIR. The commenter's disagreement with the Draft EIR's use of the phrase "short-term" in reference to the duration of construction is noted. Short-term is used to differentiate construction emissions from long-term operational emissions, where construction emissions are temporary and cease once project construction is complete. On the other hand, operational emissions occur annually throughout the project lifetime. Accordingly, "short-term" is not meant to imply insignificance. The impact conclusion for construction emissions is based on a quantitative assessment of emissions, as stated in Impact AQ-2a on page 3.2-22, to determine whether EDCAQMD numerical thresholds would be exceeded.

I-11-37: The commenter requests complete analysis of pollutants typically associated with industrial uses based on the premise that "typically" indicates these pollutants "might be" generated during construction. The project would result in the development of residential, civic, and open space/parks uses. No industrial development would occur. Evaluation of sulfur dioxide (SO_2), lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility particulates was deemed unnecessary for the project because they are not produced by residential development that includes open space and recreational facilities (e.g., the proposed Village Park). Lead, hydrogen sulfide, vinyl chloride, and visible particulates are not generated during construction. Any type of combustion could generate SO_2 and sulfates, but emissions would be extremely minor.

I-11-38: The commenter expresses concern about the analysis of the health effects of pollutants. In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The Court found that the air quality analysis for the Friant Ranch development was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that environmental documents must connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

Consistent with the Supreme Court's Friant Ranch decision, additional analysis and information has been added Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this FEIR. The text explains why a quantitative analysis correlating project-generated regional criteria pollutant emissions to specific health consequences (e.g., increase cases of asthmas) is not technically feasible with a high degree of accuracy for relatively small projects (relative to the regional air basin) given existing models and tools. As noted in Chapter 3, similar limitations exist for precisely modeling project-level health consequences of directly-emitted PM and precursors to PM (with no secondary formation). However, while there is no available tool to individually model project-level PM health effects, EPA (2018) has developed an approach for estimating the average human health impacts related to emissions of direct PM2.5 and PM2.5 precursors (NO_X and SO_2). These incident per ton estimates have been developed for 17 emission sectors (e.g., mobile sources) using nationwide photochemical modeling and demographic input parameters. All estimates are based on a national-scale study and do not account for location-specific meteorology, geographic distribution of receptors, or photochemistry, all of which can affect pollutant dispersion and exposure. The resultant health effects are therefore reflective of national averages and may not be exact when applied to the project-level. Nevertheless, the estimates can provide a general order-of-magnitude characterization of potential health consequences associated with project-generated direct PM and precursors to PM (with no secondary formation).

The below table presents the estimated incidence (i.e., cases) of health effects based on the project's operational PM2.5 and precursor inventory presented in Table 3.2-8. The estimates were developed by multiplying project-generated PM2.5 emissions and its precursors (in tons) by the relevant incidence per-ton metric from the EPA (2018). As discussed above, caution should be exercised when reviewing these results as they are based on national averages and do not account for any location-specific variables that may influence exposure to project-generated emissions. This analysis is only presented for informational purposes in response to Friant Ranch and has no bearing on the impact determination, which is based on a comparison of mass emissions to EDCAQMD thresholds. It is also important to consider the magnitude of project-generated emissions and potential health risks relative to ambient conditions. As discussed in Chapter 3, project-generated operational PM2.5 emissions represent approximately 0.03% of PM2.5 emissions in the Sacramento Federal Nonattainment Area (SFNA), which in includes the project area (Sacramento Metropolitan Air Quality Management District 2013). El Dorado County does not currently ozone NAAQS or CAAQS, PM2.5 NAAQS, or the PM10 CAAQS. Certain individuals residing in areas that do not meet the ozone or PM ambient air quality standards, including El Dorado County, could be exposed to pollutant concentrations that cause or aggregative acute and/or chronic health conditions (e.g., asthmas, lost work days, premature mortality), regardless of implementation of the project.

Health endpoint	Incidence (cases per year)[a]
Premature Mortality	<1
Respiratory emergency room visits	<1
Acute bronchitis	<1
Lower respiratory symptoms	2
Upper respiratory symptoms	4
Minor Restricted Activity Days	101
Work loss days	17
Asthma exacerbation	4
Cardiovascular hospital admissions	<1
Respiratory hospital admissions	<1
Non-fatal heart attacks (Peters)	<1
Non-fatal heart attacks (All others)	<1

Source: United States Environmental Protection Agency 2018.

[a] Calculated by multiplying project-generated PM2.5 emissions and its precursors (in tons) by the relevant incidence per-ton metric from the EPA (2018). EPA's metrics are based on national data and do not account for any location-specific variables that may influence exposure to project-generated emissions. The results presented above are presented for informational purposes only. Because this is a scaled analysis based on national data, actual changes in health outcomes due to project emissions could be higher or lower than presented due to intervening effects of location of emissions, meteorology, and photochemistry.

The Bay Area Air Quality Management District's model results referenced in the "Health Based Thresholds for Project-Generated Pollutants of Human Health Concern" footnote is offered as an example and was not used in the analysis of impacts for this project. This footnote has been removed to avoid confusion (Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*).

The analysis does not ignore cumulative impacts. Air quality analyses, by the nature of their reliance on compliance with regional air quality plans and standards, are cumulative in their approach. As discussed in Section 3.2, *Air Quality*, EDCAQMD considers projects to have less-than-significant cumulative air quality impacts if the project does not generate emissions in excess of the district's project level thresholds and is consistent with district rules, General Plan land use designations, and the regional State Implementation. Operational reactive organic gas (ROG) emissions are estimated to exceed EDCAQMD's project alone significance criteria, which have been adopted to assist the Sacramento area in reaching attainment status with the federal and state health-based ozone standards. The project also requires an amendment to the General Plan. Accordingly, the project's contribution to cumulative air quality would be cumulatively considerable, as disclosed in Impact AQ-3 in the Draft EIR (page 3.2-28 and 3.2-29).

With respect to pollutant transport from construction projects in Sacramento County; the California Air Resources Board acknowledges that emission sources in the Sacramento Valley Air Basin are contributors and receptors of pollutant transport throughout the state. While technical documents have been published analyzing the transport relationship amongst California air basins, quantifying the effects of pollutant transport as a result of project implementation would require detailed projections of future climatic and meteorological conditions. All emissions thresholds adopted by the EDCAQMD account for expected criteria air pollutant contributions from upwind air basins. Accordingly, use of the district's thresholds to evaluate construction and operational impacts associated with the project do not ignore potential cumulative effects from pollutant transport.

The analysis of local air emissions and potential human health effects was prepared in accordance with EDCAQMD's CEQA guidelines. The analysis considers potential resident exposure to nearby stationary and highway sources. Screening tables from SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* were used to evaluate cancer risk from US 50, consistent with guidance provided by EDCAQMD staff (Baughman pers. comm.). The San Joaquin Valley Air Pollution Control District *Guidance for Air Dispersion Modeling* and fuel data provided by EDCAQMD staff were used to evaluate health risks from gas stations within 1 mile of the project area.

Accordingly, the RDEIR appropriately accounts for regional, cumulative, and local health effects, consistent with the current state-of-practice and published guidance by the California Air Pollution Control Officers Association, the Office of Environmental Health Hazard Assessment, and CARB. No further analysis is required.

I-11-39: The commenter requests analysis of SO_2 and lead, with tests of the project area, in the Final EIR. The reference in the Draft EIR to lead is explaining that SO_2 and lead are two contaminants that can become concentrated in proximity to their source (i.e., may also concentrate locally). The main sources of SO_2 are coal and oil used in power stations and industrial chemical manufacturing. The main sources of lead are metals processing and piston-engine aircraft operation. Accordingly, the project does not represent a significant source of SO_2 or lead. Therefore, it would not have an adverse effect on surrounding areas from those sources of pollution. El Dorado County is in attainment for both the federal and state SO_2 and lead ambient air quality standards, and as such, the air district has not adopted a threshold of significance. Both SO_2 and lead are highly regulated through air district permitting processes and rules.

I-11-40: The commenter expresses concerns about thresholds for DPM, and why the BAAQMD thresholds are used. Diesel PM is a health-risk factor and is a localized pollutant. Weather and topographical conditions are not pertinent to thresholds for this localized pollutant because it does not mix in the atmosphere or travel far from its source. The Bay Area AQMD's threshold was used for the analysis of this project because EDCAMQD has not adopted a threshold for cumulative diesel PM. The BAAQMD threshold is appropriate because it is based on EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale levels. EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants by limiting to no higher than approximately one in ten thousand (100 in a million) the estimated risk that a person living near a source would be exposed to the maximum pollutant concentrations. There is nothing in CEQA that precludes use of another agency's threshold. An explanation of why the EDCAQMD has not adopted a threshold is not germane to the analysis of potential effects of the proposed project (see Response **I-11-33**). However, CEQA does require that when a specific threshold of another agency is used, or when a threshold is developed for a project to determine impact significance, the environmental document should explain the rationale for that threshold. The Draft EIR and this Final EIR have satisfied that requirement.

I-11-41: The commenter asks why civic-limited commercial is needed and asks that the EIR provide additional information on retail jobs that would be created through this land use designation. The proposed CEDHSP describes the land uses allowed within the civic-limited commercial designation as follows:

> The Civic-Limited Commercial (C-LC) land use designation provides for municipal, civic, and public services such as a fire station, sheriff substation, or public park and recreation activities.

> The C-LC designation also provides for professional and administrative office space for public sector agencies such as the County of El Dorado and the El Dorado Hills Community Services District (CSD), or other private-sector enterprise.

The proposed C-LC designation would not allow commercial/retail uses. The Draft EIR is not required to provide the justification of a proposed land use. The economic study requested by the commenter is not necessary because there is no commercial/retail component, and no vehicle trip reductions were assumed for the civic-limited commercial land use.

I-11-42: The commenter suggests that the EIR analyze an alternative to the project that would eliminate what the commenter states is a commercial component. As stated in Response to Comment **I-11-41**, the proposed C-LC designation would not allow commercial/retail uses. The commenter asserts that removing the C-LC designation would "significantly" reduce environmental impacts for a number of resource areas; however, no data or analysis was provided by the commenter to support this. Because the project does not contain a commercial/retail use, the analysis requested by the commenter is not necessary. Please see also Response to Comment **I-11-83**, which addresses this same comment.

I-11-43: The commenter states that the conclusion is disingenuous because it states that the project "could" conflict with the 2009 Ozone Plan. The language under Impact AQ-1 is not disingenuous or a "complete falsehood" as the commenter suggests. The significance determination is expressly stated in the title of this impact: "Impact AQ-1 (Conflict with or obstruct implementation of the applicable air quality plan [significant and unavoidable])." To clarify the impact conclusion, the final paragraph in the conclusion under Impact AQ-1 has been revised to read as follows (Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*):

> Accordingly, based on EDCAQMD's analysis criteria for consistency with applicable air quality plans, the proposed project ~~could~~would conflict with the ~~2009~~2013 Ozone Plan for the SFNA. This impact would be significant and unavoidable, and no additional mitigation is available to reduce the impact to a less-than-significant level.

I-11-44: The commenter asks about alternatives considered to meet air quality standards. The Draft EIR examines a range of alternatives to the project in Chapter 4, *Alternatives*. The construction schedule has already been designed to minimize air quality impacts by limiting the level of development occurring at one time. A longer construction schedule, which may meet EDAQMD standards, would increase the impacts of construction traffic and noise on surrounding land uses. The proposed schedule is intended to minimize air quality, noise, and traffic impacts. The proposed architectural coatings would use low volatile organic compound (VOC) coatings, as required by Mitigation Measure AQ-2a: Use low-VOC coatings during construction. Low VOC coatings are the only ones commercially available, as these coatings are regulated under state law. It is not feasible to rely on the availability of coatings that would have even lower VOCs.

I-11-45: The commenter poses a series of questions related to air quality BMPs proposed. The BMPs listed on page 3.2-23 in the Draft EIR are required under EDCAQMD's Rules 223, 223-1, and 223-2. See Response to Comment **I-11-18** regarding implementation and monitoring of air quality regulations. Appendix D of the EIR identifies the BMPs that would be applied to the project for both fugitive dust and NOA. The plans for dust reduction and NOA management would be produced, in accordance with the specific performance standards set out in Rules 223-1 and 223-2, when construction plans and designs are finalized in the future. This would include an asbestos dust mitigation plan (Rule 223-2). The ECAQMD deems compliance with Rules 223-1 and 223-2 sufficient and feasible to reduce dust emissions and NOA impacts to a less-than-significant level.

Approval and enforcement of the dust control plans required under the rules is the responsibility of the EDCAQMD. The applicant is requesting approval of a specific plan, which shows land use designations and basic infrastructure. Until a tentative map and improvement plan is approved by the County for each project under the specific plan, the exact locations where construction activities that could generate dust are unknown. Therefore, it would be speculative and inappropriate to require the fugitive dust and NOA plans at this time. Further, there is no requirement that these plans be submitted to the public for review. The EDCAQMD does not require that the plans be developed for use in a CEQA document. As stated in Response to Comment **I-11-46**, below, the mitigation measures requiring preparation and implementation of dust plans during construction are sufficiently specific.

There is no demonstrated need for the posting of a bond to ensure implementation of the BMPs. Nor is there a need for an annual report. As discussed in Response to Comment **I-11-18**, the project would be monitored on an ongoing basis by the EDCAQMD.

Please see also Master Response 3 (Naturally Occurring Asbestos)

I-11-46: The required contents of control and mitigation plans under EDCAQMD's Rules 223-1 and 223-2 are detailed in the Rules themselves. These Rules are publicly available at http://www.arb.ca.gov/drdb/ed/cur.htm. The commenter cites CEQA case law where, in most cases, mitigation had been deferred and the Court found the agency's CEQA document invalid as a result. The general rules for the acceptable deferral of the specifics of mitigation measures were first set out in *Sacramento Old City Assoc. v. City Council of Sacramento* (1991) 229 Cal.App.3rd 1011. As established by that case and expanded in subsequent decisions, the specifics of mitigation can be deferred when the agency commits to mitigation and the mitigation measure contains performance standards that would ensure its effectiveness (see *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261 [while there was deferred mitigation, it was not improper when the City is required to mitigate impacts under a Natural Community Conservation Plan/Habitat Conservation Plan, the EIR commits the City to such mitigation, and it lists what would be required in the mitigation plan] and *Save Panoche Valley v. San Benito County* (2013) 217 Cal.App.4th 503 [mitigation measures for special status species were not improperly deferred because they called for preconstruction surveys; the EIR's mitigation measures were sufficiently specific with regard to actions to occur after the surveys and "not loose or open-ended"]).

Compliance with EDCAQMD's Rules would be required of the project developer as a matter of law. In addition, the County has itself committed to these measures through Mitigation Measures AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan, and AQ-4: Submit and implement an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading as necessary. Any development in the CEDSHP involving more than 20 cubic yards of grading would require an Asbestos Dust Mitigation Plan. The mitigation measures are consistent with EDCAQMD Rules 223-1 and 223-2, which are sufficient and feasible to reduce dust emissions impacts to a less-than-significant level, per EDCAQMD.

Pursuant to Rule 223-1.5.B, a Fugitive Dust Control Plan must contain the following:

1. Name(s), address(es), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the Fugitive Dust Control Plan and responsible for the dust generating operation and the application of dust control measures.
2. A plot plan which shows the type and location of each project.
3. The total area of land surface to be disturbed, and total area in acres of the entire project site.
4. The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site.
5. 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.
6. Best Management Practice (Rule 223-1, Table 1 through 4) or other effective measures for:
    a. Construction
    b. Bulk Material Handling
    c. Carryout and Trackout Management
    d. Blasting Activities
7. Large Operations must include Dust Control Measures (Rule 223-1, Table 5 and 6).
8. 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.
9. 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.

Pursuant to Rule 223-2.5.B, an Asbestos Dust Mitigation Plan must contain the following:

1. 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.
2. A plot plan which shows the type and location of each project.
3. The total area of land surface to be disturbed and total area in acres of the entire project site.
4. The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site.
5. 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.
6. Best Management Practice (Rule 223-2, Table 1 through 4) or other effective measures for:
    a. Construction
    b. Bulk Material Handling

c. Carryout and Trackout Management

d. Blasting Activities

7. Large Operations must include Dust Control Measures (Rule 223-2, Table 5 and 6).
8. 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.
9. 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.

I-11-47: The commenter asks about the compliance with EDCAQMD's Fugitive Dust Mitigation Plan and expresses concern about the implementation of mitigation measures. The EDCAQMD's rules are regulatory requirements. They are enforced on all projects to which they apply. The project applicant has not submitted the applications for plans under Rules 223-1 and 223-2 because no project has been approved. If the project is approved, submittal and approval of the plans would be required prior to earthmoving activities beginning. The process of reviewing and approving the plans is set out in Rules 223-1 and 223-2.

Pursuant to Rule 223-1.5.A, a Fugitive Dust Control Plan is processed as follows:

1. An owner/operator shall submit a Fugitive Dust Control Plan to the Air Pollution Control Officer prior to the start of any construction activity for which a grading permit was issued by El Dorado County or an incorporated city within El Dorado County. An updated Fugitive Dust Control 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 Fugitive Dust Control Plan. An owner/operator shall provide written notification to the Air Pollution Control Officer at least 10 days prior to the initial commencement of earthmoving activities via fax or mail. The requirement to submit a Fugitive Dust Control 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 Fugitive Dust 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 Fugitive Dust Control Plan shall specify the expected start and final completion date of each project.
3. The Fugitive Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during and after any dust generating activity.
4. A Fugitive Dust Control Plan shall contain all the information described in Section 223-1.5.B. The Air Pollution Control Officer shall approve, disapprove or conditionally approve the Fugitive Dust Control Plan within 30 days of plan submittal.
5. An owner/operator shall retain a copy of an approved Fugitive Dust Control Plan at the project site. The approved Fugitive Dust Control Plan shall remain valid until the termination of all dust generating activities. Failure to comply with the provisions of an

approved Fugitive Dust Control Plan is deemed to be a violation of this rule. Regardless of whether an approved Fugitive Dust Control Plan is in place or not, or even when the owner/operator responsible for the plan is complying with an approved Fugitive Dust Control Plan, the owner/operator shall comply with all requirements of Rules 223 and 223-1 at all times.

Pursuant to Rule 223-2.5.A, an Asbestos Dust Mitigation Plan is processed as follows:

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.

Regarding Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X emissions, see Response to Comment **I-11-18**. Monitoring information would be a public record and available for public review on request.

I-11-48: The commenter expresses concerns about Impact AQ-2c and asks if there is no feasible mitigation measure. The mitigation measures referenced in Impact AQ-2c would be effective in reducing the project's impact. However, as stated in that impact discussion, the impact would be significant and unavoidable despite the reductions from Mitigation Measures AQ-2a and AQ-2b and quantified CEDHSP polices. Most of operational ROG emissions are generated by personal consumer products and architectural coatings on private residences, whereas the majority of operational fugitive dust emissions are generated by private automobile trips. The CEDHSP includes several policies that encourage alternatives to single occupancy vehicle trips, consistent with EDCAQMD recommended best management practices. These policies would reduce operational emissions, including fugitive dust, from mobile sources. Beyond these policies, imposing restrictions on public behavior (e.g., use of consumer products) would infringe on personal rights, and is, therefore, not a viable or appropriate mitigation measure for the project.

The commenter suggests extending the project's construction period as a mitigation measure for Impacts AQ-2c and AQ-3. Extending the construction period would not reduce impacts. In fact, it would prolong the potential for public nuisance, and it is counter to normal course of construction activities (see Responses to Comments **I-11-56** and **I-11-61**). The project construction timeline has already been optimized to reduce the project's contributions to cumulative air quality impacts. No mitigation is available to avoid the project's significant cumulative impact.

I-11-49: The commenter disagrees with the characterization of health risks from diesel PM described in Impact AQ-4a, which concludes that impacts would be less than significant with mitigation. Other than disagreement, the commenter offers no basis for the claim that short-term exposure may have an adverse effect on the health of sensitive nearby residents. Diesel PM concentrations and associated health impacts are highly dependent on the total amount of distributed area; the type, location, and duration of construction; and the intensity of construction activity. As described in Section 3.2.2 in Chapter 3.2, *Air Quality*, of the Draft EIR, a project-specific construction inventory is currently not available, and as such, mass emissions are estimated using equipment and vehicle assumptions from CalEEMod. While these assumptions can appropriately inform the regional air quality analysis, they are conservative and would likely lead to a substantial overestimation of health risk from exposure to localized diesel PM concentrations from actual construction activity. Moreover, information on the precise location and duration of construction activity throughout the plan area is unavailable given the preliminary level of design at this time. Thus, in the absence of the necessary construction information required to provide an informative and meaningful analysis, the evaluation of potential health risks resulting from construction-generated diesel PM is conducted qualitatively. This is consistent with guidance provided by EDCAQMD (see Baughman pers. comm. A listed on page 7-4 of the Draft EIR). Pursuant to CEQA Guidelines Section 15204, "CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters."

With respect to effects on respiratory ailments or other health effects, as noted in Section 3.2.2, *Environmental Impacts*, adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals). See Responses to Comment **I-11-38** for an expanded discussion of health risks from project-generated criteria pollutant emissions, including an informational assessment of human health impacts related to emissions of direct PM2.5 and PM2.5 precursors (NO_X and SO_2).

I-11-50: The commenter asks why the SJVAPCD guidance for air dispersion modeling is used. The San Joaquin Valley Air Pollution Control District has developed an Excel-based spreadsheet for analyzing emissions from gasoline dispensing facilities (GDF). The underlying assumptions and calculation parameters do not vary among air districts. The spreadsheet was released in 2007 and still represents the best available tool for analyzing GDF. The commenter does not suggest another model that should have been considered.

I-11-51: The commenter expresses concern about NOA. The topic of NOA is discussed extensively in Section 3.2, *Air Quality*, under the existing conditions and regulatory setting sections, and in Impact AQ-4d. See Response to Comment **I-7-13**. Mitigation Measure AQ-4 and the EDCAQMD's Rule 223-2 requires the project developer to submit an Asbestos Dust Mitigation Plan. See Responses to Comments **I-11-46** and **I-11-47** for information on the process of application for and content of that plan. The project developer would be required to hire qualified engineering geologists; the work of these consultants would be subject to oversight by the EDCAQMD. See also Master Response 3 (Naturally Occurring Asbestos).

The EIR is not flawed in its analysis of NOA, and no recirculation with respect to NOA impacts is required.

I-11-52: The commenter states that the cultural sequence and the discussion of the CA-ELD-1254-H is incorrect. The characterization of the cultural region is correct. The discussion of Samuel Kyburz is based on published literature (recordation form for CA-ELD-1254-H) and is believed to be accurate. The commenter offers opinion, but provides no factual evidence to the contrary. See also Response to Comment **I-4-11**.

I-11-53: The commenter states that the level of analysis of offsite improvements represents a serious flaw in the Draft EIR. No field surveys of offsite segments were performed because, as stated under "Fieldwork" in Section 3.1.1, the specific alignments of these improvements are unknown at this time. Impact CUL-4 on pages 3.4-17 and 3.4-18 in Section 3.4, Cultural Resources, in the Draft EIR specifically addresses offsite alignments, and clearly notes there is a potential for cultural resources to be present in locations that have not yet been surveyed. The first sentence of the Impact CUL-4 discussion on page 3.4-17 of the Draft EIR references a constraints analysis, which consisted of a review of previous studies and known resources on file with the North Central Information Center of the California Historical Resources Information System, and discusses levels of sensitivity for cultural resources for the offsite improvements. Mitigation Measure CUL-4 (page 3.4-18) requires that a study be performed when the specific alignment and design has been identified for an improvement. If, using the commenter's example, the improvement has the potential to affect a burial site, appropriate measures defined in Mitigation Measure CUL-4 would be implemented to protect the resource in accordance with applicable regulations. This level of analysis is appropriate and additional analysis will be required when specific alignments are identified.

I-11-54: The commenter implies that the project description is not adequate because the off-site improvements are not defined and cites case law. The project description is not "curtailed or distorted" as suggested by the commenter. The project description is stable and comprehensive. However, plans for offsite improvements have not been finalized at this time because the project has not been approved and, therefore, the precise alignments of those improvements are not known.

I-11-55: The commenter asks about fencing for archaeological resources. See Response to Comment **I-4-9** regarding fencing and mitigation of cultural resources.

I-11-56: The commenter asks questions regarding the methodology of the noise analysis and the adequacy of the mitigation measures. The commenter has described only a portion of Mitigation Measure NOI-1a, which addresses construction noise. Mitigation Measure NOI-1a goes on to describe a menu of required actions to reduce construction noise impacts. As specified in this measure, the construction contractor would be responsible for complying with the measure, and it would be monitored by the County. The County would adopt an MMRP in conjunction with the project if it is approved and would be responsible for monitoring the implementation of the noise mitigation measures. Monitoring would be on an as needed basis, typically occurring as County staff oversees the permit activities on the site. See also Master Response 4 (Mitigation and Monitoring).

The commenter suggests that the County contract for monitoring staff. The County would consider retaining a monitor to ensure that noise reducing measures are being employed. The cost of such monitoring could be collected from the project applicant pursuant to Public Resources Code Section 21089(a). However, as the impact is significant and unavoidable, measures are not anticipated to reduce construction noise to a less than significant level.

Mitigation Measure NOI-1a: Employ noise-reducing construction practices, would require the contractor to minimize construction noise. The commenter misinterprets this measure. It is a mandatory requirement that would be monitored for implementation by the County. The list of "measures that can be used to limit noise" identifies a number of methods that can be used to reduce construction noise. The County may impose additional measures as needed. If local residents observe that the mitigation is not being implemented, complaints can be reported to the County Community Development Agency for investigation.

The commenter requests the modification of Mitigation Measure NOI-1a to limit construction activities to certain hours on weekdays. County Municipal Code Section 130.37.020 exempts construction activities from its requirements. This mitigation measure, which limits hours of construction on weekdays and weekends, exceeds the requirements of County code. Prohibiting work on weekends would extend the construction period and associated impacts. The County chooses not to change the mitigation measure in order to avoid increasing the period during which there would be construction noise.

Regarding the questions of who would check on equipment and mitigation measure implementation, the County would be responsible for monitoring the project for compliance with the mitigation measures. See also Master Response 4 (Mitigation and Monitoring) and MMRP.

I-11-57: The commenter states that Mitigation Measure NOI-1b is a plan to have a plan. The commenter has described only a portion of Mitigation Measure NOI-1b. The rest of this measure describes the required contents of the operational noise control plan. See Response to Comment **I-11-46** regarding the acceptable deferral of the specifics of mitigation measures. Mitigation Measure NOI-1b does not impermissibly defer mitigation.

The tentative subdivision map is the first step in subdividing the project site into saleable parcels. Consideration of the tentative map is a discretionary project that is subject to CEQA review. The EIR prepared for the project would be used for CEQA compliance at the tentative map stage. The tentative subdivision map must be approved before the site can be prepared for subdivision improvements (e.g., grading, trenching). The public would have the opportunity to review the operational noise control plan when the tentative subdivision map is processed by the County. The "streamlined review" cited by the commenter does not sidestep the CEQA process; the mitigation measures in the current EIR would carry over to the tentative subdivision map even if a streamlined review is applied. CEQA requires the review of the tentative subdivision map to determine whether it would have new or substantially more severe environmental impacts that were not previously disclosed in the current project EIR. If that is the case, a subsequent environmental document would be required for the purpose of examining any such impact and, if necessary, adopting additional mitigation measures.

I-11-58: The commenter asks about the setback or barrier distance for lots facing the Village Park. The maximum setback or barrier distance is unknown at this time. It depends on the proposed plan for grading for the project, when that is finalized, and would be specified in the operational noise control plan at the time the tentative subdivision map is proposed. However, Mitigation Measure NOI-1b and Mitigation Measure AES-4 would be applicable to any noise barriers that are constructed as part of the proposed project to reduce noise levels and noise barrier aesthetics, respectively.

I-11-59: The commenter asks about noise effects and mitigation for upper stories. The specific noise mitigation for second stories is not known at this time because individual residential building locations have not been specified, nor is the orientation of the residential lots known. Both of these factors must be known in order to determine how noise is to be mitigated at a specific site. As indicated in Mitigation Measures NOI-1b, the applicant will prepare design-level operational noise control plans at the tentative map phase that will identify features and treatments to comply with County noise standards. These features may include noise reducing treatment for new buildings. The locations and heights of proposed buildings would be considered in the noise control plan. There are no "detailed noise control plans" incorporated into the specific plan as they are not yet possible.

I-11-60: The commenter asks what recourse resident would have if noise levels from HVAC systems were to exceed County standards. This question is related to the contents of the CEDHSP and recourse for noise levels in excess of County standards. The County's noise ordinance (El Dorado County Zoning Code Section 130.37) establishes maximum noise levels. Violations of the ordinance can be reported by anyone to the County Community Development Agency for investigation.

I-11-61: The commenter requests specific data about construction equipment, including rock rippers, and activities, including blasting. The size and type of rock ripper that may be used, if one is needed, is not known at this time because construction plans have not been prepared. Similarly, the need and extent of any necessary blasting and the location of sites where blasting would occur if it were needed is not known at this time. Therefore, a detailed analysis of its impact cannot be provided. However, a general analysis is provided in Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels, and Mitigation Measure NOI-2: Employ measures to reduce airblast and vibration from blasting, would be implemented to reduce any blasting to a less-than-significant impact. In addition, the applicant's contractor(s) would be responsible for complying with the mandatory requirements, including County Municipal Code Chapter 8.56, Blasting, which specifies the County's requirements for blasting activities taking place in the County. With regard to the comments about Mitigation Measure NOI-2 and deferral of mitigation, see Response to Comment **I-11-46** regarding the acceptable deferral of the specifics of mitigation measures. The full text of Mitigation Measure NOI-2 includes specific performance standards to ensure its efficacy. Mitigation Measure NOI-2 does not impermissibly defer mitigation.

The commenter requests the modification of Mitigation Measure NOI-2 to limit construction blasting to certain hours on weekdays. County Municipal Code Section 130.37.020 exempts construction activities from its requirements. This mitigation measure, which limits hours of blasting on weekdays and weekends, exceeds the requirements of County code. Prohibiting work on weekends would extend the construction period and associated impacts. The County chooses not to change the mitigation measure in order to avoid increasing the period during which there would be noise and vibration from blasting.

I-11-62: The commenter requests additional explanation of the traffic noise modeling process and asks how significant traffic impacts do not result in significant traffic noise levels. Traffic noise levels were modeled using P.M. peak-hour traffic volumes and the Federal Highway Administration's (FHWA) Traffic Noise Model, as stated on page 3.10-14 in Section 3.10, *Noise*. Modeling takes into consideration the roadway vehicle mix (percentage of automobiles, medium trucks and heavy trucks), traffic volumes, vehicle speeds, ground type and the distance between the roadway and the modeled receptor. The significance level of traffic impacts does not directly correlate to the significance of traffic noise impacts because the definition of significant impacts for these two topics is completely different (traffic is based on road congestion levels and traffic noise is based on acceptable levels of noise).

I-11-63: This comment describes the basis for cumulative impact analysis and its importance to CEQA compliance. It does not refer to any information presented in the Draft EIR. Cumulative impacts are evaluated in Section 5.2, *Cumulative Impacts*. No further response is necessary.

I-11-64: The commenter requests additional information about how values were calculated for Table 3.10-17. Existing Plus Project traffic noise levels were modeled using the FHWA Traffic Noise Model. See Response to Comment **I-11-62**.

I-11-65: The commenter has identified a typographic error in Table 3.11-2 on page 3.11-3 in Section 3.11, Population and Housing, in the Draft EIR. The text of the first paragraph and Table 3.11-2 under "Population" on page 3.11- has been amended to read:

> California experienced substantial population growth from 1990 to 2010, increasing by nearly 7.5 million people to a total population of 37,253,956 (California Department of Finance 2007, 2012). El Dorado County is, and is expected to remain, one of California's fastest-growing regions. During the 20-year period from 1990 to 2010, the County's population increased by approximately 44%. The population of El Dorado County's unincorporated area grew by 55% during the 1990 to 2010 period. DOF estimated that as of April 1, 2010, the countywide population of El Dorado County was 181,921, and the unincorporated area held 149,266 of these residents (California Department of Finance 2012). For the 25-year period of 2010 to 2035, the county's population is expected to increase by ~~27%~~37% from 180,921 to 248,623. Table 3.11-1 shows the population growth experienced by El Dorado County from 1990 to 2010, and Table 3.11-2 presents the anticipated growth for El Dorado County through 2035.

Table 3.11-2. El Dorado County Population Growth Projections 2010–2035

		Percent Change	
Year	Estimated El Dorado County Population	Incremental	Cumulative
2010	180,921	–	–
2015	184,195	2	2
2020	203,095	10	12
2025	220,384	9	22
2030	234,485	6	30
2035	248,623	6	~~27~~37

Source: California Department of Finance 2013b; BAE Urban Economics 2013.

This is a minor revision to the Draft EIR and does not affect the impact conclusion or the adequacy of the Draft EIR.

I-11-66: The commenter offers an opinion regarding the significance of population growth in light of the project. The analysis in the EIR properly places this project into the context of development within the County. The commenter's suggested methodology ignores the fact that the existing EDHSP and adopted land uses under the County General Plan currently anticipate that the project site could be developed with up to 759 total dwelling units under current plans and entitlements. As a result of site constraints, this total cannot be reasonably expected to be built, but even with constraints, a reasonable expectation is that up to 332 dwelling units could be built on the site even if the project were not approved. Therefore, the increase in anticipated growth represented by the project is 668 dwelling units.

There is no available quantitative threshold for determining the significance of population growth. Contrary to the commenter's claim that the EIR's analysis "simply jumps to the conclusion that in this instance the impact is insignificant," there is discussion under Impact POP-1 on pages 3.11-6 and 3.11-7 explaining that an increase of 1,745 residents over current projections is not substantial when viewed in light of the projected County population increase of 67,000 residents between 2010 and 2035.

I-11-67: The commenter relates his qualifications as a licensed traffic engineer, and the commenter has provided an independent analysis of the project's traffic impacts related to access and traffic operations. CEQA Guidelines Section 15151 provides that disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts, as has been done in the following responses.

I-11-68: The commenter indicates the focus of the comment letter is the east side of El Dorado Hills Boulevard and is of the opinion the traffic issues for the project on the west side accessed by Wilson Boulevard (i.e., Pedregal) are relatively straight-forward from a capacity and safety perspective. Responses to issues raised in this comment letter as they pertain to traffic conditions on the east side of El Dorado Hills Boulevard are addressed in Responses to Comments **I-11-69** through **I-11-87**, below.

I-11-69: The commenter notes that infill development with access to non-automobile travel modes can reduce vehicle miles travelled, "but challenging constraints to provide an effective and efficient transportation exist for development on the east side of El Dorado Boulevard (sic), especially between Serrano Parkway and I-50." (sic) No response to this comment is necessary because it does not raise an environmental issue relating to the EIR's adequacy.

I-11-70: The commenter notes that for the project elements north of Serrano Parkway, potential traffic impacts can be addressed with minor mitigations. The commenter recommends removing the road connection to the Parkway (sic) and signalizing the proposed T intersection between Wilson Boulevard and Serrano Parkway. See Response to Comment **I-11-73**.

I-11-71: The commenter indicates the appropriate baseline for the traffic analysis should be when significant occupancy occurs. The commenter also states the increased traffic volumes would result in unacceptable congestion at the Saratoga Way/Park Drive intersection on El Dorado Boulevard (sic) before proposed improvements are implemented. He suggests that the mitigations for the Park Drive access route be based on Cumulative scenarios. The CEQA case law has set existing conditions as the time of the Notice of Preparation of the EIR as the baseline. This methodology is supported by the *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, which found that an EIR cannot rely on an environmental baseline that takes into account environmental conditions predicted to occur following project approval (*www.hklaw.com/publications/Landmark-Decision-Issued on Proper-Environmental-Baseline-under CEQA-09-17-2013/).* It is unclear from the comment if the commenter's findings are based on an incorrect baseline analysis or are referring to the existing plus project conditions analyzed for the Draft EIR.

I-11-72: The commenter indicates agreement with the Draft EIR analysis that the El Dorado Boulevard (sic) at northern Park Drive would experience LOS F for both Cumulative and Cumulative + Project scenarios without mitigations. However, the commenter expresses the opinion that the analysis was not detailed enough to validate the proposed mitigation measures, and the shopping center internal circulation was not considered. Fehr & Peers prepared additional analysis for various scenarios to determine the queue lengths at the Park Drive/Raley's Driveway to ensure the queue lengths could be accommodated in the proposed mitigated intersection configurations. Three alternatives were evaluated, and the results are tabulated below. The table and the accompanying Synchro printouts are incorporated into the Final EIR. The results of the analysis for existing plus project indicate no significant impacts. No new significant impacts have been identified.

Park Drive/Raley's Driveway – Existing Plus Project

Intersection Control	**Delay (sec/veh) / LOS**		**Eastbound Queue Length (ft)**					
			Avg. Queue		**Max. Queue**		**95th %ile Queue**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Side Street Stop Control	3 (12) / A (B)	11 (28) / B (D)	NA					
3-Way Stop Control	4 (8) / A (A)	6 (10) / A (B)	0	1	1	6	4	9
All Way Stop Control	9 / A	13 / B	45	50	76	85	78	88

Notes:
- Delay is reported in seconds per vehicle for the overall intersection (worst movement) for side street stop and 3-way stop controlled intersections, and the overall intersection for all way stop controlled intersections.
- Vehicle queues are reported in feet.
- Delay and LOS results for the side street stop and all way stop controlled scenarios are reported based on Synchro analysis. Delay and LOS results for the 3-way stop controlled scenario are reported based on SimTraffic analysis (Synchro does report results for 3-way stop controlled intersections).

Park Drive/Raley's Driveway – Cumulative Plus Project

Intersection Control	**Delay (sec/veh) / LOS**		**Eastbound Queue Length (ft)**					
			Avg. Queue		**Max. Queue**		**95th %ile Queue**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Side Street Stop Control	3 (13) / A (B)	11 (27) / B (D)	NA					
3-Way Stop Control	6 (9) / A (A)	7 (16) / A (C)	1	1	7	10	13	14
All Way Stop Control	9 / A	13 / B	52	46	94	69	93	73

Notes:
- Delay is reported in seconds per vehicle for the overall intersection (worst movement) for side street stop and 3-way stop controlled intersections, and the overall intersection for all way stop controlled intersections.
- Vehicle queues are reported in feet.
- Delay and LOS results for the side street stop and all way stop controlled scenarios are reported based on Synchro analysis. Delay and LOS results for the 3-way stop controlled scenario are reported based on SimTraffic analysis (Synchro does report results for 3-way stop controlled intersections).

I-11-73: The commenter states there are safety issues for the proposed unsignalized intersection serving right turns in and out Westside development north of Serrano Parkway. No evidence is provided to substantiate these claims. The final design of any access point would require conformance with County design standards, including providing adequate sight distance.

I-11-74: The commenter discusses concerns with the access for the Serrano Westside development south of Serrano Parkway and lists the concerns regarding the Park Drive intersection. The commenter erroneously states that, "The southern intersection does not allow inbound left turns and eventually would be removed as part of improvements to the I-50 (sic) interchange." The "southern" intersection of Park Drive with El Dorado Hills Boulevard has always allowed inbound left turns, and this intersection is not being removed as part of the improvements to the US Highway 50 interchange. These errors were assumed in the commenter's analysis, thus rendering the commenter's conclusions incorrect or, at best, overestimating the impacts at the remaining intersections included in the commenter's analysis for both the existing and cumulative conditions.

I-11-75: The commenter states the access point on the east side of Serrano Parkway should be retained. He recommends a deceleration and acceleration lane on the parkway be provided. The final design of the access point would require conformance with County standards. The determination would be made at that time if a deceleration and/or acceleration lane is warranted.

I-11-76: The commenter is concerned with the internal circulation system of the shopping center and the adequacy of the proposed access road to accommodate project traffic. The final design of the access road and intersections would require conformance with County standards. Additionally, the revision to the shopping center, illustrated in Figure 2.10 of the Draft EIR, would require a discretionary design review of the proposed changes. See additional analysis in Response to Comment **I-11-72**.

I-11-77: The commenter points out that the traffic calculation printouts for the traffic analysis were not included in the Draft EIR. Therefore, he could not exactly replicate the calculations, but states his opinion that his conclusions are unlikely to be affected by any discrepancies with the consultant's assumptions. The traffic calculation tables are now included with the rest of the technical appendices and appended to this Final EIR (Appendix L Errata).

I-11-78: The commenter states that the baseline should be when there is full occupancy of the proposed project, and, therefore, does not agree with the volumes used in the baseline analysis. The appropriate analysis that complies with CEQA uses a baseline at the time the NOP is published. See Response to Comment **I-11-71**. Any other assumption is speculative at best, is not supported by substantial evidence, and would be contrary to CEQA; therefore, the analysis in the Draft EIR is sufficient.

I-11-79: The commenter states his assumptions for the cumulative scenarios, which include the addition of a third lane southbound through lane to the northern Park Drive intersection, a connection of Saratoga Way to the Sacramento County border, and the closure of the southern Park Drive intersection. The southern Park Drive/El Dorado Hills Blvd/ US 50 westbound on-ramp intersection is not being closed. This error was assumed in the commenter's analysis, thus rendering its conclusions incorrect or, at best, overestimating the impacts at the remaining intersections included in the commenter's analysis for cumulative conditions.

Figure 10B of the Transportation Impact Analysis (Appendix L of the Draft EIR) displays the traffic volumes into and out of the shopping center at the southern intersection (see Intersection 15) under Cumulative Plus Project conditions. When accounting for the traffic volumes at the southern intersection, the shopping center is not projected to experience the drastic decrease in traffic, as asserted by the commenter. Additionally, the commenter's comparison of the traffic in and out of the two intersections fails to account for traffic between the shopping center and the proposed project (vehicle, walking, and bicycle trips), which would further discount the assertion that the total trips in and out of the shopping center would decrease.

The commenter notes that there are "significant differences" between his analysis and the analysis in the Draft EIR. The commenter asserts that there will be significant queuing issues and LOS F traffic congestion. Those differences are likely attributable to the commenter's incorrect assumption that the southern intersection would be closed to traffic. As shown in Figure 10B of the Transportation Impact Analysis (Appendix L of the Draft EIR), the southern access point to the shopping center is projected to serve 510 AM peak hour trips (270 inbound, 240 outbound) and 620 trips in the PM peak hour (370 inbound and 250 outbound). The northern access point to the shopping center is projected to serve 570 trips in the AM peak hour and 870 trips in the PM peak hour. Therefore, the southern access point is expected to serve 44% of the traffic accessing the shopping center under the Cumulative Plus Project scenario. The commenter's incorrect assumption shifted a substantial portion of traffic to the northern access point, which led to false conclusions about the projected queuing and traffic operations at that location. All analysis and conclusions that are based on this assumption are also incorrect. This includes the comments about traffic operations and queuing internal to the shopping center and at the intersections along El Dorado Hills Boulevard between US 50 and Serrano Parkway.

I-11-80: The commenter expresses disagreement with the methodology chosen for the analysis. The commenter states the forecast should be based on existing counts. However, as the commenter has stated, future improvements to the road network would be in place along with the proposed project. Changes to the road network also changes where cars would access the different land uses. The traffic forecasts were a result of using the El Dorado County Travel Demand Model, which takes into account the updated road network as well as the forecasted land use to determine the cumulative condition scenario traffic volumes.

Although the commenter has suggested a different methodology, as stated in Response to Comment **I-11-79**, the commenter's error in assuming the Park Drive/El Dorado Hills Boulevard/ US 50 westbound on-ramp intersection is closed, renders his conclusions incorrect or overestimates the impacts at the remaining intersections. However, even with the assumption errors, the commenter calculates acceptable LOS at the Park Drive/ El Dorado Hills Boulevard/Saratoga Way intersection under cumulative conditions.

I-11-81: See Response to Comment **I-11-72** regarding the shopping center circulation analysis.

I-11-82: The commenter notes that the intersection of El Dorado Hills Boulevard/Saratoga Way/Park Drive is assumed to have additional through and turn lanes on some approaches under cumulative conditions. There is a project in the County's Capital Improvement Program (CIP) that would widen the intersection to provide additional lanes. This project is the Saratoga Way Extension Phase 2 (CIP # GP147), which would result in two outbound lanes on the Saratoga Way leg of the intersection.

I-11-83: As proposed, Serrano Westside would include the following access serving the area north of Serrano Parkway and east of El Dorado Hills Boulevard:

- Full signalized access by way of the existing El Dorado Hills Boulevard/Wilson Boulevard intersection.
- Left-in, right-in, right-out access between Wilson Boulevard and Serrano Parkway/Lassen Lane.
- Right-in/right-out access on Serrano Parkway.

The analysis results indicated that all proposed access intersections would operate acceptably under existing and cumulative conditions.

The commenter suggests the elimination of the right-in/right-out access, serving the north side of Serrano Parkway and the addition of traffic signal control at the El Dorado Hills Boulevard access intersection proposed between Wilson Boulevard and Serrano Parkway/Lassen Lane.

However, no evidence is provided to substantiate the assertion that the proposed right-in/right-out access would not be safe and that it cannot be designed to County standards. The final design of all access intersections would require conformance with County design standards, including the provision of adequate sight distance. Sufficient room is available on Serrano Parkway to locate a driveway that meets the County's driveway spacing and sight distance requirements.

I-11-84: The commenter restates the unsignalized intersection on Serrano Parkway should be retained, and acceleration and deceleration lanes should be provided and a median constructed to prohibit outbound left turn while retaining the use of the inbound left-turn lane. See Response to Comment **I-11-75**.

I-11-85: This comment restates previous comments. See Responses to Comments **I-11-71** through **I-11-82**.

I-11-86: The commenter asserts the Draft EIR must be recirculated and include items such as detailed diagrams, revised traffic analysis using his methodology, a proactive traffic monitoring program to ascertain where impacts might occur, calculation sheets for level of service and queuing, and a binding agreement on cost sharing and maintenance. In response to the commenter's request, the calculation sheets for level of service and queuing have been added to the Final EIR as an addition to the Traffic Impact Analysis, Appendix L of the Draft EIR. The diagram of the Park Drive reconfiguration is already included as Figure 2-10 in the Draft EIR. This diagram provides the appropriate level of detail for a specific plan EIR, and more detailed site plans would be generated during the appropriate design review stage of the project. See Response to Comment **I-11-72** for additional analysis of the Park Drive/Raley's shopping center proposed intersection. The remainder of the requests are more appropriately handled as conditions of approval of the tentative maps for the project.

I-11-87: The commenter erroneously states that LOS F is the existing condition on US Highway 50. The County has completed extensive analysis regarding LOS on US Highway 50 westbound in the AM Peak Hour. In 2015, Caltrans agreed that the LOS on US Highway 50 westbound between El Dorado Hills Boulevard and the County line is LOS D (see citation below). This is an acceptable LOS and, therefore, no mitigation is required for the general-purpose lanes on US Highway 50 westbound. The following response is a compilation of an analysis that was included in Master Response 14 in the County's Targeted General Plan Amendment and Zoning Ordinance Update Final EIR (El Dorado County 2015: Section 8.15.2, page 8-48) as well as a response to El Dorado County

Planning Commissioners asking for clarification of the LOS on US Highway 50 and is presented here for informational purposes. Throughout the following discussion, text within paragraphs is ***bolded and italicized*** for emphasis.

Comparison of U.S. Highway 50 Westbound Level of Service Results

The following summarizes the source data and assumptions used by Caltrans and the County to calculate LOS for US Highway 50 at the El Dorado County/Sacramento County line. Caltrans' Transportation Concept Report and Corridor System Management Plan, United States Route 50 (TCR/CSMP), dated June 2014, states that westbound Highway 50 currently operates at LOS F in the AM peak hour at the County Line. County staff disagrees with this conclusion. County staff has worked with Caltrans staff to identify and correct the errors in their analysis. The following discussion documents Caltrans' incorrect assumptions and provides evidence of the actual LOS on Highway 50.

Caltrans Transportation Concept Report and Corridor System Management Plan (TCR/CSMP), United States Route 50

Caltrans regularly produces a report regarding Highway 50 LOS. Caltrans' Highway 50 TCR/CSMP is generally used to prioritize state and federal funding for Caltrans transportation facilities. The most recent report is dated June 2014 (http://www.dot.ca.gov/dist3/departments/planning/tcr/tcr50.pdf). The report contains this disclaimer (emphasis added in ***bold and italics***):

> Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, the District 3 Office of System and Freight Planning makes every effort to ensure the accuracy and timeliness of the information contained in the TCR/CSMP. ***The information in the TCR/CSMP does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.***

The 2014 TCR/CSMP shows Highway 50 from the Sacramento/El Dorado County line to El Dorado Hills Boulevard as LOS F under existing conditions. This conclusion is contrary to the County's findings and traffic counts collected through Caltrans' PeMS system. PeMS displays real-time traffic data collected from a series of over 39,000 individual detectors (inductive loops, magnetometers and radar) along the state's freeway system.

Caltrans' LOS Determination

On Friday, April 3, 2015, Caltrans staff provided the Highway Capacity Software (HCS) output with the various inputs and assumptions used by Caltrans in the Highway 50 TCR/CSMP. The Caltrans analysis uses unsubstantiated traffic volumes and incorrectly assumes the peak direction of travel.

For the Highway 50 TCR/CSMP, Caltrans staff analyzed LOS based on the traffic volume contained in the Caltrans Traffic Volumes on California State Highways document, also known as the "Count Book". Caltrans' Count Book indicates that the peak hour two-way volume at the County line is ***8,600 vehicles***. The Caltrans Count Book for this segment of Highway 50 has not changed in seven years; ***the Count Book's volume number has remained at 8,600 vehicles from 2008-2014***, although observed traffic counts have fluctuated significantly over that time. The Count Book does not indicate which direction (eastbound or westbound) is the peak direction or which peak hour (AM or PM) is the peak hour. According to the data resources cited in the report's Appendix C, the base year used for the report was 2011.

Based on the table below, which the County received from Caltrans staff on April 3, 2015, Caltrans assumed that 65% of all traffic is travelling in the peak direction and approximately 1,000 vehicles are travelling in the High Occupancy Vehicle (HOV) lane. ***According to these assumptions, the peak hour volume would be 4,590 vehicles*** in the peak direction in the general-purpose lanes.

Mode Description and Location	Peak Hour Volume[1]	D%[2]	HOV Flow Adjustment[3]	HCS Directional Input Volume[4]	T%[5]	T% Used[6]
Sacramento/El Dorado County Line to Latrobe Road	8,600	65%	-1000	4590	6.4%	4%
1 Source: 2011 Caltrans Traffic Volumes on California State Highways Book						
2 Source: PeMS						
3 HOV Volume deduction						
4 PHV * D% - HOV Volume = Mixed Flow Volume						
5 2011 Annual Average Daily Traffic on California State Highways Book						
6 Peak Hour Truck % = Approx. 2/3 Daily T%						

Caltrans staff had stated that they use the highest peak hour volume from the Count Book in the analysis for the TCR/CSMP. The traffic volume Caltrans used to calculate LOS on Highway 50 is approximately 50% higher than the single highest hourly volume observed by Caltrans' PeMS system in spring or fall of 2014, which was the most recent data available at the time (4,590 trips vs. 3,012 trips respectively). If Caltrans' analysis conducted for the TCR/CSMP is replicated precisely, only changing the volume to reflect observed traffic counts, it would conclude that ***Highway 50 operates at LOS C in the AM peak hour*** (see discussion below for more detail).

Furthermore, Caltrans staff assumed that the peak hour is westbound in the morning. Therefore, their LOS analysis assumes only two general purpose lanes, resulting in LOS F (see Table 2 below). However, Caltrans PeMS data and subsequent count data indicates that the peak hour for this location is eastbound in the evening. The eastbound direction has three general purpose lanes. If Caltrans' analysis conducted for the TCR/CSMP is replicated precisely, only changing the peak direction and peak hour to eastbound in the evening, this section of ***Highway 50 operates at LOS C in the PM peak hour*** (see Table 2 below).

County LOS Determination

In a letter dated May 5, 2015, Caltrans supplied the Spring (March – May)/Fall (September – October) 2010 and 2012 peak hour volumes from PeMS for the westbound direction of the segment of U.S. Highway 50 between El Dorado Hills Blvd./Latrobe Road and the County line. In September 2016, Caltrans staff provided PeMS volumes from Spring 2015 for the same segment of US 50. Using the information provided, County staff ran the Highway Capacity Software (HCS) 2010 for the Basic Freeway Segment Operational Analysis with ***inputs and assumptions identical to those used by Caltrans for the 2014 TCR/CSMP, changing only the volume input***. The results from the various volumes are summarized in the table below.

If Caltrans' analysis conducted for the TCR/CSMP is replicated precisely, only changing the volume to reflect observed traffic counts, this analysis would conclude that ***Highway 50 operates at LOS C or D in 2010 and 2011 and LOS E in Spring 2015*** (see Exhibit F for analysis details). The only scenario that leads to LOS F is using the volume derived from the Caltrans Count Book and the incorrect peak hour and direction assumptions. The Caltrans Count Book volume of 4,590 is substantially different from (i.e. 50% higher than) other volumes observed and calculated for this segment. Furthermore, the Count Book volume is less reliable because the Count Book does not specify the direction of travel or peak hour that this volume represents.

Table 2 - Results of Basic Freeway Segment LOS Operational Analysis
U.S. Highway 50 Westbound - El Dorado Hills Blvd./Latrobe Road to County line

Year	Peak Hour Volume	Source[1]	Density	LOS	Notes
2010	2,860	PeMS (March 2010)	23.7	C	(E. of Scott Road mainline Station 316993) Initial volumes used in RDEIR[2] (total of general purpose lanes and HOV lane volume)
2010	2,955	PeMS	24.7	D	Updated volume used in FEIR[3] based on Caltrans comment letter
Unknown	3,200	Unknown	27.4	D	Caltrans recommended volume for segment (Caltrans' May 5, 2015 letter)
2010	3,348	PeMS (4-15-10)	29.3	D	Caltrans supplied PeMS data (highest 2010 Spring/Fall volume)
2012	3,393	PeMS (5-15-12)	29.8	D	Caltrans supplied PeMS data (highest 2012 Spring/Fall volume)
2015	3,806	PeMS	36.0	E	Caltrans supplied PeMS data (Average 2015 Spring volume, E. of Scott Road mainline Station 316993)
2011	4,590	Caltrans 2011 Count Book	54.3	F	Caltrans volume used in various State Reports. Count Book does not specify direction or peak hour. Analysis ***assumes westbound AM peak hour***.
2011	4,590	Caltrans 2011 Count Book	25.8	C	Caltrans volume used in various State Reports. Count Book does not specify direction or peak hour. Analysis ***assumes eastbound PM peak hour***.

Notes: All calculations used the same peak hour factor, terrain type, % trucks, Driver Population factor, and flow rate as the Caltrans analysis.

[1] All PeMS data came from the "W. of Latrobe" Mainline Station 316653 for the general purpose lanes during the AM Peak Hour (7:00 AM – 7:59 AM), consistent with Caltrans methodology, unless otherwise noted.

[2] Recirculated Draft Environmental Impact Report (RDEIR) for the Targeted General Plan Amendment – Zoning Ordinance Update (TGPA-ZOU).

[3] Final Environmental Impact Report (FEIR) for the TGPA-ZOU.

Additionally, in 2016, Caltrans staff working in conjunction with County staff held meetings to discuss the LOS on US Highway 50 near the County line. Caltrans accepted and agreed with the County's updated LOS analysis results of LOS E on westbound US Highway 50 between El Dorado Hills Boulevard and the County line. LOS E is an acceptable LOS consistent with the County's General Plan and Caltrans requirements (October 11, 2016 Caltrans letter, included in Appendix L).

I-11-88: The commenter discusses in general the basic requirement that an EIR evaluate a range of reasonable alternatives to the project. Section 4.1, Alternatives Overview, on page 4-1 in the Draft EIR summarizes the applicable CEQA requirements for an alternatives analysis. The Draft EIR also includes a lengthy description of the process that was used to identify the alternatives evaluated in the Draft EIR in Section 4.2, *Alternatives Development and Screening Criteria*, on pages 4-1 to 4-7. The Draft EIR has fully complied with CEQA requirements for an alternatives analysis.

I-11-89: The commenter references a CEQA court case pertaining to evaluating a reduced size alternative. The Draft EIR evaluates a Reduced Density alternative (Alternative 2), which is discussed in Section 4.3.2 on pages 4-21 through 4-32. The County has not rejected a reduced size alternative.

I-11-90: The commenter states that the Draft EIR needs to evaluate additional alternatives. The range of alternatives analyzed in an EIR is governed by the "rule of reason," which provides that the EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines Section 15126.6[f]) CEQA Guidelines Section 15126.6(a) provides that "[a]n EIR need not consider every conceivable alternative to a project."

The commenter suggests that the EIR should include an evaluation of an alternative that represents "Measure E," the El Dorado Hills CSD's advisory measure on the November 2015 ballot. CSD Advisory Measure E presented the following question to voters within the CSD: "Should the El Dorado County Board of Supervisors re-zone the approximately 100 acres of the former executive golf course in El Dorado Hills from its current land use designation as 'open space recreation' to a designation that allows residential housing and commercial development on the property?" The commenter notes that "the vast majority of voters wanted to keep that portion of the proposed project open space" by voting no on the measure. As noted in Response to Comment **I-7-2**, the former golf course area is private property and does not currently operate as publicly accessible open space. The commenter describes a potential Measure E Alternative in comment I-11-91, please see Response to Comment **I-11-91** below and Master Response 2 (CSD Advisory Measure E).

The commenter suggests another alternative that would avoid "disturbing 'asbestos ridge,'" but provides no other details. This is presumably intended to avoid development of EDHSP Village D-1, Lots C and D. The project includes a proposal to transfer acreage and density from Serrano Village D-1, Lots C and D to the Serrano Westside planning area; designating Lots C and D as "open space" on the CEDHSP. The open space designation would preclude development of these lots. This suggested alternative need not be considered further because it is similar to the project.

The commenter suggests that the EIR should evaluate an alternative that would address the issue of ozone precursor air quality impacts. The commenter does not suggest what might constitute the content of this alternative. Both Alternative 2 – Reduced Density and Alternative 3–Reduced Wetland Impact, which are evaluated in the EIR, would reduce ozone precursors in comparison to the project. This suggested alternative need not be considered further because it is similar to those two alternatives.

I-11-91: In this comment, the commenter describes two suggested alternatives, in line with the general alternatives outlined in comment I-11-90, and two alternative components. The range of alternatives analyzed in an EIR is governed by the "rule of reason," which provides that the EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines Section 15126.6[f]) CEQA Guidelines Section 15126.6(a) provides that "[a]n EIR need not consider every conceivable alternative to a project." The alternatives evaluated in an EIR must (1) be feasible, (2) meet most or all of the project objectives, and (3) substantially reduce one or more of the project's significant effects. (CEQA Guidelines Section 15126.6)

The first alternative, entitled the "Measure E Alternative," would remove the old golf course site, the commercial area, and the portions of the project within the El Dorado Hills Specific Plan boundaries from the proposal. Existing entitlements on these lands, including the residential development potential of Lots C and D would remain. Therefore, this alternative would consist of development of the Pedregal Planning Area alone.

The suggested CSD Advisory Measure E Alternative would fail to meet several of the project objectives identified in Section 2.2 of the EIR, including:

- Create a new non-motorized transportation system. The CSD Advisory Measure E Alternative would not include the Class 1 bicycle paths and pedestrian facilities that are included in the project.
- Improve north-south pedestrian and bicycle connectivity. The CSD Advisory Measure E Alternative would not include the Class 1 bicycle path adjoining El Dorado Hills Boulevard and the bicycle and pedestrian overcrossing of US 50 that are included in the project.
- Provide opportunities for recreational facilities in El Dorado Hills. The CSD Advisory Measure E Alternative would eliminate the park land proposed under the project and would not include park land. The open space provided in the Pedregal Planning Area acts as a buffer between residences and would not be available for recreational use.
- Maintain characteristics of natural landscape. The CSD Advisory Measure E Alternative would allow future development of Lots C and D, resulting in the loss of natural landscape.
- Minimize impacts on oak woodlands. Existing oak woodlands on Lots C and D would be available for development under the CSD Advisory Measure E Alternative. While the County oak tree ordinance would preserve some of these trees, this alternative would result in the loss of trees that would otherwise be preserved in open space under the project.

The suggested CSD Advisory Measure E Alternative is rejected for detailed analysis in the EIR because it would not meet many of the project objectives. No further analysis is required.

The second alternative, entitled the "Measure E Reserve Alternative," would establish the old golf course as a reserve area to be left undeveloped until the El Dorado Hills CSD has the opportunity to purchase the site at its fair market value. The suggested CSD Advisory Measure E Reserve Alternative would provide that the developer and county enter into a development agreement stipulating that if the CSD or some other community-based group did not purchase the property by 2035, then it "would revert to the development levels defined in the proposed CEDHSP." All other parts of the proposed project would remain the same.

A development agreement is a voluntary contract entered into by a city or county and a developer for the purposes of establishing defined vested development rights (Government Code Section 65864 et seq.). It may be entered into for any period of time and describes the development rights that are being vested (Government Code Section 65865.2). The project proponent has proposed to develop portions of the old golf course and has not indicated that they would be willing to forgo those development plans for up to nearly 20 years. Further, precluding development of the old golf course would make infeasible the proposed Class 1 bicycle path and bicycle/pedestrian overcrossing of US 50 needed for north-south non-motorized connections. The project proponent is very unlikely to enter into a development agreement with this provision. This alternative is rejected from analysis because it is not feasible.

It should be noted that even though the former golf course is currently designated by the County as open space – recreational facilities, the golf course that formerly occupied this site was a private and not a public recreational use. This land use designation does not reflect a public designation, but a recreational and open space land use designation.

I-11-92: The commenter suggests a "third alternative component" that would "eliminate the commercial/retail potential from the "Civic-Limited Commercial" designation at the northeast corner of Wilson and El Dorado Hills Boulevards. This comment is identical in content to comment I-11-42. This land use designation does not provide for commercial/retail uses. Please see Response to Comment **I-11-42**. Therefore, there is not a reason to consider the commenter's suggestion as a project alternative.

I-11-93: The commenter suggests that a "fourth alternative component" would "consider construction schedules and/or construction materials so that the proposed project would be in compliance with ROG and NO_X air quality standards, and reduce ozone standard violations." The project construction timeline has already been optimized to reduce the project's contributions to these air quality impacts. The timeline is shown in Table 3.2-5 on page 3.2-14 in Section 3.2, *Air Quality*. Mitigation Measures AQ-2a: Use low-VOC coatings during construction, and AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X emissions, presented on pages 3.2-24 and 3.2-25 in the Draft EIR, already mandate actions that would reduce ROG and NO_X emissions. Further, Policy 8.53 of the proposed CEDHSP provides that "[a]ll building materials, finishes, fixtures, and other components installed at time of construction shall be compliant with VOC and other toxic compound limits established in state law." The region is federally designated as severe non-attainment for ozone. This alternative would not alter that designation. The project already incorporates the suggested fourth alternative component. No further analysis is necessary.

I-11-94: The commenter suggests that the level of evaluation of the alternatives is not adequate and would like to see more quantitative analysis. An alternatives analysis must "include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project" and "the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed" (CEQA Guidelines Section 15126.2[d]). Chapter 4, *Alternatives Analysis*, identifies a range of three potentially feasible alternatives and examines them on a resource-by-resource basis in sufficient detail to allow comparison of their potential impacts with those of the proposed project. The CEQA Guidelines do not require that alternative analysis be quantitative. The alternatives analysis meets the requirements of CEQA to "foster informed decision making" (CEQA Guidelines Section 15126.2[a]).

I-11-95: The commenter expresses concern about population and asks how the project can be consistent with mixed-use plan for the area. The excerpt from Section 5.3.2 cited by the commenter (Draft EIR page 5-46) excludes the beginning sentence of that paragraph that states: "The proposed project would directly affect population and housing growth in the area by increasing the number of housing units in the area." The opening sentence clearly informs that reader that the project would directly affect growth. The analysis on page 5-46 goes on to state that the project would contribute to overall growth within El Dorado County but would not cause County growth projections to be exceeded, and the project is consistent with growth projections contained in the Metropolitan Transportation Plan/Sustainable Communities Strategy adopted by the Sacramento Area Council of Governments. The section concludes that "[b]ecause the project includes primarily residential uses, the proposed project's limited commercial development would not induce substantial population growth." The reasons for this conclusion are described in Section 5.3.2 between these beginning and concluding statements. The threshold for determining significance is stated on page 3.11-5 in Section 3.11.2 in Section 3.11, Population and Housing. The applicable threshold is whether the project would induce substantial growth. Impact POP-1 on page 3.11-6 and 3.11-7 in Section 3.11, *Population and Housing*, provides additional information about growth projections. The Draft EIR has clearly explained why growth would not be substantial. See also Response to Comment **I-11-66**.

I-11-96: The comment is directed to the County's process for engaging the services of professional environmental consultants to prepare CEQA documents, not to the adequacy of the environmental review contained in the Draft EIR. The EIR was prepared by ICF International. ICF was selected by and is paid by El Dorado County. Contracts and funding agreements between the Applicant and El Dorado County ensure sufficient funding for the EIR preparation and circulation. The project proponent reimburses the County for the cost of EIR preparation, as authorized by Public Resources Code Section 21089. El Dorado County has also engaged Michael Baker International, a firm with an office in the Sacramento area that prepares EIRs and other CEQA documents, as a third party reviewer of the EIR for this project. In addition, the EIR was reviewed by County staff prior to issuance of the public review and recirculated drafts. ICF has no conflict of interest with regards to the preparation of this EIR.

LETTER I-12

January 13, 2016

County of El Dorado Planning Division
Rommel "Mel" Rabalinas, Senior Planner
2850 Fairlane Court
Placerville, CA 95667

16 JAN 14 AM 11:44
RECEIVED
PLANNING DEPARTMENT

RE: Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the Proposed Central El Dorado Hills Specific Plan (CEDHSP)

Mel Rabalinas, Senior Planner:

The Notice of Preparation (NOP) should allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR. It appears, however, that decisions on the scope of the EIR have already been made. The proposed project Mitigation Measure CUM-D (see page 5-50) forces analysis of the impacts to the El Dorado Hills Townhouses. What is the Traffic Infusion on Residential Environment (TIRE) index for the El Dorado Hills Townhouses and the surrounding neighborhood? I-12-1

The referenced Mitigation Measure is also in conflict with the Highway 50 Interchange/El Dorado Hills Boulevard-Latrobe Road Project judgment (CARE v. El Dorado County), which provided that Mammouth Way would remain open to Saratoga Way; that the neighborhood would not be routed in the opposite direction (through the Mammouth Way neighborhood street to Arrowhead Drive). The court proceedings made it clear that a separate and thorough Environmental Impact Report (EIR) should be completed on any proposal to enlarge a project.

The traffic study fails to provide any evaluation of the impacts to the neighborhood streets; and therefore does not provide any mitigation. No traffic analysis was performed for Mammouth Way even though it is recognized by both the Highway 50/El Dorado Hills Boulevard-Latrobe Road Interchange Project and the proposed Saratoga Way Extension Project that it will be impacted by cut-through traffic as a result of the Project. The extension will result in 15,000 to 18,000 cars each day on Saratoga Way and create hundreds of additional car trips on intersecting streets. These previously documented facts must be considered in the Traffic Impact Analysis. I-12-2

Hopefully, the Noise Study will include the impact of the noise to our homes on Scenic and Hills Courts. Please feel free to contact me for access to my home for an interior noise study. I-12-3

The requirement to analyze Alternatives to the Project has not been fulfilled must be presented in the DEIR/EIR. I-12-4

I am incorporating by reference the January 12, 2016 letter submitted by the El Dorado Hills Townhouses Association. Since the proposed project will result in significant noise, traffic, air quality, and neighborhood safety impacts to our homes on Scenic Court it is imperative that the EIR include the townhouses location and intersecting streets for analysis in the scope and content of the EIR. I-12-5

Sincerely,

Hilary Krogh

Hilary Krogh
(916) 212-0456

Response to I-12, Hillary Krogh, 1/13/2016

I-12-1: This comment references the NOP for the Draft EIR. The NOP for the proposed project was published in 2013. The Draft EIR was published November 20, 2015. For purposes of this response, the County assumes the commenter is referring to the Draft EIR because this comment references a mitigation measure presented on page 5-50 in Chapter 5, *Other CEQA Considerations*. The NOP does not include mitigation measures.

The scope of the Draft EIR was developed a result of comments submitted on the NOP, which are summarized in Appendix A. Publication of the Draft EIR in November 2015 provided the public the opportunity to comment on the scope and content of the EIR. Comments on the Draft EIR must be considered before the County can certify the Final EIR. No decisions regarding the project have been made.

The commenter states that the proposed project Mitigation Measure CUM-D forces analysis of the impacts to the El Dorado Hills Townhouses and references a Traffic Infusion on Residential Environment (TIRE) index. The access restriction at Saratoga Way/Mammouth Way intersection and the installation of a traffic signal at the Saratoga Way/Arrowhead Drive intersection is not needed to mitigate impacts at the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection. An updated traffic analysis was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The 2017 updated traffic analysis indicates that the intersection of El Dorado Hills Boulevard/Saratoga Way and Park Drive will operate at acceptable LOS under cumulative plus project conditions and therefore Mitigation Measure CUM-D is not necessary. These revisions have been made in Chapter 3 (*Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*) of this Final EIR.

I-12-2: The commenter is confusing the El Dorado Hills Boulevard/Latrobe Road Interchange project with the Central El Dorado Hills project. This project is not the connection of Saratoga Way to the county line nor is it the El Dorado Hills Blvd interchange project. The analysis simply assumed the Saratoga Way connection to Iron Point Road as it is a Capital Improvement Program Project for El Dorado County. The Central EDH project does not route traffic through the subject neighborhood. The CARE v. El Dorado County judgment referenced by the commenter did not specifically require Mammouth Way remain open to Saratoga Way; rather, the Writ of Mandate, which was discharged by the Court, simply required additional environmental analysis before implementing cul-de-sacs on roads intersecting Saratoga Way. Similarly, the judgment did not specifically prohibit rerouting of neighborhood traffic. Nevertheless, the CEDHSP does not prohibit trips from Mammouth Way to Saratoga Way, nor does it re-route traffic through the neighborhood.

I-12-3: The Draft EIR evaluates noise impacts of the proposed project in Section 3.10, *Noise*. This includes areas that would be subject to traffic noise from the project. The referenced residential areas are on the west side of El Dorado Hills Boulevard and, based on the information in Draft EIR Table 3.10-17, are not expected to be adversely affected by project noise.

I-12-4: The Draft EIR includes an alternatives analysis, which is presented in Chapter 4, *Alternatives Analysis* (pages 4-1 through 4-47).

I-12-5: Responses to comments submitted by the El Dorado Hills Townhouses Association are provided in Responses to Comments **O-1-1** through **O-1-11**.

From: **Christine Librach** <christine@sellingnorcal.com>
Date: Mon, Dec 7, 2015 at 5:38 PM
Subject: DEIR - Against Applicant's Request to Rezone (CEDHSP)
To: "bosone@edcgov.us" <bosone@edcgov.us>, "bostwo@edcgov.us" <bostwo@edcgov.us>, "bosthree@edcgov.us" <bosthree@edcgov.us>, "bosfour@edcgov.us" <bosfour@edcgov.us>, "bosfive@edcgov.us" <bosfive@edcgov.us>, "rommel.pabalinas@edcgov.us" <rommel.pabalinas@edcgov.us>, "rich.stewart@edcgov.us" <rich.stewart@edcgov.us>, "gary.miller@edcgov.us" <gary.miller@edcgov.us>, "tom.heflin@edcgov.us" <tom.heflin@edcgov.us>, "dave.pratt@edcgov.us" <dave.pratt@edcgov.us>, "brian.shinault@edcgov.us" <brian.shinault@edcgov.us>

Good afternoon Ladies and Gentlemen,

I am writing to you all and asking for a NO Vote, to Parkers request to rezone the open space at the old golf course in EDH, relative to Central EDH Specific Plan that Serrano Associates LLC is requesting.

I-13-1

The majority of the voting populace has spoken in the recent "No" Vote on Measure E Advisory vote – that is, the Community does not want the land, that's been designated in the CDEHSP, to be rezoned residential and commercial, from its current open space/recreational.

We, and I speak for the majority of the homeowners who voted NO on Measure E, believe that the area serves the community extremely well as open space recreational and by adding 1000+ homes and commercial projects it will diminish our current resources, i.e. water, and it's been shown in many studies, including the CalTrans report that the amount of housing being proposed will severely impact our 50 freeway off ramp, as we're currently at our max – the housing will also negatively impact our schools, roads, etc, because our current infrastructure can't support what Serrano Associates LLC is requesting.

I-13-2

I-13-3

I-13-4

We still have 8,000 undeveloped home parcels coming on line in addition to the CEDHSP proposed (doubling the proposed with known issues of traffic and inadequate underground infrastructure). The EIR should double the existing environmental impacts calculated in the study to capture the "real" and "actual" data on the end dates. Here are the already approved lots so adding an additional 1000 homes at the bottom of Serrano Pkwy is insanity!

1. Marble Valley 3,236
2. Lime Rock 800
3. San Stino 1,041
4. Bass Lake 1,500
5. Central EDH 1,028
6. Dixon Ranch 605
7. Tilden Park 80
8. Saratoga Estates 316
9. Town Center 255
Over 8,000 Proposed new.
plus 8,000 already approved and not yet built
AND. Over 12,000 approved in South Folsom

I-13-5

We realize that the County will be getting a considerable amount of revenue from this proposed build, but I hope that you'll not let that influence your decision, as it will likely cause many residents to leave and many not even want to buy homes here, because of the congestion all this build out will cause. I-13-6

Most of us are not opposed to growth, we just want smart, thoughtful growth, as that's why people come here to live because we have a unique and wonderful community. A smaller project would be considerably better for all of us, so I hope you take this into consideration when it's time to vote. I-13-7

I appreciate a confirmation that you've received and read my email, thank you.

Kind regards,

Christine Librach | Broker & Owner
4359 Town Center Blvd #110 El Dorado Hills, CA 95762

***P.** (916) 283-7427 | **F.** (916) 404-0336*

Response to I-13, Christine Librach, 12/7/2015

I-13-1: The commenter states her opposition to the project and notes the CSD Advisory Measure E advisory vote. Please see Master Response 2 (2015 El Dorado Hills Community Services District Advisory Measure E). The commenter's opinion regarding the project is noted and will be considered by the Board of Supervisors during the decision-making process.

I-13-2: A WSA was prepared for the proposed project and is summarized in Section 3.12, *Public Service and Utilities*. The WSA, which is included in Appendix K in the Draft EIR, was approved by the EID Board of Directors. The results of the analysis indicate EID would have sufficient supplies under normal and drought conditions to meet project demands in addition to the demands of other existing and planned projects. Please see Master Response 1 (Water Supply).

I-13-3: The commenter indicated that "it has been shown in many studies" that the addition of dwelling units proposed would severely impact the off-ramp to US 50. It is unclear what studies, other than one prepared by Caltrans, the commenter is referring to, as no data, technical analysis, or studies were provided with the comment. Traffic impacts are addressed in Section 3.14, *Traffic and Circulation*, and cumulative impacts are addressed in Section 5.2.2, *Analysis of Potential Cumulative Impacts*. A revised traffic analysis was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. Results of the revised traffic study are provided in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Please see Responses to Comments **I-9-4**, **I-11-87**, and **L-1-10**.

I-13-4: The commenter states that additional housing will negatively impact schools and roads. Impacts on schools are addressed in Impact PSU-1 on page 3.12-37 in Section 3.12, *Public Services and Utilities* and impacts related to traffic and circulation are addressed in Impact TRA-1 in Section 3.14, *Traffic and Circulation* and revisions to Section 3.14 provided in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. No data or analysis was provided in the comment that contradicts the conclusions of the Draft EIR regarding schools or roadways. Please see Responses to Comments **I-10-14**, **I-19-9**, and **I-22-6** regarding school capacity and Responses to Comments **I-9-4**, **I-11-87**, and **L-1-10** regarding roads and traffic.

I-13-5: All of the projects listed by the commenter are considered as part of the cumulative background for the analysis in the EIR. The cumulative impacts analysis in the Draft EIR considered the following approved projects: Bass Lake Hills Specific Plan, Carson Creek Specific Plan, El Dorado Hills Specific Plan, Marble Valley development, Promontory Specific Plan, and Valley View Specific Plan (see details in Table 5-1 on page 5-3 of the Draft EIR). Additional proposed projects on the commenter's list are not approved, but are presented in Table 5-2 on page 5-5 of the Draft EIR, which includes reasonably foreseeable projects. The cumulative impact analysis in the EIR includes all of these projects, and the data in each of the tables regarding the number of housing units reflects County data at the time of publication of the Draft EIR. The basis for the commenter's assertion that the impacts identified in the EIR need to be doubled to account for these projects is not stated. Please also see Response to Comment **I-7-16**.

The Draft EIR has fully complied with the requirements for an adequate cumulative impact analysis. The commenter is of the opinion the Draft EIR's analysis of cumulative impacts is inadequate but did not provide specific examples or technical data that should have been considered, so no further response can be provided.

I-13-6: The commenter expresses an opinion that the project should not be approved. This comment is directed to the merits of the proposed project and does not address the adequacy of the Draft EIR. No further response is required.

I-13-7: The commenter expresses an opinion that a smaller project would be better. The EIR analyzes three alternatives to the proposed project, all of which are smaller in some way than the proposed project. For example, the Reduced Density Alternative would result in fewer housing units than the proposed project, while the No-Project Alternative would result in a smaller footprint of development and fewer housing units.

From: <j.e.manchester@sbcglobal.net>
Date: Tue, Jan 19, 2016 at 10:40 AM
Subject: [cedhsp] Central El Dorado Hills Specific Plan
To: cedhsp@edcgov.us

To:
Rommel (Mel) Pabalinas
County of El Dorado
Community Development Agency
Long Range Planning Division
2850 Fair Lane Court
Placerville, CA 95667

To:
Board of Supervisors
County of El Dorado
330 Fair Lane
Placerville, CA 95667

Comment:

The El Dorado County Board of Supervisors is currently considering the request of Parker Development Company, Serrano Associates, LLC, to amend the El Dorado County General Plan and rezone the El Dorado Hills Golf Course. The proposed amendment and rezoning would permit the development of up to 1,000 dwelling units on the site of the golf course. In its consideration of this proposal, has the Board of Supervisors taken into account the entrance and gateway to El Dorado County? The historical El Dorado Hills Golf Course has as much visual significance to our county as the Tong Ranch and Apple Hill and has become a part of our cultural heritage. Do we, as residents of El Dorado County, wish to greet newcomers to our county with 1,000 condominiums and townhouses, or with a green, open space dedicated to outdoor recreation and the preservation of nature that characterizes the heritage of El Dorado County? Or do we wish for the entrance to our county to be known for traffic jams, poor air quality, scant natural beauty, dwindling water resources and the increased crime rate that inevitably come when the population density is greatly increased? I-14-1
I urge the El Dorado County Board of Supervisors to reject any and all plans for residential development of our El Dorado Hills Golf Course and to maintain the attractive and green corridor that best represents the beauty and the healthy environment and that has made El Dorado County a remarkable place to live.

Sincerely,

Jeanette Manchester
819 Shasta Circle
El Dorado Hills, CA 95762

Response to I-14, Jeanette Manchester, 1/19/2016

I-14-1: The commenter states that the development of 1,000 dwelling units on the site of the golf course has visual significance. Impacts on scenic vistas and other scenic resources are analyzed in detail, and that analysis is presented in Section 3.1, *Aesthetics.* It should be noted that the golf course has been closed since 2007 and currently is covered with annual grassland, some trees, and a water feature. It should also be noted that the project does not propose that all 1,000 dwelling units be located in the former golf course area of the Serrano Westside planning area.

The commenter also indicates that the former golf course is historical and is part of the County's cultural heritage. The term "cultural heritage" when discussing cultural resources and environmental impacts generally refers to generations of a social or ethnic group and sites associated with cultural heritage are usually the locations of ongoing activities or ceremonies central to the group's identity. Although the former golf course is more than 50 years old and was designed by a well-known designer, it does not retain integrity because it has not been maintained and is currently annual grassland, and is not considered a significant cultural resource under CEQA.

The commenter expresses an opinion that the project should not be approved. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is required in the EIR.

LETTER I-15

From: **Shannon Merryman** <shannonmerryman@gmail.com>
Date: Mon, Jan 18, 2016 at 8:54 AM
Subject: [cedhsp] OPPOSE the "Central El Dorado Hills Specific Plan"
To: cedhsp@edcgov.us

Dear Supervisor -

I am writing in response to the Long Range Planning letter I received regarding the "Central El Dorado Hills Specific Plan" as I strongly OPPOSE this project as well as any additional building.

As an El Dorado Hills resident, since I was seven years old, I have loved this community and the safety it provides. I moved away to Santa Barbara for college, lived in LA after graduation, and have choose to come back here to raise my children. I-15-1

Why did I decide this was the perfect place for my family? Because of the high-standard of living in which my children will be surrounded with open space to appreciate a slower pace of life. If we had wanted a mini-metropolis we would have moved to Folsom or Orange County. However, the simple life style mixed with low traffic congestion in which we could truly enjoy life and "get away from it all" is why we moved here. Please, please don't ruin that! This build, build, build mentality has to stop - WE DON'T WANT IT! Please listen to the people!

Thank you for your time,
Shannon Merryman

Response to I-15, Shannon Merryman, 1/18/2016

I-15-1: The commenter states that open space and "low traffic congestion" are the reasons she lives in El Dorado Hills and opposes the project. Impacts related to traffic are presented in Section 3.14, *Traffic and Circulation,* and in Section 5.2, *Cumulative Impacts*, under the *Traffic and Circulation* subheading beginning on page 5-25, and in revisions to those discussions in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. The project would result in more zoned open space than currently exists. The commenter does not raise environmental concerns or comment on the adequacy of the environmental document. The commenter's opposition to the project is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is required in the EIR.

From: **Nola Mulligan** <nola3mulligan@gmail.com>
Date: Thu, Dec 24, 2015 at 11:23 AM
Subject: The EDH Central Plan
To: rommel.pabalinas@edcgov.us

Attn: Mel Pabalinas, Senior Planner

I want to register my disagreement regarding the Parker Development proposal to build the massive number of houses near El Dorado Hills Blvd. and the surrounding area.

My great concerns are:
(1) The severe water conditions in El Dorado Hills. It is foolish to bring more pressure on the people that currently live here, who are very restricted in the use of water. I see sick and dying plants, trees, grass all over the place. I-16-1

(2) The congestion on El Dorado Hills Blvd., Hwy. 50, and all the surrounding streets. Will the developers, planners, supervisors, etc. not be concerned until there is total gridlock due to excessive traffic? I-16-2

(3) The destruction of the views of the beautiful hills in the area. The grassy hills, skyline, and trees that are here, is a great deal of what makes El Dorado Hills. I-16-3

I lived in Napa for 52 years and though it is a beautiful valley, the influx of cars are destroying the ambience and beauty of the Valley. Not to mention the potential smog problem from cars and the frustration of moving about on the roadways.

I am very suspicious that Parker Development is not the least concerned about the above mentioned concerns, but enriching those involved in Parker Development is the concern.

I appreciate the opportunity to let my very honest concerns be heard.

Sincerely,
Nola Mulligan
(916)934-0162

Response to I-16, Nola Mulligan, 12/24/2015

I-16-1: The commenter states that she is concerned about water supply. Water supply is addressed in Section 3.12, Public Services and Utilities, Impact PSU-6, which summarized the Water Supply Assessment prepared for the project. Please see Response to Comment **I-22-5**, and Master Response 1 (Water Supply).

I-16-2: The commenter's concern about traffic conditions in El Dorado Hills and on US 50 is noted. The Draft EIR fully discloses the impacts of the project on El Dorado Hills Boulevard and other local roadways and US 50 in Section 3.14, *Traffic and Circulation*, which addresses project-level impacts, and in Section 5.2, *Cumulative Impacts*, under the *Traffic and Circulation* subheading beginning on page 5-25. The Draft EIR concludes that the project's impacts would be less than significant or can be mitigated to less-than-significant levels through mitigation measures identified in the Draft EIR, as revised in Final EIR Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*.

I-16-3: The commenter expresses concern about project impacts on views. Impacts on scenic vistas and other scenic resources are analyzed in detail in Section 3.1, *Aesthetics*, of the EIR.

LETTER I-17

From: <djneher@sbcglobal.net>
Date: Jan 17, 2016 3:11 PM
Subject: Response to DEIR Central El Dorado Hills Specific Plan
To: "cedhsp@edcgov.us" <cedhsp@edcgov.us>, "Rommel Pabalinas" <rommel.pabalinas@edcgov.us>
Cc:

Good Morning Mr. Pabalinas-

Attached I have submitting my public comment in response to the DEIR for the Central El Dorado Hills Specific Plan - State Clearinghouse #2013022044

I am also attaching three displays that are to be used as reference material as well as six photographs that are of the area proposed for the new intersection #23. I-17-1

Thank you for your attention to my concerns.

Respectfully,

Donn Neher

LETTER I-17

January 15, 2016

To: County of El Dorado Community Development Agency
Long Range Planning Division
2850 Fairlane Court, Building C, Placerville, CA 95667 Sent Via: USPS and Email
Rommel.Pabalinas@edcgov.us

Attention: Rommel Pabalinas:

Re: Serrano Westside Draft EIR Report
State Clearinghouse #2013022044

I would like to register my concern regarding the proposal known as the Serrano Westside project within the Central El Dorado Hills Specific Plan. This plan has been submitted by the Parker Development Company and their current goal is to have their property, which was previously a golf course, rezoned so they can build 763 homes in this open space. I-17-2

The DEIR that was available for public comment beginning November 20, 2015 appears at first glance to present a well-rounded plan for more housing in the central part of El Dorado Hills, however, upon more careful review and when considering the total impact to the community, it is clear that there are many aspects of this plan that negatively affect the safety, health and living environment of persons living, visiting and working within that sphere of influence. I-17-3

I have reviewed the DEIR that was recently completed and I also attended the public forum that was held on December 2, 2015. This forum offered no new information from the previous session that I attended on March 14, 2013 with respect to the points I want to stress in this letter. In December 2012, I wrote to the El Dorado County Planning Department and members of the Board of Supervisors advising them of my concern surrounding the air pollution, traffic hazards and noise this development would cause to the surrounding area; and especially to residents in the Serrano community of D2 that live directly up the hill and east of the project. I-17-4 I also asked what was being done to mitigate the effect this large development would have to cars that continuously travel at a high rate of speed as they proceed down the hill on Serrano Parkway. I asked this question yet again on December 2, 2015 to the representatives that prepared the DEIR and they did not know what if any additional controls or design modifications would be in place at the new intersecting streets (proposed intersection #23). The description of Serrano Parkway listed on page 493 of the DEIR totally ignores and does not in any way address the sharp curves coupled with the steep road grade that occurs in close proximity to this proposed intersection #23. It appears my concern has not been properly addressed and as indicated by Impact TRA-4 on page 518 several hazards remain. Further, Section 5.6.2 of the DEIR dealing with Traffic Mitigation Measures totally ignores these obvious concerns associated with the traffic and roadway design of the Serrano Parkway! This project substantially increases hazards because of the current design feature (e.g., sharp curves on Serrano Parkway or dangerous intersections - #23), and I must again alert you to the serious safety issue that is being posed should this development be allowed to go forward in the current plan. I-17-5

Even without the addition of thousands of more cars as proposed by this plan, evidence of vehicles running off of Serrano Parkway is clearly present throughout the year and this is obvious to anyone that frequents this intersection. On the morning of January 7, 2016 I took a series of pictures that are attached to this document that clearly reflect the extent of the current traffic problem on Serrano Parkway just east of El Dorado Hills Boulevard. There have been at least seven collisions within the past few days where cars have either simply run off the road, collided with a tree (fresh and previous damage shown) hit a no parking sign, toppled a very large street light and more. This area looks like a war zone! All these collisions are occurring at the location of the proposed new intersection #23. Can you imagine how much more hazardous this will be with all the new side traffic coming onto Serrano Parkway?! Also, vehicles entering the development from both directions on eastbound and westbound Serrano Parkway will cause a domino effect to those motorists previously mentioned and given the absence of merging lanes or turn pockets, which Parker Development also failed to construct on the at both of the entrances to Village D2 of their Serrano development (Penela and Vila Flor) the problem is magnified. This existing roadway was poorly designed by the applicant and now they want to compound the problem by adding more vehicles.

I can assure you that if the current plan is allowed to proceed without mitigating these environmental affects, the impact to Serrano Parkway will be extremely problematic at best and I am very concerned the results will be far worse. According to the map that is posted on the Parker Development Company website and was presented at the forum on December 2, 2015, two new streets are proposed to intersect Serrano Parkway. The housing in this area is proposed as village high density residential (VRH), Medium (VRMH) and low density (VRM-L); and there is no way that this amount of housing should be allowed this close to the Serrano Parkway. Referring to table 2.2 on page 76 and more clearly outlined in table 3.1 page109 of the Central El Dorado Hills Review Draft published in August 2015, and using the nationally recognized ITE trip generation table, there are 123 SFR units that are expected to generate an average of ten trips daily for a total of 1230 trips. Add to this number, 310 medium high dwellings (VRM-H) and 330 high density units (VRH) then clearly, according to the Institute of Transportation Engineers, a development of this size may easily generate an additional 5,660 vehicle trips daily when using the average number of residents, friends and vendors frequenting each household. Please keep in mind that the figures I have presented reflect only the median number of vehicles daily. This is intended to account for drivers that may carpool, bicycle, or use the local transit system. This also accounts for retirees who may travel less frequently, the mix and balance of land uses, compactness of design, neighborhood connectivity and walkability, infill versus remote location, and the variety of transportation choices offered. Using the figures supplied by the applicant, clearly it is shown that this confined area was never intended to house this mass amount of residents and handle this large amount of traffic on an ADT basis. Even if you reduce the median number of ADT by 35% as suggested by the report published in 2013 titled GETTING TRIP GENERATION RIGHT Eliminating the Bias Against Mixed Use Development published by the American Planning Association and endorsed by the applicant's consultants Fehr and Peers, the end result is still almost 4000 vehicle trips daily. This "old golf course" area cannot be compared to other locations that are contained in this report above. Developments in major cities such as The River Place in Portland, Oregon; Atlanta Station in Atlanta, Georgia; and Bay Street in Emeryville, California cannot be compared to the small suburban community El Dorado Hills, California. This area was set aside as a community golf course to be enjoyed as a neighborhood recreational activity by local residents. We really need to compare apples to apples! I-17-5 cont.

A major part of this traffic problem is a result of the fact that the design requires adequate ingress and egress to the development which has resulted in the need for two major feeder streets to intersect Serrano Parkway (intersection #23). This frequent cross traffic will adversely affect vehicles travelling at a very high rate of speed, sometimes over 50mph, down this very steep hill and then they having to negotiate an extremely difficult blind turn. The potential results of this conflict could be devastating. Again, this is a significant negative traffic concern that has not been mitigated.

Additionally, cars exiting the new development will have to contend with vehicles that continue to speed around the corner as they begin their ascent up Serrano Parkway. Drivers typically will use the quickest route to get to their destination and I expect the majority of the residents in this new VRH, VRMH and VRM-L area are going to exit onto Serrano Parkway and not leave through the backside of the shopping center as the shopping center route is much too confined and was never intended to I-17-6 handle as much traffic as proposed. The modification of what is currently designated at intersection #14, and its realignment with the private access road behind Raley's market is going to create significant traffic issues. The mitigation measures CUM-D listed on pages 614 (and repeated on page 628) will have little if any effect on the traffic congestion that will occur inside the Raley's Parking lot. Page 613 of the DEIR clearly outlines that this project is going to "***significantly worsen***" and have a "***significant impact***" to traffic in and around this area. It states that the intersection of El Dorado Hills Boulevard/Park Drive/Saratoga way (intersection 13) I-17-6 cont.

> *"Under cumulative conditions, which includes reasonably foreseeable but not approved projects, this intersection is projected to operate unacceptably at LOS F without the project during the P.M. peak hour. Unacceptable operations at this intersection would be due to a combination of increased traffic from cumulative development and due to changes in travel patterns associated with the Silva Valley Parkway interchange and the Saratoga Way Extension project. According to established significance criteria, the project is projected to "**significantly worsen**" conditions because it would add more than 10 trips to the intersection during the P.M. peak hour. **This would be a significant impact.**"*

I-17-7

The noise created by this traffic and significant population increase is amplified as it is heard all the way up the hill to where our homes are located. This increase in noise, air pollution, and traffic congestion is going to create a nightmare for the residents of Serrano and the surrounding longstanding developments and will be a significant and irreversible negative impact on the surrounding community. I-17-8

I would also like to point out that there appears to be only one point of access to the Pedregal planning area that is off of Wilson Boulevard. This is totally contrary to basic rules affecting emergency access (impact TRA-5 p 518) and this traffic circulation concept is poorly presented. I-17-9

Lastly, despite what has been written in the DEIR, I really believe this is going to have a very negative effect on the wildlife that live in this open space and wetlands area that is being proposed for residential construction. The air, water and noise pollution will have a devastating effect to the owls, hawks, turkeys, geese and other natural wildlife habitats behind our home. The natural pond that is present in this area that is clearly evident today as I drove by will be filled in and force all the wildlife to relocate out of the area. The only way to adequately address these concerns, given the constraints of this particular location, is to maintain this as open space along the entire stretch of the west end of Serrano Parkway and keep overdevelopment from occurring near Serrano Parkway. I-17-10

Thank you for your attention and resolve in actively addressing this concerns!

Donn Neher
1154 Souza Drive
El Dorado Hills, CA 95762
925-785-8169

Attachment: Trip Generation Chart from the Institute of Transportation Engineers
Figure 3.1 Land Use Diagram
Table 3.1 Land Use Summary
Photographs of Collisions on Serrano Parkway adjacent to new intersection #23
Taken the morning of January 7, 2016

C: All Members of the Board of Supervisors

HOW ARE TRIPS GENERATED CALCULATED?

To calculate the number of trips expected to be generated by the proposed development in your community, apply the appropriate rate below to the proposed land use.

Table 3.3 Trip Generation Rates

Land Use	Base Unit	AM Peak	ADT	ADT Range
		Rates		
Residential				
Single Family Home	per dwelling unit	.75	9.55	4.31-21.85
Apartment Building	per dwelling unit	.41	6.63	2.00-11.81
Condo/TownHome	per dwelling unit	.44	10.71	1.83-11.79
Retirement Community	per dwelling unit	.29	5.86	
Mobile Home Park	per dwelling unit	.43	4.81	2.29-10.42
Recreational Home	per dwelling unit	.30	3.16	3.00-3.24
Retail				
Shopping Center	per 1,000 GLA	1.03	42.92	12.5-270.8
Discount Club	per 1,000 GFA	65	41.8	25.4-78.02
Restaurant (High-turnover)	per 1,000 GFA	9.27	130.34	73.5-246.0
Convenience Mart w/ Gas Pumps	per 1,000 GFA		845.60	578.52-1084.72
Convenience Market (24-hour)	per 1,000 GFA	65.3	737.99	330.0-1438.0
Specialty Retail	per 1,000 GFA	6.41	40.67	21.3-50.9
Office				
Business Park	per employee	.45	4.04	3.25-8.19
General Office Bldg	per employee	.48	3.32	1.59-7.28
R & D Center	per employee	.43	2.77	.96-10.63
Medical-Dental	per 1,000 GFA	3.6	36.13	23.16-50.51
Industrial				
Industrial Park	per employee	.43	3.34	1.24-8.8
Manufacturing	per employee	.39	2.10	.60-6.66
Warehousing	1,000 GFA	.55	3.89	1.47-15.71
Other				
Service Station	per pump	12.8	168.56	73.0-306.0
City Park	per acre	1.59	NA	NA
County Park	per acre	.52	2.28	17-53.4
State Park	per acre	.02	.61	.10-2.94
Movie Theatre w/Matinee	per movie screen Saturday	89.48 (PM Peak)	529.47	143.5-171.5
Day Care Center	per 1,000 GFA	13.5	79.26	57.17-126.07

Source: Institute of Transportation Engineers (ITE). Trip Generation.

How do we account for "pass-by" trips?

Table 3.1: Land Use Summary

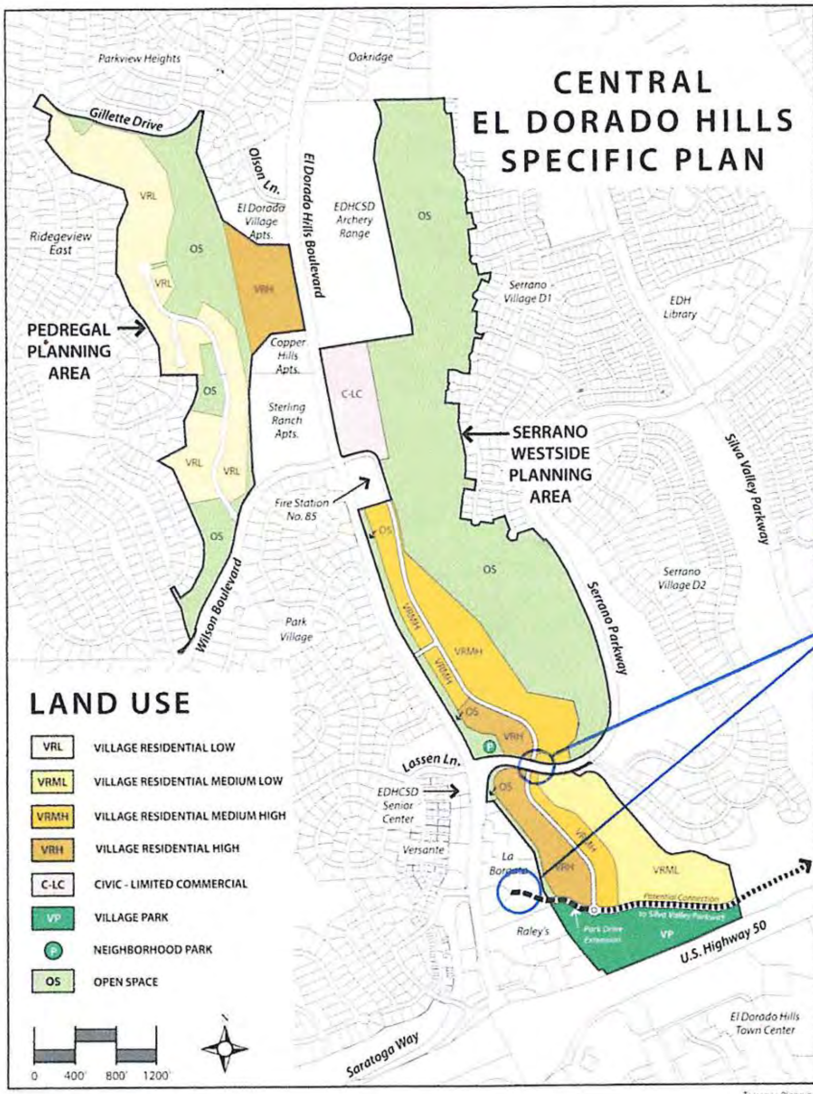
Land Use Designation		Planning Area	Density Range		Area (Ac)	% of Total Area	Res-idential Units	% Res. Total	Commercial Area (SF)
Residential									
VRL	Village Residential - Low	[1]	< 1.0 Du/Ac	[3]	45	13%	37	4%	
VRM-L	Village Residential - Medium Low	[2]	5 - 8 Du/Ac	[3]	23	7%	123	12%	
VRM-H	Village Residential - Medium High	[2]	8 - 14 Du/Ac	[3]	37	11%	310	31%	
VRH	Village Residential - High	[2]	14 - 24 Du/Ac	[3]	16	5%	330	33%	
VRH	Village Residential - High	[1]	14 - 24 Du/Ac	[3]	13	4%	200	20%	
	Subtotal				134	40%	1,000	100%	
Civic - Limited Commercial									
C-LC	Civic-Limited Commercial	[2]			11	3%			50,000
	Subtotal				11	3%			50,000
Public Facilities									
VP	Village Park	[2]			15	4%			
	Subtotal				15	4%			
Open Space									
OS	Open Space	[2] [4]			130	38%			
OS	Open Space	[1]			39	12%			
	Subtotal				169	50%			
Road Right-of-Way and Landscape Lots									
	Road Right-of-Way & Landscape Lots	[2]			7	2%			
	Road Right-of-Way & Landscape Lots	[1]			5	1%			
	Subtotal				12	3%			
Total					341	100%	1,000	100%	50,000

[1] Pedregal Planning Area (102 acres)
[2] Serrano Westside Planning Area (239 acres)
[3] Based on average dwelling units per acre for each resdidential land use designation
[4] Includes a 1.2 acre neighborhood park

P. 109

page 108

FIGURE 3.1:
LAND USE DIAGRAM



Torrence Planning

Significant Negative Traffic Concern

LETTER I-17

LETTER I-17

LETTER I-17

LETTER I-17

LETTER I-17

LETTER I-17

Response to I-17, Donn Neher, 1/17/2016

I-17-1: The comment is a cover letter identifying the commenter's submittal. It does not address the adequacy of the environmental review, but it does contain attachments, including a web page related to trip calculation, a land use summary table from the CEDHSP, an annotated land use figure from the CEDHSP, and six photographs that the commenter indicates are of the area proposed for the new intersection #23 that were submitted as reference material for the subsequent comments in the letter

I-17-2: The commenter expresses general concern about the project, but does not address the adequacy of the environmental review. No further response is necessary.

I-17-3: This comment references the availability of the Draft EIR for public review beginning November 20, 2015, but the commenter appears to have misinterpreted the purpose of the Draft EIR. The Draft EIR is not the same as the Specific Plan, and it is not the purpose of the Draft EIR to serve as the plan for development, but rather to evaluate its environmental effects. The commenter offers a general observation that the project will negatively affect the safety, health and living environment of residents, visitors, and employees in the project area.

I-17-4: The comment expresses general concerns about air pollution, traffic hazards, and noise. The commenter's specific concerns are described in more detail later and are addressed in Responses to Comments **I-17-5** through **I-17-10**.

I-17-5: The commenter expresses concern about safety and traffic congestion on Serrano Parkway. The final design of the access onto Serrano Parkway would comply with County standards and, therefore, would address sight distance. Sight distance is calculated based on vehicle speed. The project applicant would be required to construct the intersection to provide the appropriate sight distance for vehicles on all approaches in accordance with County standards. The proposed new intersection would be constructed such that all vehicles using the intersection would be able to make safe movements. Additionally, as part of the intersection improvements, signage would be placed on Serrano Parkway in advance of the intersection to warn motorists of cross traffic. The proposal for a right-in and right-out only access would help minimize potential conflicts with vehicles accessing Serrano Parkway.

The comment contains trip generation rates and estimates for the proposed project. The Transportation Impact Analysis (Appendix L of the Draft EIR) contains the trip generation of each part of the project using the Trip Generation manual (Institute of Transportation Engineers 2012) with reductions for internal trips and walking trips. The trip reductions make up less than 5 % of all trips generated from the proposed Serrano Westside project area. The trip reductions were based on research conducted at other mixed-use developments throughout the United States, including some in the Sacramento region. Even with the trip reductions, the trip generation analyzed for the Serrano Westside area is greater than estimated by the commenter. The commenter states that the "confined area" of the project cannot handle the increases in project traffic. However, the analysis contained in the Traffic Impact Analysis, as revised by an updated study prepared in 2017 (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, and Appendix L) demonstrates that the roadway network, along with the proposed mitigation measures, would accommodate the project's traffic and maintain acceptable LOS on the County's roadway network.

I-17-6: The final design of the access onto Serrano Parkway would comply with County standards and, therefore, would address sight distance, as indicated in Response to Comment **I-17-5**.

Additionally, the commenter is concerned about traffic operations at the interior intersection of the shopping center, near Raley's. The commenter is correct that the roadway was not designed to be a through roadway. However, the project applicant would reconstruct the interior intersection and roadway to accommodate the traffic from the proposed project, as shown in Figure 2-10 in Chapter 2, *Project Description*.

I-17-7: The commenter notes the traffic impacts reprinted in this comment at the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection, which as the commenter correctly notes, would be significant based on the original traffic analysis. A revised traffic analysis was prepared in 2017 to include improvements that had been completed since the circulation of the Draft EIR, to be consistent with the County's 2016 Capital Improvement Program, and to recognize the opening of the new Silva Valley Parkway Interchange. The 2017 updated traffic analysis, however, indicates that the project impacts at the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection would be less than significant, and no mitigation would be required (see Chapter 3, Changes *and Errata to the Draft EIR and the Partial Recirculated Draft EIR* in this document).

I-17-8: Noise impacts are addressed in Section 3.10, *Noise*. Traffic noise is examined in Impact NOI-3 (Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project) (see page 3.10-25). The analysis discloses that project traffic would generate marginal increases in noise. However, these noise levels would not exceed the County's noise thresholds at any location. The commenter does not provide any data or analysis that contradicts the conclusions of the Draft EIR or to support the commenter's conclusion that the project's traffic-related noise would result in a significant and irreversible negative impact.

The commenter expresses a general concern over the significance of air quality impacts. Air quality impacts are examined and their significance disclosed in Section 3.2, *Air Quality*. The Draft EIR concludes that certain air quality impacts would be significant and unavoidable: Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan; Impact AQ-2b: Violate any air quality standard of contribute substantially to an existing or project air quality violation during operation; Impact AQ-2c: Violate any air quality standard or contribute substantially to an existing or project air quality violation during combined construction and operation; Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

I-17-9: This comment addresses emergency access. The El Dorado Hills Fire Department has reviewed the project and provided comments on the Draft EIR, which are included in Letter R-6 in this Final EIR. Item 15 in the letter identifies the requirements for secondary access. The California Department of Forestry and Fire Protection (CAL FIRE) also submitted a comment noting the requirement for secondary access (see Letter S-1). As indicated in Impact HAZ-8 on page 3.7-13 of the Draft EIR, Policy 6.19 of the CEDHSP requires that tentative subdivision maps, parcel maps, and planned development permits be reviewed by the local fire protection district prior to approval by the County. Policy 6.20 of the CEDHSP requires the preparation and submittal of a Wildfire Safety Plan. The requirement for secondary access is a standard Condition of Approval that would be applied to future planned development permit and tentative map applications, and incorporated into final design.

I-17-10: The commenter states an opinion that the project will have a negative effect on wildlife and wetlands, particularly the pond near Serrano Parkway; suggesting that the project maintain as open space “the entire stretch of the west end of Serrano Parkway and keep overdevelopment from occurring near Serrano Parkway.” This impact is examined in Section 3.3, *Biological Resources*, which concludes that impacts on biology and wetlands would be less than significant with mitigation. Mitigation measures include, but are not limited to: Mitigation Measure BIO-3a: Avoid and minimize disturbance of waters of the United States, including wetlands; Mitigation Measure BIO-4: Compensate for loss of other waters of the United States; Mitigation Measure BIO-6a: Assume presence of California red-legged frog or conduct protocol-level surveys and implement avoidance and minimization measures, as applicable; Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog; Mitigation Measure BIO-7: Conduct preconstruction surveys for Pacific pond turtle and exclude turtles from the work area; Mitigation Measure BIO-9a: Conduct vegetation removal activities outside the breeding season for birds and raptors; Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction; and Mitigation Measure BIO-10: Identify suitable roosting sites for bats and implement avoidance and minimization measures. Other than speculation, the commenter does not provide any data or analysis that contradicts the impact conclusions or the effectiveness of proposed mitigation measures.

The commenter suggests that leaving open space along the west end of Serrano Parkway would address the concerns that he raised. This suggestion is effectively a recommended alternative to the project. The range of alternatives analyzed in an EIR is governed by the “rule of reason,” which provides that the EIR must “set forth only those alternatives necessary to permit a reasoned choice.” (CEQA Guidelines Section 15126.6(f)) CEQA Guidelines Section 15126.6(a) provides that “[a]n EIR need not consider every conceivable alternative to a project.” The alternatives evaluated in an EIR must (1) be feasible, (2) meet most or all of the project objectives, and (3) substantially reduce one or more of the project’s significant effects. (CEQA Guidelines Section 15126.6) The project’s impacts on biological resources would be less than significant with implementation of the mitigation measures identified in the EIR. The County does not need to examine an alternative in order to reduce the level of these impacts. The suggested alternative would curtail the project’s ability to provide high- and medium-density residential housing to the area. This would conflict with the following project objectives:

- Assist in meeting future Regional Housing Needs Allocations (RHNA) needs. The housing built in the County has historically not met the RHNA for very-low and low-income residents. This project, by providing apartments, offers the potential to improve the County’s performance in meeting this aspect of the RHNA.
- Broaden the housing stock in El Dorado Hills. El Dorado Hills housing stock is primarily composed of single-family residences. The project would provide additional high- and medium-density residential housing to the area.
- Create a new non-motorized transportation system. The alternative would preclude installation of the Class 1 bike path across Serrano Parkway. This would interfere with the connectivity of the project’s non-motorized transportation system.
- Improve north-south pedestrian and bicycle connectivity. The alternative would preclude installation of the Class 1 bike path across Serrano Parkway. This would interfere with the project’s non-motorized transportation system’s ability to reach south of US 50.

The suggested alternative is rejected for analysis because it would not meet many of the project objectives. No further analysis is required.

From: **Deb Ozdinski** <dozdinski@comcast.net>
Date: Mon, Jan 18, 2016 at 1:00 PM
Subject: [cedhsp] Open Space Management CEDHSP
To: cedhsp@edcgov.us
Cc: Greg Ozdinski <gregoz@comcast.net>, Deb Ozdinski <dozdinski@comcast.net>

RE: Community Development Agency Long Range Planning
DEIR for Central El Dorado Hills Specific Plan

We would like to make a comment for the record that any Open Space needs to have an improved " Open Space Management Plan" to manage the over population of animals, rodents, wildlife and to preserve the natural setting of the Open Space. Within that plan any animal, wildlife, tree damage problems should automatically be dealt with by owner and if not, any complaints made to county planning be investigated and penalty enforced. In particular, when recommendations are made by CDFW to owner/developer. Mitigation plan should be enforced. Parker Development Company has Open Space responsibility in the Serrano development where the Open Space has completely changed due to poor maintenance and management.

I-18-1

Please be aware the Open Space behind Beckett and Edgehill Drive is experiencing severe change of its natural setting. There are at least 2 other known problem areas. The county of EDH needs to have more involvement and oversight along with enforcement of the "Open Space Management Plan" to ensure the plans are enforced and the natural settings are not destroyed, changed, or mismanaged by the developers who have the obligation to maintain these Open Spaces for the county and homeowners who live next to the Open Space. When trees are girdled, being destroyed and consistently falling towards homes, this is a problem.

Regards,

Deb and Greg Ozdinski
2136 Beckett Drive
El Dorado Hills

Response to I-18, Deb Ozdinski, 1/18/2016

I-18-1: The commenter states that any open space should have an open space management plan (OSMP) and that OSMP should be enforced. As stated on page 3.3-51 of the Draft EIR, prior to submittal of the first small tentative subdivision map to the County, as directed by CEDHSP Policy 5.31, the project applicant has committed to preparing an OSMP that guides the conservation and protection of oak woodland and wildlife uses within designated open space in the project area in perpetuity (described in Chapter 5 of the CEDHSP). The OSMP would be implemented by the long-term management owner. More details about the OSMP are described in the EIR in Section 3.3, *Biological Resources*. The County appreciates the commenter's suggestion for possible improvement to the OSMP and the County's process, which will be considered by the Planning Commission and Board of Supervisors during the decision-making process.

LETTER I-19

Central El Dorado Hills Specific Plan EIR

Comment Card

Informational Open House · December 7, 2015 6:00 PM

Comments:

1. Please analyze the health effects upon children and adults with a proposed 15 acre park next to the freeway. I-19-1

2. Please analyze naturally occurring asbestos which has been identified in several areas in the general vicinity of the project area. I-19-2

3. General Plan states that the old executive golf course is zoned as open space recreational. Please analyze the high density along El Dorado Hills Boulevard if rezoned to residential. I-19-3

4. This project is not aesthetically pleasing. Please analyze the aesthetics of high and medium density housing in surrounding hills. I-19-4

5. Please analyze additional noise if 750 homes and apartment complex are built along El Dorado Hills Boulevard. I-19-5

(over) →

Leonard and Teresa Patane
Name
3513 Smokey Mountain Circle
Address
El Dorado Hills, CA 95762

If you would like to mail your comments, please send them to:

Mel Pabalinas, Senior Planner
El Dorado County Community Development Agency
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
Fax: 530-642-0508
E-mail: Rommel.Pabalinas@edcgov.us

Comments (continued from front).

6. Please analyze how much water would be needed for the entire Central El Dorado Hills project. I-19-6
Also analyze the additional costs and effects of increased sewer needs for the project. I-19-7
7. Please analyze traffic. Cal Trans states LOS F in that specific area. How will you address the county's traffic study versus Cal Trans? I-19-8
8. Please analyze how schools, which are already impacted, will handle an increase in K-12. I-19-9
9. Analyze the impact of wildlife in the area. I-19-10
10. Analyze the impact on emergency services for the entire Central El Dorado Hills Project. I-19-11
11. Please analyze the effect upon air quality in the surrounding areas. I-19-12
12. Please analyze the effect upon the quality of life for the current residents in El Dorado Hills. I-19-13

EL DORADO COUNTY
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LONG RANGE PLANNING

Response to I-19, Leonard Patane, 2/8/2016

I-19-1: The commenter requests an analysis of health effects of a park next to the freeway. Impacts of the existing freeway on neighboring land uses are not subject to CEQA analysis under the California Supreme Court's holding in *California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. In that decision, the Court found that, as a general rule, CEQA does not apply to the impacts of the environment on a project, with two exceptions: certain specific uses for which statutes require consideration of impacts of the environment (these relate to school siting and statutory exemptions for certain types of residential development); and where a project would "exacerbate" the existing condition. None of the statutory exceptions applies here. Nevertheless, the air quality analysis presents an analysis of cumulative health risks from exposure to pollution from US 50 and four gas stations (refer to Impact AQ-4b). The project would contribute only a small amount of new auto and light truck traffic to US 50, which does not represent a significant cancer or health risk (see Table 3.2-10 in the Draft EIR); therefore, the project would not exacerbate the existing toxic air contaminant (TAC) condition.

I-19-2: The commenter requests an analysis of naturally occurring asbestos. The EIR addresses impacts related to NOA in Section 3.2, *Air Quality*. See Master Response 3 (Naturally Occurring Asbestos).

I-19-3: The commenter requests an analysis of high density residential along El Dorado Hills Boulevard at the site of the former golf course. The high-density residential development proposed along El Dorado Hills Boulevard is described in Chapter 2, *Project Description*, and the environmental impacts of construction and occupancy of those uses are evaluated in the impact analyses in Sections 3.1 through 3.14 of the Draft EIR. Chapter 5, *Other CEQA Considerations*, evaluates the uses in the context of cumulative development and growth-inducing potential.

I-19-4: The commenter is of the opinion the project is not aesthetically pleasing but did not indicate which specific features are of concern. The first part of this comment is directed to project design. The commenter also requests an analysis of the aesthetics of high and medium density housing in surrounding hills. The aesthetics impacts of the project, including the potential development of housing units on hills in view of existing residences and public spaces, are examined in Impacts AES-1 through AES-6 beginning on page 3.1-10 of the Draft EIR, in Section 3.1, *Aesthetics*.

I-19-5: The commenter requests an analysis of noise. The noise impacts of the project are examined in Section 3.10, *Noise and Vibration,* of the Draft EIR. The noise impacts associated with the residential components are examined in Impact NOI-1c, beginning on page 3.10-21 of the Draft EIR. This impact addresses the exposure of residents to noise generated by non-transportation sources during project operation and was found to be less than significant with implementation of Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses.

I-19-6: The commenter requests an analysis of water demand from the project. A WSA has been prepared for the project and is included in the Draft EIR as Appendix K. The analysis is summarized in Impact PSU-6 beginning on page 3.12-50 of the Draft EIR. The discussion concludes that there is sufficient water supply to accommodate the project, and that this impact would be less than significant. See also Master Response 1 (Water Supply).

I-19-7: The commenter requests an analysis of sewer demand. Utility needs are examined in Section 3.12, *Public Services and Utilities*, of the Draft EIR. A discussion of the capacity of the wastewater treatment system is provided in Impact PSU-2 and the impact is found to be less than significant. A discussion of the potential impacts of necessary improvements to the water and wastewater conveyance systems are presented in Impacts PSU-3 and PSU-4. These impacts would be less than significant with the mitigation for construction practices indicated in the remainder of the sections of the document. Cost of sewer is an economic impact, not a physical change in the environment, and is not subject to CEQA review (CEQA Guidelines Section 15358(b)).

I-19-8: The commenter requests an analysis of traffic. Traffic is analyzed extensively in Section 3.14, *Traffic*, of the Draft EIR, as revised by the results of an updated traffic study in 2017 (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*). The relationship between Caltrans data and the project's traffic impact analysis is discussed under *Analysis Procedures* in Section 3.14.2. Please see Responses to Comments **I-11-87** and **L-1-3**.

I-19-9: The commenter requests an analysis of how schools will accommodate students. Schools are discussed in Section 3.12, *Public Services and Utilities*, under Impact PSU-1 beginning on page 3.12-37 of the Draft EIR. School crowding is not subject to CEQA review (*Chawanakee Unified School District v. County of Madera* (2011) 196 Cal.App.4th 1016; *Goleta Union School District v. Regents of U.C.* (1995) 37 Cal.App.4th 1025).

I-19-10: The commenter requests an analysis of impacts on wildlife. The project's impacts on wildlife are examined in Impacts BIO-6 through BIO-11, beginning on page 3.3-46 of the Draft EIR. See Response to Comment **I-2-4**.

I-19-11: The commenter requests an analysis of the impacts on emergency services. The project's impact on emergency services is discussed in Section 3.12, *Public Services and Utilities*, and in Section 3.14, *Traffic and Circulation*, of the Draft EIR. Impact PSU-1 addresses the physical impacts related to the need for new facilities for fire and police protection services. This discussion on page 3.12-36 of the Draft EIR also addresses the impacts of the project on response times. The discussion concludes that fire protection services can accommodate the proposed project, and that though there could be a reduction in response times that are already below the County standard, staffing is not a CEQA issues and is funded by taxes. Because no new facilities would be required, there would be no significant impact under CEQA.

I-19-12: The commenter requests an analysis of air quality. The project's impacts on local and regional air quality are examined extensively in Section 3.2, *Air Quality*, of the Draft EIR.

I-19-13: The commenter requests an analysis of the impacts on the quality of life of the current residents of El Dorado Hills. Quality of life is a social concern and not an effect subject to CEQA analysis. (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560)

Merrilee and Jeffrey Posner

4331 Cordero Drive
El Dorado Hills, CA 95762
916-715-4518
maposner@yahoo.com

16 JAN -7 AM 11: 57
RECEIVED
PLANNING DEPARTMENT

January 5, 2016

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fair Lane Court
Placerville, CA 95667

Dear Mr. Pabalinas:

Thank you for your assistance these past few weeks with regard to the Draft Environmental Impact Report (DEIR) for Central El Dorado Hills Specific Plan;

"The proposed project includes two planning areas (Figure 2 2). The proposed Serrano Westside planning area is east of the El Dorado Hills Boulevard and Serrano Parkway intersection. The proposed Pedregal planning area is east of El Dorado Hills Boulevard between Wilson Boulevard and Olson Lane, adjacent to the Ridgeview subdivision."

Project Area Topography is discussed starting on page 3.5-8 with specific details outlined in Table 3.5-1. Project Area Slope Information. Youndahl Letter Reports 2012 A & B, Project No. E90099.005 and Project No. E12098.000, for this project, indicate there are no grading plans done as of the date of the letter Reports.

As I read the DEIR and other supporting documents I am unable to find a copy of the Youngdahl report referenced as "Youngdahl 2012." I would like have a copy of the this report and copies of any other reports that were done by Youndahl or other agencies with respect to the geology, minerals, including naturally occurring asbestos and the grading to be done as outlined in the DEIR. I-20-1

Sincerely yours,

Merrilee Posner

Jeffrey Posner

CC: Dave Sedarquist, C.E.G.,C.H.G., Sr. Engineering Geologist,Youndahl Consulting Group, Inc.

Response to I-20, Merrilee Posner, 1/5/2016

I-20-1: The commenter requests a copy of the report referenced in the Draft EIR as "Youngdahl 2012." The County provided Ms. Posner with this study in January 2016. This report was also publicly available at the County when the Draft EIR was released to the public on November 20, 2015.

Merrilee and Jeffrey Posner

4331 Cordero Drive
El Dorado Hills, CA 95762
916-715-4518
maposner@yahoo.com

16 JAN -6 AM 11:57
RECEIVED
PLANNING DEPARTMENT

January 5, 2016

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fair Lane Court
Placerville, CA 95667

Dear Mr. Pabalinas:

I received a letter from Mr. Gene Whitehouse concerning the new AB52 law which requires tribes notify any agencies that may be completing CEQA review projects that may impact cultural concerns. The letter they sent was meant to satisfy the tribes request to consult under AB52.

According to Mr. Whitehouse ..."regarding the Central Plan, we are very familiar with this project. UAIC has deferred consultation to Shingle Springs Rancheria, who is the most closely culturally affiliated tribe in the area. I have CC'd Kara Perry and Daniel Fonseca who represent SSR. If you have concerns I am sure they can help you." The email addresses of Ms. Perry and Mr. Fonseca are found within the copy of the email stream enclosed. Email CC to Mr. Whitehouse, Ms. Perry and Mr. Fonseca. I-21-1

It appears to me that you will need this document and an email string that covers our communications regarding this issue. I am also copying Ms. Shahira Ashkar, ICF International, Project Manager, EIR preparation, technical oversight, Cultural Resources, Alternatives Overview and Other CEQA Considerations.

Please do not hesitate to contact me if you have any questions. Thank you for your assistance.

Respectfully,

Merrilee Posner

CC: Mr. Whitehouse, Ms. Perry, Mr. Fonseca, and Ms. Shahira Ashkar, Manager, I.C.F. International

LETTER I-21

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Danny Rey, Secretary | Brenda Adams, Treasurer | Calvin Moman, Council Member

November 23, 2015

El Dorado Hills Services District Representative
1021 Harvard Way
El Dorado Hills, CA 95630

RE: AB 52 Notification Request, California Environmental Quality Act Public Resources Code section 21080.3, subd. (b) Request for Formal Notification of Proposed Projects within the United Auburn Indian Community (UAIC) of the Auburn Rancheria's Geographic Area of Traditional and Cultural Affiliation

Dear El Dorado Hills Services District Representative:

In accordance with Public Resources Code Section 21080.3.1, subd. (b), The United Auburn Indian Community (UAIC) of the Auburn Rancheria, which is traditionally and culturally affiliated with a geographic area within your agency's geographic area of jurisdiction, requests formal notice of and information on proposed projects for which your agency will serve as a lead agency under the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq.

Enclosed with this letter is a copy of a map that depicts the ancestral territory that the UAIC is traditionally and culturally affiliated with. UAIC's traditionally and culturally affiliated geographic area is supported by, and has been developed through, multiple lines of evidence including oral tradition, history, ethnography, geography, linguistic, kinship, biology, archaeology, anthropology, folklore, other relevant information and expert opinion, and Congressional action through the Auburn Indian Restoration Act of 1994 (H.R. 4228 [103rd]).

Pursuant to Public Resources Code section 21080.3.1, subd. (b), and until further notice, we hereby designate the following person as the tribe's lead contact person for purposes of receiving notices of proposed projects from your agency:

Lead Contact:
Gene Whitehouse,
Chairman
10720 Indian Hill Road
Auburn, CA 95603
916-883-2320

Copies to:
Jason Camp
Tribal Historic Preservation Officer
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2320
jcamp@auburnrancheria.com

Marcos Guerrero
Cultural Resources Manager
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2364
mguerrero@auburnrancheria.com

We request that all notices be sent via certified U.S. Mail with return receipt and that your notices specify a lead contact person for your agency. Following receipt and review of the information your agency provides, within the 30-day period outlined in Public Resources Code section 21080.3.1, subd. (d), the UAIC may request consultation, as defined by Public Resources Code section 21080.3.1, subd. (b), pursuant to Public Resources Code section 21080.3.2 to discuss issues including the type of environmental review to be conducted, project alternatives, significant effects of the project and mitigation measures for any project impacts (direct, indirect and cumulative) a specific project may cause to tribal cultural resources.

For your information, UAIC's policy is to be present during project cultural resource surveys, including initial pedestrian surveys, to identify tribal cultural resources. UAIC's policy is also to be provided all existing cultural resource assessments, including the request for and results of any records search that may have been conducted prior to the initial survey or consultation meeting. Finally, UAIC's general policy is preservation in place and avoidance of tribal cultural resources, and any subsurface testing or data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.

We recommend that your agency retain this correspondence in your permanent files. If you have any questions or need additional information, please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com.

Sincerely,

Gene Whitehouse,
Chairman

CC: Jason Camp, THPO
Marcos Guerrero, CRM
Cynthia Gomez, NAHC

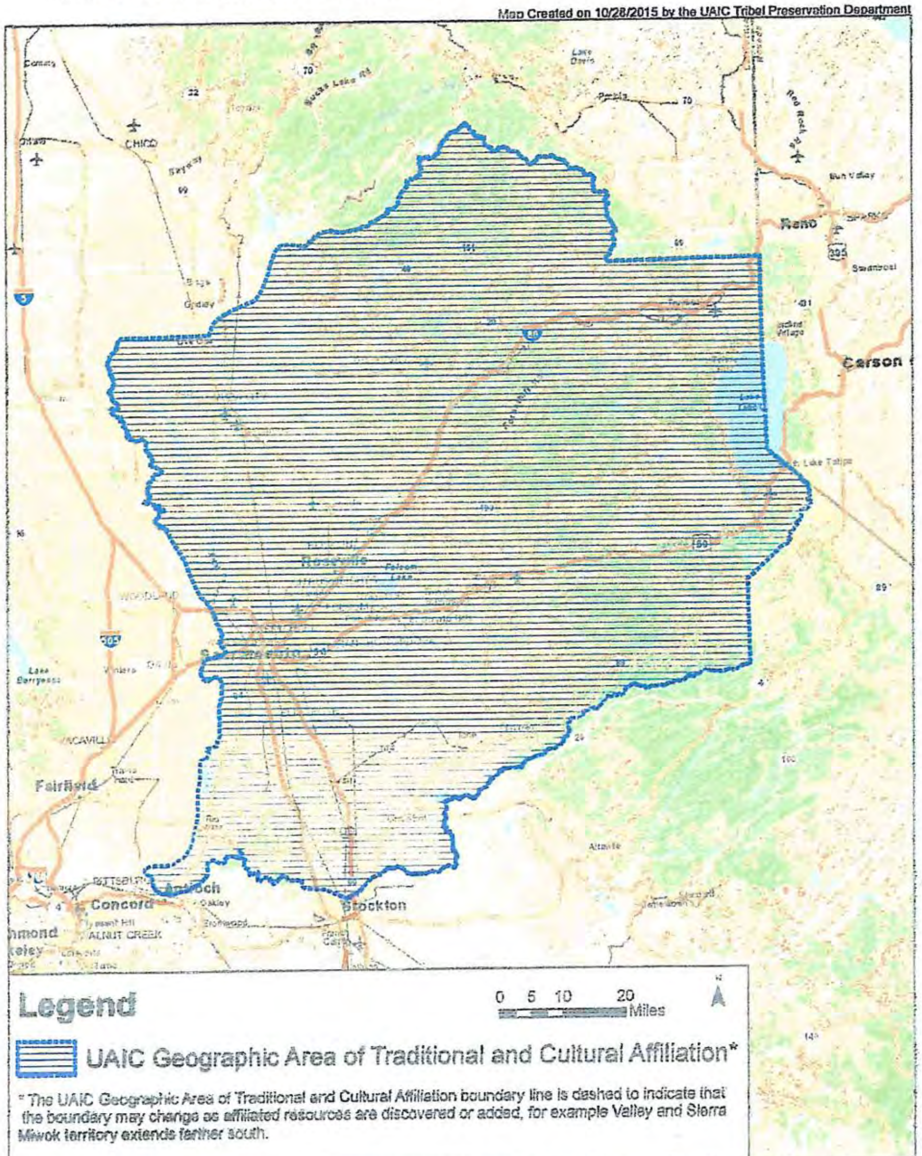
LETTER I-21

UAIC Geographic Area of Traditional and Cultural Affiliation

(for the purposes of California AB 52)

This area includes all of Amador, El Dorado, Nevada, Placer, Sacramento, Sutter and Yuba counties as well as portions of Butte, Plumas, San Joaquin, Sierra, Solano, and Yolo counties.

Map Created on 10/28/2015 by the UAIC Tribal Preservation Department



This map is no substitute for direct consultation with UAIC prior to considering any proposed project or commencing any archaeological activities in or around sensitive areas.

Note: While we make every effort to identify Tribal Cultural Resources that exist within the UAIC Geographic Area of Traditional and Cultural Affiliation, it is highly probable that there are additional, older sites that we have not yet identified due to restricted access or other reasons or that agricultural or construction activities have distributed burials and cultural materials beyond the previously known boundaries of these sites. Even if these materials are in a disturbed condition, they still retain cultural value to UAIC and should be respected and protected. Because of this, thorough survey with a qualified Native American Monitor to confirm site boundaries and search for unknown sites is critical. This survey should be conducted after consultation with the Tribe and prior to the final determination of the type of environmental document to be used.

1.

Merrilee Posner
To Jason Camp Marcos Guerro
Jan 2 at 8:51 AM
Good morning Mr. Whitehouse, Mr. Camp and Mr. Guerro:

I was given a copy of the letter Mr. Whitehouse sent to El Dorado Hills Service District Representative, attached copy within this email. I am concerned that your communication is not reaching the intended audience. Please help me help you. My number is 916-715-4518, I am simply a concerned resident who is not supporting this development.

There is a pending development for Central El Dorado Hills, Westside Planning Area and Pedregal, see attached map. It appears to me to impact your community lands. My concern is that reports for the project indicate blasting and other deep earth work moving may be necessary, quoted below. This is moving quickly and appears to have the support of the local government agencies. The Draft Environmental Impact Report will close effective February 19, 2016.

Per Youndahl and Draft Environmental Impact Report what is expected in the way of demolition:

According to Youngdahl Consulting Group (2012a, 2012b), the underlying bedrock materials can likely be excavated to depths of several feet using dozers equipped with rippers. Youngdahl Consulting Group expects that the upper, weathered portion of the rock could require use of a Caterpillar D9 equipped with a single or multiple shank rippers, or similar equipment. Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. Youngdahl Consulting Group anticipates that a ripper equipped D9 can penetrate at least as deep as the test pits at most locations with moderate effort. However, blasting cannot be ruled out in areas of resistant rock. Blasting could result in fracturing and/or erosion, Which could result in unstable geologic or soil conditions on the project site or adjacent properties if not properly managed.

The lead agency per the documents is El Dorado County Planning Department, Mel Pabalinas, Senior Planner. His contact information is:

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Gentlemen, thank you for your assistance in this matter.
Most respectfully,
Merrilee Posner

2.

Attachments 2
View all
Download all

Download
Whitehouse SKM_C364e15121807140-1 .pdf
Download
CEDHSP Aerial Photo .pdf

Reply, Reply All or Forward I More
Merrilee Posner
To Kevin Loewen Rommel Pabalinas
Jan 2 at 9:01 AM
Good morning Kevin,

Just wanted to copy you in this loop as I reached out twice by phone to Mr. Whitehouse, once in late December and again today. I also left phone messages with Mr. Camp and Mr. Guerrero today.

In addition to sending this email I am copying them on the email, sending it registered, return receipt requested, mail to their offices directly, to the attention of each of them. That is the extent of my work with regard to this.

Also, forwarding it this day to Mel Pabalinas Sr. Planner and lead agent for the Central El Dorado Hills Specific Plan concerning Westside Planning Areas and Pedregal.

Respectfully,
Merrilee Posner

On Saturday, January 2, 2016 8:51 AM, Merrilee Posner wrote:

Good morning Mr. Whitehouse, Mr. Camp and Mr. Guerro:

I was given a copy of the letter Mr. Whitehouse sent to El Dorado Hills Service District Representative, attached copy within this email. I am concerned that your communication is not reaching the intended audience. Please help me help you. My number is 916-715-4518, I am simply a concerned resident who is not supporting this development.

There is a pending development for Central El Dorado Hills, Westside Planning Area and Pedregal, see attached map. It appears to me to impact your community lands. My concern is that reports for the project indicate blasting and other deep earth work moving may be necessary, quoted below. This is moving quickly and appears to have the support of the local government agencies. The Draft Environmental Impact Report will close effective February 19, 2016.

3.

Per Youndahl and Draft Environmental Impact Report what is expected in the way of demolition:

According to Youngdahl Consulting Group (2012a, 2012b), the underlying bedrock materials can likely be excavated to depths of several feet using dozers equipped with rippers. Youngdahl Consulting Group expects that the upper, weathered portion of the rock could require use of a Caterpillar D9 equipped with a single or multiple shank rippers, or similar equipment. Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. Youngdahl Consulting Group anticipates that a ripper equipped D9 can penetrate at least as deep as the test pits at most locations with moderate effort. However, blasting cannot be ruled out in areas of resistant rock. Blasting could result in fracturing and/or erosion, Which could result in unstable geologic or soil conditions on the project site or adjacent properties if not properly managed.

The lead agency per the documents is El Dorado County Planning Department, Mel Pabalinas, Senior Planner. His contact information is:

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Gentlemen, thank you for your assistance in this matter.

Most respectfully,
Merrilee Posner

2 Attachments
View all
Download all

Download
Whitehouse SKM_C364e15121807140-1 .pdf
Download
CEDHSP Aerial Photo .pdf

4.

Reply, Reply All or Forward I More
Marcos Guerrero
To Merrilee Posner Jason Camp

CC KPerry@ssband.org dfonseca@ssband.org
Today at 11:04 AM

Ms. Posner,

It appears you are not familiar with the new AB52 law which requires tribes notify any agencies that may be completing CEQA review projects that may impact cultural concerns. Please pass this along to your friend. The letter we sent was meant to satisfy the tribes request to consult under AB52.

Regarding the Central Plan, we are very familiar with this project. UAIC has deferred consultation to Shingle Springs Rancheria, who is the most closely culturally affiliated tribe in the area. I have CC'd Kara Perry and Daniel Fonseca who represent SSR. If you have concerns I am sure they can help you. Thanks,
mg

From: Merrilee Posner
Sent: Saturday, January 2, 2016 8:52 AM
To: Jason Camp; Marcos Guerrero
Subject: Re: Letter from Mr. Whitehouse, attached, notification AB. 52, Merrilee Posner follow up.

Good morning Mr. Whitehouse, Mr. Camp and Mr. Guerro:

I was given a copy of the letter Mr. Whitehouse sent to El Dorado Hills Service District Representative, attached copy within this email. I am concerned that your communication is not reaching the intended audience. Please help me help you. My number is 916-715-4518, I am simply a concerned resident who is not supporting this development.

There is a pending development for Central El Dorado Hills, Westside Planning Area and Pedregal, see attached map. It appears to me to impact your community lands. My concern is that reports for the project indicate blasting and other deep earth work moving may be necessary, quoted below. This is moving quickly and appears to have the support of the local government agencies. The Draft Environmental Impact Report will close effective February 19, 2016.

Per Youndahl and Draft Environmental Impact Report what is expected in the way of demolition:

5.

According to Youngdahl Consulting Group (2012a, 2012b), the underlying bedrock materials can likely be excavated to depths of several feet using dozers equipped with rippers. Youngdahl Consulting Group expects that the upper, weathered portion of the rock could require use of a Caterpillar D9 equipped with a single or multiple shank rippers, or similar equipment. Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. Youngdahl Consulting Group anticipates that a ripper equipped D9 can penetrate at least as deep as the test pits at most locations with moderate effort. However, blasting cannot be ruled out in areas of resistant rock. Blasting could result in fracturing and/or erosion, Which could result in unstable geologic or soil conditions on the project site or adjacent properties if not properly managed.

The lead agency per the documents is El Dorado County Planning Department, Mel Pabalinas, Senior Planner. His contact information is:

Rommel (Mel) Pabalinas, Senior Planner
El Dorado County Community Development Agency-
Development Services Division-Planning Services
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Gentlemen, thank you for your assistance in this matter.

Most respectfully,

Merrilee Posner

Nothing in this e-mail is intended to constitute an electronic signature for purposes of the Electronic Signatures in Global and National Commerce Act (E-Sign Act), 15, U.S.C. §§ 7001 to 7006 or the Uniform Electronic Transactions Act of any state or the federal government unless a specific statement to the contrary is included in this e-mail.

Reply, Reply All or Forward I More
Merrilee Posner
To Marcos Guerrero
CC KPerry@ssband.org dfonseca@ssband.org
Today at 4:59 PM

CEDHSP-DEIR-Chapters-Nov-2015 (1).pdf
Merrilee Posner shared from Dropbox
View on www.dropbox.com

Preview by Yahoo

6.

Hello Mr. Guerrero:

Thank you very much for your response. Kind of you to say it appears I am unfamiliar with this. Actually I know nothing about this. If it occurs to you that I need to so something else to be certain this moves toward the right people, please let me know. The communication was just handed off to me and I accepted it.

Today I sent you, Mr. Camp and Mr. Whitehouse a hard copy of the email I sent to you all via certified mail with a return receipt requested. I copied Mr. Pabalinas on that email too. I will print out Mr. Whitehouse's letter and send that to Mr. Pabalinas, certified mail, return receipt requested also.

I am attaching the DEIR to this email. The Appendices file size is large and I am having trouble attaching it. Will send a follow-up email with that document. They named this latest version of the proposal Central El Dorado Hills Specific Plan. Nothing like more confusion to enhance process I guess.

Best regards,
Merrilee Posner

On Monday, January 4, 2016 11:04 AM, Marcos Guerrero wrote:

Ms. Posner,
It appears you are not familiar with the new AB52 law which requires tribes notify any agencies that may be completing CEQA review projects that may impact cultural concerns. Please pass this along to your friend. The letter we sent was meant to satisfy the tribes request to consult under AB52.

Regarding the Central Plan, we are very familiar with this project. UAIC has deferred consultation to Shingle Springs Rancheria, who is the most closely culturally affiliated tribe in the area. I have CC'd Kara Perry and Daniel Fonseca who represent SSR. If you have concerns I am sure they can help you. Thanks,
mg

From: Merrilee Posner
Sent: Saturday, January 2, 2016 8:52 AM
To: Jason Camp; Marcos Guerrero
Subject: Re: Letter from Mr. Whitehouse, attached, notification AB. 52, Merrilee Posner follow up.

Good morning Mr. Whitehouse, Mr. Camp and Mr. Guerro:

I was given a copy of the letter Mr. Whitehouse sent to El Dorado Hills Service District Representative, attached copy within this email. I am concerned that your communication is not reaching the intended audience. Please help me help you. My number is 916-715-4518, I am simply a concerned resident who is not supporting this development.

7.

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Per Youndahl and Draft Enviromental Impact Report what is expected in the way of demolition:

According to Youngdahl Consulting Group (2012a, 2012b), the underlying bedrock materials can likely be excavated to depths of several feet using dozers equipped with rippers. Youngdahl Consulting Group expects that the upper, weathered portion of the rock could require use of a Caterpillar D9 equipped with a single or multiple shank rippers, or similar equipment. Where hard rock cuts in fractured rock are proposed, the orientation and direction of ripping will likely play a large role in the rippability of the material. Youngdahl Consulting Group anticipates that a ripper equipped D9 can penetrate at least as deep as the test pits at most locations with moderate effort. However, blasting cannot be ruled out in areas of resistant rock. Blasting could result in fracturing and/or erosion, Which could result in unstable geologic or soil conditions on the project site or adjacent properties if not properly managed.

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Rommel (Mel) Pabalinas, Senior Planner
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Development Services Division-Planning Services
Planning Division
2850 Fairlane Court
Placerville, CA 95667
Main Line 530-621-5355
Direct line 530-621-5363
Fax 530-642-0508

Gentlemen, thank you for your assistance in this matter.

Most respectfully,
Merrilee Posner

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8.

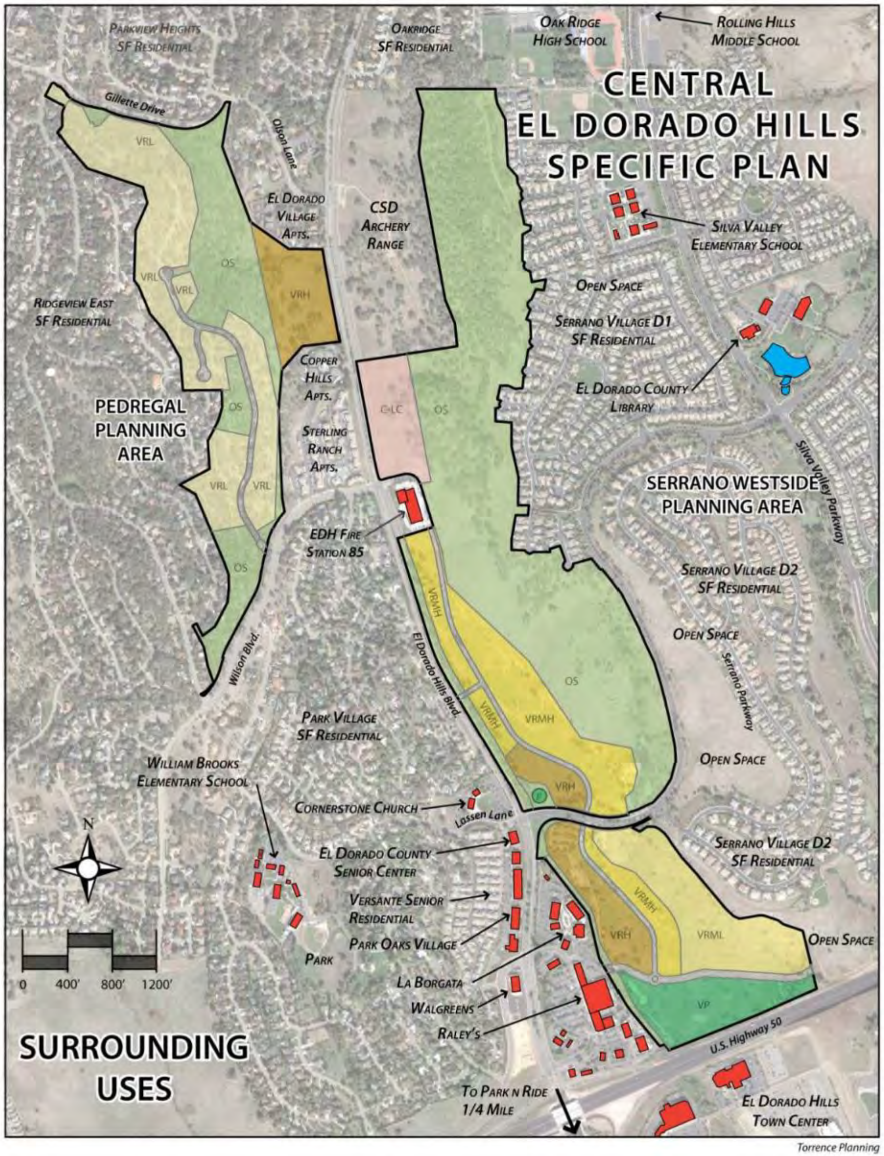
Reply, Reply All or Forward I More
Merrilee Posner
To Marcos Guerrero
CC KPerry@ssband.org dfonseca@ssband.org
Today at 5:50 PM

Dear Mr. Guerrero: The file for the Draft Environmental Report Appendices for Central El Dorado Hills Specific Plan, part of the communication email dated 1/4/16 above is being sent to you in a link from Dropbox. I have to download it for them to share as the size is beyond my computer and server. Thanks for your patience. I want to be certain I respect you and handle this properly, if you have any questions please call me, 916-715-4518. Thank you.

Best,
Merrilee Posner

Reply, Reply All or Forward I More

Central El Dorado Hills Specific Plan
Project Site Aerial Photo and Surrounding Uses (DRAFT, November 2013)



Response to I-21, Merrilee Posner, 1/5/2016

I-21-1: The commenter provides the County with a copy of the Assembly Bill (AB) 52 Notification provided by the United Auburn Indian Community (UAIC) to the El Dorado Hills Service District, as well as a series of e-mails between the commenter and the UAIC. The e-mails pertain to AB 52 and impacts on bedrock and NOA. The commenter's intent appears to be to provide the County with the contact information for the Shingle Springs Rancheria. As stated on page 3.4-5, under *Assembly Bill 52*, AB 52 applies to project that have an NOP filed on or after July 1, 2015. The NOP for this project was filed on February 20, 2013, and therefore AB 52 does not apply to this project. However, consultation under Senate Bill 18 was conducted and documentation was provided in Appendix G of the Draft EIR. NOA is a site-specific issue evaluated in the Draft EIR, there is no specific comment associated with this letter concerning environmental impacts. No further response is necessary.

From: "Bruce Quinn" <bquinnster@sbcglobal.net>
Date: Feb 12, 2016 7:18 AM
Subject: [cedhsp] Attn: Rommel (Mel) Pabalinas_Comments to EIR for EDH Specific Plan (SC#2013022044)
To: <cedhsp@edcgov.us>
Cc: "Bruce Quinn" <bquinnster@sbcglobal.net>

Mr. Pabalinas:

I have attached my comments/questions for the subject EIR for your review. Please confirm receipt of this email and attachments.

Best Regards,

Bruce Quinn

bquinnster@sbcglobal.net

650-740-6843

LETTER I-22

January 18, 2016

County of El Dorado
Community Development Agency
2850 Fairlane Court
Placerville, CA 95667

Subject: Central El Dorado Hills Specific Plan (State Clearinghouse No 2013022044) EIR

Attn: Rommel (Mel) Pabalinas;

I have some serious concerns and questions in regard to the accuracy of the Environmental Impact Report (EIR) and the effect it will have on the quality of life for those of us in El Dorado Hills and the county. I-22-1

1.0 Traffic Impact Analysis (TIA):

The (EIR) takes a micro view of the existing state of traffic flow, attempts to project the incremental impact of the Central El Dorado Hills Specific plan, and then discusses a host of general road improvements to be completed by 2035. What has not been addressed in the EIR are macro effects of the existing permitted shovel ready building projects (see attached New Development report), the other specific plans (e.g. Marble Valley, Lime Rock, etc.), and the major Folsom development south of Highway 50; all of which will have a material effect on our quality of life. I-22-2

The residents of Serrano experience first-hand the bottlenecks getting to Highway 50 during commute periods. Putting 1000 housing units at the base of the hill is only going to make a difficult situation intolerable. This is one of the reasons why 91% of the voters voted against the rezone of the golf course property in the recent advisory election.

Questions:

1) Has a macro time phased traffic impact analysis been performed for El Dorado Hills and County (through 2035) and Highway 50 which analyzes where the bottle necks will develop, how and when they will be addressed, the funding status for infrastructure, and who specifically will be asked to pay for these improvements? Can this be provided? I-22-2 cont.
2) Putting a road through the Raley's shopping center complex is questionable. With the expected bottlenecks getting to Highway 50 drivers will begin to cut through the parking lot to Saratoga Drive. Pedestrians and shoppers will be put at risk. How do we prevent impatient drivers from cutting through the parking lot and protect the safety of our residents? I-22-3
3) Will the taxpayers be asked to foot the bill for any new traffic infrastructure required to support this EIR? I-22-4

2.0 Water:

In recent history, California has experienced long term droughts going well beyond this four-year drought. Since 1970, the population in California has more than doubled, little additional storage capacity has been added, farming has expanded, and storage releases are now mandated to protect the fisheries. Another year of drought would have been disastrous for California. At the local level residents of El Dorado County saw Folsom lake drop to record lows and water cuts of 28% were mandated. Clearly the planners have underestimated or ignored the effects of long term drought on the existing housing in the county. I-22-5

The water availability projections cited in the EIR do not address long term drought scenarios for the existing customer base. Additional development will further burden the infrastructure requiring an increase in storage capacity to address drought periods.

Questions:

1) What future drought contingency steps are being taken to provide increased water capacity for the existing housing base?

2) What steps are being taken to support the extra capacity needed for projected growth, how is it time phased with the growth, and who will specifically be asked to pay for the cost of this new infrastructure? I-22-5 cont.
3) Has a worst case study been performed for a long term drought of 10-20 years? Can this analysis be provided?

3.0 Educational Facilities:

Contrary to the opinion of the EIR, the addition of 1000 units will significantly increase the enrollment at the local EDH schools. These 1000 units are roughly 20% - 25% of the current number of homes in Serrano. The residents of Serrano have paid over ~$56 Million in Mello Roos since 1995 to fund school infrastructure against a bond authorization of $78 Million. Historically the local districts thought the Mello Roos special tax would go on perpetually but through grass roots political action they are recognizing that an end date is inevitable and needs to be negotiated. How soon it happens is TBD but it can no longer be considered a reliable source of long term infrastructure funding.

The EIR executive summary (page 21) states that the school districts will not require any additional facilities beyond what is currently planned. If the EIR is wrong, the developer, the school districts, and the county will decide how to finance the shortfall without giving the taxpayers a direct voice. The EIR further assumes that the rezoned land will be automatically annexed to the CFD requiring the existing homeowners to subsidize the incremental costs of providing any additional infrastructure. Rezoning the golf course from open space to high density housing provides significant benefit to the few (the developer and merchants) without providing any discernable benefit to the existing homeowners. I-22-6

Questions:

1) Currently a large percentage of the EDH high school kids south of 50 are bussed to a high school ~10 miles away due to Oak Ridge being close to its maximum. I would like to see disclosure on where the new students under this EIR would go to school for all grades to include any new facilities that will need to be built to support the rezone.

2) The developer gains significantly in the rezone of the golf course. I would like to know what the existing homeowners gain in return for financing additional school infrastructure for rezoned open space.

3) Is there any reason why we can't give the existing homeowners in the CFD a direct vote on whether to annex the area in question or addressing any incremental school liabilities associated with the rezone? I-22-6 cont.

3) Are the existing Serrano homeowners going to be expected to pay for incremental infrastructure required for the other new developments such as Marble Valley? I-22-7

Best Regards,

Bruce Quinn

1327 Terracina Drive

El Dorado Hills, CA 95762

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

Project	Location	Type	Size	Process	Const. Date	Status
Aerometals Expansion SUP 98-0017-R-2	Sandstone Dr APN 117-081-01	Commercial	38,350 square foot expansion, office, warehouse, aircraft hanger 5.613 acres **-OR-** New Building 58,600 square feet	Grading Plans arrived 6/23/15	Unknown	Co. Planning Process
Bass Lake Golf Course (Rescue)	Starbuck Road APN 102-210-08	Residential	33 Residential Homes	FIL	Unknown	Co. Planning Process
Bass Lake K-8 School	Bass Lake	K-8 School	20 acres	Preliminary Design	Unknown	Preliminary Design
Bass Lake North PD14-0010/Rezone Z14-0008/TM14-1522	Sienna Ridge APN's 115-400-06, 115-400-07, 115-400-08	Residential	90 lots, 38.74 acres	Planning. TAC 2/2/15	Unknown	Co. Planning Process
Bell Ranch	Morrison Rd/Holy Trinity Church Area	Residential	113 lots on 113 acres	Planning/Revised FD Comments 5/31/15	TAC June 2015	Co. Planning Process
Bell Woods	Adjacent to Hollow Oak Subdivision	Residential	54 lots	Planning TAC 12/29/14 for revision to map (TM approved 5/24/05)	TAC February 2015	Co. Planning Process
~~Black Stone Villas Lot 1 (Lot V) TM 06-1430~~	~~Latrobe/Royal Oaks APN 118-140-01~~	~~Multi-Family~~	~~19 bldgs,112 condos 12.8 acres~~	~~Planning Approved~~	~~Unknown~~	~~Co. Planning Process~~
Blackstone W TM 12-1506	SE Corner Latrobe and Clubview APN 118-140-65	Residential	73 homes 9.66 acres	Construction Trailer SUP approved 4/7/15	Started 2015	Planning Approved 2.27.14
Blackstone X TM 12-1508-F	NE Corner Latrobe and Clubview APN 118-140-63	Residential	61 Lots 7.85 acres	Final Map TAC 2/23/15	Started 2015	Model Plans Approved 3.23.15
Blackstone V (Lot 1)	Latrobe/Royal Oaks	Residential	70 lots, 10.08 acres	Planning Approved	Unknown	Planning Approved

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT | Current

TM 12-1507/ Z12-0006/ A12-0002	Drive APN 118-140-61			5/8/14		5/8/14
Carson Creek Corporate Center Z06-0023/ PD06-0018/ P06-0020	4671 Golden Foothill Parkway APN 117-010-06, 117-210-28, 30, 33, 34, 41, 43	Commercial	152,603, 11 bldgs 86.7 Acres	In process	2011-12	Grading complete
Carson Creek Fitness (Heritage) S14-0003	Carson Crossing Drive APN 117-010-07 Carson Creek Unit 1	Commercial, Recreational and Fitness Center	5,000 square foot fitness center, pool, recreation. 4.9 acres	Improvement Plans 2/9/15. Building Plans in. SUP approved 3.12.15	Spring 2015	Building Process/Mylar signed 5/1/15
Carson Creek Unit 1	Carson Crossing	Residential/55 and older	285 Homes	Final Map Meeting 2/23/15	3 months	Final Map Meeting 2/23/15
Carson Creek Unit 2	Carson Crossing	Residential/55 and older	634 homes and two multi-family dwellings	Improvement Plans approved 2/12/15. New TM proposed 5.1.15	Unknown	Improvement Plans under review 2/12/15
Carson Creek Unit 3	Carson Crossing	Residential/55 and older	321 homes on 19.37 acres	Planning/TM/Revised Comments 5/27/15	Unknown	Co. Planning
Central El Dorado Hills Specific Plan	Pedegral, Station 85 South to Highway 50	Residential Westside Plan Area 155 acres Pedregal Plan Area 102 acres	1,028 Residential Lots 50,000 Commercial Sq. Ft.	Planning	Unknown	Specific Plan Draft 2
D'Artagnan Micro Winery SUP	Rocky Springs Ct	Commercial	4 acres grapes. 1,800 square foot bldg.	Completed 2/2015	Completed	Completed 2/2015
4408 Deer Valley Rd. (RES)	4408 Deer Valley Rd.	Residential Barn/Shop	1920 square feet	Building Permit	Unknown	Co. Planning Process

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current

Diamonte Estates TM 06-1421	Malcom Dixon Rd APN 126-100-24	Residential	19 parcels 113.11 ACRES	Planning	Unknown	Co. Planning Process
Dieu Nhan Buddhist Meditation Center (RES) SUP 13-0007	Duncan Hill Rd.	Church/Residential	6807 square foot meditation center, 2 Resident nun buildings, monk cottage, retreat cottage, guest cottage 10.05 acres	Planning / SUP	Unknown	Co. Planning Process/ FIL – water supply system problems.
Dixon Ranch A11-0006/ Z11-0008/ PD11-0006	Green Valley Rd APN 126-020-01, 02, 03, 04, & 126-150-23	Residential	605 Total lots. 160 age restricted. 280 acres total	EIR – Meeting on EIR at Planning 2/25/15	Unknown	Co. Planning Process
Eden Vale Inn (RES) Sup 07-0027-R	1780 Springvale Road APN 102-140-88	Commercial/Hotel	13 Guest rooms in 2 buildings, Yurts, Caretaker homes 12,000 sq. ft. total	Revision to SUP 07-0027-R	Unknown	Unknown
El Dorado Hills Apartments A14-0001/ Z14-0001/ SP 86-0002-R/ PD94-0004-R-2	Town Center (empty field) APN 121-290-60, 61, 62	Residential/Parking Garage	5 story parking garage 4 story apartment 250 units, 4.57 acres	Approved by Board of Supervisors 11/4/14 (lawsuit in progress)	Unknown	Co. Planning Process
El Dorado Hills Body Shop PD 13-0005	Town Center/Rossmore Lane APN 121-280-22	Commercial	1 Bldg – Approx. 14,904 square feet	Improvement Plans, Building Plans approved	2015	Under Construction
El Dorado Hills Dog Park S03-0005-R-3	At CSD Park APN 125-110-09	Dog Park	39.5 acres	Planning – comment letter submitted 3/5/14	Unknown	Planning
El Dorado Hills Memory Care/Grove at Francisco	Francisco/Green Valley APN 124-140-33	Memory Care	40,280 square feet, 64 beds 6.85 acres	Comments Submitted 6/15. TAC July 13th	Unknown	Co. Planning Process
El Dorado Hills Retirement SP13-0001/ PD95-0002-R/	Town Center West APN 117-160-38	Retirement Residence	3 stories 114,000 sq. ft.	Building Plans approved	2015	Construction 2015

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

PD95-0007-R/ P12-0004/ S13-0017			130 units 20.3 acres			
EDH 52 PA 14-0009	Silva Valley/50 APN 122-720-09	Commercial	51.45 acres, 350,000 square feet commercial, including 3 major buildings, gas stations, fast food, etc.	Planning	Unknown	Co. Planning Process
El Dorado Springs 23 TM 14-1514	White Rock Across 4 Seasons APN 117-010-05	Residential	49 lots on 21.65 acres	Approved by Board of Supervisors 12/2014	Unknown	Co. Planning Process
EID – ATT Cell Tower	Cabrito Dr.	Cell Tower	65' Mono Pine	Planning	Unknown	Co. Planning Process
Grove at Francisco	Francisco/ Green Valley APN 124-140-33	Memory Care	64 beds, 6.8 acres	TAC 7/13/15	Unknown	Co. Planning Process
Golden State Flow Measurement	Golden Foothill Pkwy	Commercial	10,920	Plan Review Complete	2011-12	Construction Pending
Granade Subdivision (LTB) PA 14-0008	Brandon/S. Shingle APN 087-310-64	Residential	10 lots on 133 acres	Conceptual Review	Unknown	Co. Planning
Green Valley Cemetery/Mortuary (RES) S94-0002-R/ Z14-0011/ PD14-0009	3004 Alexandrite Dr APN 102-030-28	Commercial Expansion	Addition of 3,604 square feet plus 1,712 covered patio, 2 underground LPG 8.6 acres	Planning 5/14/15. Continued off calendar	Unknown	Co. Planning
Green Valley Convenience Center S12-0015/ PD 12-003	SE Corner Sophia/Green Valley Rd. APN 124-301-46	Commercial	10,925 sq. ft. including - fuel Station, convenience store, fast food, car wash 2.12 acres	Planning/ Full EIR after lawsuit – Jan 2015 Public Meeting	Unknown	Co. Planning - Comments
Hansen Parcel Split (Latrobe) PA 14-0005	6740 South Shingle Rd APN 087-021-05	Residential Parcel Split 4x4	4 lots 45.69 Acres	Conceptual Review	Unknown	Co. Planning Comments

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current

Hawk View TM 00-1371-R	Bass Lake Road/Hawk View APN 115-040-16	Residential	114 lots 38.47 acres	Planning TAC 12/29/14 for revision to map (TM approved 5/24/05)	Unknown PFFP issues	Co. Planning Process FIL updated 5/5/15
La Cresta Woods PA 13-0009	Wilson/Lago Vista APN 120-070-01	Residential	24 lots 7.5 Acres	FIL	Unknown	Planning
Lakehills Verizon Cell Tower	Lakehills Church	Cell Tower	Cell Tower	Construction	Unknown	Construction
Lakehills ATT Cell Tower	Lakehills Church	Cell Tower	Cell Tower	Planning	Unknown	Planning Comments
Lime Rock Valley	South East Marble Valley Area	Residential	740 acres 800 Res. Lots	Planning	Unknown	Specific Plan Draft 2
Malcom Dixon – Diamonte TM 05-1401-R	Malcom Dixon APN 126-490-01, 02	Residential	8 Lots 40.654 acres	Planning	Unknown	Co. Planning Process
Marble Valley SP12-0003 / DA 14-0002	South Bass Lake	Residential/Commercial	2341 acres 3236 Res. Lots, 475,000 sq. ft. commercial, 87 acres public facilities	Planning	Unknown	Specific Plan Draft 2
McCann Parcel Split (RES) P98-0011	2621 Crowdis Rd. APN 069-110-091	Residential Parcel split	3 Parcel Split	Improvement Plans Failed – Revisions needed 6/15/15	Unknown	Co. Planning Process
Miginella TM 07-1458-R/ BLA13-0015	Salmon Falls/Kaila Way APN 110-020-45	Residential	8 lots 26 acres	Planning	Unknown	Planning Approved 2.27.14
No Name = APN 115-040-16	North of Hawk View off Bass Lake	Residential Lots	114 lots	FIL Letter	Unknown	Planning
Oak Trails (Rescue) P14-0001	2660 Deer Valley Rd. APN 102-200-56	Residential	Parcel Split – 4 lots 42.26 Acres	Approved improvement plans 7/7/15	Unknown	Co. Planning Process
Porter	Golden Foothill Pkwy	Commercial	6,075	One building complete. 2nd building unknown	2011-12	Under construction
Promontory Lot D1	Sophia/Alexandria	Residential	63 Lots	Approved	2014-	Under construction

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current

A13-0004/ Z13-0004/ TM13-1512	APN 124-070-62		11.01 acres		2015	
Promontory Lot H Unit 1 & 2 TM06-1423	Beatty/Alexandria APN 124-390-03	Residential	64 lots 9 acres	Final Map 11/5/13	2015	Under construction
Promontory Village 8 TM13-1513	Via Baragio/Via Trevisio APN 124-400-01	Residential Lots	63 lots 63.24 acres	Planning/ Improvement Plans 5/7/15 (revisions)	2015	Grading under construction
Quail Commercial Center PD14-0007/ P14-0005/ Z14-0010	Sunglow Ct at Suncast APN 117-060-35	Commercial – existing – parcel split only	Parcel Split – 7 individual parcels 3.101 acres	TAC 12/15/14 Planning approved 3.12.15	Unknown	Co. Planning Process
Ridgeview Village Unit 9 TM08-1477	Beatty near Powers APN 120-010-01	Residential	49 lots 22.4 acres	Planning	Unknown	Planning Commission
Ridgeview West Unit 4 APN 120-700-07 (Trevisio II)	Via Barlogio at Via Trevisio	Residential Lots	20 lots	Final Map meeting 1/2015	Unknown	Planning
Salmon Falls Road Verizon	Arroyo Vista/ Lake Vista Lane	Cell Tower	85' Monopine	Planning Commission approved 11/13/14	Unknown	Co. Planning Process
Saratoga Estates Subdivision	West Dead End of Wilson/Folsom Boundary APN 120-070-02	Residential	316 lots on 121.95 acres	FIL Letter/Wildfire Safe Plan Review/ EIR started	Unknown	Planning
Schaefer Gym (Rescue) SUP 14-0002	1550 Old Ranch Rd APN 105-250-55	Commercial Gym	Gym 3,000 sq. ft. 4.43 acres	Planning Approved 3/15 To Rescue Board for Shared Access Agreement 6/10/15	Unknown	Co. Planning Process
Serrano J 5/6 Z13-0002/ PD13-0001/ TM13-1511	Bass lake Rd at Serrano Parkway APN 123-040-07, 09 & 115-400-13	Residential	119 homes 50 acres	Revision	Unknown	Large Lot Final Map August 13, 2013
Serrano K 6	Greenview	Residential	74 homes	complete	2012	Construction in process
Serrano K1/K2 TM01-1377-F5	Pannini / Da Vinci APN 123-390-02	Residential Lots	43 lots 49 acres	Final Map 11/5/13	11/5/13	BOS - final

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

Serrano K-5	Green view	Residential	151 homes	Final Map	Early 2014	Final Map Process
Serrano Village A-14 PD 08-0004 /TM 08-1464	Russi Ranch Dead end. APN 122-590-01	Residential - attached	54 lots 1 park 38.53 acres	Planning	Unknown	Co. Planning Process
Serrano Village C-2 Z 08-0005 / TM 08-1465	Russi Ranch Dead end. APN 122-030-05, 122-130-14, 122-140-03, 122-580-27, 122-590-01	Residential	50 lots 121 acres	Planning	Unknown	Co. Planning Process
Serrano Village D1 Z08-0037 / PD 08-0024 / TM 08-1484	Meadow Wood/ Boundary Oaks Dr. APN 121-040-20, 27	Residential	65 Lots 121 acres	Planning	Unknown	Co. Planning Process
Serrano Village J Lot H TM14-1524 / PD14-0008	Serrano/Bass Lake APN 123-280-10, 123-370-01, 03	Residential Lots	75 lots 23 acres	TAC Meeting 2/23/15	Unknown	Co. Planning Process
Serrano J5 Public Park SP15-0001/PD 15-0002	Serrano/Bass Lake APN 123-570-01	Park – replacing commercial	Park – four soccer fields 12 acres	Planning – TAC April 13, 2015	Unknown	Co. Planning Process
Serrano Westside	Near Raley's/ Serrano Parkway APN 120-160-03, 121-120-22, 121-040-20, 29, 31	Residential Multi-family	640 multi-family units 123 single family 50,000 ft. sq. commercial 105 acres	Planning	Unknown	NOP
Silva Valley Parkway Class I/II Bike Path	On Silva Valley between Harvard and Green Valley	Bike Path	1.1 miles of a Class I multi-use path along the east side of Silva Valley Parkway from Harvard Way to Appian Way and a Class II bike lane on	Planning	Unknown	Mitigated Negative Declaration

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT | Current

			the southbound side of the road from Appian Way to Harvard Way and approximately 0.9 mile of a Class II bike lane on both sides of Silva Valley Parkway from Appian Way to Green Valley Road.			
Silver Springs (RES) TM 97-1330	Silver Springs/Green Valley APN 103-010-02, 103-020-09 and 103-020-10	Residential	244 lots on 243 acres	Planning, Revised phasing plan on 7/1/15	Unknown	Co. Planning Process
Springs Equestrian Center (RES) Z04-0015/ SUP 01-0011/ P08-0036	Deer Valley and Green Valley Road APN 115-410-05	Equestrian Center	2 covered arenas 45,000 sq. Ft. each 420 horse stall barns Fenced riding area 12,000 commercial store Camping 146.42 acres	Planning	Unknown	Planning 10/23/14
Summer Brook (Rescue) A07-0005/ Z07-0012/ PD07-0007/ TM07-1440	Green Valley near Deer Valley APN 102-210-12, 102-220-13	Residential	29 lots 90.3 acres	Approved by Planning 9/25/14	Unknown	Approved by Planning 9/25/14
Town Center ACE Hardware FIL	Next to Debbie Wongs	Commercial	21,800 square feet	FIL	Unknown	FIL
Town Center West PA11-0004/ PD95-02	Latrobe and White Rock Road – Blue Shield	Commercial	Revision to Town Center West PD95-02	Planning	Unknown	Co. Planning Process

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current :

	APN 117-160-17, -44 through -57		51 acres 1,168,060 sq. ft.			
Verizon Cell Tower (RES)	3000 Alexandrite	Cell Tower	Cell tower	Permit	Dec. 2014	Building Permit
Valley View East Ridge TM 14-1521	Above Blackstone APN 118-130-28	Residential	701 Lots 735 acres	Planning Commission Approved 6/11	Unknown	Co. Planning Process
Watermark La Reserve P08-0013	Salmon Falls Rd. Adjacent to Watermark and Zee Estates APN 104-240-22	Residential	4 homes 20 acres	Improvement Plans Signed 9.14	Unknown	Mylar signed
Westmont Assisted Living	Golden Foothill at New Carson Crossing Drive APN 117-07-100	Assisted Living and Memory Care	149 beds in 134 units. 2 stories. 120,213 square feet	FIL	Unknown	Co. Planning
West Valley Unit 3B		Residential		Map Revision	Unknown	Co. Planning Process
West Valley 5B Unit 1	Blackstone	Residential		Final Map 11/5/13	11/5/13	BOS - final
West Valley Lot 6 & 7	Blackstone	Residential		Final Map 12/2013	12/2013	Co. Planning
Wilson Estates Z14-0002/ PD14-0001/ TM14-1515	Malcolm Dixon APN 126-070-22, 23, 30	Residential	28 homes on 28.18 acres	Approved at Board of Sups 11/13/14	Unknown	Co. Planning Process

Response to I-22, Bruce Quinn, 1/18/2016

I-22-1: The commenter's opinion of the EIR and concern over the project's effect on quality of life are noted. El Dorado Hills Fire Department Development Activity Reports are attached to the letter. Please see the responses to the commenter's specific comments for the issues raised in the comment letter. Quality of life is a social concern and not an effect subject to CEQA analysis (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560).

I-22-2: The commenter discusses the traffic analysis and asks if a "macro time phased traffic impact analysis" has been performed to account for projects listed in the El Dorado Hills Fire Department Activity Report (referenced as the "attached New Development report" in the comment). It should be noted the El Dorado Hills Fire Department Activity Report is developed by the fire department and includes many projects that are accounted for in the El Dorado County General Plan. The commenter is referring to a cumulative impact analysis. Cumulative projects are discussed under Section 5.2.1, *Cumulative Scenario*, and include approved projects (e.g., those with permits, grading plans, tentative maps), as well as more recent projects (see Table 5-2 on page 5-5 of the Draft EIR and revised table in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document). The future impact of General Plan implementation is factored into the cumulative impact analysis in the EIR. The EIR's list of projects consists of reasonably probable future projects that are in addition to the level of development set out under the General Plan. El Dorado County is the land use permitting authority, and its list of approved and planned projects comprises the official list of projects to be considered in the analysis of traffic impacts.

The cumulative traffic analysis identifies both cumulative impacts of all projects combined, and, as required under CEQA, the project's contribution to the cumulative impact. Consequently, the EIR's analysis is not limited to project-only effects. The project's contribution to cumulative traffic effects resulting from it and the contributions of past, present, and reasonably probable future projects are analyzed in Section 5.2.2 of the Draft EIR, beginning on page 5-30 and as revised in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document.

I-22-3: The commenter is concerned about cut-through traffic at the Raley's shopping center. Cut-through traffic is not anticipated due to its inefficiency. Park Drive, which provides access to the Raley's shopping center, is a public (i.e., County) road. The Park Drive extension, which is a County CIP project, would be a 2-lane roadway built to County standards. The extension would reach the existing Park Drive, approximately 350 feet from the El Dorado Hills Boulevard intersection. Cutting through the parking lot would require stopping at six stop signs prior to the intersection of Park Drive/El Dorado Hills Blvd/US Highway 50 westbound on-ramp. This route would take longer and result in more delays to the driver than using El Dorado Hills Boulevard. Therefore, it is unlikely to attract cut-through traffic. The facility will be designed to applicable County design standards and will accommodate all travel modes and users.

I-22-4: The purpose of the Draft EIR is to disclose the environmental impacts of implementing the CEDHSP. The Draft EIR, as implied by the comment, is not a mechanism for promoting the project or advocating approval. This comment is generally directed to project merits and concerns funding, which is not a topic requiring evaluation in the EIR. The following response is provided for informational purposes to address the commenter's inquiry about funding status for infrastructure projects and who will pay for improvements to the roadway system. The El Dorado County Capital Improvement Program (CIP) contains a list of infrastructure projects that are planned for construction within the next 20 years. The CIP, which includes both roadway projects and utility infrastructure, identifies the anticipated funding sources for each improvement project. CIP projects are funded through a variety of sources, including the TIM Fee Program. The TIM fee program is a funding mechanism for the CIP specific to roadway improvements. TIM fees are paid by the project applicant at the issuance of building permits.

General Plan policies do not allow for the public to bear the cost of roadway improvements if the need for such improvement is the result of a development project, such as the CEDHSP.

I-22-5: Please see Responses to Comments **I-7-22** and **I-13-2**. The WSA prepared and approved by EID for the project (presented in Appendix K of the Draft EIR) evaluates water supply in dry and multiple dry years. The WSA takes into account both existing and projected water demand. The required analysis and content of a WSA is summarized in the Draft EIR on pages 3.12-17 through 3.12-22 and pages 3.12-50 through 3.12-60 (Impact PSU-6). Senate Bills 610 (Chapter 643, Statutes of 2001) and x7-7 (Chapter 4, Statues of 2009) do not require evaluation of a long-term drought (e.g., the 10 to 20 years suggested by the commenter). There are also no requirements that a CEQA analysis consider a "worst-case" scenario. The WSA meets the standards for a CEQA document, as established by California Water Code Section 10910.

I-22-6: The commenter expresses opinions concerning the state of school building financing. Regarding the commenter's question about project impacts on schools, as noted in Response to Comment **I-10-4**, project impacts on schools, including Oak Ridge High School, are presented in Impact PSU-1.

Regarding the commenter's question concerning how existing homeowners benefit from paying property taxes, this question is not within the scope of the EIR. As noted on page 3.12-38 of the Draft EIR, Increased enrollment is not a significant environmental effect, but is rather a social effect (*Goleta Union School District v. Regents of U.C. 1995*). Because the school districts collect school impact fees, those fees serve as full and complete mitigation for development under SB 50, as provided for under California Government Code Section 65995 et seq.

Regarding the commenter's third question concerning annexation to the CFD and school funding decision making, this comment is outside of the scope of the EIR.

I-22-7: The commenter asks whether existing Serrano homeowners will be expected to pay for infrastructure for new developments. This comment does not address the adequacy of the environmental analysis presented in the Draft EIR for this project. The means of funding infrastructure for other projects is an economic issue outside the scope of the Draft EIR. However, this response is provided to inform the decision-making process. County General Plan policies require development to fund infrastructure that is necessary to support that development. Existing development does not pay for the installation of incremental infrastructure. The responsibility for funding the cost of operations and maintenance is not covered by impact fees, and is a mixture of special taxes (community facilities districts), general fund, and special district funding. The specific mixture varies depending on the particular proposed project. Throughout the EIR, the effects of the CEDH specific plan and its two planning areas is analyzed, and mitigation measures are included which would require the project to contribute to offsite improvements either through fair share contributions, impact fees, or taxes.

LETTER I-23

From: **John Raslear** <jjrazzpub@sbcglobal.net>
Date: Mon, Dec 14, 2015 at 8:21 AM
Subject: Comments Central EDH Specific Plan EIR
To: Rommel.pabalinas@edcgov.us

Mr. Rommel , Please accept my comments on the Central El Dorado Hills Specific Plan EIR. I-23-1

John Raslear

3124 Four Seasons Drive

El Dorado Hills Ca 95762

916-933-2203

Comments on the Central El Dorado Hills Specific Plan EIR

CEDHSP DIR Chapters Public Facilities

Central El Dorado Hills Public Project List Page 1

WESTSIDE PUBLIC ROADS – Park Drive to Roundabout October 23, 2015

Comment:

Please provide information about bike lines on this new road and provide information about the terminus of this road and how it will connect to existing bike lanes on Silva Valley

Page 7

WESTSIDE TRAILS PROJECT October 23, 2015

Comment:

Please explain the class designation of this trail and explain where it will connect to existing trails on El Dorado Hills Blvd and other existing bike Trails .

I-23-2

CEDHSP-PFFP Executive Summary

In Executive Summary –Project Description and Proposed Land Uses

Comment:

Please explain what types of commercial will be included and explain how these types of commercial establishments will provided a variety of employment opportunities .

This sentence on page ES1 " The land uses cluster in the center of El Dorado Hills, and interconnect through a significant system of trails and open spaces that make walking and cycling convenient. " indicates that the existing and planned trails are interconnected.

Comment :

Please show how in a graphic form these existing trains and planned trails are connected to connected and when this will occur.

Land use page ES2

Please explain where the clusters as stated in this sentence , "The Specific Plan clusters development on the western slope to protect and conserve the County's Rural Centers and Rural Regions,---" are located.

I-23-3

Comment:

Please show areas of land development that are outside these clusters and the nature of these land developments.

Page 9 note # 2 "Total fee revenue may not result in the construction of the 15 parks

Comment:

Please explain what will happened to the land allotted for these parks if the fee revenue is not sufficient .

Transportation page ES2

"The Specific Plan meets the objectives of Measure Y by coordinating the planning and construction of roadway improvements concurrent with new development to maintain adequate levels of service (General Plan Goal TC-X)."

Comments

If CALTRANS has declared Highway 50 in the El Dorado Hills area as Level F and does not plan to expand Highway 50 in the future , I-23-3 cont.

Explain how this specific plan will meet the objectives of Measure Y.

Page 13 :

Park Drive From EDH Blvd to Westside Roundabout

Comment.

Please explain why these plans to not include bike/pedestrian paths .

Page 13 Optional Roadway Improvement :

Comment :

Please remove the continuation of this road way to Silva Valley as the builder will not complete in and it is misleading to the public.

Page 14

Table 1-4

Comment :

Please explain what the cost will be to the public if EID and the builder determine if the cost of these improvement is reimbursed by EID's CIP .

Table 4

Comment:

Please explain who will pay for this pedestrian bridge over highway 40 as the county does not have the funds.

Page 14 Public Facilities Cost Estimates

Comments

Please explain what the cost will be if the Pedegal project is not deemed to be part of the CED1 . I-23-3 cont.

Page 21

Summary of Financial Strategy

Comment

Please explain what the Mello Roos for this project will be if existing fees do not cover the cost.

Page 25

Two Percent Feasibility Summary

Comment

Please explain how it was determined that the Serrano Density Unity will be slightly above 1.8 and less than 2.0

Submitted by:

John Raslear

3124 Four Seasons Drive

El Dorado Hills Ca 95762

Response to I-23, John Raslear, 1/14/2015

I-23-1: This comment is an email to the County transmitting attached comments and indicating the comments are on the Draft EIR. However, the comments in the attachments do not refer to any pages in the Draft EIR but to the draft Public Facilities Financing Plan (PFFP) and PFFP Executive Summary, which were available for review on the County's website for the proposed project. Although the comments are not specific to the Draft EIR, responses are provided to inform the decision-making process.

I-23-2: While the commenter appears to reference the Draft EIR in the title block, this comment references information on pages 1 and 7 in the draft PFFP. The comment does not address the adequacy of the Draft EIR. Figure 2-7 in the Draft EIR shows the proposed classes of bike lanes and locations, as well as connections to existing facilities.

I-23-3: The commenter requests additional information about items included in the draft PFFP Executive Summary, a 40-page document that summarizes the project elements, based on the Draft EIR's project description, and the strategy to finance required backbone infrastructure and other public facilities serving the proposed land uses in the CEDSHP. The separate issues included in the comment do not specifically address the Draft EIR, but to the extent they address a potential environmental consideration, responses are provided. The Draft EIR and CEDHSP documents include the information requested by the commenter as follows:

The Civic-Limited Commercial (C-LC) land use designation provides for municipal, civic, and public services such as a fire station, sheriff substation, or public park and recreation activities. The C-LC designation also provides for professional and administrative office space for public sector agencies such as the County of El Dorado and the El Dorado Hills Community Services District (CSD), or other private-sector enterprise.

The trail connections are illustrated and described in Figure 2-7 and page 2-10 in the Draft EIR, respectively.

The CEDHSP is within El Dorado Hills, an established urban area within the El Dorado Hills Community Region. The statement referenced by the commenter is a generalized statement in the CEDHSP that relates to the County's policy of directing urban development to identified Community Regions and away from the Rural Region. Figures 2-2 through 2-5 in the Draft EIR show the project land uses relative to existing development.

This is a comment on the PFFP and not the Draft EIR. The parks would be required as a part of project approval. The proposed project would be required to comply with the Quimby Act, which specifies the parkland dedication requirements for new residential development and outlines when in-lieu fees are collected. If fees are insufficient to provide for park construction, the park areas would remain in a natural state. However, there is no reason to expect this to occur and the EIR is not required to speculate on what might happen if fee revenue is insufficient.

The project would not result in impacts on US 50 and therefore would not be required to build improvements under the requirements of Voter Initiative Measure E. Additionally, Caltrans and the County agree that US 50 operates at LOS E under existing conditions. Please see response to comment **I-11-87**.

Park Drive to the Westside roundabout would include sidewalks and bike paths. There are no statements in the draft PFFP Executive Summary that such features would not be included. The commenter is referred to Chapter 4 in the CEDHSP, which describes pedestrian/bicycle facilities, including cross-sections.

As stated on page 2-10 in the Draft EIR, the potential connection to Silva Valley Parkway is not required for the project. However, it has been added to the County's 2016 CIP. It is evaluated in the Draft EIR, because right-of-way for this potential connection within the CEDHSP has been reserved for such use. The Development Agreement currently includes right-of-way dedication and phased construction of the roadway. There are no misleading statements in the Draft EIR about this improvement.

Costs for improvements and the applicant's responsibilities would be set forth in the Development Agreement, which is subject to approval by the Board of Supervisors.

Dan and Susan Rausch
901 Matthew Court
El Dorado Hills, CA 95762
916-933-4478
srausch2000@yahoo.com

February 16, 2016

Mel Pabalinas, Senior Planner
El Dorado County Community Development Agency Planning Division

Central El Dorado Hills Specific Plan EIR comments:

A. Sound walls are being proposed that are to match existing sound walls. Where are there currently sound walls along El Dorado Hills Blvd? We would prefer a berm or dense trees be used instead to match what is currently in use. I-24-1

B. We are concerned about the preservation of the Native American bedrock mortars and the cultural impact of the loss of this valuable resource We would prefer an alternate road and utility placement other than destroying or disturbing the four bedrock mortar areas. I-24-2

C. Concerning the open space in the Pedregal Planning Area on the west side of El Dorado Hills Blvd:

1. Our home is located directly below the proposed open space. We currently have occasional motorcycles and jeeps trespassing behind our house in that area. This causes noise pollution, erosion of the hillside and is a fire hazard. Could a barricade be placed along Gillette Drive and any other access points to prohibit access for motorized vehicles but still allow access for police and fire? I-24-3

2. We currently have access to that open space area from our back yard. Will access be restricted to only the houses in the new development. We would like to continue our access to the open space or is the open space to be fenced thus blocking our gate?

3. Currently the EIR states that the existing overhead power lines are to be left above ground and more lines are to be added to those poles. There have been several fires behind our house caused by those power lines. Could the lines be buried or relocated to reduce the fire hazard and visual impact of the lines? I-24-4

4. Cell towers are proposed for open space, can we have a 200 foot set back from residential property lines to reduce the visual impact? I-24-5

5. Where are the public accesses to the open space located? Will there be a parking area provided? I-24-6

Sincerely,
Dan and Susan Rausch

Response to I-24, Dan Rausch, 2/16/2016

I-24-1: The commenter states that sound walls are being proposed to match existing sound walls. However, this is not correct; the document refers to "barriers," not walls. The types of sound barriers that could be used include solid noise barriers and/or landscaped earthen berms (see Draft EIR page 3.1-15). The commenter's preference for berms or dense trees instead of sound walls is noted and will be considered by the Planning Commission during the decision-making process. Please see also Response to Comment **I-11-11**.

I-24-2: The commenter suggests roads and utilities be realigned to avoid the destruction of bedrock mortars. As discussed in Section 3.4, *Cultural Resources*, on page 3.4-4, the preferred mitigation for impacts on NRHP- and/or CRHR-eligible resources under CEQA is preservation in place, and, if that is not possible, the agency must explain why it is not feasible. Preservation in place, through the dedication of open space as a result of project re-design made during the planning process, has been incorporated to preserve those Native American bedrock mortar features that are the most significant, as determined through direct consultation with the Native American community. The project has been designed to avoid as many of these resources as possible; however, restrictions related to landform, slope, and oak retention requirements have made complete avoidance of all these features impossible. Remaining impacts would require mitigation to reduce them to a less-than-significant level under Mitigation Measure CUL-1a: Develop and implement a site-specific Historic Properties Treatment Plan for the Pedregal Archaeological District. In addition, during the process of obtaining the USACE Section 404 permit for filling of waters of the United States, additional mitigation may be required pursuant to Section 106 of the National Historical Preservation Act, which could supplement the mitigation requirements in Mitigation Measure CUL-1a.

I-24-3: The commenter asks questions concerning potential changes to access by motor vehicles to the open space, and access from the commenter's property. Regarding existing trespassing, this is not an issue to be addressed in the EIR, and would be addressed by the County in another manner. Regarding pedestrian access from the commenter's property to the open space area, no access has been designed at this time.

I-24-4: The commenter asks if power lines could be buried and is concerned about fires. As stated on page 3.12-63 in the Draft EIR, "the southern portion of the overhead main line 600-amp circuit that traverses the Pedregal planning area would be converted to underground and placed in a public utilities easement adjacent to or within a new roadway. The north portion would remain overhead in its current location." All new onsite subdivision (single family) and site plan designs (multi-family) would underground utilities as required by the utility purveyors. The applicant is not proposing adding more lines to the existing overhead lines, and there are no statements in the Draft EIR to that effect.

I-24-5: This comment is directed to project design and does not address the adequacy of the analysis in the Draft EIR. There are no statements in the Draft EIR indicating cell towers are proposed to be constructed in open space. The Draft EIR includes the County's zoning information about cellular communication facilities on page 3.1-5 in Section 3.1, *Aesthetics*. The CEDHSP document provides standards regarding cell towers, and sets forth whether cell towers are permitted or not permitted in certain land uses. However, the CEDHSP does not propose specific locations, and the project applicant is not requesting approval to construct cell towers. A Conditional Use Permit application would need to be submitted to the County by the service provider, and it would be within the County's discretion to approve or deny the application. Siting requirements for a cell tower would be determined by the County as part of the Special Use Permit.

I-24-6: This comment is directed to project design and does not address the adequacy of the analysis in the Draft EIR. Please see Response to Comment **I-24-3**.

LETTER I-25

Central El Dorado Hills Specific Plan EIR

Comment Card

Informational Open House · December 2, 2015 6:00 PM

Comments:

+ Open space
bike trail
Lay out of the density
for residential

- EDH Boulevard is already insufficient for rush hour taking upto 15-20 minutes to get on and go one block to freeway during busiest times I-25-1

- Water & utilities availability needs to include already approved zoning I-25-2

1000 additional units will stress already limited resources & road access to freeway I-25-3

Joan Bence
(Name)
13777 Arrowhead court
(Address)
EDH

If you would like to mail your comments, please send them to:

Mel Pabalinas, Senior Planner
El Dorado County Community Development Agency
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
Fax: 530-642-0508
E-mail: Rommel.Pabalinas@edcgov.us

Response to I-25, Joan Rene, 12/2/2015

I-25-1: The commenter is of the opinion El Dorado Hills Boulevard is insufficient for rush hour traffic. This appears to be a general observation, and no data or analysis were provided. Impacts related to traffic are discussed in Section 3.14, *Traffic and Circulation,* as revised in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Table 3.14-3, as revised, discloses that several segments of El Dorado Hills Boulevard are currently operating at LOS D during peak hours. Tables 3.14-7 and 3.14-8, as revised, disclose the peak hour LOS with the project.

I-25-2: The commenter indicates that the availability of water and utilities should include already approved zoning. As discussed in Section 3.12, *Public Services and Utilities*, the project's impacts are considered relative to the suppliers current commitments, which are based on the anticipated demands of planned development. The cumulative impacts of the project and all other reasonably foreseeable projects are discussed in Section 5.2.2. A WSA was prepared for the project, as required by CEQA, and was approved by EID. The assessment concludes that water supplies would be sufficient to meet project demand as well as other existing and planned uses in the EID service area. Please see also Master Response 1 (Water Supply).

I-25-3: The commenter does not specify which resources are limited and would be affected by the project. No further response is possible. See Response to Comment **I-25-1** regarding traffic conditions.

From: **WILLIAM STURCH** <bsturch2000@yahoo.com>
Date: Mon, Feb 1, 2016 at 11:51 AM
Subject: Re: Extension of Public Review Period for Central El Dorado Hills Specific Plan Draft Environmental Impact Report (DEIR)
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Cc: "cedhsp@edcgov.us" <cedhsp@edcgov.us>

Eir Comments for the El Dorado Hills Specific Plan
Traffic

Document indicates there will be little impact on traffic volumes on EDH Blvd, however in the case of of the roadway segment from Governor Drive to Wilson blvd, the EIR reflects an increase of approx 167 vehicles per day at peak hours and from Wilson to I-26-1 Serrano Parkway an increase of 500 vehicles per day. As to noise, the EIR reflects an increase in noise levels from 1.5 to 3.0 db on all roadway segments of EDH Blvd. With 1000 dwelling units planned for in the development, 500 additional vehicle trips per day doesn't add up nor does the increased noise reconcile to the added traffic the project brings. Presently, the noise levels without the project exceeds the County standards for homes bordering the Blvd. As such, the project only increases the unacceptable noise that residents are currently dealing with. EIR needs to address mitigating measures for this unacceptable noise confronting the already developed areas. Also, the EIR indicates with the project, noise levels on Olson Lane/Gillette Dr. which is currently 56.9 will increase by 5db putting it over the County standard. Eir does not reflect any mitigating measures for this segment of roadway. I-26-2 Lastly, as to the circulation plan, it is unclear in the Pedregal planning area just how vehicles will move other than the one road connecting to Wilson Blvd. Therefore, any comments, I have specific to circulation will wait until the project is heard before the planning commission/board of supvs. I-26-3 Bill

Response to I-26, William Sturch, 2/1/2016

I-26-1: Impact TRA-1 on page 3.14-24 in Section 3.14, *Traffic and Circulation*, in the Draft EIR evaluates project impacts on local roadway intersections and segments and has been revised to include results from an updated traffic analysis that was prepared in 2017 to include improvements that had been completed since the circulation of the Draft EIR, to be consistent with the County's 2016 Capital Improvement Program, and to recognize the opening of the new Silva Valley Parkway Interchange. Table 3.14-8 on page 3.14-26, to which the commenter appears to be referring, identifies traffic volumes under existing conditions and with the project and includes the two roadway segments noted by the commenter (Governor Drive to Wilson Boulevard and Wilson Boulevard to Serrano Parkway). The commenter's calculations of an increase of 167 vehicles per day and 500 vehicles per day correspond to the existing plus project AM peak hour condition on the Governor Drive to Wilson Boulevard and Wilson Boulevard to Serrano Parkway segments, respectively. The traffic analysis is quantitative and does not use subjective terms to describe impacts, and there are no statements in the Draft EIR that the project would result in "little impact on traffic volumes on [El Dorado Hills Boulevard]." As shown by the data in Table 3.14-8, there is a projected increase in traffic volume, but the increase would not be enough that the LOS would degrade to below an acceptable level. In the existing condition, the segments mentioned are at LOS D (see Table 3.14-3 beginning on page 3.14-10). With existing plus project conditions, the LOS would still be D. The 2017 traffic analysis reached the same conclusion.

I-26-2: The commenter states that the Draft EIR reflects a noise level increase of 1.5 to 3 decibels (dB) on all roadway segments of El Dorado Hills Boulevard. It appears that the commenter is referring to the significant noise increase increments in Table 3.10-11 as project-induced noise increases. The dB numbers in Table 3.10-11 represent 'thresholds' or the number of dBs noise levels would have to increase to be considered significant. The actual increases in noise due to the project are shown in Table 3.10-17, the highest of which is 1.3 dB, which would be lower than any of the significant-increase increments. Noise levels were calculated using the increase in peak-hour traffic volumes, not the increase in total vehicles per day.

As the commenter notes, noise along El Dorado Hills Boulevard would exceed the County standards without the project. The project would increase noise by a small amount (based on Table 3.10-17) that would not be noticeable to the human ear, and all project-related increases on all roadways would be below the applicable significant noise increase increments established by County Policy 6.5.1.12. New residences that are part of the project would be exposed to noise levels that exceed the County standards, but these impacts would be mitigated because the project would develop new land uses that would exceed the standards. The project is not responsible for existing residential exceedances of the County standards that are primarily from non-project sources (with the important caveat that the project-related increases would be below the applicable thresholds). Therefore, there would be no mitigation warranted for existing residences that are located in areas where the County's standard is exceeded.

The commenter notes that the with-project increase in noise at Olson Lane/Gillette Drive would be 5 dB, resulting in noise above the County standard. As noted above, 5 dB is the noise increase increment that would be considered significant, not the actual project-induced increase. The with-project noise level increase at Olson Lane/Gillette Drive would be 0.1 dB (and less than the County's compatibility standard of 60 L_{dn}, see Table 3.10-8), based on Table 3.10-17. No mitigation would be required.

I-26-3: The commenter is unclear on the proposed access to the Pedregal planning area. As shown in Figure 2-6 of the Draft EIR, *Preliminary Vehicle Circulation Plan*, access to the Pedregal planning area would be via a road that would intersect with Wilson Boulevard and provide access via the two-cul-de-sacs at the end of that road.

LETTER I-27

From: <rcswens@comcast.net>
Date: Thu, Dec 3, 2015 at 4:36 PM
Subject: [cedhsp] DIER comment / Pedregal project
To: cedhsp@edcgov.us

Dear Community Development Agency,

Please keep the Pedregal area zoned to what has been previously planned without any rezone or approval of denser housing of any sort.

I've lived in my home for 28 years and I'm disappointed on how the general development plan has changed for El Dorado Hills to accommodate for denser development throughout the community. When I went to the planning session for Serrano, the community was promised that the hilltops would be preserved as open space. Coming to El Dorado Hills from HWY 50 and can't help but think what an ugly community this is becoming and how our representatives are over accommodating for developers wishes over the people with variances and change orders. I-27-1

The traffic on my street (Ridgeview Drive) is already too busy with many of the vehicles going too fast. Something just getting down the hill to Raley's reminds me of the heavy traffic when driving the El Camino Real in the Bay Area.

Delay approval of any new projects (like was done in the late '80's) until we know there is enough water for the existing community. I can't help but think allowing more water meters at this time is anything less than gross negligence. Ten's of thousands of landscaping dollars will be destroyed if we are forced to go to a stage 5 conservation emergency.

Please balance the rights of land developers and builders with my rights as a citizen who moved here partly due to the long range plan that has been bastardized. This goes for the Green Valley project that want's a rezoned to the pleasure of the greedy developer who purchased that land.

I looked at the 600+ page DEIR and could not find the details on the Pedregal project. I-27-2

Regards,
Robert Swenson
3368 Ridgeview Drive
El Dorado Hills, Ca. 95762
(916)933-4125

Response to I-27, Robert Swenson, 12/3/2015

I-27-1: The commenter notes already existing development and traffic in El Dorado Hills and suggests delaying approval of new projects until it is established that there is enough water for the existing community.

Impacts related to traffic, including traffic on Serrano Parkway, are discussed in Section 3.14, *Traffic and Circulation*. Table 3.14-3, as revised, discloses that segments of Serrano Parkway are currently operating at LOS C and D (acceptable levels of service) during peak hours (see Chapter 3, *Changes and Errata to the Draft EIR and Partial Recirculated Draft EIR*, in this document). Table 3.14-8, as revised, discloses that the peak hour LOS along Serrano Parkway segments would remain at LOS C and D with the project.

A WSA was prepared for the project. The WSA details the long-term water supply available to the community under existing and future conditions and includes details on how much would be available for new projects, such as this one. It then analyzes how much water demand the project would generate and whether this demand could be met through existing water supply. The WSA is attached to the Draft EIR as Appendix K and is summarized in Section 3.12, *Public Services and Utilities*, beginning on page 3.12-17. Also see Responses to Comments **I-7-22**, **I-13-2**, and **I-22-5** and Master Response 1 (Water Supply).

The commenter's request that the Pedregal planning area not be rezoned is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is required in the EIR.

I-27-2: The commenter states that they were unable to find "details on the Pedregal project." The Pedregal planning area is part of the project area and is discussed throughout the Draft EIR. Proposed land uses and zoning are separated by planning area (Serrano Westside and Pedregal) in Tables 2-2 and 2-3 on pages 2-8 and 2-9 of the Draft EIR and the Pedregal planning area is labelled on nearly all the figures in Chapter 2, *Project Description*. Each resource section addresses the impacts of both of the project's planning areas.

LETTER I-28

From: <tjwhite510@aol.com>
Date: Mon, Dec 14, 2015 at 12:23 PM
Subject: Central El Dorado Hills Specific Plan DEIR
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Dear Mr. Pabalinas. Thank you for sending me a copy of the DEIR. I know that the deadline to submit comments to the DEIR is January 19, 2016, but I would like to formally request that the comment period be extended for an additional 30 days, until February 19, 2016. I recognize that the 60 day review period is standard, but I believe that an additional 30 days would benefit all parties that are currently reviewing the DEIR. The DEIR obviously took months to prepare, and was written by experts well versed in writing such documents. It is over 600 pages long, and has appendices that are also over 600 pages in length. An additional 30 days to review such a lengthy document is, I believe, warranted. An additional factor warranting a 30 day extension is that the 60 day review period comes during the holiday season including the Thanksgiving, Hanukkah, Christmas, Kwanzaa and New Year celebrations, a time when there are many distractions. I-28-1

If this is not the proper format to request an extension please let me know what I have to do. Thank you for your consideration of my request.

Tim
Sent from my iPhone

Response to I-28, Tim White, 12/14/2015

I-28-1: The commenter requests an extension of the review period. The review period was extended from 60 days to 90 days. Please see Responses to Comment **I-7-3** and **I-8-1**.

LETTER I-29

Central El Dorado Hills Specific Plan EIR

Comment Card

Informational Open House · December 2, 2015 6:00 PM

Comments:

Where was our Supervisor? Mike? I-29-1

(Name)

(Address)

If you would like to mail your comments, please send them to:

Mel Pabalinas, Senior Planner
El Dorado County Community Development Agency
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
Fax: 530-642-0508
E-mail: Rommel.Pabalinas@edcgov.us

Response to I-29, Anonymous, 12/2/2015

I-29-1: This is not a comment on the Draft EIR and no response is required. It is included in the Final EIR because it was received during the open house during the Draft EIR public review period.

From: "Lisa Burkard" <lisaburkard@gmail.com>
Date: May 20, 2016 3:16 PM
Subject: [cedhsp] Partial RDEIR and proposed Project - Central El Dorado Hills Specific Plan
To: <cedhsp@edcgov.us>
Cc:

To whom it may concern,

After reading the proposed project and looking online at various maps, I would like to say that I am opposed to the project in it's entirety. I am surprised to see this, quite frankly, with the majority of El Dorado Hills voting against developing the golf course area at the bottom of Serrano Parkway. I'm guessing the folks wanting this project think a bit further down the road is going to make a difference? I-R-1-1

The way I see it...this project still chews up empty space which adds to the beauty of the area. It will also increase traffic on El Dorado Hills Blvd, particularly at peak times. It's bad enough already. And let's not forget how awful the Blvd. can be while construction is going on for any period of time. I-R-1-2

You've asked for input, so there you have it. My only hope is that you receive many comments in opposition to this project and that it is not approved.

Lisa Burkard
Resident of EDH for the last 16 years.

Response to I-RECIRC-1, Lisa Burkhard, 5/20/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-1-1: The commenter states opposition to the project and references the CSD Advisory Measure E vote. Please see response to Comment I-7-2 and Master Response 2 (CSD Advisory Measure E). The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process.

I-R-1-2: Please see Response to Comment **I-10-2** regarding traffic conditions on El Dorado Hills Boulevard.

LETTER I-RECIRC-2

From: **Zachary Caldwell** <zack@fivec.biz>
Date: Wed, May 18, 2016 at 6:31 PM
Subject: REIR
To: edc.cob@edcgov.us

May 18th, 2016

Attn: Mel Pabalinas and El Dorado County Board of Supervisors

Ron Mikulaco
Shiva Frentzen
Brian Veerkamp
Sue Novasel
Michael Ranalli

This letter is meant to make public commentary on your proposed rezoning of the Serrano Executive Golf Course, your disastrous "Revised Environmental Impact Report", and, the blatant misuse of the trust of El Dorado County voters and residents.

When El Dorado County residents voted 91% in opposition to your money grab, we thonght the message was clear. There should be NO approval of ANY rezoning in the El Dorado Hills area. When residents of El Dorado County purchased their homes (from Parker Development) this land was meant to be open space in perpetuity! Now, after convenient (for Parker's and the Board's finances and not those of the Public) land-swaps, you present to the Public a RDEIR that pretends it beneficial to bring in low income housing, a foot bridge over the freeway that would likely terminate next to a mobile-home park, over a thousand new homes that will lessen the property values of existing residents near Serrano (and likely drive up taxes on more affordable homes in lower priced neighborhoods), a lesser amount of open space for the Public to enjoy, and more traffic congestion on Highway 50 (after you just lowered the impact fees on the developer last week and have no meaningful plan to improve the congestion). All of El Dorado County will be impacted by your money grubbing. With the promise of more tax revenue for the county (sold as jobs that never come here) you attempt to swindle the Public out of their quality of life. Crime is on the rise in El Dorado County, property taxes are being assessed upwards, open space is being bulldozed, public-worker pensions and benefits are being increased, home values are stagnating. All this is going on while you attempt to bring in more low rent apartments, and yet, you the "Board of Supervisors" find it more important to line your pockets and help Parker once again screw the People than manage the existing affairs that currently plague this community. What does the Public get offered in return? One concession stand and gazebo next to a smog polluted freeway, a footbridge for flashers to shock traffic, and a "permanent restroom" for the homeless and a few other worthless trifles. Where is the hot tar and feathers? You deserve worse. I-R-2-1

Zachary Lane
Pissed off member of the Public

PS
We're still waiting for the end of the Mello-Roos that Parker forced on us

Response to I-RECIRC-2, Zachary Caldwell, 5/18/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-2-1: This comment addresses project merits and does not address the analysis in the RDEIR. No further response is required. The commenter's opposition to the project is noted and will be considered during the decision-making process.

LETTER I-RECIRC-3

From: "lori" <tootinyedh@hotmail.com>
Date: Jun 5, 2016 3:38 PM
Subject: Public Space Dev./Native American preservation
To: "rommel.pabalinas@edcgov.us" <rommel.pabalinas@edcgov.us>
Cc:

June 4, 2016

To: County of El Dorado Planning Services

2850 Fairlane Court

Placerville, California 95667

Attn: Mel Pabalinas, Sr. Planner

We are writing to you in regards of the plans for developing the land west of El Dorado Hills Blvd. near the Ridgeview community area. We have been residents of El Dorado Hills for twenty five years. In that time, we have watched the tremendous growth and development in our area. Having more services, entertainment and recreation have been exciting and welcome in some respects, however, the grid lock on our infrastructure and increased water usage in drought times are a grave concern. Even more so, is the knowledge of our Native American predecessor's artifacts, grinding rocks and over all history being jeopardized when developers can literally desecrate what is left of this important cultural history to our area.

This area that we are very concerned about is a historical EDH haven, that needs to be examined and preserved for future generations to enjoy, but more importantly connect to the heritage of the people that were here before us. It is WRONG to ignore this sacred ground in our area and pretend like it doesn't exist! I-R-3-1

We implore the county planners to reconsider development in this area, due to its historic nature. Has anyone in the planner's office even considered taking a "hands-on" approach and taking a walk into this area? It seems like the connection to the land (without bulldozers) is virtually absent. How can your decisions be made about the "Natural" environment and such important cultural resources in our community without taking the time to thoroughly examine the land up for slaughter?

We will be following the actions of the county planners closely and hope the decisions that are made will show promise for everyone in the area and give due respect to the people who came before us.

Mark and Lori Christensen, concerned residents

El Dorado Hills, CA

From: tootalledh@msn.com
To: tootinyedh@hotmail.com
Subject: grinding rock pic
Date: Sun, 5 Jun 2016 15:30:50 -0700 I-R-3-2

Response to I-RECIRC-3, Mark and Lori Christensen, 6/5/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-3-1: The commenter expresses concern about cultural resources in the area. Cultural resources and potential impacts on them are discussed in Section 3.4 of the Draft EIR. Please see Response to Comment **I-24-2**.

I-R-3-2: The commenter provides photographs of artifacts and bedrock mortars. The provenance of the resources depicted there is unknown. No reference is made in the comment to these photographs.

From: **Wayne Haug** <whaug@yahoo.com>
Date: Fri, Apr 22, 2016 at 12:15 PM
Subject: Re: Partial Recirculated Draft Environmental Impact Report (RDEIR) for the Central El Dorado Hills Specific Plan
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Due to the length and technical content of the RDIER I respectively request an additional 60 days from the June 6, 2016 to August 5, 2016. I believe this is not an unreasonable request for more time since the depth of analysis required to adequately comment on the revised project requires this extension. I-R-4-1

Your prompt reply granting this request is appreciated.

Wayne H. Haug

Law Office of Wayne H. Haug 3720 Mesa Verdes Drive El Dorado Hills, CA 95762 (916) 933-6549 The information transmitted is intended solely for the addressed individual or entity. This document may contain confidential and/or legally privileged material and/or information. Any review, retransmission, dissemination or other use of or taking action in reliance upon this information by persons or entities other than the intended recipient(s) is prohibited. If you have received this email in error, please contact the sender and delete the material from any computer.

Response to I-RECIRC-4, Wayne Haug, 4/22/2016

I-R-4-1: The commenter requests an additional 60 days to review the RDEIR due to the length and complexity of the document. The County responded via email on May 11, 2016 that the review period would remain at 45 days.

From: **'Alan Hockenson' via DS-Central El Dorado Hills Specific Plan-m**
<cedhsp@edcgov.us>
Date: Mon, Jun 6, 2016 at 11:50 AM
Subject: [cedhsp] Re: Central El Dorado Hills Specific Plan, RDEIR
To: cedhsp@edcgov.us

Attached are comments in Word format by:

Alan Hockenson, resident
1212 Terracina Drive
El Dorado Hills, CA

Comments on the Central El Dorado Hills Specific Plan, Revised Draft Environmental Impact Report Provided by El Dorado County Resident:

Alan Hockenson

1212 Terracina Drive

El Dorado Hills, CA 95762

I have previously commented on the Draft Environmental Impact Report (DEIR) on February 19, 2016. I am now providing comments Revised Draft Environmental Impact Report (RDEIR).

My comments are as follows:

1. The DEIR would only be revised if, without the revision, the DEIR would clearly be deemed inadequate which could result in a long, expensive, and cumbersome process for the proposed project to be successful. As the updates are mandated by the California Supreme Court, the revisions to the RDEIR are clearly necessary. I-R-5-1

2. The focus of the RDEIR is to address limiting carbon emissions as legislated by AB32 in 2006. Although ill-conceived, poorly written, and difficult to regulate, it is the law. The RDEIR expands on related actions including Executive Order B-30-15. In the end, the subject of the RDEIR must either comply with the established law and regulations, as identified, or challenge their applicability. My reading of the RDEIR is that the intent is to comply with the standards, even though some are being legally challenged by others or subject to the establishment of future regulations. Therefore, the question becomes whether the proposed project is compliant or not compliant. I-R-5-2

3. The focus of the RDEIR is to provide an analytical basis for assessing the potential carbon emissions from the project. The analytics are separated into construction and operation aspects of the project and have different measurements to make determinations. The construction period is relatively short and concentrated but mathematically extends of a period from 2016 to 2030. Through accident or by design, the construction impacts closely approach the threshold of significance in 2019 but do not reach the level of significance. There is different situation with operation aspects of the project. As stated on RDEIR page 3-24, "Since mass emissions exceed 1,100 metric tons CO2e, GHG emissions associated with the CEDHSP in 2020 may conflict with AB 32." My comment is that unless there is a basis for how there is not a conflict, it can only be interpreted that <u>the project would conflict with AB32</u>. I-R-5-3

4. How does the RDEIR downplay this significant conflict? <u>First</u>, the RDEIR includes a long laundry list of mandatory CEDHSP policies (Mitigation Measure GHG-1) to reduce the carbon footprint of the development. Once approved there is no accounting for whether these measures will actually be implemented and whether the regulatory jurisdiction will hold the developer to I-R-5-4

these commitments or later ask for variances. And what is the penalty when a developer defaults on these obligations? Once built, the development would be difficult to be unbuilt. The RDEIR admits on page 3-20, "Implementation of Mitigation Measure GHG-1 . . . would reduce emissions but not to a level below 1,100 metric tons CO2e. Accordingly, this impact would be significant and unavoidable under the bright-line threshold." Also, on page 3-22, "even with mitigation, the project's emissions would still exceed the 2035 efficiency indicator." Therefore, even with these efforts, <u>the project would conflict with AB32</u>. I-R-5-4 cont.

5. How does the RDEIR downplay this significant conflict? <u>Second</u>, the good old strategy of relying upon SACOG policies of "smart growth" or "Sustainable Communities Strategy (SCS)" is used to imply the modifications to the project are an attempt by the developer to do the right thing and consistent with regional planning. On page 3-24, the RDEIR talks about "SACOG's MTP/SCS which was adopted by SACOG on February 18, 2106." (Note: the date is likely a typographical error in the RDEIR.) On page 3-25, "The SCS policies include a mix of strategies that encourage compact growth patterns, mixed-use design, alternative transportation, transit, mobility and access, network expansion, and transportation investment." Developers especially like the compact growth patterns strategy as it justifies cramming high density housing in areas that are usually despised by local existing residents. The increase in high density housing is a key feature of this project. However, this project fails many of the smart growth strategies as this area is not a Major Employment Center as depicted on SACOG's MTP/SCS Figure 3.5. The closest area of that designation is in Folsom, between 4 and 5 miles away. Further, there is "no existing or planned light rail, street car, or train station" or Transit Priority Areas (TPSs) within one-half mile of the project (see SACOG's MTP/SCS, page 43). Other than the mixed-use plan (a feature of the original project) and the potential connector to Silva Valley Road, no significant features of smart growth have been added. Does the developer foresee retired people riding their bicycles or walking to Raley's or Taco Bell from their high-density residences? The is not smart growth as there is nothing in this plan that reduces the impact of working age adults commuting to their places of employment. I-R-5-5

6. How does the RDEIR downplay this significant conflict? <u>Third</u>, on pages 3-25/26, the RDEIR attempts to justify the use of smart grown principles as something that is unavoidable given the assumption that the executive orders and implementing regulations will require such actions for the State to meet its carbon reduction goals. In short, the proposed project produces a smaller carbon footprint and therefore is better than its predecessor. The RDEIR suggests that many of these factors are "outside the control of the county and beyond the scope of the CEDHP." This is correct, but I would add there are many other influences, particularly on the electric utility industry, as well as the regional economy that will determine if and how the ultimate carbon footprint strategies will unfold. Nevertheless, at the end of the day, <u>the project would conflict with AB32</u>.

In summary, the RDEIR paints a particular bleak picture regarding the prospects of this project. Unless there is a commitment to legally challenge the content of AB32, this project will be in conflict I-R-5-6 and represent a significant impact. Furthermore, the RDEIR has shown that the existing plan for this acreage would also be in conflict with AB32. From the documentation, I see no appetite to challenge the law, so we are left with a project (existing or revised) that represents significant environmental impacts. I-R-5-6 cont. El Dorado County has been particularly careful in how it develops its population growth and associated transmission system. On June 7, 2016, Measures E and G will be voted upon and the results may increase the pressure on decision makers to rethink their view of the acceptability of the project contained in the RDEIR and the predecessor project as well. I-R-5-7

Response to I-RECIRC-5, Alan Hockenson, 6/6/2016

I-R-5-1: The commenter stated that updates to the RDEIR are mandated by the California Supreme Court; however, the RDEIR is not mandated by any court. As discussed in Section 1.1.1 of the RDEIR, the California Supreme Court clarified the approach to GHG analysis in its *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204 (Newhall Ranch) decision. This decision effectively set aside the most commonly used approach to GHG analysis in CEQA documents. Because the County had used an approach similar to the evaluation used in the Newhall Ranch case, the County determined proactively to revise the GHG analysis in keeping with the Newhall Ranch decision and recirculate the Greenhouse Gas Emissions section of the Draft EIR (Section 3.6).

I-R-5-2: The commenter interprets that the intent of the RDEIR is to comply with carbon emissions in accordance with AB 32. This is incorrect. The purpose of the RDEIR, like the Draft EIR, is to disclose the environmental impacts of implementing the CEDHSP. It is not the purpose of the RDEIR to specify *how* [emphasis added] the project should comply with AB 32 or other laws and regulations pertaining to GHGs. The RDEIR does, however, address whether the proposed project's contribution to cumulative GHG emissions would be significant as it relates to emissions reduction requirements set forth in the Scoping Plans, which implement, in part, AB 32.

I-R-5-3: The commenter discusses the approach to analysis. The commenter notes that the construction emissions do not reach the level of significance, but that operational emissions do and that therefore, the "project would conflict with AB32." The commenter is correct and therefore Impact GHG-1a is less than significant and Impact GHG-1b is significant and unavoidable. Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, is also significant and unavoidable. The text of the second paragraph under Impact GHG-2 has been revised for clarity as follows:

> As discussed above, the CEDHSP includes numerous policies to reduce operational and construction-related GHG emissions. These measures are consistent with strategies identified in the 2008 Scoping Plan and 2014 First Update, as well as statewide goals to improve energy efficiency, reduce building energy consumption, and increase renewable energy generation. However, while the average efficiency-metric threshold of 4.7 metric tons CO_2e per service population would not be exceeded in 2020, total emissions would exceed the 1,100 metric ton CO_2e regional threshold (see Table 3.6-6). Both thresholds are derived from the AB 32 reduction target for 2020. As noted above, the efficiency metric is most applicable to large-scale plans like the proposed project. However, the analysis evaluated project impacts relative to all available thresholds as of the writing of this document. Accordingly, since mass emissions exceed 1,100 metric tons CO_2e, GHG emissions associated with the CEDHSP in 2020 ~~may~~ would conflict with AB 32.

Please also see Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*, Section 3.6, Greenhouse Gases, in this Final EIR for additional analysis of the project's consistency with GHG regulatory programs. This analysis is included in the FEIR to supplement the RDEIR considering the 2018 Court of Appeals decision in *Golden Door Properties/Sierra Club vs. County of San Diego* (September 28, 2018, 27 Cal.App.5th 892)

I-R-5-4: The CEDHSP includes several policies to reduce GHG emissions, and the RDEIR also identifies mitigation measures. The measures will be included in the MMRP, incorporated into the Specific Plan, and made a part of project approval. The MMRP will detail responsibility for implementing and monitoring the measures. Please see Master Response 4 (Mitigation and Monitoring).

As the commenter correctly notes, the RDEIR states that even with the implementation of mitigation measures, the GHG impact would be less than significant. As stated in the RDEIR, the impact would be significant and unavoidable, despite the implementation of feasible mitigation measures. In conjunction with certification of the EIR, the County would need to adopt a statement of overriding considerations under CEQA Guidelines Section 15093 describing those project benefits that outweigh its significant impacts.

I-R-5-5: The commenter notes that no significant features of smart growth have been added to the plan. This comment is directed to project design and does not specifically address the analysis in the RDEIR. The project already includes several smart growth features including utilization of undeveloped infill sites to curtail sprawl, promotion of mixed use development patterns, promotion of compact land use patterns to maximize existing public services, improved pedestrian and bicycle travel along El Dorado Hills Boulevard, a pedestrian and bicycle crossing over Highway 50 that would enable travel to the El Dorado Town Center without using a car, energy conservation provisions in its development standards and design guidelines, increased opportunities for a range of housing types in El Dorado Hills, and others. The RDEIR acknowledges that there are no areas within El Dorado County with sufficient transit service to qualify for transit priority project streamlining introduced under SB 375. However, the project includes a mixed-use development component, as well as high-density zoning and numerous policies that would reduce GHG emissions from building operation. Emissions reductions from quantifiable CEDHSP sustainability policies have been quantified and incorporated into the impact analysis, as discussed in Section 3.6 of the RDEIR.

The sole purpose of the RDEIR is to address changes in approach to the GHG analysis presented in the Draft EIR and how that affects the significance conclusions. The commenter states that the RDEIR downplays the significance of this impact. The RDEIR clearly identifies this as a significant and unavoidable impact, whereas in the Draft EIR it was identified as a less than significant impact, and therefore does not "downplay" the significance.

I-R-5-6: This comment reflects the opinion of the commenter concerning AB 32, which will be considered during the decision-making process. The purpose of the RDEIR (as well as the Draft EIR) is to disclose the environmental effects of implementing the CEDHSP, which includes evaluating the project's GHG emissions in the context of AB 32. The provisions of AB 32 are not subject to debate or challenge by the County. Neither the RDEIR nor the Draft EIR contain subjective statements about the project's merits as it relates to AB 32 and GHGs, nor is it required to do so.

As correctly noted by the commenter, the RDEIR concludes the CEDHSP would result in significant operational GHG impacts, and the RDEIR identified mitigation measures to reduce GHG emissions, which clarify and expand on several policies in the CEDSHP concerning GHG.

I-R-5-7: This comment references Countywide voter-initiative Measures E and G, which address transportation planning and land use planning, respectively. These comments are related to planning, not the project's environmental impact under CEQA. However, the Draft EIR has been revised (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR)*, to reflect the voter initiative Measure E vote. Measure G was not approved.

From: **Doug Lindvig** <dlindvig@comcast.net>
Date: Fri, May 20, 2016 at 4:50 PM
Subject: Parker Plan opinion
To: Rommel.pabalinas@edcgov.us

Hi Mr. Pabalinas,

I feel that you are getting a strong negative feeling from most people regarding the proposed Central El Dorado Hills Specific Plan. I feel differently.

I have read the proposed plan and it seems that the project has been thoughtfully constructed so that there is a good balance between additional housing and improvements to the area such as a large village park, recreational sites, accessibility to the Town Center, and upgrades to the Raley's shopping center. Opponents to the project would have everyone feel that the project would not only destroy El Dorado Hills but much of Northern California. Yes, there are pros and cons to any change in the landscape but opponents ignore any good and exaggerate the bad. My impression is that they have not studied the long term plan for El Dorado as outlined by the Board of Supervisors with the aid of suburban growth professionals. I-R-6-1

Last November there was a special ballot to vote if we wanted "Apartments or Parks" in the undeveloped space. Given that as the premise, everyone seemed to say, "Gee, I guess I would rather have a park." It was a very biased and in my opinion worthless use of our taxpayer money since it had no impact other than tell the supervisors most people would rather have a park than an apartment building when in fact I doubt if most people did any type of due diligence in forming their own opinion. I have no problem with people opposing the project as long as it is a result of critical thinking and not just a knee jerk reaction to seeing a fictional apartment complex.

I wonder if people are aware that if the project does not get approved, Parker can build an already approved plan along the hill ridge next to El Dorado Blvd? This would also result in the loss of many heritage oaks and that project has no improvements to the area other than building houses. I-R-6-2

Well, I won't make this any longer other than to say I trust the Board of Supervisors to make the best decision for El Dorado Hills since they are most informed. Personally I would like to see El Dorado Hills grow and become even a more beautiful and economically successful place. Please don't cave into the zealots on either side. I-R-6-3

Sincerely,

Doug Lindvig

Response to I-RECIRC-6, Doug Lindvig, 5/20/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-6-1: The commenter supports the project. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is necessary in the EIR.

I-R-6-2: The commenter notes that if the proposed project is not approved, the previous plan would be implemented, which would result in the loss of heritage oaks. This is the No-Project Alternative, which is described and evaluated in Chapter 4, Alternatives Analysis, in the Draft EIR. As shown in Table 4-1 in the November 2015 Draft EIR (page 4-8), the proposed project would impact 14 acres of oak trees, and the No-Project Alternative would impact 32 acres. Depending on which oak woodland plan is in place at the time development entitlement applications are submitted, both the proposed CEDHSP and the No-Project Alternative, oak woodland impacts would be required to be mitigated in accordance with either the General Plan Policy 7.4.4.4, or the Oak Resources Management Plan or the provisions of the El Dorado Hills Specific Plan, as applicable. Section 3.3 of the Draft EIR has been revised to explain mitigation under both scenarios (Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*).

I-R-6-3: The commenter states that they trust the Board of Supervisors to make the best decision for El Dorado Hills. This is not a comment on the RDEIR. No further response is necessary.

From: "William mackean" <billymac5864@gmail.com>
Date: May 20, 2016 12:14 PM
Subject: [cedhsp] Serrano west side
To: <cedhsp@edcgov.us>
Cc:

1000 apartments along El Dorado Hills Boulevard would create so much traffic. It would decrease quality of life that we've come to expect in El Dorado Hills I think high density should be concentrated south of Highway 50 we're it already exists I-R-7-1

Sent from my iPad

Response to I-RECIRC-7, William MacKean, 5/20/216

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-7-1: The commenter is concerned about increases in traffic and quality of life resulting from "1000 apartments along El Dorado Hills Boulevard." As noted in the project description and the CEDHSP, 1,000 dwelling units are proposed for the entire plan area which includes both the Serrano Westside and Pedegral properties. Of those 1,000 proposed dwelling units, 530 are high-density (apartment or condominium) dwelling units. Traffic impacts are addressed in Section 3.14 and Section 5.2.2 of the November 2015 Draft EIR, and in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR* in this document.

From: **Barbara Narez** <barbnarez@yahoo.com>
Date: Mon, Jun 6, 2016 at 12:38 PM
Subject: Cultural and Historical Impact/Pedregal Project
To: rommel.pabalinas@edcgov.us
Cc: Barb and Duane Heglie <heglie@comcast.net>

To: The County of El Dorado Planning Services
2850 Fairlane Court
Placerville CA 95667

Attn: Mel Pabalinas, Sr. Planner

Dear Mr. Pabalinas,

We are writing to express our grave concern for the future of the last remaining significant historical and cultural sites that remain in El Dorado Hills. As residents of El Dorado Hills for the past 30 years and members of the El Dorado Hills Historical Society, we are aware that the development of the Pedregal Project could have serious and permanent effect on the Native American artifacts and cultural history to our area. As an educator in El Dorado Hills for 30 years, I have had the opportunity to support teachers and students in their studies of Native Americans, their history and their culture firsthand. How fortunate are we to have actual grinding rocks and artifacts of historical significance which have been unharmed for hundreds of years, right in our back yard? We implore that you and the county planners reconsider the development proposed for this area, and do whatever possible to preserve these historical and cultural sites. Please keep us notified of any public hearings in regards to the Pedregal Project. I-R-8-1

Sincerely,
Barbara and Rich Narez
El Dorado Hills Historical Society Members

Response to I-RECIRC-8, Barbara Narez, 6/6/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-8-1: The commenter is concerned about the historical and cultural sites in El Dorado Hills. As indicated in Section 3.4, Cultural Resources, of the November 2015 Draft EIR, cultural resources studies were conducted determine whether the proposed project would result in significant impacts, and the County and the applicant have been in contact with Native American representatives, who have provided input and preferences about treatment of cultural resources within the project area. Please see Responses to Comment **I-24-2** and **I-R-3-1** regarding efforts to avoid impacts on cultural resources.

From: **Judi Oswald** <ma11538@sbcglobal.net>
Date: Sat, May 21, 2016 at 5:18 PM
Subject: [cedhsp] Partial RDEIR for Central El Dorado Hills
To: "cedhsp@edcgov.us" <cedhsp@edcgov.us>

This project, even with the current revisions, will have an extremely negative environmental impact on the community of El Dorado Hills. The proposed additional housing units will inevitably bring more unwanted pollution, traffic, noise and safety issues, as well as overcrowding of this are. It will only lead to numerous negative impacts on all residents of El Dorado Hills. There is no way that changes to the current infrastructure will be able to appropriately handle the increase in population that 1000 additional housing units will bring. The current ambiance and semi-rural atmosphere of El Dorado Hills will forever be changed for the worse, never to be the same again. I-R-9-1

I strongly object to the current revision of the RDEIR for this project. I-R-9-2

Judi Oswald
29 year resident of El Dorado Hills

Response to I-RECIRC-9, Judi Oswald, 5/21/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-9-1: The commenter states that the proposed project, even with revisions, would have a negative environmental impact on the community. The RDEIR does not propose any revisions to the proposed project. As noted in Section 1.1.1 of the RDEIR, the purpose of the document is to provide analysis of GHG emissions consistent with a recent court decision. The project description remains the same as presented in the Draft EIR.

The commenter is concerned about pollution, traffic, noise, and safety issues, and overcrowding. The environmental impacts of the proposed project on air quality, traffic, noise, safety, and population growth are fully disclosed in the Draft EIR in Section 3.2, Section 3.14, Section 3.10, and Section 3.11, respectively, and in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Please see Responses to Comments **I-17-5** through **I-17-8**.

From: **Stanley Price** <2stanleyprice@gmail.com>
Date: Mon, Jun 6, 2016 at 4:43 PM
Subject: Re: Partial Recirculated Draft Environmental Impact Report (RDEIR) for the Central El Dorado Hills Specific Plan
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Cc: Lindell Price <lindellprice@gmail.com>

Rommel Pabalinas,

Here are my comments for the Partial Recirculated Draft Environmental Impact Report for the Central El Dorado Hills Specific Plan.

3.6 Should this document meet current standards? What are the criteria for evaluating facilities for walking and bicycling? I-R-10-1

In 3.6.2.1 Environmental Impacts, Methods of Analysis, Operation, the trip reduction data for the planned facilities is inadequate. As addressed in footnote 12 of Environmental Impacts, 3.6.2.1 Methods of Analysis, Operations, that are not included by Fehr & Peers Appendix L of the DEIR trip rates leaves out an increase in non-motorized trips counted on for reducing GHG reductions. If the increase of bicyclists and pedestrians crossing the intersections during peak periods is accounted for, traffic would be slowed resulting in a more significant impact that would certainly change the calculations. Please include the increase in non-motor vehicle trips (increased pedestrian trips), anticipated reductions to complete the study. I-R-10-2

A review of the circulation pattern for pedestrians within and reaching beyond the project does not meet levels of adequacy of design. The significant shift from motor vehicles to other modes will not occur with the current design... This is a significant short coming in achieving GHG reductions. The lack of pedestrian facilities design will lead to VMT utilized to reach suitable places to walk for exercise, thus increasing VMT. (See Appendix L). I-R-10-3

In 4.2.2.2,Significant Impacts That Can Be Mitigated to Less-Than-Significant Levels, section "Traffic and Circulation" is not treated properly as evidenced by an error that omits "non-motorized travel" in Impact TRA-1. By addressing "on-motorized travel". You may consider this a typographical error, but existence of the error demonstrates a shortcoming the the active transportation analysis. I-R-10-4

4.2.3 The public golf course is a cultural resource, and should be addressed.. I-R-10-5

Regarding Appendix L: I-R-10-6

The traffic counts were done in August, a time when school is not in session, and residents may be on vacation. This timing would reduce the peak hour counts. This number should be seasonally adjusted, or recounted. Is the study in accord with EDC Goal TC-3? I-R-10-7

In the traffic modeling, actual counts of pedestrians and bicyclists are used, with a "minimum of 2 pedestrians per approach per peak hour". To meet the goal of increasing non-motorized transportation, this is too low a threshold, and is not in accord with EDC Goal TC-4. Is this included in the traffic analysis? I-R-10-8

The insufficiency of the non-motorized transportation facilities is demonstrated by internal capture being greater than the number of walking trips, with walking trips/motor vehicle trips = 150/7,075. (Trip Generation- Serrano Westside). I-R-10-9

Appendix L, 7.2.4 Pedestrian and Bicycle Facilities, Impact 10 shows "a less than significant impact." There is no El Dorado County Pedestrian Plan, so the planning for pedestrian activity is clearly insufficient. Mitigation is required to meet a modest, safe, well-designed pedestrian plan for the development, and adjacent areas with direct access. You are not in compliance with El Dorado County Goal TC-5. I-R-10-10

Additionally, the El Dorado County Bicycle Master Plan did not account for this development, so being in compliance with that plan is not meeting the goals of the county, Are you in compliance with El Dorado County Goal TC-4? I-R-10-11

The bikeway designs, the traffic circle and roundabout designs, pedestrian facilities designs including the ramps at crossings are so poor that people will be discouraged from walking or bicycling. Note that the inadequacy of these non-motorized facilities will also compromise transit use due to poor non-motorized access to transit. I-R-10-12

Stanley Price

Utilitarian Cyclists

Response to I-RECIRC-10, Stanley Price, 6/6/2016

I-R-10-1: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

It is not clear to which criteria and standards for walking and bicycling the commenter is referring. Bicycle and pedestrian facilities are discussed in Section 3.14 of the November 2015 Draft EIR.

I-R-10-2: The commenter states that the trip reduction data used are inadequate because they leave out an increase in non-motorized trips counted on for reducing GHG. Emissions from increases in vehicle delay associated with biking and walking are inconsequential and are generally accounted for in the GHG modeling. The transportation analysis does account for increased trips made by people who walk and bike. The project trip generation accounts for the project's land use, location, and development scale that contribute to a reduction in vehicle trips, due in part to people that will walk and bike to access commercial and retail services near the project. As documented, the project would generate 11 AM peak hour and 15 PM peak hour walking trips that would otherwise be made by vehicle, if the project was proposed in a remote location that was not accessible. In addition, the intersection operations analysis includes pedestrians crossing at the study intersections, so the effect of pedestrians are accounted for in the analysis results.

I-R-10-3: The commenter is of the opinion that the circulation patterns for pedestrians in the proposed project are inadequate and that the lack of pedestrian facilities is a shortcoming in achieving GHG reductions. This is not a comment on the adequacy of the RDEIR GHG analysis but rather a comment on the pedestrian facilities proposed as part of the project. The pedestrian facilities proposed for the project are assumed in the RDEIR GHG analysis. The commenter's opinion is noted and will be considered by the Board of Supervisors during the decision-making process. No further response is necessary.

I-R-10-4: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter notes a typographical error in Section 4.2.2.2, Impact TRA-1, and infers that the analysis is inaccurate. This section was included to provide context for the RDEIR. No changes were made to the Traffic and Circulation impacts in this section of the RDEIR. Impact TRA-1 of the November 2015 Draft EIR addresses non-motorized travel. The typographical error has been corrected in the Final EIR.

I-R-10-5: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter states that the golf course is a cultural resource. Please see responses to comments **I -11-6** and **I-14-1**.

I-R-10-6: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter erroneously states that traffic counts were done in the summer and therefore peak hour counts were reduced. As described in Section 4.3 in the traffic study (Appendix L in the Draft EIR), traffic counts were collected mid-week in January and May when local schools were in session. The traffic study was updated in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. Traffic counts for the 2017 revised traffic study were collected mid-week in early December 2016, when schools were in session. See Response to Comment R-5-31(b) regarding the validity of the traffic counts.

I-R-10-7: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR*.

Goal TC-3 of the El Dorado County General Plan is "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." Policies that implement Goal TC-3 address the County's support for applicable regulations and standards pertaining to transportation, consideration of transportation systems management, provision of onsite facilities to encourage alternative transit mode, synchronization of signalized intersections. Goal TC-3 and its associated policies do does not pertain to a how the proposed project's traffic study should be performed.

I-R-10-8: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

Goal TC-4 of the County's General Plan is "to provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes." The commenter notes that actual pedestrian counts were used in the modeling, but that the minimum of 2 pedestrian per approach per peak hour is too low a minimum threshold to increase non-motorized transportation. The traffic counts are used to create a model based on existing conditions. The minimum number of pedestrians was used because fewer than 2 were observed during the count. Use of a different value in an effort to further Goal TC-4, as suggested by the commenter, would be speculative for purposes of the Draft EIR analysis. None of the policies that implement Goal TC-4 include a numerical threshold or value that must be used in traffic studies. The opinion expressed by the commenter does not affect the adequacy of the EIR, and no further response is required.

I-R-10-9: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter is of the opinion that non-motorized transportation facilities are insufficient as evidenced by information in the traffic study. Please see Response to Comment **I-R-10-8**. The proposed project includes bicycle and pedestrian facilities to augment the existing system, as noted in the project description.

I-R-10-10: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter states that planning for pedestrian activity is insufficient and the project is not in compliance with Goal TC-5, which seeks "to provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode." The proposed project includes sidewalks on many minor collectors, and local and residential streets, as is noted in the Transportation section of the CEDHSP. Additionally, pedestrian and bicycle facilities are proposed that could connect to the proposed Highway 50 overcrossing to provide access to Town Center. The comment does not pertain to the adequacy of the Draft EIR, and no further response is required.

I-R-10-11: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter notes that the CEDHSP is not accounted for in the El Dorado County Bicycle Master Plan. The commenter is incorrect. The El Dorado County Transportation Commission's 2010 update of the Bicycle Transportation Plan identifies the key bicycle improvements proposed by the CEDHSP. See Map 1 of the Bicycle Transportation Plan.

I-R-10-12: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter states that the bicycle and pedestrian designs will discourage people from walking or bicycling. This comment is directed to project design and not the analysis in the RDEIR. The commenter did not provide an alternate design that should have been considered.

From: **Bruce Quinn** <bquinnster@sbcglobal.net>
Date: Fri, May 13, 2016 at 6:22 AM
Subject: RE: Partial Recirculated Draft Environmental Impact Report (RDEIR) for the Central El Dorado Hills Specific Plan
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>
Cc: Bruce Quinn <bquinnster@sbcglobal.net>

Mr. Pabalinas:

Here are my comments to the RDEIR you sent to me April 22nd. Please confirm receipt of this email. I have included my previous submission for convenience. I-R-11-1

Best Regards,

Bruce Quinn

May 11, 2016

County of El Dorado
Community Development Agency
2850 Fairlane Court
Placerville, CA 95667

Subject: Central El Dorado Hills Specific Plan (State Clearinghouse No 2013022044) RDEIR

Reference: Comments to Draft EIR dated January 18, 2016

Attn: Rommel (Mel) Pabalinas;

I have some serious concerns and questions in regard to the accuracy of the Partially Recirculated Draft Environmental Impact Report (RDEIR) dated April 2016 and the effect it will have on the quality of life for those of us in El Dorado Hills and the county. I-R-11-2

Section 3.6 Greenhouse Gas Emissions:

The (RDEIR) starts by taking a micro view of Green House Gas Emissions (GHG) as if this project was the only one being considered. What has not been addressed in the RDEIR are the macro effects of the existing permitted shovel ready building projects (see New Development report provided), the other specific plans (e.g. Marble Valley, Lime Rock, San Stimo etc.), and the major Folsom development south of Highway 50; all of which will have a material effect on GHG I-R-11-3

emissions that will be greater than the sum of the individual projects. In addition, we have the planned Capital Southeast Connector (JPA Connector) currently planned to come through EDH Town Center and terminate at the Silva Valley Interchange at Highway 50. Other developers have submitted plans to extend Iron Point Road to Saratoga Way providing a parallel path to Highway 50. The convergence of the JPA, Highway 50, and the Iron Point extension is going to create a massive bottleneck for vehicles during peak periods of traffic. I-R-11-4

Capitol Southeast Connector

It is my belief that the RDEIR is flawed in its analysis and does not take into account the GHG cumulative effects that each project will bring. I-R-11-5

Traffic:

The RDEIR makes the assumption that fuel efficiency is going to improve based on advances in technology, but fails to address the effects of GHG emissions from inefficiencies created by traffic gridlock (LOS F conditions) and general population increases. I-R-11-6

Schools:

The RDEIR does not address the additional schools that will be needed (Oak Ridge High School is almost at capacity) to support the growth in housing. I-R-11-7 No analysis was performance that calculated the incremental GHG footprint to build and support additional schooling. I-R-11-8

Water:

Page 3-7 RDEIR forecasts a decrease in April snowpack by 88-97% due to global warming. and a hotter climate due to the effects of GHG emissions. It also fails to mention that most of the state will see reductions in rainfall. California water rights are already over-subscribed to a point where there is currently more demand than supply. The hotter climate is also going to drive up the demand for energy for climate control which will then drive up the GHG emissions. I-R-11-9

Questions:

1) Has a macro time phased traffic analysis been performed that measures the cumulative effects of GHG emissions taking into account the sum of the shovel ready, specific plans, and the planned roadway infrastructure? If so, can you provide the analysis of the Central El Dorado Specific Plan and the sum of the other projects in play. I-R-11-10
2) Assuming an 88% decrease in snowpack as forecasted on page 3-7, please provide an analysis of the available water and the demand through 2050. Your analysis must take into account periodic three year droughts. If new sources of water are required, please provide the source of water that will be procured, identify the water rights to that source, the cost to bring the water to the customers, and the effect it will have on the water rates. I-R-11-11
3) The RDEIR failed to address 2nd and 3rd order increases in GHG that will be a results of the additional infrastructure required to support the new residents. Please provide an analysis of this contributors to GHG emissions. I-R-11-12
4) The RDEIR discussed bringing in mass transit solutions to reduce GHG emissions. Assuming the Federal and State governments will be prioritizing funding for seal level rise, what (and who) will be the source of funding for mass transit. I-R-11-13

5) The "Conclusion" on page 3-26 of the RDEIR states that the GHG emissions are significant and unavoidable, and exceed state standards. Please provide your rationale on why the developer hasn't been required to develop a plan that is carbon neutral. I-R-11-14

6) The RDEIR lists "sense of community" as one of the essential criteria in this proposed development. Yet in November 2016 an unprecedented 91% of the EDH voters voted against the golf course rezone. The voters deemed the golf course rezone not compatible with our sense of community. Please explain how the "sense of community" will be enhanced if it is approved in its current form. I-R-11-15

Best Regards,

Bruce Quinn

1327 Terracina Drive

El Dorado Hills, CA 95762

January 18, 2016

County of El Dorado
Community Development Agency
2850 Fairlane Court
Placerville, CA 95667

Subject: Central El Dorado Hills Specific Plan (State Clearinghouse No 2013022044) EIR

Attn: Rommel (Mel) Pabalinas;

I have some serious concerns and questions in regard to the accuracy of the Environmental Impact Report (EIR) and the effect it will have on the quality of life for those of us in El Dorado Hills and the county. I-R-11-16

1.0 Traffic Impact Analysis (TIA):

The (EIR) takes a micro view of the existing state of traffic flow, attempts to project the incremental impact of the Central El Dorado Hills Specific plan, and then discusses a host of general road improvements to be completed by 2035. What has not been addressed in the EIR are macro effects of the existing permitted shovel ready building projects (see attached New Development report), the other specific plans (e.g. Marble Valley, Lime Rock, etc.), and the major Folsom development south of Highway 50; all of which will have a material effect on our quality of life.

The residents of Serrano experience first-hand the bottlenecks getting to Highway 50 during commute periods. Putting 1000 housing units at the base of the hill is only going to make a difficult situation intolerable. This is one of the reasons why 91% of the voters voted against the rezone of the golf course property in the recent advisory election.

Questions:

1) Has a macro time phased traffic impact analysis been performed for El Dorado Hills and County (through 2035) and Highway 50 which analyzes where the bottle necks will develop, how and when they will be addressed, the funding status for infrastructure, and who specifically will be asked to pay for these improvements? Can this be provided?
2) Putting a road through the Raley's shopping center complex is questionable. With the expected bottlenecks getting to Highway 50 drivers will begin to cut through the parking lot to Saratoga Drive. Pedestrians and shoppers will be put at risk. How do we prevent impatient drivers from cutting through the parking lot and protect the safety of our residents?
3) Will the taxpayers be asked to foot the bill for any new traffic infrastructure required to support this EIR?

2.0 Water:

In recent history, California has experienced long term droughts going well beyond this four-year drought. Since 1970, the population in California has more than doubled, little additional storage capacity has been added, farming has expanded, and storage releases are now mandated to protect the fisheries. Another year of drought would have been disastrous for California. At the local level residents of El Dorado County saw Folsom lake drop to record lows and water cuts of 28% were mandated. Clearly the planners have underestimated or ignored the effects of long term drought on the existing housing in the county.

The water availability projections cited in the EIR do not address long term drought scenarios for the existing customer base. Additional development will further burden the infrastructure requiring an increase in storage capacity to address drought periods.

Questions:

1) What future drought contingency steps are being taken to provide increased water capacity for the existing housing base?

2) What steps are being taken to support the extra capacity needed for projected growth, how is it time phased with the growth, and who will specifically be asked to pay for the cost of this new infrastructure?
3) Has a worst case study been performed for a long term drought of 10-20 years? Can this analysis be provided?

3.0 Educational Facilities:

Contrary to the opinion of the EIR, the addition of 1000 units will significantly increase the enrollment at the local EDH schools. These 1000 units are roughly 20% - 25% of the current number of homes in Serrano. The residents of Serrano have paid over ~$56 Million in Mello Roos since 1995 to fund school infrastructure against a bond authorization of $78 Million. Historically the local districts thought the Mello Roos special tax would go on perpetually but through grass roots political action they are recognizing that an end date is inevitable and needs to be negotiated. How soon it happens is TBD but it can no longer be considered a reliable source of long term infrastructure funding.

The EIR executive summary (page 21) states that the school districts will not require any additional facilities beyond what is currently planned. If the EIR is wrong, the developer, the school districts, and the county will decide how to finance the shortfall without giving the taxpayers a direct voice. The EIR further assumes that the rezoned land will be automatically annexed to the CFD requiring the existing homeowners to subsidize the incremental costs of providing any additional infrastructure. Rezoning the golf course from open space to high density housing provides significant benefit to the few (the developer and merchants) without providing any discernable benefit to the existing homeowners.

Questions:

1) Currently a large percentage of the EDH high school kids south of 50 are bussed to a high school ~10 miles away due to Oak Ridge being close to its maximum. I would like to see disclosure on where the new students under this EIR would go to school for all grades to include any new facilities that will need to be built to support the rezone.

2) The developer gains significantly in the rezone of the golf course. I would like to know what the existing homeowners gain in return for financing additional school infrastructure for rezoned open space.

3) Is there any reason why we can't give the existing homeowners in the CFD a direct vote on whether to annex the area in question or addressing any incremental school liabilities associated with the rezone?

3) Are the existing Serrano homeowners going to be expected to pay for incremental infrastructure required for the other new developments such as Marble Valley?

Best Regards,

Bruce Quinn

1327 Terracina Drive

El Dorado Hills, CA 95762

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

Project	Location	Type	Size	Process	Const. Date	Status
Aerometals Expansion SUP 98-0017-R-2	Sandstone Dr APN 117-081-01	Commercial	38,350 square foot expansion, office, warehouse, aircraft hanger 5.613 acres **-OR-** New Building 58,600 square feet	Grading Plans arrived 6/23/15	Unknown	Co. Planning Process
Bass Lake Golf Course (Rescue)	Starbuck Road APN 102-210-08	Residential	33 Residential Homes	FIL	Unknown	Co. Planning Process
Bass Lake K-8 School	Bass Lake	K-8 School	20 acres	Preliminary Design	Unknown	Preliminary Design
Bass Lake North PD14-0010/Rezone Z14-0008/TM14-1522	Sienna Ridge APN's 115-400-06, 115-400-07, 115-400-08	Residential	90 lots, 38.74 acres	Planning. TAC 2/2/15	Unknown	Co. Planning Process
Bell Ranch	Morrison Rd/Holy Trinity Church Area	Residential	113 lots on 113 acres	Planning/Revised FD Comments 5/31/15	TAC June 2015	Co. Planning Process
Bell Woods	Adjacent to Hollow Oak Subdivision	Residential	54 lots	Planning TAC 12/29/14 for revision to map (TM approved 5/24/05)	TAC February 2015	Co. Planning Process
~~Black Stone Villas Lot 1 (Lot V) TM 06-1430~~	~~Latrobe/Royal Oaks APN 118-140-01~~	~~Multi-Family~~	~~19 bldgs,112 condos 12.8 acres~~	~~Planning Approved~~	~~Unknown~~	~~Co. Planning Process~~
Blackstone W TM 12-1506	SE Corner Latrobe and Clubview APN 118-140-65	Residential	73 homes 9.66 acres	Construction Trailer SUP approved 4/7/15	Started 2015	Planning Approved 2.27.14
Blackstone X TM 12-1508-F	NE Corner Latrobe and Clubview APN 118-140-63	Residential	61 Lots 7.85 acres	Final Map TAC 2/23/15	Started 2015	Model Plans Approved 3.23.15
Blackstone V (Lot 1)	Latrobe/Royal Oaks	Residential	70 lots, 10.08 acres	Planning Approved	Unknown	Planning Approved

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

TM 12-1507/ Z12-0006/ A12-0002	Drive APN 118-140-61			5/8/14		5/8/14
Carson Creek Corporate Center Z06-0023/ PD06-0018/ P06-0020	4671 Golden Foothill Parkway APN 117-010-06, 117-210-28, 30, 33, 34, 41, 43	Commercial	152,603, 11 bldgs 86.7 Acres	In process	2011-12	Grading complete
Carson Creek Fitness (Heritage) S14-0003	Carson Crossing Drive APN 117-010-07 Carson Creek Unit 1	Commercial, Recreational and Fitness Center	5,000 square foot fitness center, pool, recreation. 4.9 acres	Improvement Plans 2/9/15. Building Plans in. SUP approved 3.12.15	Spring 2015	Building Process/Mylar signed 5/1/15
Carson Creek Unit 1	Carson Crossing	Residential/55 and older	285 Homes	Final Map Meeting 2/23/15	3 months	Final Map Meeting 2/23/15
Carson Creek Unit 2	Carson Crossing	Residential/55 and older	634 homes and two multi-family dwellings	Improvement Plans approved 2/12/15. New TM proposed 5.1.15	Unknown	Improvement Plans under review 2/12/15
Carson Creek Unit 3	Carson Crossing	Residential/55 and older	321 homes on 19.37 acres	Planning/TM/Revised Comments 5/27/15	Unknown	Co. Planning
Central El Dorado Hills Specific Plan	Pedegral, Station 85 South to Highway 50	Residential Westside Plan Area 155 acres Pedregal Plan Area 102 acres	1,028 Residential Lots 50,000 Commercial Sq. Ft.	Planning	Unknown	Specific Plan Draft 2
D'Artagnan Micro Winery SUP	Rocky Springs Ct	Commercial	4 acres grapes. 1,800 square foot bldg.	Completed 2/2015	Completed	Completed 2/2015
4408 Deer Valley Rd. (RES)	4408 Deer Valley Rd.	Residential Barn/Shop	1920 square feet	Building Permit	Unknown	Co. Planning Process

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Diamonte Estates TM 06-1421	Malcom Dixon Rd APN 126-100-24	Residential	19 parcels 113.11 ACRES	Planning	Unknown	Co. Planning Process
Dieu Nhan Buddhist Meditation Center (RES) SUP 13-0007	Duncan Hill Rd.	Church/Residential	6807 square foot meditation center, 2 Resident nun buildings, monk cottage, retreat cottage, guest cottage 10.05 acres	Planning / SUP	Unknown	Co. Planning Process/ FIL – water supply system problems.
Dixon Ranch A11-0006/ Z11-0008/ PD11-0006	Green Valley Rd APN 126-020-01, 02, 03, 04, & 126-150-23	Residential	605 Total lots. 160 age restricted. 280 acres total	EIR – Meeting on EIR at Planning 2/25/15	Unknown	Co. Planning Process
Eden Vale Inn (RES) Sup 07-0027-R	1780 Springvale Road APN 102-140-88	Commercial/Hotel	13 Guest rooms in 2 buildings, Yurts, Caretaker homes 12,000 sq. ft. total	Revision to SUP 07-0027-R	Unknown	Unknown
El Dorado Hills Apartments A14-0001/ Z14-0001/ SP 86-0002-R/ PD94-0004-R-2	Town Center (empty field) APN 121-290-60, 61, 62	Residential/Parking Garage	5 story parking garage 4 story apartment 250 units, 4.57 acres	Approved by Board of Supervisors 11/4/14 (lawsuit in progress)	Unknown	Co. Planning Process
El Dorado Hills Body Shop PD 13-0005	Town Center/Rossmore Lane APN 121-280-22	Commercial	1 Bldg – Approx. 14,904 square feet	Improvement Plans, Building Plans approved	2015	Under Construction
El Dorado Hills Dog Park S03-0005-R-3	At CSD Park APN 125-110-09	Dog Park	39.5 acres	Planning – comment letter submitted 3/5/14	Unknown	Planning
El Dorado Hills Memory Care/Grove at Francisco	Francisco/Green Valley APN 124-140-33	Memory Care	40,280 square feet, 64 beds 6.85 acres	Comments Submitted 6/15. TAC July 13th	Unknown	Co. Planning Process
El Dorado Hills Retirement SP13-0001/ PD95-0002-R/	Town Center West APN 117-160-38	Retirement Residence	3 stories 114,000 sq. ft.	Building Plans approved	2015	Construction 2015

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT [illegible]

PD95-0007-R/ P12-0004/ S13-0017			130 units 20.3 acres			
EDH 52 PA 14-0009	Silva Valley/50 APN 122-720-09	Commercial	51.45 acres, 350,000 square feet commercial, including 3 major buildings, gas stations, fast food, etc.	Planning	Unknown	Co. Planning Process
El Dorado Springs 23 TM 14-1514	White Rock Across 4 Seasons APN 117-010-05	Residential	49 lots on 21.65 acres	Approved by Board of Supervisors 12/2014	Unknown	Co. Planning Process
EID – ATT Cell Tower	Cabrito Dr.	Cell Tower	65' Mono Pine	Planning	Unknown	Co. Planning Process
Grove at Francisco	Francisco/ Green Valley APN 124-140-33	Memory Care	64 beds, 6.8 acres	TAC 7/13/15	Unknown	Co. Planning Process
Golden State Flow Measurement	Golden Foothill Pkwy	Commercial	10,920	Plan Review Complete	2011-12	Construction Pending
Granade Subdivision (LTB) PA 14-0008	Brandon/S. Shingle APN 087-310-64	Residential	10 lots on 133 acres	Conceptual Review	Unknown	Co. Planning
Green Valley Cemetery/Mortuary (RES) S94-0002-R/ Z14-0011/ PD14-0009	3004 Alexandrite Dr APN 102-030-28	Commercial Expansion	Addition of 3,604 square feet plus 1,712 covered patio, 2 underground LPG 8.6 acres	Planning 5/14/15. Continued off calendar	Unknown	Co. Planning
Green Valley Convenience Center S12-0015/ PD 12-003	SE Corner Sophia/Green Valley Rd. APN 124-301-46	Commercial	10,925 sq. ft. including - fuel Station, convenience store, fast food, car wash 2.12 acres	Planning/ Full EIR after lawsuit – Jan 2015 Public Meeting	Unknown	Co. Planning - Comments
Hansen Parcel Split (Latrobe) PA 14-0005	6740 South Shingle Rd APN 087-021-05	Residential Parcel Split 4x4	4 lots 45.69 Acres	Conceptual Review	Unknown	Co. Planning Comments

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

Hawk View TM 00-1371-R	Bass Lake Road/Hawk View APN 115-040-16	Residential	114 lots 38.47 acres	Planning TAC 12/29/14 for revision to map (TM approved 5/24/05)	Unknown PFFP issues	Co. Planning Process FIL updated 5/5/15
La Cresta Woods PA 13-0009	Wilson/Lago Vista APN 120-070-01	Residential	24 lots 7.5 Acres	FIL	Unknown	Planning
Lakehills Verizon Cell Tower	Lakehills Church	Cell Tower	Cell Tower	Construction	Unknown	Construction
Lakehills ATT Cell Tower	Lakehills Church	Cell Tower	Cell Tower	Planning	Unknown	Planning Comments
Lime Rock Valley	South East Marble Valley Area	Residential	740 acres 800 Res. Lots	Planning	Unknown	Specific Plan Draft 2
Malcom Dixon – Diamonte TM 05-1401-R	Malcom Dixon APN 126-490-01, 02	Residential	8 Lots 40.654 acres	Planning	Unknown	Co. Planning Process
Marble Valley SP12-0003 / DA 14-0002	South Bass Lake	Residential/Commercial	2341 acres 3236 Res. Lots, 475,000 sq. ft. commercial, 87 acres public facilities	Planning	Unknown	Specific Plan Draft 2
McCann Parcel Split (RES) P98-0011	2621 Crowdis Rd. APN 069-110-091	Residential Parcel split	3 Parcel Split	Improvement Plans Failed – Revisions needed 6/15/15	Unknown	Co. Planning Process
Miginella TM 07-1458-R/ BLA13-0015	Salmon Falls/Kaila Way APN 110-020-45	Residential	8 lots 26 acres	Planning	Unknown	Planning Approved 2.27.14
No Name = APN 115-040-16	North of Hawk View off Bass Lake	Residential Lots	114 lots	FIL Letter	Unknown	Planning
Oak Trails (Rescue) P14-0001	2660 Deer Valley Rd. APN 102-200-56	Residential	Parcel Split – 4 lots 42.26 Acres	Approved improvement plans 7/7/15	Unknown	Co. Planning Process
Porter	Golden Foothill Pkwy	Commercial	6,075	One building complete. 2nd building unknown	2011-12	Under construction
Promontory Lot D1	Sophia/Alexandria	Residential	63 Lots	Approved	2014-	Under construction

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT

Current

A13-0004/ Z13-0004/ TM13-1512	APN 124-070-62		11.01 acres		2015	
Promontory Lot H Unit 1 & 2 TM06-1423	Beatty/Alexandria APN 124-390-03	Residential	64 lots 9 acres	Final Map 11/5/13	2015	Under construction
Promontory Village 8 TM13-1513	Via Baragio/Via Trevisio APN 124-400-01	Residential Lots	63 lots 63.24 acres	Planning/ Improvement Plans 5/7/15 (revisions)	2015	Grading under construction
Quail Commercial Center PD14-0007/ P14-0005/ Z14-0010	Sunglow Ct at Suncast APN 117-060-35	Commercial – existing – parcel split only	Parcel Split – 7 individual parcels 3.101 acres	TAC 12/15/14 Planning approved 3.12.15	Unknown	Co. Planning Process
Ridgeview Village Unit 9 TM08-1477	Beatty near Powers APN 120-010-01	Residential	49 lots 22.4 acres	Planning	Unknown	Planning Commission
Ridgeview West Unit 4 APN 120-700-07 (Trevisio II)	Via Barlogio at Via Trevisio	Residential Lots	20 lots	Final Map meeting 1/2015	Unknown	Planning
Salmon Falls Road Verizon	Arroyo Vista/ Lake Vista Lane	Cell Tower	85' Monopine	Planning Commission approved 11/13/14	Unknown	Co. Planning Process
Saratoga Estates Subdivision	West Dead End of Wilson/Folsom Boundary APN 120-070-02	Residential	316 lots on 121.95 acres	FIL Letter/Wildfire Safe Plan Review/ EIR started	Unknown	Planning
Schaefer Gym (Rescue) SUP 14-0002	1550 Old Ranch Rd APN 105-250-55	Commercial Gym	Gym 3,000 sq. ft. 4.43 acres	Planning Approved 3/15 To Rescue Board for Shared Access Agreement 6/10/15	Unknown	Co. Planning Process
Serrano J 5/6 Z13-0002/ PD13-0001/ TM13-1511	Bass lake Rd at Serrano Parkway APN 123-040-07, 09 & 115-400-13	Residential	119 homes 50 acres	Revision	Unknown	Large Lot Final Map August 13, 2013
Serrano K 6	Greenview	Residential	74 homes	complete	2012	Construction in process
Serrano K1/K2 TM01-1377-F5	Pannini / Da Vinci APN 123-390-02	Residential Lots	43 lots 49 acres	Final Map 11/5/13	11/5/13	BOS - final

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current

Serrano K-5	Green view	Residential	151 homes	Final Map	Early 2014	Final Map Process
Serrano Village A-14 PD 08-0004 /TM 08-1464	Russi Ranch Dead end. APN 122-590-01	Residential - attached	54 lots 1 park 38.53 acres	Planning	Unknown	Co. Planning Process
Serrano Village C-2 Z 08-0005 / TM 08-1465	Russi Ranch Dead end. APN 122-030-05, 122-130-14, 122-140-03, 122-580-27, 122-590-01	Residential	50 lots 121 acres	Planning	Unknown	Co. Planning Process
Serrano Village D1 Z08-0037 / PD 08-0024 / TM 08-1484	Meadow Wood/ Boundary Oaks Dr. APN 121-040-20, 27	Residential	65 Lots 121 acres	Planning	Unknown	Co. Planning Process
Serrano Village J Lot H TM14-1524 / PD14-0008	Serrano/Bass Lake APN 123-280-10, 123-370-01, 03	Residential Lots	75 lots 23 acres	TAC Meeting 2/23/15	Unknown	Co. Planning Process
Serrano J5 Public Park SP15-0001/PD 15-0002	Serrano/Bass Lake APN 123-570-01	Park – replacing commercial	Park – four soccer fields 12 acres	Planning – TAC April 13, 2015	Unknown	Co. Planning Process
Serrano Westside	Near Raley's/ Serrano Parkway APN 120-160-03, 121-120-22, 121-040-20, 29, 31	Residential Multi-family	640 multi-family units 123 single family 50,000 ft. sq. commercial 105 acres	Planning	Unknown	NOP
Silva Valley Parkway Class I/II Bike Path	On Silva Valley between Harvard and Green Valley	Bike Path	1.1 miles of a Class I multi-use path along the east side of Silva Valley Parkway from Harvard Way to Appian Way and a Class II bike lane on	Planning	Unknown	Mitigated Negative Declaration

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current

			the southbound side of the road from Appian Way to Harvard Way and approximately 0.9 mile of a Class II bike lane on both sides of Silva Valley Parkway from Appian Way to Green Valley Road.			
Silver Springs (RES) TM 97-1330	Silver Springs/Green Valley APN 103-010-02, 103-020-09 and 103-020-10	Residential	244 lots on 243 acres	Planning, Revised phasing plan on 7/1/15	Unknown	Co. Planning Process
Springs Equestrian Center (RES) Z04-0015/ SUP 01-0011/ P08-0036	Deer Valley and Green Valley Road APN 115-410-05	Equestrian Center	2 covered arenas 45,000 sq. Ft. each 420 horse stall barns Fenced riding area 12,000 commercial store Camping 146.42 acres	Planning	Unknown	Planning 10/23/14
Summer Brook (Rescue) A07-0005/ Z07-0012/ PD07-0007/ TM07-1440	Green Valley near Deer Valley APN 102-210-12, 102-220-13	Residential	29 lots 90.3 acres	Approved by Planning 9/25/14	Unknown	Approved by Planning 9/25/14
Town Center ACE Hardware FIL	Next to Debbie Wongs	Commercial	21,800 square feet	FIL	Unknown	FIL
Town Center West PA11-0004/ PD95-02	Latrobe and White Rock Road – Blue Shield	Commercial	Revision to Town Center West PD95-02	Planning	Unknown	Co. Planning Process

EL DORADO HILLS FIRE DEPARTMENT DEVELOPMENT ACTIVITY REPORT Current :

	APN 117-160-17, -44 through -57		51 acres 1,168,060 sq. ft.			
Verizon Cell Tower (RES)	3000 Alexandrite	Cell Tower	Cell tower	Permit	Dec. 2014	Building Permit
Valley View East Ridge TM 14-1521	Above Blackstone APN 118-130-28	Residential	701 Lots 735 acres	Planning Commission Approved 6/11	Unknown	Co. Planning Process
Watermark La Reserve P08-0013	Salmon Falls Rd. Adjacent to Watermark and Zee Estates APN 104-240-22	Residential	4 homes 20 acres	Improvement Plans Signed 9.14	Unknown	Mylar signed
Westmont Assisted Living	Golden Foothill at New Carson Crossing Drive APN 117-07-100	Assisted Living and Memory Care	149 beds in 134 units. 2 stories. 120,213 square feet	FIL	Unknown	Co. Planning
West Valley Unit 3B		Residential		Map Revision	Unknown	Co. Planning Process
West Valley 5B Unit 1	Blackstone	Residential		Final Map 11/5/13	11/5/13	BOS - final
West Valley Lot 6 & 7	Blackstone	Residential		Final Map 12/2013	12/2013	Co. Planning
Wilson Estates Z14-0002/ PD14-0001/ TM14-1515	Malcolm Dixon APN 126-070-22, 23, 30	Residential	28 homes on 28.18 acres	Approved at Board of Sups 11/13/14	Unknown	Co. Planning Process

Response to I-RECIRC-11, Bruce Quinn, 5/13/2016

I-R-11-1: The commenter has included comments submitted on the November 2015 Draft EIR (dated January 18, 2016). None of the comments in the January 2016 letter were related to GHG. Please see Responses to Comments **I-22-1** through **I-22-7**.

I-R-11-2: The commenter is concerned about the accuracy of the RDEIR (detailed more fully below) and the effect the project will have on quality of life. Quality of life is a social concern and not an environmental effect subject to CEQA analysis. See Response to Comment **I-22-1**.

I-R-11-3: The commenter states that the "macro effects" of known building projects (including Village of Marble Valley SP, Lime Rock Valley SP, San Stino SP, south of US 50 in Folsom) and road projects are not addressed. For purposes of this response, the County interprets "macro effects" as meaning cumulative effects, based on information provided in the comment.

The commenter's assertion regarding cumulative impacts is incorrect. The summary of major projects identified in this comment (e.g., Marble Valley and Lime Rock) is similar to that provided in the commenter's January 2016 letter. The comment also appends a list of "shovel-ready" projects compiled by the El Dorado Hills Fire Department that is identical to the list in the commenter's previous letter. The County has addressed this comment; please see Response to Comment **I-22-2**. Response to Comment **I-22-2** describes the scope of the cumulative analysis in the Draft EIR, which also applies to the analysis in the RDEIR. As explained in Response to Comment **I-22-2**, the cumulative analysis identifies the cumulative impacts of all projects combined, and then, as required under CEQA, what the proposed project's contribution would be. As such, the EIR's analysis is not limited to project-only effects and does include a cumulative analysis.

The Draft EIR does not take a "micro view" of GHG emissions. In fact, GHG is inherently cumulative, as is acknowledged in Section 3.6.1.2, Environmental Setting of the RDEIR, "Consequently, unlike other resource areas that are primarily concerned with localized project impacts (e.g., within 1,000 feet of the project site), the global nature of climate change requires a broader analysis approach." The analysis includes the projects the commenter mentioned as well as the projects listed and described in Section 5.2.1 of the RDEIR. Finally, Section 5.2.2.6, which specifically addresses cumulative impacts states:

> Climate change is a global problem, and greenhouse gases (GHGs) are global pollutants, unlike criteria air pollutants (such as ozone precursors, which are primarily pollutants of regional and local concern). Given their long atmospheric lifetimes (see Table 3.6-1), GHGs emitted by numerous sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of past, present, and future sources. Therefore, GHG impacts presented in Section 3.6, *Greenhouse Gas Emissions*, are inherently cumulative.

I-R-11-4: The commenter states that "the convergence" of several road improvements would create a bottleneck during peak traffic hours. The cumulative traffic analysis presented in Section 5.2.2 of the November 2015 Draft EIR addresses cumulative traffic impacts and accounts for all reasonably foreseeable projects. The updated analysis that has been added to Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document also addresses cumulative impacts and has been updated using the County's 2016 CIP. Please see Response to Comment **I-22-2**.

I-R-11-5: The RDEIR's evaluation of GHG impacts correctly accounts for cumulative development. Section 5.2.2.6, Greenhouse Gas Emissions specifically addresses the project's contribution. Please see Response to Comment **I-R-11-3**.

I-R-11-6: The commenter asserts inefficiencies created by traffic congestion and population increases contribute to GHG emissions, which should have been evaluated in the RDEIR. Other than a general statement, the commenter does not provide any data concerning a relationship between LOS F conditions and GHG emissions that should have been considered in the RDEIR. Future conditions, including both population growth and increase traffic, are accounted for in traffic modeling. Emissions from real or perceived inefficiencies in traffic levels of service are inconsequential and are generally accounted for in the GHG modeling

GHGs associated with population growth are fully accounted for in the analysis. GHGs emitted from project-generated vehicle trips, energy use, area sources (e.g., natural gas combustion, landscaping), water consumption, wastewater conveyance and treatment, and landfilling solid waste) are all population-driven. These sources and their emissions are presented in Table 3.6-6 and Table 3.6-7 on pages 3-20 and 3-12 in the RDEIR. Please see Response to Comment **I-R-11-3** regarding the cumulative analysis of GHG.

I-R-11-7: The Draft EIR evaluates impacts on schools. The RDEIR did not need to evaluate impacts on school capacity because no changes to the CEDSHP are proposed in the RDEIR, and the RDEIR was limited to the analysis of GHG impacts, as stated on page 1-2 in the RDEIR. Please see Response to Comment **I-10-4** regarding the analysis of schools impacts.

I-R-11-8: The commenter states that the RDEIR GHG analysis does not account for the building and supporting of new schools. This is because the construction and operational impacts of the new school facilities needed to serve the project, if any, are speculative at this time.

As noted in the discussion of *Schools*, under Impact PSU-1 on page 3.12-27 of the Draft EIR, the Buckeye Union School District, which provides elementary and middle schools in the project area, has not published projections beyond 2008. The *El Dorado Union High School District, Demographic Study 2017/18*, adopted on November 14, 2017, projects student enrollment in the various attendance areas in the County through 2023/2024 using information provided by local municipalities on the development of housing units. The proposed project has been incorporated in the study and the study concluded that the El Dorado Union High School District anticipates a decline in students and an increase in available capacity by 2023/2024 over a six year building horizon in the proposed project's attendance area, which would more than compensate for the increase of 177 students anticipated as a result of the proposed project.

Since projections for elementary and middle school enrollment are not provided, the actual number of additional students over capacity, if any, is not known because projected capacity is not known. The need for new classrooms, the location and design of such classrooms, if needed, and the ease of access to the school facilities by walking or bicycle are all unknown factors that would be important when determining potential impacts. Therefore, addressing the GHG emissions based on the construction and operations of new schools would be highly speculative.

Additionally, Impact GHG-2, which addresses GHG emissions from operation of the project, has been determined to be significant and unavoidable. The addition of 90 students (41 elementary and 49 middle school) is negligible in comparison to the current capacity of the Buckeye Union School District (4661 students) and would not change that determination.

I-R-11-9: The RDEIR (page 3-7) summarizes the conclusions of studies on climate change and its potential effects in California, with references provided for each study. The RDEIR does not include independent analysis or predictions, as implied by the comment. The list is not intended to be all-inclusive, nor does the absence of a particular factor invalidate the RDEIR analysis. Please see Section 3.6.2.1, Methods of Analysis, for a detailed explanation of how GHG impacts were determined.

A Water Supply Assessment (WSA) was prepared for the project and was adopted by the EID Board of Directors in August 2013. The WSA considered drought conditions and concluded there would be adequate water supply for the project along with demands of other projects (see also Master Response 1 [Water Supply]). Additional and detailed analysis of the conditions postulated by the commenter (climate change effects on water rights and increased energy demand for climate control) are beyond the scope of the analysis, would be speculative (thus not requiring evaluation per CEQA Guidelines Section 15145), and would not alter the RDEIR, which concluded GHG impacts would be significant and unavoidable.

I-R-11-10: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter asks if a macro time phased traffic analysis has been performed. Please see Response to Comment **I-22-2**.

I-R-11-11: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter requests an analysis of available water and demand through 2050. Impact PSU-6 in Section 3.12, *Public Services and Utilities*, of the November 2015 Draft EIR, provides a discussion of water supply and demand. The EID has determined water supplies are sufficient, and the analysis in the WSA fully complies with the requirements of the California Water Code Section 10910 and CEQA Guidelines Section 15155 as it pertains to evaluating water supply under drought conditions. The scenario and information requested by the commenter is not required by CEQA, which requires analysis projected 20 years into the future, and would not affect the analysis. Please see Response to Comment **I-R-1-9** and Master Response 1 (Water Supply).

I-R-11-12: The commenter does not define or provide specific examples of "2nd and 3rd order increases in GHG" that should have been considered. The analysis of GHG emissions factors include increased energy and water consumption, as well as waste and wastewater generation. It includes both construction and operational emissions and accounts for reasonably foreseeable development. It is unclear what consequences in particular the commenter is concerned about and therefore any further response to this comment is not possible.

I-R-11-13: There are no references to "mass transit" in the RDEIR. It is not a component of the CEDHSP, nor is it required to mitigate any impact. The commenter is referred to the El Dorado County Regional Transportation Improvement Program for information about funding for specific projects. Mass transit projects and the means by which they are funded are beyond the scope of the RDEIR.

I-R-11-14: The commenter's view of carbon neutrality is directed toward the merits of project design. There is no local, state, or federal mandate for carbon neutrality. The County strives, through its review of development projects to ensure all feasible GHG reduction features are included in project designs. The County has pursued all feasible mitigation measures in the CEDHSP to reduce

GHG emissions to the greatest extent possible. The RDEIR finds that even with mitigation there is a significant and unavoidable impact related to operational GHG emissions. A statement of overriding considerations is necessary where a significant impact cannot be mitigated (Section 15093 of the CEQA Guidelines), and the County would need to adopt Findings of Fact supporting this determination and a statement of overriding considerations for this impact.

I-R-11-15: *The RDEIR is a focused document that discusses greenhouse gas emissions. This comment is not related to GHG emissions or the adequacy of the RDEIR.*

The commenter references the project objective, "sense of community" and the CSD Advisory Measure E vote and questions how these can be reconciled. Please see Response to Comment **I-7-2** and Master Response 2 (CSD Advisory Measure E).

LETTER I-RECIRC-12

From: **Chad Randolph** <chad.edh@sbcglobal.net>
Date: Mon, Jun 6, 2016 at 9:20 AM
Subject: Pedregal Planning Area
To: "rommel.pabalinas@edcgov.us" <rommel.pabalinas@edcgov.us>

To: County of El Dorado Planning Services
2850 Fairlane Court
Placerville, California 95667

Attn: Mel Pabalinas, Sr. Planner

As members of the El Dorado Hills Preservation Society and residents of El Dorado Hills since 1992, we are writing to voice our opposition to the planned development of the land between El Dorado Hills Blvd. and the Ridgeview neighborhood in El Dorado Hills (e.g., Pedregal Planning Area). This open land is among the most significant archeological, historical and cultural sites in the area and should not be lost to Parker Development's aggressive plans to build out every remaining parcel of land they can acquire. There are some things more important than the tax revenue that will accrue to El Dorado Country as a result of such a development.

One of the reasons we moved here - and why people enjoy living here - is the quality of life and recreational activities possible in a community with ample open space (not just parks but undeveloped woodland areas as well). Over the past 24 years, we have watched development increase and development-related traffic problems worsen. Now, because El Dorado Hills bears less resemblance to the town we moved to all those years ago, we are committed to trying to preserve lands that deserve it. Given your own EIR findings that some archeological treasures cannot be saved and will be destroyed by the proposed development, we believe the Pedregal Planning Area is one of those areas that deserves to remain undeveloped. I-R-12-1

Lastly, we urge the County of El Dorado to take its cue about development in El Dorado Hills from the vote results on Measure E last year. Though only an advisory vote that does not bind the County, the message could not have been clearer. Despite deceptive campaign tactics by Parker Development designed to confuse voters, residents were – and remain - overwhelmingly (91%) opposed to rezoning the former El Dorado Hills Golf Course site to allow residential and commercial development. If you want a mandate from voters who are on record opposing plans for more residential and commercial development along the length of El Dorado Hills Blvd. – including the Pedregal Planning Area - you have it. I-R-12-2

We would appreciate being notified about any future hearings on the Pedregal Plan.

Thank you for considering our comments.

Patty & Chad Randolph
El Dorado Hills, CA

Response to I-RECIRC-12, Chad Randolph, 6/6/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-12-1: The commenter is opposed to the project and is concerned about cultural resources and quality of life. As indicated in Section 3.4, Cultural Resources, of the November 2015 Draft EIR, cultural resources studies were conducted to support the proposed project and the County and the applicant have been in contact with Native American representatives, who have voiced their concerns and preferences about treatment of cultural resources within the project area. Please see Response to Comment **I-24-2** regarding efforts to avoid bedrock mortars. Quality of life is a social concern and not an effect subject to CEQA analysis. (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560).

I-R-12-2: The commenter references the CSD Advisory Measure E vote. Please see Response to Comment **I-7-2** and Master Response 2 (CSD Advisory Measure E).

LETTER I-RECIRC-13

6/3/16

16 JUN -6 AM 10: 58

RECEIVED
PLANNING DEPARTMENT

Mr. Rommel Pabalinas
County of El Dorado
Community Development Agency,
Long Range Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667

Re: Comments on the Partial Recirculated Draft EIR for the Central El Dorado Hills Specific Plan (the "RDEIR")

Dear Mr. Pabalinas:

I am submitting these comments on behalf of myself and the organization Parks not Parker 2.0.

The following are comments to the RDEIR:

1. Section 1.2, page 1-3, second paragraph, entitled "Chapter 2, Project Description". The first sentence reads "This contains the Project Description from the CEDHSP DEIR with NO REVISIONS (CAPITALIZATION ADDED)". REVISIONS WERE MADE- see below in comment No.2 for details.

2. Chapter 2, Project Description, page 2-1, italicized first sentence "This chapter is provided for information purposes only to assist the reader in understanding the revised greenhouse gas (GHG) analysis; NO CHANGES HAVE BEEN MADE (CAPITALIZATION ADDED)." CHANGES WERE MADE.

I-R-13-1

The revisions and changes that were made are small, and probably inconsequential, but the fact that any changes or revisions were made, after the explicit statement, in 2 locations in the RDEIR, that NO CHANGES OR REVISIONS WERE MADE, calls into question the veracity and truthfulness of the preparer of the RDEIR, ICF International. If ICF International can make mistakes like these, on very simple matters, how can El Dorado County, its Planning Department, its Board of Supervisors, and the county residents, who rely on the truthfulness and accuracy of statements made on much more complex matters in documents like the DEIR and the RDEIR, ever trust anything prepared by ICF International. Why is this company being hired and paid?

The changes and revisions made are as follows: A. On page 2-1, the first sentence of the 4th paragraph, starting with the words "The Central El Dorado Hills Specific Plan..." is new. It is a repeat of footnote 4 at the bottom of the page. B. The numbering of subsections 2.1.2.1, 2.1.2.2, 2.3.1.1, 2.3.1.2, 2.3.1.3, 2.3.3.2, 2.3.3.3 and 2.3.3.4 is all new. They were not present in the DEIR.

Again, the changes and revisions are small, inconsequential and, arguably, are helpful, but the fact that any changes or revisions were made is what is important, after explicit statements that NO changes or revisions were made. I-R-13-1 cont.

3. Chapter 2, Project Description, page 2-1, second sentence of the second paragraph - "The proposed project would be developed in multiple phases with FULL BUILD-OUT ANTICIPATED IN 2025 (CAPITALIZATION ADDED) or later."

CONTRAST that statement with the following: A. The last sentence of the first full paragraph on page 3-13, which states " Accordingly, project-related impacts in both 2020 and FULL BUILD (2035) (CAPITALIZATION ADDED)..., B. TABLE 3.6-2., titled Operational GHG Thresholds/Efficiency Indicator, where under the heading "Analysis Condition" it references "2035 Development (Full Build), and C. the first paragraph on page 3-14, where the words "FULL BUILD (2035)" (CAPITALIZATION ADDED) appear twice, once in the heading and once in the body of the paragraph.

These are the first indications that full build of the Proposed Project will not occur until 2035, rather than 2030, as previously stated in the DEIR and certainly inferred by reference in Chapter 3, sub-chapter 3.2 in the following Tables- Table 3.2-5-Construction Scheduling and Phasing, Table 3.2-6- *Estimated Maximum Unmitigated Construction Emissions*, Table 3.2-7-Estimated Maximum Mitigated Construction Emissions, Table 3.2-9- Estimated Mitigated Combined Construction and Operational Emissions, and Table 3.6-3- Estimated Construction GHG Emissions, all of which indicate construction and/or operation will occur between the years 2016 and 2030. No information or analysis is provided for construction that will occur between the years 2030 and 2035. I-R-13-2

For an EIR to be adequate, it must reflect a good faith effort at full disclosure. (CEQA Guidelines, sec. 15151.) The failure to disclose the extended build out of the Proposed Project for an additional 5 years, until 2035, is unconscionable, and reflects poorly on the character, honesty and trustworthiness of both the preparer of the RDEIR, ICF International, and the Project Applicant. This is an omission of a major, material fact and once again shows a lack of commitment by both ICF International and the Project Applicant to full disclosure and transparency.

To quote from page 1-1 of the DEIR "According to Section 15002 of the State CEQA Guidelines, the basic purposes of CEQA include the following - Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities." Did ICF International and the Project Applicant really believe that the change in the build out to 2035 was NOT SIGNIFICANT and did not need to be disclosed? ICF International may claim that their failure to disclose this material change was a mistake and inadvertent, but mistakes like this should have consequences, particularly since ICF International holds itself out to be experts in preparing and writing Environmental Impact Reports.

This change in the build out period for the project poses five CEQA concerns: the clarity, accuracy, and stability of the project description; the accuracy of project-specific impact analyses; the accuracy of the cumulative impact analyses, the requirement to adopt sufficient feasible mitigation, and the need for recirculation of the DEIR.

A. There is a need to clarify the buildout of the project.

An accurate and complete project description is necessary to fully evaluate the project's potential environmental impacts. *(El Dorado County Taxpayers for Quality Growth v. County of El Dorado* (App. 3 Dist. 2004) 122 Cal.App.4th 1591.) Put another way, a description of the project is an indispensable component of a valid environmental impact report under CEQA. (*Western Placer Citizens for an Agricultural and Rural Environment v. County of Placer (App. 3 Dist. 2006)* 144 Cal.App.4th 890.)

"An accurate, stable, and finite project description is the *sine qua non* of an informative and legally sufficient EIR." (*County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal.App.3d 185, 193.) "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decisionmakers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (i.e. the 'no project' alternative) and weigh other alternatives in the balance." (*Id.* at pp. 192-193.) The primary harm caused by "the incessant shifts among different project descriptions" was that the inconsistency confused the public and commenting agencies, thus vitiating the usefulness of the process "as a vehicle for intelligent public participation." A "curtailed, enigmatic or unstable project description draws a red herring across the path of public input." (*Id.* at pp. 197-198.) I-R-13-2 cont.

A project description should account for reasonably foreseeable future phases of proposed projects if they may change the scope of the initial project or its environmental impacts. (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 393-399. For example, the EIR for a prison expansion was inadequate insofar as the EIR failed to accurately describe the project, and give a complete analysis of project alternatives. (*City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438.)

Thus, the first task for the County is to determine one, consistent, build out period for the project. Is build out at 2025, 2030, or 2035?

B. Impact analyses must uniformly apply the proper build out period.

"The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data." (CEQA Guidelines, sec. 15064, subd. (b).) An agency must produce rigorous analysis and concrete substantial evidence to support a determination that the project's impacts are insignificant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692.)

The environmental effects that must be considered in an EIR include short and long-term effects. (CEQA Guidelines, sec. 15126.2, subd. (a).) "Even when a project is intended and expected to improve conditions in the long term—20 or 30 years after an EIR is prepared—decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement. These costs include not only the impacts involved in constructing the project but also those the project will create during its initial years of operation." *(Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (August 5, 2013) 57 Cal.4th 439)

I-R-13-2 cont.

The use of outdated information to evaluate environmental impacts does not reflect, "[A] reasoned and good faith effort to inform decisionmakers and the public." (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344. 1367.) A clearly inadequate or unsupported study will be entitled to no judicial deference. *(State Water Resources Control Board Cases* (App. 3 Dist. 2006) 136 Cal.App.4th 674.)

The effects of changing the buildout period for the project will vary depending upon the resource affected. For example, extending the buildout period, and reducing the peak emission of ozone precursors from construction equipment, may help keep construction-related ozone precursor emissions below significance thresholds. On the other hand, extending the buildout period may extend the duration of other construction related impacts including noise, dust, and construction related traffic-delays. Thus, once a single build out period is selected, it must be uniformly applied on all the impact evaluations. For some impacts, this will require amending the impact analyses in the DEIR to reflect a new build out period.

C. The cumulative impact analyses must be adjusted if the build out period is changed.

"'Cumulative impacts' refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, sec. 15355.) In some cases, a cumulative impact "results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." (CEQA Guidelines, sec. 15355.) A cumulative impacts analysis must take into account the environmental impacts of not only projects that are already approved, but also proposed projects undergoing environmental review. (*San Franciscans for Reasonable Growth v. City and County of San Francisco* (1st Dist. 1984) 151 Cal.App.3d 61.) I-R-13-3

An EIR must discuss significant cumulative impacts, and/or explain why the cumulative impacts are not significant. (CEQA Guidelines, sec. 15130; *Citizens to Preserve Ojai v. County of Ventura* (2d Dist. 1985) 176 Cal.App.3d 421, 432.) The discussion of cumulative impacts must either "list past, present, and reasonably anticipated future projects producing related or cumulative impacts" or provide "A summary of projections contained in an adopted general plan or related planning document which described or evaluated regional or areawide conditions." Then it must summarize their "expected environmental effects" and "examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects." (CEQA Guidelines, sec. 15130.)

"Assessment of a project's cumulative impact on the environment is a critical aspect of the EIR. " 'One of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact.' " (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720, quoting Selmi, The Judicial Development of the California Environmental Quality Act (1984) 18 U.C. Davis L.Rev. 197, 244, fn. omitted.)" (*Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025 – 1026.)

"'An agency may not ... [treat] a project as an isolated 'single shot' venture in the face of persuasive evidence that it is but one of several substantially similar operations .... To ignore the prospective cumulative harm under such circumstances could be to risk ecological disaster.'" (*Whitman v. Board of Supervisors* (2d Dist. 1979) 88 Cal.App.3d 397, 408, quoting *Natural Resources Defense Council v. Callaway* (2d. Cir. 1975) 524 F.3d 79, 88.) "Consideration of the effects of a project or projects as if no others existed would encourage the piecemeal approval of several projects that, taken together, could overwhelm the natural environment and disastrously overburden the man-made infrastructure and vital community services. This would effectively defeat CEQA's mandate to review the actual effect of the projects upon the environment." (*Las Virgines Homeowners Federation, Inc. v. County of Los Angeles* (2d Dist. 1986) 177 Cal.App.3d 300, 306.) I-R-13-3 cont.

Also, "'It is vitally important that an EIR avoid minimizing the cumulative impacts. Rather it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them.' [Citation.] A cumulative impact analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of a project, the necessity for mitigation measures, and the appropriateness of project approval. [Citation.] An inadequate cumulative impact analysis does not demonstrate to an apprehensive citizenry that the governmental decisionmaker has in fact fully analyzed and considered the environmental consequences of its action." *Citizens to Preserve Ojai v. County of Ventura* (2d Dist. 1985) 176 Cal.App.3d 421, 431, quoting *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1st Dist. 1984) 151 Cal.App.3d 61, 79.)

The relevant question is whether any additional amount of effect should be considered significant in the context of the existing cumulative effect. *(Communities for a Better Environment v. California Resources Agency* (App. 3 Dist. 2002) 103 Cal.App.4th 98; (See also

Los Angeles Unified School District v. City of Los Angeles (1997) 58 Cal.App.4th 1019.) The more severe the existing environmental problems are, the lower the threshold for treating the project's cumulative impacts as significant. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 718-721.)

Changing the buildout of a project can change the cumulative impacts of a project. For example, the cumulative construction emissions for the county may increase from 2030-2035, if the project buildout is extended from 2030 to 2035. Also, construction related traffic delays in 2030-2035 may be cumulatively worse, if build out of the project is extended from 2030 to2035. I-R-13-3 cont.

Thus, once a single build out period is selected, it must be uniformly applied on all the cumulative impact evaluations. For some cumulative impacts, this will require amending the impact analyses in the DEIR to reflect a new build out period.

D. For instances in which the buildout assumption is key to reducing environmental impacts, it must become an enforceable mitigation measure.

A mitigation measure is something that avoids an impact, minimizes an impact, reduces the impact over time, restores the impacted environment, or compensates for an impact by providing substitute resources or environments. (CEQA Guidelines, sec. 15370.) CEQA requires agencies to adopt feasible mitigation measures in order to substantially lessen or avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).)

When approving projects that are general in nature (e.g. general plan amendment), agencies must develop and approve whatever general mitigation measures are feasible, and cannot merely defer the obligation to develop mitigation measures until a specific project is proposed. (*Citizens for Quality Growth v. City of Mount Shasta* (3 Dist. 1988) 198 Cal.App.3d 433, 442). Certification of an EIR for such a general project, without adoption of a feasible mitigation measure, is an abuse of discretion under CEQA. (*City of Marina v. Board of Trustees* (2006) 39 Cal.4th 341.) I-R-13-4
Furthermore, such mitigation must be "required in, or incorporated into" (Public Resources Code § 21081, subd. (a)(1)) a project as a condition of project development, so that it is "fully enforceable" (Public Resources Code § 21081.6, subd. (b)). (*Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.)

"Numerous cases illustrate that reliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decision making; and consequently, these mitigation plans have been overturned on judicial review as constituting improper deferral of environmental {Slip Opn. Page 23} assessment. (See, e.g., *Gentry v. Murrieta* (1995) 36 Cal.App.4th 1359, 1396 (*Gentry*) [conditioning a permit on "recommendations of a report that had yet to be performed" constituted improper deferral of mitigation]; *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275 [deferral is impermissible when the agency "simply requires a project applicant to obtain a biological report and then comply with any recommendations that may be made in the report"]; *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777 , 794 ["mitigation measure [that] does no more than require a report be prepared and followed, . . . without setting any standards" found improper deferral]; *Sundstrom* , *supra* , 202 Cal.App.3d at p. 306 [future study of hydrology and sewer disposal problems held impermissible]; *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597 , 1605, fn. 4 [city is prohibited from relying on "postapproval mitigation measures adopted during the subsequent design review process"].)" (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70) I-R-13-4 cont.

Thus, it is not enough to rely on build out assumptions when they are used to reduce impacts. It is necessary to adopt phasing of the project as a feasible mitigation measure to ensure that those impact reductions are actually achieved. It is necessary to make those phases a condition of project approval, to ensure that the mitigation measure is implemented. The time for adopting that mitigation and placing that condition is at this phase of specific plan approval, not at some later phase of project approval.

E. Recirculate the amended impact analyses reflecting a uniform build out date.

ICF International and the Project Applicant should be required to prepare, file and circulate a second Recirculated Draft EIR, because Section 15088.5 of the CEQA Guidelines provides that all or a portion of a DEIR shall be recirculated for public review and comment when there is a new or more severe impact not analyzed in the DEIR. A new build out date results in new impacts affecting a time not previously analyzed in either the DEIR or the RDEIR. New Tables need to be prepared- not only the ones specifically mentioned above, which are clearly deficient, but perhaps others as well. The onus must be on the purported expert, ICF International, and on the Project Applicant, to go through the entire DEIR, and make any and all necessary changes to all text, tables, etc. to reflect a single build out date. I-R-13-5

4. Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure compliance during project implementation. (Pub. Resources Code, sec. 21081.6.)

The GHG mitigation measures have no plan of who, how and when said mitigation will be monitored to insure it actually happens. The RDEIR uses the word "shall", i.e. mandatory, but it's like putting up a speed limit sign on the highway without any police around to enforce it. Where's the plan? I-R-13-6

This concerns me since in the past a lack of compliance monitoring of mitigation has occurred. The county has admitted they don't have the resources to monitor mitigation. An example of this inability to monitor mitigation is the loss of oak trees from the original development of Serrano. In the oak tree mitigation areas there are 100's of white PVC stakes marking planted oak tree replacements which are dead due to no mitigation enforcement.

5. Please provide the name, educational background and qualifications of the person or persons who prepared, researched and wrote the revised Chapter 3 on Greenhouse Gas Emissions. I-R-13-7

6. When responding to these and other comments on the DEIR and RDEIR, please remember that responses to comments are necessary to ensure that stubborn problems are not swept under the rug. (*Santa Clarita Organization for Planning the Environment v. County of Los Angeles (*2003) 106 Cal.App.4th 715.)

An adequate EIR must respond to specific suggestions for mitigating a significant environmental impact, unless the suggested mitigation is facially infeasible. The response should evince good faith and a reasoned analysis. (*San Francisco Ecology Center v. City and County of San Francisco* (1975) 48 Cal.App.3d 584, 596; Guidelines, § 15088, subd. (b); Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1029; *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342.) A response to a comment regarding the efficacy of a mitigation measure was inadequate where it contained no analysis of the issues, and contained no specific information justifying the rejection of the concern. (*Environmental Protection Information Center, Inc. v. Johnson* (1985) 170 Cal.App.3d 604.) I-R-13-8

Please note that ignoring non-duplicative public comments is prejudicial error. (*Environmental Protection and Information Center v. California Department of Forestry and Fire Protection* (2008) 44 Cal.App.4th 459.) An inadequate response to even <u>one</u> substantive comment can be enough to justify a writ of mandate remanding the decision to the lead agency. (*Gallegos v. California State Board of Forestry* (1978) 76 Cal.App.3d 945, 952-955)

Sincerely,

Timothy J. White
1097 Lomond Drive
El Dorado Hills, CA 95762
tjwhite@aol.com

For Parks not Parker 2.0

Response to I-RECIRC-13, Timothy White, 6/3/2016

I-R-13-1: The commenter notes minor typographical errors and a formatting error in the Project Description of the RDEIR. On page 2-1, the text of a footnote was incorporated into the text. The text of the footnote is removed in Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*. A fourth level numbered heading was added. The numbers in front of fourth level heading are removed in Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*. These typographical changes do not affect the assumptions and conclusions related to the Draft EIR.

I-R-13-2: The commenter has misinterpreted the timeline described in the Draft EIR for development and build-out of the CEDHSP. The project description states that full build-out is anticipated to be 2025 or later (page 2-1, first paragraph). The introductory text of the GHG analysis (Chapter 3) states that GHG emissions are analyzed in 2020 and at full build-out (2035).

As the commenter notes, the RDEIR (and the DEIR) states that full build-out of the project "is anticipated in 2025 OR LATER" (emphasis added). Section 2.3.4 of the DEIR and the RDEIR state that build-out of the project would be dictated by housing market conditions. Air quality modeling in Appendix C and the Traffic Impact Analysis in Appendix L of the DEIR both analyze 2020 and 2035 conditions. However, this statement is intended to identify the year in which cumulative conditions are analyzed, not the year in which construction is completed. No change has been made to the assumed build-out year. The following clarifying text change has been made in the Final EIR:

> Section 3.6, Greenhouse Gas Emissions, replaces the previous Section 3.6 of the DEIR in its entirety and contains the analysis and discussion of greenhouse gas (GHG) emissions using a combination of a bright-line threshold and efficiency metric per service population to determine the significance of GHG emissions in 2020 and under cumulative conditions with ~~at~~ full build-out in 2035~~(2035)~~.

The commenter references a number of tables in the RDEIR that present estimated operational GHG emissions data in 2035. This does not mean that the project has just been completed as of 2035, but that in 2035, the project would be fully built out. Table 3.6-3 shows construction emission assumptions to 2030, because construction is not anticipated to continue past 2030. The data in the tables in RDEIR are identical to the tables in the November 2015 Draft EIR.

The project description has not changed since release of the Draft EIR in November 2015. The project description included in the RDEIR was provided for information purposes to assist the reader in understanding the GHG analysis, as stated on page 2-1 in the RDEIR. In order to examine cumulative contributions, the analysis goes beyond the project's build-out date. The build-out date is applied consistently across the analyses in the Draft EIR, RDEIR, and Final EIR. The approach in the EIR is consistent with the court decisions cited by the commenter.

I-R-13-3: The commenter suggests that the cumulative impact analysis must be adjusted if the build-out period is changed. As noted above in Response to Comment **I-R-13-2**, the build-out period has not changed. The cumulative impact analysis remains valid.

I-R-13-4: The commenter asserts that it is not enough to rely on build-out assumptions to reduce impacts; it is necessary to adopt phasing of the project to ensure impact reductions are achieved. This statement is generally true, but not applicable in this instance. The CEDHSP is not a general plan. The environmental analysis conducted for the CEDHSP has been conducted on this specific project and the Draft EIR and RDEIR are project-level documents. Case law cited by the commenter refers to projects that are “general in nature” – General Plan amendments, for instance, which are addressed in program-level EIRs. Project phasing is not addressed as a means to mitigate any environmental impacts of the proposed project.

I-R-13-5: The commenter is of the opinion that a second Recirculated Draft EIR should be prepared and circulated for public review because a new build-out date results in new impacts affecting a time not previously analyzed. The build-out date has not changed (please see Response to Comment **I-R-13-2**). The build-out date is applied consistently across the analyses in the Draft EIR, RDEIR, and Final EIR. The approach in the EIR is consistent with the court decisions cited by the commenter. No significant change has been made that would require recirculation under CEQA Guidelines Section 15088.5.

I-R-13-6: The commenter expresses concern that mitigation measures in the RDEIR will not be enforced. The commenter also notes that prior to project approval, the lead agency must adopt a mitigation monitoring and reporting plan (MMRP). The mitigation measures identified in the Final EIR, including those identified in the RDEIR, are part of the MMRP and would also be incorporated into the Specific Plan. They would be implemented accordingly and enforced by the County as development occurs. Please see Master Response 4 (Mitigation Monitoring and Reporting Program).

The Final EIR includes specific mitigation measures; no measures are deferred to later approvals. In some cases the measures establish performance standards for the specific design of later approvals under the CEDHSP, but that is allowable under CEQA. (*City of Hayward v. Board of Trustees of the California State University* (2015) 242 Cal.App.4th 833 [transportation demand management standards were sufficiently detailed to ensure that further refinements made as more information became available would avoid impacts from traffic]) An MMRP has been prepared that enumerates all mitigation measures developed in the DEIR and the RDEIR and assigns responsibility and a time frame to each measure. This MMRP would be adopted by the County Board of Supervisors if the project is approved.

I-R-13-7: The GHG analysis was conducted by Laura Yoon and Shannon Hatcher of ICF International (the same staff who prepared the Draft EIR Air Quality and GHG sections), with guidance regarding thresholds from Rich Walter, also with ICF International. The qualifications of all preparers have been added to the Final EIR, and Rich Walter has been added to this list.

I-R-13-8: The commenter cites various case law citations concerning responding to public comments on an EIR, presumably for informational purposes. The County’s responses to comments on the Draft EIR and the RDEIR comply with CEQA requirements, which are set forth in Section 15088 of the CEQA Guidelines, and have been prepared with consideration of applicable case law.

LETTER I-RECIRC-14

COMMUNITY DEVELOPMENT AGENCY

LONG RANGE PLANNING

2850 Fairlane Court, Placerville, CA 95667
Phone (530) 621-4650, Fax (530) 642-0508

**NOTICE OF AVAILABILITY
OF A PARTIAL RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE CENTRAL EL DORADO HILLS SPECIFIC PLAN
(State Clearinghouse No. 2013022044)**

Date:	**April 22, 2016**
To:	**Interested Agencies and Individuals**
From:	**Community Development Agency**

The County of El Dorado Community Development Agency, as the Lead Agency, has prepared a Partial Recirculated Draft Environmental Impact Report (RDEIR) for the proposed specific plan identified as Central El Dorado Hills Specific Plan (CEDHSP). The Partial RDEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Sections 21000 et seq. and the CEQA Guidelines (14 California Code of Regulations [CCR] Sections 15000 et seq.).

The CEDHSP DEIR was released for public review on November 20, 2015. On November 30, 2015, the California Supreme Court decided *Center for Biodiversity et al. v. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (62 Cal. 4th 204) (also referred to as "Newhall Ranch"). This case addressed the issue of how a greenhouse gas (GHG) analysis is to be conducted in a CEQA environmental document. The review period for the CEDHSP DEIR closed on February 19, 2016.

As a result of the Court's decision, the County determined that the GHG analysis in the CEDHSP DEIR (Section 3.6, Greenhouse Gas Emissions) should be revised to reflect the direction of the Court regarding the Newhall Ranch case. In addition to a revised Section 3.6, Greenhouse Gas Emissions, the Partial RDEIR also contains revisions to Chapter 4, Alternatives Analysis, and Chapter 5, Other CEQA Considerations, which included information pertaining to GHGs. The remainder of the CEDHSP DEIR previously released for public review is not a part of this recirculation. I-R-14-1

DOCUMENT AVAILABILITY AND REVIEW PERIOD: The RDEIR is available for public and agency review for a 45-day period **beginning April 22, 2016 and ending June 6, 2016**. CEQA Guidelines Section 15088.5(f)(2) states that: When the EIR is revised only in part and the lead agency is recirculating only the revised chapters or portions of the EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR. The lead agency need only respond to (i) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (ii) comments received during the recirculation period that relate to the chapters or portions of the earlier EIR that were revised and recirculated. In keeping with this provision, the County requests that commenters limit their comments to the revisions and new material presented in the Partial Recirculated DEIR. The Final EIR (FEIR) will include written responses to the comments submitted on the previously circulated DEIR, as well as the comments received on the Partial RDEIR.

The Partial RDEIR may be reviewed and/or obtained at the following locations:

Community Development Agency 2850 Fairlane Court, Building C Placerville, CA 95667	**El Dorado County Library 345 Fair Lane Placerville, California 95667**	**El Dorado County Library 7455 Silva Valley Pkwy. El Dorado Hills, CA 95762**
Community Development Agency Long Range Planning Website http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx		

All written public and agency comments on the Partial RDEIR must be received by 5:00 PM on **June 6, 2016** and should be directed to: County of El Dorado Community Development Agency Long Range Planning Division, **Attention: Rommel (Mel) Pabalinas, 2850 Fairlane Court, Placerville, CA 95667**. Please include the name of the contact person of your agency, if applicable. Comments may be submitted via email to **cedhsp@edcgov.us**.

Where does ALL the WATER come from. Heard About WATER RATIONING ?

Comments submitted via email must either be included in the body text of the message or as an attachment in Microsoft® Word or Adobe® PDF format. Comments may also be submitted via fax to (530) 642-0508.

PUBLIC MEETINGS AND HEARINGS: For more information on the meeting schedule or to sign-up for email notification on this project, please visit
http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx

PROJECT INFORMATION

PROJECT TITLE/ APPLICATIONS: Central El Dorado Hills Specific Plan
Project File Nos. A14-0003, SP12-0002, SP86-0002-R-2, Z14-0005, PD14-0004, TM14-1516, DA14-0003

PROJECT APPLICANT: Serrano Associates, LLC
4525 Serrano Pkwy,
El Dorado Hills, CA 95762

PROJECT DESCRIPTION: The proposed project site covers 341 acres north of U.S. Highway 50, south of Green Valley Road and Folsom Lake, along El Dorado Hills Boulevard approximately 0.72 miles east of the Sacramento–El Dorado County line, 1.5 miles west of Bass Lake Road and north of U.S. Highway 50 in the El Dorado Hills Area (Assessor's Parcel Nos. 121-160-05, 121-120-24 (portion); 121-040-20, -29, -31; 120-050-01, -05).

PROJECT DESCRIPTION: The proposed project would provide for development of up to 1,000 dwelling units, 11 acres of civic-limited commercial use (50,000 square feet of commercial use), 15 acres of public village park, 1-acre neighborhood park and 168 acres of natural open space in the center of the El Dorado Hills community. The proposed project consists of two planning areas: Serrano Westside and Pedregal. The Serrano Westside planning area would complement the existing Serrano development with gated residential neighborhoods and would include civic or commercial development and a public village park. The Pedregal planning area would have residential neighborhoods, which may or may not be gated. The CEHSP also includes infrastructure and roadway improvements. (Please refer to the DEIR document for more detailed project description and associated figures.)

To implement the proposed development, the applicant is requesting amendments to the El Dorado County General Plan Land Use Diagram and the existing El Dorado Hills Specific Plan Land Use Map and rezoning, approval of a large-lot tentative map, in addition to adoption of the CEDHSP.

ENVIRONMENTAL IMPACTS: This RDEIR discusses the potential significant environmental impacts that may result from the Project related to greenhouse gas emissions.

COMMUNITY DEVELOPMENT AGENCY - LONG RANGE PLANNING DIVISION
DAVID DEFANTI, Assistant Director
Date: April 22, 2016

Response to I-RECIRC-14, Anonymous, Undated

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

I-R-14-1: The commenter asks where the water will come from. Please see Response to Comment **I-5-1** and Master Response 1 (Water Supply).

Comments and Responses—Local Agency

LETTER L-1

From: <hpkp@aol.com>
Date: Fri, Feb 19, 2016 at 1:49 PM
Subject: re: Comment Letter for the Central El Dorado Hills Specific Plan DEIR/APAC
To: rommel.pabalinas@edcgov.us

Good Morning:

The EDH APAC Central El Dorado Hills Specific Plan (CEDHSP) subcommittee submits the following comments on the CEDHSP DEIR. In the 35+ years that APAC has been commenting on County development projects, this is the first time that a developer has declined to present their project update at an APAC General Meeting, which the public is always invited to attend. This has made it much more difficult for APAC to review the project and engage in a Q&A discussion to clarify features or plans related to the project. Please note that the full APAC committee will review the recommendations of this subcommittee at its next monthly meeting on Weds. March 9th. L-1-1

Sincerely,

Ellison Rumsey
2016 APAC Committee Chair

Submitted by APAC, Secretary, Kathy Prevost

El Dorado Hills Area Planning Advisory Committee
1021 Harvard Way
El Dorado Hills, CA 95762

2016 Board Chair
Ellison Rumsey
Vice Chair
John Raslear
Secretary
Kathy Prevost

February 19, 2016

El Dorado County Community Development Agency
Development Services Department, Planning Division
Attn: Mel Pabalinas, Principal Planner
2850 Fairlane Court
Placerville, CA. 95667

Subject: APAC Comments on the Draft Environmental Impact Report for the Central El Dorado Hills Specific Plan

Dear Board of Supervisors, Planning Commission and County Staff,

The EDH APAC Central El Dorado Hills Specific Plan (CEDHSP) subcommittee submits the following comments on the CEDHSP DEIR. In the 35+ years that APAC has been commenting on County development projects, this is the first time that a developer has declined to present their project update at an APAC General Meeting, which the public is always invited to attend. This has made it much more difficult for APAC to review the project and engage in a Q&A discussion to clarify features or plans related to the project. Please note that the full APAC committee will review the recommendations of this subcommittee at its next monthly meeting on Weds. March 9th. L-1-2

We appreciate the County extending the review period for this DEIR, to allow a more thorough public review process. The subcommittee has researched and studied the 1200 pages of documents and appendices available. Our conclusion is that the DEIR fails to address effective mitigation measures for many of the known impacts, especially in the area of traffic and transportation. Highway 50 is currently at LOS F as measured by CalTrans, the governing authority for Hwy 50. The Traffic Analysis fails to identify how the project impacts to Highway 50 will be effectively and concurrently mitigated, as Measure Y of the General Plan requires. L-1-3

Summary of Analysis

- The CEDHSP Draft Environmental Impact Report fails to show substantial evidence for the conclusions reached. There are broad community impacts that will result from a project of this density. L-1-4
- Inadequate analysis and conclusions in the CEDHSP Draft EIR and attachments as to the Mitigations necessary to make findings for Significant Impacts to Less than Significant. The mitigations given by the consultant on the DEIR do not scratch the surface of the total improvements needed. Merely contributing funds to the County L-1-5

TIM fee pool does not mitigate the direct impacts of the project, and certainly not in a concurrent manner. L-1-5 cont.

- Inadequate considerations of cumulative effects, requires thorough and fully supportive mitigations, which are not presently defined within this DEIR. L-1-6
- Inadequate analysis of asbestos soils that are known to exist in the portion of the CEDHSP that is currently controlled under the El Dorado Hills Specific Plan (aka asbestos ridge). Sampling should be done and records maintained by the Owner and enforced by the County through onsite inspection and daily diaries, photos and records. Any project that is approved should be subject to the condition that the owner is required to hire an independent inspector and provide documentation to the County weekly. The County should state in the DEIR how enforcement and oversight will be carried out and met by a truly independent source. L-1-7
- The Traffic Section of the DEIR is wholly inadequate in that it fails to identify some of the critical road and intersection improvements needed, such as an effective entrance to the Raley's shopping Center. This is a significant failure of the Traffic element of the DEIR in that it not only does not adequately and transparently disclose full improvements needed to mitigate to 'Less than Significant' but does not give any concrete metrics for evaluating implementation of the mitigations. L-1-8
- The Area Planning Advisory Subcommittee strongly opposes any weekend noise from construction activity allowed on Weekends and any activity on weekdays should be limited to a 5 PM curfew. L-1-9

Specific comments for the most critical sections of the DEIR include:

Hwy 50 Traffic:
Section 3.14.1 describes Caltrans responsibilities relative to measuring traffic Level of Service on U.S Hwy 50. Table 3.14-5 of the DEIR describes the Existing LOS on Hwy 50 during Peak Hours. The last Westbound segment is identified as El Dorado Hills Blvd on ramp, which is reported to be operating at LOS D, which is inconsistent with the Caltrans letter dated September 25, 2013 which notes that "the portion of the segment from the County line to the EDH Blvd interchange operates at LOS F during the peak hour. More recent Caltrans data confirms this LOS F existing condition. Why doesn't the CEDHSP DEIR reflect the Caltrans data for existing conditions? Given the current LOS F status, the additional traffic associated with the approximately 1000 residences in the DEIR will significantly worsen the current LOS F, which is in violation of the EDCo General Plan Measure Y provisions. Why does the traffic analysis not define US Hwy 50 mitigation measures required to minimize the impacts (i.e. the completion of the connection of Saratoga Way to Iron Point Road in Folsom) as a required mitigation prior to any CEDHSP construction being allowed? L-1-10

DEIR Section 4.3 Alternatives Analysis

This section of the DEIR identifies 3 viable project alternatives, but does not include an alternative that the Measure E ballot voters would support. Section 4.5.3 identifies an all Parks and Open Space Alternative, which was quickly rejected as not meeting the core project objectives in the analysis. Again, that is not what Measure E sought to achieve. Section 4.3.1 defines the "No project alternative", but speculates on "what would be reasonably expected to occur in the foreseeable future if the project were not approved, L-1-11

based on current plans and consistent with available infrastructure and community services". This specific plan is a collection of various properties, including the 98 Acre Open Space-Recreational use golf course and approximately 41 acres of the previously approved EDHSP (fondly referred to a Asbestos Ridge), as identified on Figure 4-1, the previous Pedregal project Property, and other properties including a purported land dedication for a "Center for the Ages" facility that is proposed to be zoned as Civic-Limited Commercial.
In order to achieve the desires of 91% of the registered voters in El Dorado Hills that voted (41% turnout) on November 3rd 2015, not to allow the rezoning of the 98 acre golf course, two new project alternative should be defined and analyzed. The first could be titled the 'Measure E alternative'. This alternative would preclude the rezoning of the currently approved 41 acres of the EDHSP. The EDHSP was approved many years ago as an integrated project, it should not be altered-period. Therefore it should be removed from consideration of this new CEDHSP. Secondly, the 98 acre golf course should be removed from the CEDHSP also, as from its origins it was intended to remain as Open Space-Recreation for the entire community of EDH to enjoy. There is significant documentation on this that has been gathered by early residents of EDH and the EDH historical society. Lastly, if the Civic use site on Wilson Blvd, opposite the EDH Fire Department Station 85 is being deeded for the creation of the "Center for the Ages", then it should also be removed from this CEDHSP. The remainder property then would become the 'revised' CEDHSP. L-1-11 cont.

The second alternative that should be considered could be titled the 'Measure E Reserve' alternative. This alternative would include the 98 acre golf course as a 'Reserve' area of the CEDHSP, with an associated Development Agreement that would stipulate that if the EDHCSD, or some other EDH community based group did not purchase the property at its 'fair market price' by January 2035, then the property would revert to the discretional development defined by the CEDHSP.

In summary, this environmental document has significant failings and does not provide any economic accountability or cost benefit analysis of the project. County staff and the BOS must require these studies be included in the DEIR to use as a planning tool for a DOT 'funding demands forecast'. It does not disclose any costs associated with the true and full mitigations to bring them in to 'Less than Significant' status. L-1-12

APAC appreciates having the opportunity to provide comments for this DEIR. If you have any questions please contact Ellison Rumsey, 2016 APAC Chairman at aerumsey@sbcglobal.net or (916 358-5733), or the CEDHSP Co-Chairs Jeff Haberman at jeff.h@ix.netcom.com or (916-933-3430) and Kathy Prevost hpkp@aol.com or (530) 672-6836.

Sincerely,

Ellison Rumsey

Ellison Rumsey
2016 APAC Committee Chair
Cc: EDCo Planning Commission
EDCo BOS
APAC read file

Response to L-1, El Dorado County Area Planning Advisory Committee, Ellison Rumsey, 2/19/2016

L-1-1: The comment does not address the adequacy of the environmental review, but indicates disappointment that a presentation about the project was not made at an Area Planning Advisory Committee (APAC) General Meeting. (APAC is a citizen group that provides advisory review and comments on projects.) Extensive outreach has been conducted for the project, which is described in Section 1.3.2 on pages 1-3 and 1-4 in the Draft EIR. This outreach is not required under CEQA, but was voluntarily provided by the applicant to engage the community. Additional opportunities for input on the project, as required under CEQA, are described in Section 1.3.3 on page 1-4. Although the comment states recommendations of its CEDHSP subcommittee would be considered by the APAC at a meeting scheduled for March 9, 2016, no comment letters other than this comment letter dated February 19, 2016 were submitted by the APAC to the County after the close of the comment period for the Draft EIR.

L-1-2: See Response to Comment **L-1-1**.

L-1-3: The comment conveys the opinion that the Draft EIR does not identify effective mitigation measures, particularly for traffic. Traffic is analyzed in Section 3.14, *Traffic and Circulation*, and cumulative traffic impacts are evaluated in Section 5.2, *Cumulative Impacts*, based on the traffic impact analysis included as Appendix L of the Draft EIR. The analysis, conclusions, and mitigation measures are based on the traffic analysis prepared by Fehr & Peers transportation consultants. The original traffic study was conducted in 2015 and an update was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The relationship between Caltrans data and the project's traffic impact analysis for US 50 is discussed under *Analysis Procedures* in Section 3.14.2 under the *Freeway Facilities* subheading (page 3.14-18) and on pages 5-25 through 5-28 for the cumulative analysis. The analysis under Impact TRA-1 as it relates to US 50 freeway facilities (Draft EIR page 3.14-27 and as revised in this Final EIR [see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*]) concludes that the project would have a less-than-significant impact on US 50 operations. The Draft EIR identifies one cumulative impact for US 50 operations, which is described on page 5-39. Analysis in the 2017 updated traffic study, accounting for changes in the CIP, indicate that all study freeway facilities will operate at acceptable levels of service under cumulative plus project conditions. These revisions have been made to the Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*). Please see Response to Comment **I-11-87** regarding US Highway 50 LOS.

L-1-4: The County disagrees with the commenter's statement that the Draft EIR does not provide substantial evidence for the conclusions reached. The conclusions in the impact sections of Chapters 3, 4, and 5 are all supported by substantial evidence in the record, including the studies appended to the EIR, and references listed in Chapter 7.0, *References Cited*. Responses to specific issues raised by the commenter are provided in Responses to Comments **L-1-5** through **L-1-11**, below.

L-1-5: The commenter does not provide specific examples of what "total improvements" should be added to mitigation measures, or specific impacts and mitigation measures of concern. With regard to the commenter's view that the TIM fee pool does not mitigate direct impacts of the project and concurrency requirements, this response assumes the comment may be in reference to traffic impacts and associated mitigation measures where payment of TIM fees is a component of mitigation. The comment is conclusory in nature, and no analysis or data were provided to indicate why impacts could not be mitigated to less-than-significant levels. The mitigation measures included in the Draft EIR are based upon quantified data, and the County has determined the mitigation measures are sufficient to reduce the traffic impact to a less-than-significant level.

The TIM fee program includes a comprehensive assessment of road improvements necessary to meet the needs of future development, identifies specific improvements to be made and their cost, and levies fees on new development to build the needed improvements. In addition, the developer would be responsible for road improvements along the project's frontage. The TIM fee program does not provide for concurrent improvements to all roads where the necessary improvements are not along the project's frontage. Identified offsite improvements are installed as sufficient fees are collected from development projects within the collection area and other sources of funding become available. Contributing funds to the TIM program ensures that the project contributes its fair share to the road improvements. The project cannot be charged for more than its fair share of the cost of mitigating its impacts. (*Dolan v. City of Tigard* (1994) 512 U.S. 374; *Nollan v. California Coastal Commission* (1987) 483 U.S. 835)

Mitigation measures identified in the Draft EIR that include payment of TIM fees to mitigate cumulative impacts have been revised to incorporate the requirements of amendments to General Plan policies as a result of voter approval of Measure E in June 2016. Payment of TIM fees is still required, but additional requirements are now in place. Please see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, for a summary of how Measure E requirements apply to the project to mitigate its contribution to cumulative traffic impacts, and how the County would ensure those requirements are implemented.

L-1-6: The comment states that cumulative effects were not adequately addressed in the Draft EIR. The Draft EIR contains a comprehensive cumulative impacts analysis in Section 5.2, *Cumulative Impacts*. The 44-page cumulative impact analysis, beginning on page 5-1 and continuing through page 5-44, describes the cumulative impacts that would occur for each of the topics addressed in the 14 technical sections in Chapter 3, *Impact Analysis*. Mitigation measures for cumulative impacts are identified, along with explanations of how those mitigation measures would reduce cumulative impacts. Other than a broad statement about the adequacy of the analysis, the comment does not identify specific resource topics, data, or analysis pertaining to cumulative impacts that are not adequately considered, and no further response is possible.

L-1-7: See Response to Comment **I-7-13** and Master Response 3 (Naturally Occurring Asbestos).

L-1-8: The comment states that the traffic section of the Draft EIR is inadequate in that it does not address the entrance to the Raley's Shopping Center. The Raley's Shopping Center is not a part of this project, and the Draft EIR is not required to identify mitigation to correct existing conditions. The project does, however, include proposed improvements to Park Drive, which goes through the shopping center, to provide connection to the Serrano Westside planning area. These proposed improvements are identified on page 2-12 and shown on Figure 2-10 in the Draft EIR. The traffic analysis in Section 3.14, *Traffic and Circulation*, provides a transparent disclosure of traffic impacts. Impact TRA-1, beginning on page 3.14-24 of the Draft EIR, describes the intersections and road segments affected by the project and level of the project's impact in Tables 3.14-7, 3.14-8, and 3.14-9. In addition, the project's traffic impact analysis is attached to the EIR as Appendix L.

L-1-9: The comment does not indicate which kind of construction noise is of concern (e.g., road improvements, utility installations, or home construction). The Draft EIR Section 3.10, Noise, (Table 3.10-7 on page 3.10-8) shows the County's construction noise standards as set forth in the General

Plan. Construction noise impacts are evaluated in the Draft EIR in Impact NOI-1a on page 3.10-16. Thresholds and activity windows were taken from the County General Plan. Recent revisions to the General Plan and Zoning Ordinance (County Ordinance Chapter 130.37) have removed the thresholds for construction noise (130.37.20 (I)). The subcommittee's opposition to construction noise during the weekend (proposed as 8AM to 5PM in Mitigation Measure NOI-1a) and suggestion that weekday noise should not occur after 5PM (instead of 7PM, as proposed in Mitigation Measure NOI-1a) will be considered by the Planning Commission and Board of Supervisors during deliberations over the project.

L-1-10: The commenter is citing an old (2013) Caltrans letter regarding the traffic analysis for the Targeted General Plan Amendment. The Caltrans comments on this project, dated February 19, 2016 do not raise any issue regarding this segment. The traffic impact analysis was prepared in consultation with Caltrans. Please see Response to Comment **I-11-87**.

L-1-11: See Responses to Comments **I-7-2** and **I-11-91**, and Master Response 2 (CSD Advisory Measure E) regarding the November 2015 CSD Advisory vote and CSD Advisory Measure E alternatives.

L-1-12: This comment summarizes the commenter's concerns. There is no requirement under CEQA that an EIR include an "economic accountability or cost benefit analysis of the project" as suggested by the commenter. Impacts under CEQA are limited to changes in the physical environment and do not include social or economic impacts, except to the extent they may result in a physical change. (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184)

Comments and Responses—Organization

EL DORADO HILLS TOWNHOUSE ASSOCIATION

P.O. Box 4572
El Dorado Hills, CA 95762-4572

January 12, 2016

16 JAN 14 AM 11:45
RECEIVED
PLANNING DEPARTMENT

County of El Dorado Community Development Agency
Long Range Planning Division
Rommel "Mel" Rabalinas, Senior Planner
2850 Fairlane Court
Placerville, CA 95667

RE: Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the Proposed Central El Dorado Hills Specific Plan (CEDHSP)

Dear Mr. Rabalinas:

The November, 2015 Central El Dorado Hills Specific Plan (CEDHSP) November 2015 Draft Environmental Impact Report (DEIR) fails to consider the impacts to Hills and Scenic Courts as well as the entire Park Village community. What are the impacts to neighborhood noise levels, traffic, air quality, and public safety, etc.? O-1-1

The CEDHSP DEIR (see page 5-50 Mitigation Measure CUM-D) proposal to implement restricting access to Saratoga Way/Mammouth Way intersection is enlarging the Project. The DEIR/EIR needs to recognize that Mammouth Way and Arrowhead Drive will experience significant adverse environmental impacts due to the re-routing of traffic in these neighborhoods. What is the Traffic Infusion on Residential Environment (TIRE) index for the El Dorado Hills Townhouses, as well as the entire Park Village neighborhood?

There will be significant traffic and traffic circulation impacts. We are requesting that the DEIR/EIR to explain: 1) After vehicles make a *right* turn onto from Mammouth Way onto Saratoga Way (because a left turn will be prohibited), where will we be able to make a U turn on Saratoga Way in order to head toward our original intended direction? If a U turn is also prohibited, the DEIR did not address the safety and traffic issues when the traffic enters the driveway of the Walgreens parking lot as a turn-around route onto Saratoga Way. O-1-2

The project's proposed prohibition of a left turn from Mammouth Way onto Saratoga Way forces our neighbors (as well as the business generated traffic from the Urgent Care, Placer Title Company, Umqua Bank, etc. that currently uses the Mammouth Court to Mammouth Way to left on Saratoga Way route) to take a more circumvented route *through the neighborhood*. Hills Court intersects Arrowhead

Drive in close proximity to the intersection with Saratoga Way. The re-routing of traffic is likely to result in traffic backups at the intersection of Arrowhead Drive and Saratoga Way. The blocking of the Hills Court traffic would prevent a left hand turn onto Arrowhead Way in order to reach Saratoga Way. The backups at Mammouth Way could block Scenic Court. O-1-2 cont.

As a result of the U. S. Highway 50 Project which realigned Saratoga Way, certain mitigation measures were implemented. These mitigation measures included a sound wall, dual paned windows in only the second story of a handful of the impacted residences. At no time did the noise study measure actual noise levels after the re-routing of Saratoga Way. The DEIR needs to include an interior noise study on our townhomes to identify if additional mitigation, such as insulated siding and providing dual pane windows to additional homes, should be considered. O-1-3

The DEIR needs to additionally consider that there is a neighborhood park, an elementary school entrance, and school bus stops when considering the impacts of cut-through and other traffic. Arrowhead Drive and Mammouth Way are narrow streets without sidewalks, bike paths or street lamps. O-1-4 Further, increased traffic on Saratoga Way and the re-routing of traffic through neighboring roads could result in decreased property values, which in turn could result in additional foreclosures and abandonments leading to decay in the surrounding neighborhoods. Such decay could potentially also result in increased crime, which could be especially significant given the location of a park and elementary school within the impacted project area. O-1-5

In 2000, El Dorado County approved a project known as the U.S. Highway 50 /El Dorado Hills Boulevard-Latrobe Road Interchange Project (Highway 50 Project). The Highway 50 Project specifically made it clear that a separate and thorough Environmental Impact Report (EIR) should be completed on any proposal to enlarge a project. Any DEIR needs to fulfill this obligation of the County as outlined in previous EIRs and court proceedings. O-1-6

The impacts to neighborhood noise levels, traffic, air quality, and public safety are not adequately analyzed and therefore no mitigation measures for the neighborhood are proposed. O-1-7 There are hidden traffic mitigation measures that do not consider the cumulative impacts to existing neighborhoods. This segmenting of projects totally contradicts previous traffic studies which indicate the impact of the extension of Saratoga Way to the city of Folsom will be at least **15,000 to 18,000** cars a day on Saratoga Way. This contradiction gives the appearance of an attempt to hide the true impacts when it is convenient to exclude numbers within the ambiguous definition of the project. O-1-8

This letter is not totally inclusive of all of our concerns as we request that the DEIR address any potential impacts including air quality, visual impacts, aesthetics, blight and ramifications thereof as well as cumulative impacts. O-1-9 Alternatives to the Project that consider existing neighborhoods should be considered. We cannot be expected to absorb the brunt of the impacts at our detriment. O-1-10

We request notification of the availability of the DEIR/EIR; and the schedule of any meetings and public hearings by Planning Commission and/or Board of Supervisors on this project. O-1-11

Respectfully Submitted,

Richard Harris, President

Hilary Krogh, Vice President

Brandy Dollins, Treasurer

Mayda Malacara, Secretary

Gloria McAdon, Member-at Large

Board of Directors
El Dorado Hills Townhouses Association

CC: El Dorado County Board of Supervisors
El Dorado County Planning Commission

Response to O-1, El Dorado Hills Townhouses Association, Richard Harris, 1/12/2016

O-1-1: The comment states that noise impacts on the Park Village community are not addressed. Please see Response to Comment **I-12-3** regarding noise impacts on Hills and Scenic Courts The Draft EIR examines noise impacts in Section 3.10, *Noise*; traffic in Section 3.12, *Traffic*; air quality in Section 3.2, *Air Quality*; and public safety in Sections 3.2, *Air Quality*, 3.7, *Hazards and Hazardous Materials*, and 3.12, *Public Services and Utilities*.

O-1-2: The comment concerns traffic impacts and access to Saratoga Way and Mammouth Way. See Response to Comment **I-12-2**. The restrictions for Mammouth Way and the addition of a signal at Saratoga Way and Arrowhead Drive were proposed to address the project's impact at the intersection of El Dorado Hills Boulevard/Saratoga Way/Park Drive based on the original traffic analysis. An updated traffic analysis was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The 2017 updated traffic analysis indicates that the intersection of El Dorado Hills Boulevard/Saratoga Way and Park Drive would operate at acceptable LOS under cumulative plus project conditions and therefore Mitigation Measure CUM-D is not necessary. These revisions have been made in Chapter 3 (*Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*) of this Final EIR.

O-1-3: The comment asks that the Draft EIR include an interior noise study be conducted at their El Dorado Hills Townhomes and mitigation be identified. The noise analysis in Section 3.10, *Noise*, considered exterior noise levels, with the assumption that interior noise levels are about 15 L_{dn} less than exterior noise levels due to building attenuation. As shown in Table 3.10-17, vehicle traffic on Saratoga Way results in noise levels of 59.7 L_{dn} without the project and 59.8 L_{dn} with the project. Thus, even with the addition of vehicle traffic from the project, the noise level at residences near Saratoga Way would not exceed 60 dBA, and the interior noise levels are not projected to exceed 45 dBA. Moreover, the additional noise generated by project traffic on Saratoga Way would be 0.1 dBA, which is substantially below the change in noise that is considered to be barely noticeable, 3 dBA (California Department of Transportation 2013).

Traffic noise on El Dorado Hills Boulevard near Saratoga Way was modeled to be 72.7 dBA without the project and 73.6 dBA with the project (as shown in Table 3.10-17 for the El Dorado Hills Boulevard segment from Serrano Parkway to US 50). While this level of noise, both with and without the project, exceeds the County's compatibility standard of 60 L_{dn}, the project's contribution (1.3 dBA) would be less than significant, because it is below the significant noise increment threshold as established in County Policy 6.5.1.12 (1.5 dBA, as shown in Table 3.10-11 for the El Dorado Hills Boulevard segment from Serrano Parkway to US 50). Based on the modeled traffic volumes and corresponding increases in noise, the project would not significantly worsen the existing noise environment on Saratoga Way or on El Dorado Hills Boulevard, and a study of interior noise levels at residences in this area is not warranted.

O-1-4: The comment states that the Draft EIR should address traffic from parks and schools when considering cut-through traffic. The traffic analysis in Section 3.12, *Traffic and Circulation*, includes all streets that would potentially be affected by traffic generated by the project. Both Mammouth Way and Arrowhead Drive are located on the west side of El Dorado Hills Boulevard and are not likely to be directly affected by project traffic. William Brooks Elementary School is located about ½ mile west of El Dorado Hill Boulevard. The most direct access to the school is provided through the

Redwood Lane/Park Drive intersection, by way of Park Drive and Lassen Lane (i.e., through the El Dorado Hills Boulevard/Serrano Parkway/Lassen Lane intersection). Of the two Central El Dorado Hills Specific Plan planning areas, only Pedregal is in the Williams Brooks Elementary School boundary. Students from the Pedregal planning area would use Lassen Lane and Park Drive to access William Brooks Elementary School and not Saratoga Way, Mammouth Way, and Arrowhead Drive to access the school, since the route has a shorter travel time. Serrano Westside is in the Oak Meadow Elementary School boundary. Therefore, potential students from the Serrano Westside planning area would travel east, likely using Serrano Parkway, to access Oak Meadow Elementary School, which would not add traffic to Saratoga Way, Mammouth Way, and Arrowhead Drive.

The commenter does not provide any evidence to support the assertion that these two streets would be directly affected by the project. The traffic analysis does consider potential effects on Saratoga Way at its intersection with El Dorado Hills Boulevard as intersection 13 in Table 3.14-7 on page 3.14-25. A revised traffic analysis was prepared in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The results of the 2017 traffic analysis are provided in Table 3/14-7, which has been updated in the Final EIR. This intersection is shown to operate at acceptable levels of service during the morning and evening peak hours under both existing conditions and with the project in both the original 2015 and updated 2017 traffic analysis.

O-1-5: The commenter speculates the project would result in cut-through traffic that would, in turn, result in decreased property values and crime. The commenter presents no evidence to support the assertion that the project would result in urban decay. Impacts under CEQA are limited to changes in the physical environment and do not include social or economic impacts, except to the extent they may result in a physical change (CEQA Guidelines Section 15131; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184).

O-1-6: The commenter references an interchange project approved in the area and discusses the requirements for environmental documents for enlarged or expanded projects. The project is not related to the previously approved US 50/El Dorado Hills Boulevard/Latrobe Road interchange project referenced in this comment, nor is the CEDHSP EIR tiering from the EIR prepared for the interchange project. The CEDHSP Draft EIR adequately examines, discloses, and mitigates the impacts of the proposed CEDHSP. It is unclear from the comment what "previous EIRs and court proceedings" the commenter is referencing. No previous EIRs have been prepared for the CEDHSP.

O-1-7: The commenter states that impacts to the neighborhood related to noise, traffic, air quality, and public safety are not analyzed and therefore no mitigation is proposed. The Draft EIR evaluates how the project could affect local noise levels, traffic, air quality, and public safety. Impacts NOI-1a, NOI-1b, NOI-1c, NOI-3, and NOI-4 in Section 3.10, *Noise*, describe construction and operational noise impacts. Traffic impacts are evaluated in Impacts TRA-1 in Section 3.14, *Traffic and Circulation*. The Draft EIR evaluates air quality in Impacts AQ-2a, AQ-2b, AB-2c, AQ-4a, AQ-4b, AQ-4c, AQ-4d, and AQ-5 in Section 3.2, *Air Quality*. Contrary to the commenter's assertion, mitigation measures are identified in the Draft EIR to reduce impacts related to noise, traffic, and air quality. Public safety impacts, such as emergency access, hazardous materials, fire and police protection, and wildland fire hazard are also addressed in the Draft EIR in Section 3.7, *Hazards and Hazardous Materials*, and Section 3.12, *Public Services and Utilities*.

O-1-8: The comment references previous traffic studies for the extension of Saratoga Way, and segmenting of a project. As noted in Response to Comment **O-1-6**, the proposed project is a separate project not related to the previously approved US 50/El Dorado Hills Boulevard/Latrobe Road interchange project, no “segmenting” of a project has occurred. Cumulative traffic impacts are evaluated in Draft EIR Section 5.2, and Figure 5-1 identifies the cumulative projects that were considered in the original traffic analysis. The traffic study was updated in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The results of the updated analysis are presented in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR.* The expected future level of traffic on Saratoga Way is considered in Section 5.2.2, *Analysis of Potential Cumulative Impacts*, under the cumulative impacts analysis. As indicated in the revised Table 5-6, Saratoga Way operates at acceptable levels of service in the morning and evening peak hours under cumulative plus project conditions. Table 5-5, as revised, indicates that the El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 13) operates at acceptable levels of service in both the morning and evening peak hours under cumulative conditions with and without the project. As explained in Response O-1-2, Mitigation Measure CUM-D: Improve the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection, has been removed from this Final EIR (see Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*),. The Draft EIR fully discloses impacts.

No impacts or mitigation measures are “hidden.” All cumulative traffic mitigation measures were clearly identified on pages 5-32 through 5-31, and the potential environmental effects of implementing those measures is presented in the Draft EIR in Section 5.6.2, *Traffic Mitigation Measures*. The updated traffic analysis required that some impacts and mitigation be revised, and those revisions are shown in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Impacts are reduced, largely due to the completion of improvements. No changes were made to the project, and no new or worsened impacts were identified by the updated analysis.

O-1-9: See Response to Comment **O-1-1**. Cumulative impacts are disclosed in Chapter 5, *Other CEQA Considerations*.

O-1-10: The commenter does not describe any specific alternatives that should be considered. As a result, no additional alternatives can be examined in response to this comment.

O-1-11: The commenter requests notification of availability of documents and any meetings or public hearings. The County will publish notices of the hearings of the Planning Commission and Board of Supervisors in advance, as required by law.

Comments and Responses—Regional Agencies

COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
ENVIRONMENTAL MANAGEMENT DIVISION
INTEROFFICE MEMORANDUM

Date: February 19, 2016

To: Shawna Purvines, Long Range Planning Division, EDC-CDA

From: Robert Lauritzen, Geologist, Environmental Management Division

Subject: Draft Environmental Report for Central EDH Specific Plan

This is to clarify previous comments I submitted in a memo dated January 4, 2016 following my review of the Draft Environmental Impact Report (DEIR), Chapter 3.5 – Geology, Soils, Minerals, and Paleontological Resources, for the above referenced project.

My review of the impact analysis presented in the DEIR concluded that the findings for Naturally Occurring Asbestos (NOA) may not be representative of the site conditions, as other nearby areas have found significant NOA, and therefore construction of the site has the potential to reveal areas with NOA exceeding that found by the studies.

The August 2012 Preliminary Geotechnical Engineering Study for Serrano Westside Development prepared by Youngdahl Consulting Group, Inc., discloses these finding and recommends all earthwork should be periodically observed by a geologist experienced in the visual identification of NOA or for conditions likely to contain NOA. R-1-1

The study recommends that additional NOA evaluation should be performed during grading for the determination of possible capping requirements, and concludes that all grading and soil disturbance for the project will be subject to existing regulations including El Dorado County Rule 223-2 requirements for capping soils for the control for dust emissions.

DEIR Impact AQ-4d addresses exposure of sensitive receptors to NOA, and Mitigation Measure AQ-4 requires the applicant to meet EDCAQMD Rule 223-2 prior to the start of any construction activity. I concur with the DEIR and Youndahl's recommendations discussed above, and recommend these be included as a condition of approval for the project.

If you have any questions or comments please call me at 530-621-5130.

Response to R-1, El Dorado County Environmental Management Division, Robert Lauritzen, 2/19/2016

R-1-1: The commenter clarifies comments made in an earlier letter (January 4, 2016, see Letter R-2). The commenter states that the findings and recommendations in the August 2012 Preliminary Geotechnical Engineering Study (Youngdahl 2012) as described in the Draft EIR and presented in Impact AQ-4d and Mitigation Measure AQ-4 address the previous concerns and the commenter concurs with the recommendations. See also Master Response 3 (Naturally Occurring Asbestos).

COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
ENVIRONMENTAL MANAGEMENT DIVISION
INTEROFFICE MEMORANDUM

Date: January 4, 2016

To: Mel Pabalinas, Long Range Planning Division, EDC-CDA

From: Robert Lauritzen, Geologist, Environmental Management Division

Subject: DEIR - Central EDH Specific Plan- Review & Comments
Serrano Associates, LLC
El Dorado Hills, California

I have reviewed the above referenced document submitted by Serrano Associates, LLC which presents potential environmental impacts that may result from implementation of the project. My concerns are as follows:

R-2-1

1) Naturally Occurring Asbestos (NOA) studies referenced in the document are not representative of site conditions as nearby areas have found significant NOA (eg. Oakridge HS, Woodee Drive, etc.).

2) Geologic conditions of the development include a fault on or near ultramafic rock which indicates that this area is likely to contain significant to hazardous levels of NOA.

3) The applicant should be prepared to address hazardous levels of NOA (1% and greater) during and after construction that are protective of the following:
    1) Construction workers,
    2) Future residents; and,
    3) Existing downwind residents.

See El Dorado County AQMD, CAL-OSHA and DTSC for worker protection and disposal restrictions with respect to NOA.

If you have any questions or comments please call me at 530-621-5130.

Response to R-2, El Dorado County Environmental Management Division, Robert Lauritzen, 1/4/2016

R-2-1: This comment is the earlier comment referenced in R-1 above. The Draft EIR adequately evaluates potential impacts related to naturally occurring asbestos under Impact AQ-4d in Section 3.2, *Air Quality*, summarizing the findings of the Preliminary Geotechnical Engineering Study (Youngdahl 2012). See Master Response 3 (Naturally Occurring Asbestos) and Response to Comment **R-1-1**.

LETTER R-3

From: **Fred Sanford** <fred.sanford@edcgov.us>
Date: Wed, Dec 16, 2015 at 4:17 PM
Subject: Developments
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Central El Dorado Hills
Lime Rock Valley
Village of Marble Valley

Hi, Hope you have a wonderful holiday. Attached is a general comment on all three projects concerning Vector control. It is for what it is worth. R-3-1

Fred Sanford, REHS
Supervising Environmental Health Specialist

County of El Dorado
Community Development Agency
Environmental Management Division
2850 Fairlane Court
Placerville, CA 95667
(530) 621-7614 / FAX (530) 642-1531
fred.sanford@edcgov.us

LETTER R-3

As of Wednesday December 9, 2015, a total of 681 human cases of West Nile virus (WNV) illness have been reported to CDPH. As of December 11, 2015, there have been 173 cases of chikungunya reported in California (47 confirmed, 126 probable and there have been 92 cases of dengue fever reported in California (21 confirmed, 71 probable). These are all serious Mosquito borne diseases. As anticipated, invasive Aedes mosquitoes were most abundant during October. During this time, Aedes aegypti was detected in 15 new cities in 6 counties, and Aedes albopictus in 6 cities in 3 counties. This strained the resources of many affected agencies. It is very important that as these new developments are formed they consider developing good drainage plans to prevent mosquito habitats and properly manage their irrigation and storm water runoff. The organizations that are created to manage the developments such as HOA's need to include mosquito control programs. The mosquito invasion is only getting worse. R-3-1

Response to R-3, El Dorado County Environmental Management Vector Control, Fred Sanford, 12/16/2015

R-3-1: The commenter notes that mosquito-borne diseases have been detected in California and that the development of good drainage plans for new development will be important in preventing the creation of mosquito habitats. This comment is for informational purposes. The project's drainage plans will be reviewed by County staff before grading permits are issued. One detention basin is proposed, as shown in Figure 3.8-1 of the Draft EIR. Standing water is not anticipated during normal operations (see discussion on page 3.8-21 through 23 of the Draft EIR). The El Dorado County Vector Control District is responsible for mosquito abatement where there are areas of standing water.

LETTER R-4

El Dorado Hills
COMMUNITY SERVICES DISTRICT

December 4, 2015

Rommel Pabalinas, Project Planner
El Dorado County Planning Department
2850 Fairlane Court
Placerville, CA 95667

RE: **DEIR for Central El Dorado Hills Specific Plan (A14-0003, SP12-0002, SP86-0002-R-2, Z14-0005, PD14-0004, TM14-1516, DA14-0003)**

Dear Mr. Pabalinas:

The El Dorado Hills Community Services District ("EDHCSD") appreciates the opportunity to review and comment upon the above referenced Draft Environmental Impact Report ("DEIR") for the Central El Dorado Hills Specific Plan ("CEDHSP" or "project"). EDHCSD intends to provide detailed and extensive comments on the EIR, but writes at this time to request an extension to the EIR public review and comment period from the current 60 days to 180 days. Such an extension is warranted for several reasons, including:

1) Extensive Reference Document Analyses Required

The DEIR cites an extensive list of reference documents and laws. EDHCSD cannot fulfill its duties to diligently review and comment on the DEIR by simply reading and relying on the cursory citations to these documents provided in the DEIR. To properly understand the DEIR's analyses, these reference materials must be reviewed and analyzed thoroughly. To provide some perspective, a non-exhaustive list of the DEIR reference materials and their page counts is provided below: R-4-1

2004 El Dorado County General Plan	200+ Pages
Assembly Bill 32: The Global Warming Solutions Act of 2006	32 Pages
Senate Bill 375: Sustainable Communities and Climate Protection Act	38 Pages
SACOG Blueprint, Impacts of Blueprint, and the Metropolitan Transportation Plan /Sustainable Communities Strategy for 2035 (2012)	300+ Pages
El Dorado County Code of Ordinances	1200+ Pages

Measure Y – Transportation and Circulation Element	34 Pages	
Assembly Bill 1358: Complete Streets Act of 2008	9 Pages	R-4-1 cont.

To adequately review these reference materials and integrate our understanding of them into the DEIR's analyses and use of them, EDHCSD staff and legal counsel will require more time than the 60 day review period currently provided.

2) SACOG Metropolitan Transportation Plan / Sustainable Communities Strategy for 2035 Under Revision and Due for Adoption in February 2016

A major reference element of the DEIR is the SACOG Metropolitan Transportation Plan / Sustainable Communities Strategy for 2035 (MTP/SCS). This plan and strategy is in the final stages of its own DEIR and is expected to be adopted in February 2016, per the official SACOG website (Sacog.org/mtpscs/). The impacts are timely in that an adoption of the MTP/SCS in February would afford incorporation of any critical changes that should be applied to the thoughtful growth of El Dorado Hills and El Dorado County A critical analysis of the MTP/SCS, both current and adopted update, in respect to the CEDHSP DEIR warrants the requested review period extension. Failure to so extend the comment period raises a high probability that the DEIR will have to be revised and recirculated to accommodate the findings and information in the MTP/SCS reports and document. R-4-2

3) Holiday Closures and Staff Availability

The current document availability and review period of 60 days includes several widely recognized holidays – Thanksgiving, Hanukkah, Christmas, Kwanzaa, New Years, and Martin Luther King Jr Day. Employees of the EDHCSD, as well as individual residents in the community, would typically be spending time with their families and/or utilize work leave time to extend a holiday period.

R-4-3

The CEDHSP is proposed to be an additional development within the El Dorado Hills Community Services District boundaries. The EDHCSD has a mission to: *Enhance the quality of life for El Dorado Hills residents through innovative, responsible leadership and by providing superior services and facilities.* Well-planned growth requires thoughtful analyses, which in turn require time and resources. The EDHCSD respectfully requests that the DEIR's public review and comment period be extended to provide a total of at least 180 days of review time.

Should you have any questions or comments regarding the concerns expressed in this letter, please contact me at (916) 614-3233.

Cordially,

Kevin A. Loewen

Kevin A. Loewen
Director of Parks and Planning
El Dorado Hills Community Services District

Response to R-4, El Dorado Hills Community Services District, Kevin Loewen, 12/4/2015

R-4-1: The El Dorado Hills CSD requests a 180-day public review period, citing the need to review a 600+ page environmental document, the General Plan, AB 32, SB 375, SACOG's MTP/SCS, the County Ordinance, Measure Y, and AB 1358. In response to multiple requests to extend the comment period, the County extended the original 60-day review period another 30 days, for a total of 90 days. Please see Response to Comment **I-7-3**.

R-4-2: The commenter notes that the update to the 2035 MTP/SCS will be available in February 2016 and cites this as further justification to extend the review period. SACOG adopted the 2035 MTP/SCS in February 2016 and certified its EIR at the same time. There are no substantive differences relative to the project between the 2012 MTP/SCS and the MTP/SCS adopted in February 2016. Importantly, the project site is identified as a "developing community" on both the 2016 and 2012 versions. The policies of the 2016 and 2012 versions of the MTP/SCS are largely the same and their differences relate to improvements in regional modelling techniques and related data updates, rather than any substantive changes in policy direction. This does not rise to the level of significant new information that would require recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5.

Note that Senate Bill 375 of 2008 allows for certain levels of streamlined GHG review and analysis of residential and mixed-use projects that are consistent with SACOG's MTP/SCS. Projects eligible for this streamlining can tier off the MTP/SCS EIR for CEQA purposes. Although the project would be eligible for streamlined review, the County has conservatively elected to quantitatively analyze all project-generated GHG emissions, including GHGs that would be generated by mobile sources. Therefore, any differences between the 2012 and 2016 editions of the MTP/SCS related to regional GHG emissions are not significant new information because the County did not rely on the 2012 MTP/SCS analyzing project GHG emissions.

R-4-3: The commenter notes that the 60-day review period included holidays, when residents and employees would typically spend time with their families and not be working. In response to multiple requests to extend the comment period, the County extended the original 60-day review period another 30 days, for a total of 90 days. The comment period ended February 19, 2016. Please see Response to Comment **I-7-3**.

On Thu, Feb 18, 2016 at 4:01 PM, Kevin Loewen <kloewen@edhcsd.org> wrote:

Mr. Pabalinas,

The CSD is submitting its comments related to the CEDHSP DEIR electronically (attached here) and will be sending a copy via USPS.

Thank you,

Kevin A. Loewen

From: Rommel Pabalinas [mailto:rommel.pabalinas@edcgov.us]
Sent: Thursday, February 18, 2016 4:18 PM
To: Kevin Loewen
Subject: Re: Submission of CEDHSP DEIR Comments by El Dorado Hills CSD

R-5-1

Thank you, Kevin.

From: **Kevin Loewen** <kloewen@edhcsd.org>
Date: Fri, Feb 19, 2016 at 4:31 PM
Subject: Inclusion of Attachments - RE: Submission of CEDHSP DEIR Comments by El Dorado Hills CSD
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Mel,

It appears as though my attachments referenced in the CSD's comments did not actually get attached. I'm including them here, but not sending them in the mail. Is that going to be acceptable?

Cordially,

Kevin A. Loewen

LETTER R-5

El Dorado Hills
COMMUNITY SERVICES DISTRICT

DATE: FEBRUARY 16, 2016

El Dorado County
Development Services Department
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
c/o: Rommel Pabalinas
email: CEDHSP@edcgov.us
Fax: 530-642-0508

Re: Public Comments on Central El Dorado Hills Specific Plan Draft Environmental Impact Report

Dear Mr. Pabalinas:

This letter provides the comments of the El Dorado Hills Community Services District ("District" or "CSD") regarding El Dorado County's Central El Dorado Hills Specific Plan Draft Environmental Impact Report ("EIR"). The District has numerous concerns with the level of analysis and disclosure in the EIR and takes issue with the sufficiency of certain conclusions and analyses in the EIR. The District believes that these deficiencies make the EIR inadequate under CEQA, and the District opposes the approval of any project based on the current EIR. The District urges the County to revise and improve the EIR in accordance with the comments provided in this letter, and then to recirculate the EIR prior to making any decision on the proposed project (or other determination) in reliance on the EIR. R-5-2

Community Services District Purview for Parks, Recreation, and Quality of Life Elements

The El Dorado Hills Community Services District was formed on May 21, 1962 by County Board of Supervisors Resolution No. 98-62 and under Government Code §61600. Although the District has obvious powers related to parks and recreation, it has a broad and strong mission statement to: "*Enhance the quality of life for El Dorado Hills residents through innovative, responsible leadership and by providing superior services and facilities.*" The proposed project and its many environmental impacts that are evaluated and disclosed in the EIR will directly, indirectly, and cumulatively affect many elements and factors that contribute to the quality of life of residents within the CSD's service area. Accordingly, the District is seeking through this comment letter to obtain further analysis and discussion of certain important issues so that better-informed decisions and public participation on this proposed project can occur. R-5-3

Residents Expressed Overwhelming Concern With The Proposed Development Project In A Recent Ballot Initiative

The El Dorado Hills Community Services District Board of Directors placed Measure E on the November 3, 2015 ballot. Measure E posed the following question: R-5-4

1021 Harvard Way • El Dorado Hills, CA 95762 • (916) 933-6624 • (916) 941-1627 fax • www.edhcsd.org

Should the El Dorado County Board of Supervisors re-zone the approximately 100 acres of the former Executive Golf Course in El Dorado Hills from its current land use designation as "open space recreation" to a designation that allows residential housing and commercial development on the property?

The Former Executive Golf Course is approximately 100 acres of the project being addressed in this EIR. A resounding 40.7% of eligible voters in the District cast their vote, and 91% of these voters spoke with an equally resounding "No" vote to the ballot question. Although the ballot did not seek further input as to the various reasons why so many residents of El Dorado Hills sought to retain this property in its current open space / recreation facilities zoning and use, respectively, it is reasonable to presume that environmental impacts related to the proposed project evaluated in the EIR are a major factor. R-5-4 cont.

INADEQUATE ANALYSES

Alternative Analysis Options Too Narrow in Focus - Fatal Flaw in No-Project Alternative
The No-Project Alternative is fatally flawed due to this alternative utilizing development that would occur should a previously approved project in the neighboring plan area (El Dorado Hills Specific Plan / Serrano) occur. More specifically, the Project Proponent is essentially requesting a specific plan boundary adjustment – a reduction – for the El Dorado Hills Specific Plan. That reduction area includes approved residential density – or dwelling units. The proposed project requests a transfer of those dwelling units to other areas within the new and proposed specific plan, Central El Doardo Hills Specific Plan A true No-Project Alternative would review the impacts onto the land that is not currently within the El Dorado Hills Specific Plan. The No-Project Alternative must consider no project impacts onto the various land use and zoned areas as they are now, both inclusive and exclusive to the proposed project and to the El Dorado Hills Specific Plan. R-5-5

Inadequate Alternative Development Sites Analysis

CEQA requires an analysis of alternatives to the proposed project. Here, the EIR improperly determined to exclude a discussion of alternative development sites and included an inadequate range of alternatives.

The EIR Alternative Analysis admits that there are other sites that could accommodate the proposed residential development. (EIR at 4-46 ["A few parcels exist on the south side of US 50 that are located across from Latrobe Road from the Town Center commercial area."].) Despite this admission, the EIR dismisses considering these as alternatives in conclusory fashion without ample discussion or support. The EIR states that "Parker Development does not own those parcels," but that is insufficient to exclude an off-site alternative from analysis in an EIR. Further, Parker Development does own other properties within the District boundaries that may meet the full or partial goals described in this project plan. Such property(ies) may include the Marble Valley Specific Plan Area. The EIR must consider potential land swaps, purchase of the property by Parker Development or use of the County's power of eminent domain. Furthermore, the EIR's claim that any alternative site would not meet project objectives is vague and without support. A project alternative need only satisfy most project objectives to merit inclusion in an R-5-6

EIR. The EIR Alternative Analysis here presented 15 project objectives (EIR at pp. 4-2 – 4-3), and it does not discuss whether residential development at these available alternatives sites would meet (or fail to meet) any of these 15 objectives. The District's preliminary review of that issue indicates that these alternatives sites would meet at least 8 of the 15 stated objectives (i.e., most objectives) and therefore should be considered under CEQA.

To the extent that the EIR seeks to justify exclusion of a detailed analysis of all alternative sites on the grounds that the proposed project has an overarching, fundamental project objective that these locations would not meet (e.g., promoting a sense of community or making efficient use of infrastructure) that conclusion is not adequately explained or supported. To the extent the EIR attempts to elevate the "walkable community" factor to this fundamental objective status in eliminating off-site alternatives from discussion, it is inconsistent with other statements in the EIR and unsupported by adequate discussion and evidence. R-5-6 cont.

Inadequate Aesthetics Analysis

The inadequacies of this area of the alternative analyses within the EIR (pp. 4-10 – 4-11) is especially disconcerting, as the EIR asserts that the aesthetic appeal and nighttime light of the No-Project Alternative would have a similar impact as the project occurring. Due to this project plan requesting a transfer of pre-approved homes in a portion of the neighboring specific plan to other areas of the proposed project we find the EIR assertion of a similar impact, i.e. *"Both the proposed project and No-Project Alternative would result in new sources of nighttime light and this impact would be less than significant. The No-Project Alternative would result in slightly less lighting because it has a decreased development density and a smaller project footprint that would result in fewer lighting sources…."* This statement may appear to have some validity, but when analyzed closer the lighting and aesthetic impacts of the No-Project Alternative would be localized rather than throughout a larger area of the proposed project. A descriptive and illustrative presentation of these impacts is requested and would afford reviewers of this plan a better understanding of the extent of impacts for the various EIR project alternatives throughout the project – Westside and Pedregal. R-5-7

Further, the aesthetic impacts may be clearly reviewed should a full project rendering of the various project alternatives be created. Both a daytime and nighttime rendering are suggested to fully capture the impacts that must be analyzed as part of this process. This request should be supported, as aesthetics are a concern for, or the appreciation of, beauty. It should be noted that the renderings provided in the EIR (pp. 3.1 – 2a-7) are narrow in scope considering the whole of the project, and there have been trees added into the renderings that skew a thorough analysis. That is, a significant number of trees have been portrayed as new tree installations in Figure 3.1-6 which screen the view of homes, but those trees within the proposed park may not be well-situated there R-5-8

Inadequate Biological Resources Analysis

The EIR does not adequately report by means of quantification the amount and extent of biological resources to be impacted across the various alternatives provided. For instance, the Specific Plan indicates that oak woodland currently covers 27.7% of the plan area (5.3.5, Oak Woodlands), and an oak woodland canopy measure, in acres, is given, but this does not address the total count of oak trees; count of heritage oak trees; or dbh (diameter at breast height) for R-5-9 oaks to be impacted or preserved under the various alternatives. A descriptive and illustrative reporting of these data must be provided for full disclosure and participation of all interested parties regarding the impacts to these resources. R-5-9 cont.

The Impact Analysis for oak canopy loss within the EIR (pp.3.3-34) indicates that *"Because blue oaks are slow-growing trees, achieving the original canopy density within 15 years, as required under Option A, would be challenging. However, Option A also requires a 90% survival rate for planted trees, which would be attainable by overplanting....Each replacement tree is defined as a 1-gallon sapling or three locally collected acorns."* Proper mitigation may be challenging, as described in the EIR, but it is incumbent upon the Project Proponent and the County to both identify the impacts and seek feasible solutions. Here, the challenge is for mitigation to compensate for the loss of oak canopy. Planting – even overplanting – acorns is inadequate for a mitigation measure. The footnote on this page (3.3-35) provides a 0.5:1 credit for replacement trees, which is severely inadequate when mitigation measures are not currently considering the total tree loss or dbh loss. Should the Specific Plan and EIR continue to measure oak canopy then mitigation should be 1:1 for canopy loss, which would require a significantly larger number of replacement trees and/or significantly larger canopy replacement trees. A minimum 15-gallon oak tree, and 24-inch boxed tree wherever feasible, shall be the threshold for a mitigation tree as part of the remainder mitigation plan presented. Acorn planting is not advisable, as the neighboring property to the proposed project site has received such mitigation previously with insufficient oak acorn survival and growth rates. The 15-year monitoring plan is highly supported by the District, with the addition of a bond to be carried for which replacement could be made should the Project Proponent not comply with this mitigation measure. The analysis indicates that the future homeowners (or HOA), *or the County,* will be responsible for replacing dead oak trees. Does mitigation for this project fall upon either of those entities? If so, then the contractual language and intent by all parties to that effect must be provided for review at this time. R-5-10

The Applicant asserts within their Specific Plan that *the Project Proponent may elect to pursue that option, in which additional impacts and mitigation to the oak woodlands may occur subject to any required CEQA analysis and an amendment to this Specific Plan* (Specific Plan pp. 5-11; Section 5.3.5, Oak Woodlands, Oak Canopy Retention). The assertion within the Project Proponent's Specific Plan that a reduction to requirements may be available to them, should future policies be changed, is somewhat troubling. Does this assertion then beg for additional alternative analyses to be performed based on the various assertions of future lessened restrictions? The District asserts that it does, as it is now feasible in light of the Project Proponent's forethought on the matter. Further, there are several such assertions and it is incumbent upon the Project Proponent and the County to address each feasible alternative, be it explicitly stated within the Specific Plan and EIR, or feasible by a test of reasonableness.

The location of oak canopy mitigation should occur within the District boundaries and should be indicated descriptively and illustratively. Mitigation sites, other than residential sites, should be preserved as mitigation sites in some manner to assure mitigation in perpetuity. A conservation endowment may be one method for which the impact mitigation could be secured.

The impact of the loss of riparian woodland is deemed *less than significant with mitigation*. Mitigation measures presented in the impact analysis (pp. 3.3 - 38-40) should be required to occur within the District boundaries to address impacts in a more distinct and specific manner so as to properly meet a 1:1 mitigation ratio – as proposed in this analysis. R-5-11

The analysis for the loss of jurisdictional wetlands (pp. 3.3 - 40-42) indicates that there will be a *less than significant with mitigation* impact, yet there are *direct and permanent impacts* and that *the project will be designed, to the extent feasible, to avoid direct and indirect impacts on waters of the United States, including wetlands*. How does this analysis quantify a less than significant impact when there are direct and permanent impacts? Additionally, how does this analysis qualify what is a feasible design to preserve the waters of United States and wetlands? The analysis and findings for this area are inadequate to serve CEQA's purpose of full and informed decision-making and public participation. Again, we assert that offsite mitigation, if pursued by the Project Proponent, shall be within the District and that maintenance and management of those wetlands be held in perpetuity by all feasible means available, such as in the form of an endowment fund.

The analysis for the loss of other waters of the United States, including intermittent drainages, drainage ditches/roadside ditches, and ponds (pp. 3.3 – 42-44) indicates that there will be a *less than significant with mitigation* impact, yet the descriptive analysis continues on to state that these impacts are *considered significant because they are regulated by the USACE and Regional Water Boards…However, in addition to implementing the measures required as part of the CWA permits, the project applicant would implement Mitigation Measures…* The District contends that in-District mitigation occur and that maintenance and management of those waters of the United States be protected in perpetuity vis-à-vis a suitable funding mechanism such as an endowment fund. R-5-12

All on-site, off-site, in-District, or otherwise located mitigation sites for Biological Resources shall not already be part of a credit obtained by the Project Proponent or any other entity or individual. To permit dual credit for mitigation would defeat the purpose of mitigation. All mitigation in this area of the EIR should be documented in such as manner so as to ensure mitigation in perpetuity, preferably by means of an endowment fund and monitored by a conservancy or governmental entity.

Inadequate Hydrology, Water Quality, and Water Resources Analysis

The State of California is again in the throes of a severe drought and climate change models and studies indicate that such conditions may recur more frequently and worsen the State's water supply future. The Alternatives utilized in this EIR do not fully consider feasible and proactive measures to address this new reality of water use and management. Water is one of this region's most valuable resources. Consequently, the EIR should analyze a Net-Zero Water & Energy Alternative.. A Net-Zero Alternative would designing the proposed project, or feasible mitigation measures, in a manner that does not add to the area's current demand for water or energy. Such a "zero-impact" water development can be achieved by reuse of water within and outside a home, or commercial structure, by all current means possible, or improving existing structures and systems in the District to obtain credit toward creating a net-zero system. For instance, smart irrigation improvements could be made by the Project Proponent to existing R-5-13

District homeowner's and business properties to offset the proposed project's new water demand.. In this way, the proposed project will not increase the already taxed and stressed water supplies of the area. Without such an alternative, the EIR is inadequate and its conclusion of no impacts to water supply, or the availability of adequate new supplies for the proposed project is unsupported. Residents of this area are already under mandatory State orders to conserve water and reduce annual use by more than 25%. Given this exiting baseline of inadequate supplies for existing users, any suggestion or conclusion in the EIR that there is sufficient water for new residential demand is utterly unsupportable. R-5-13 cont. R-5-14

<u>Inadequate Geology, Soils, Minerals, and Paleontological Resources Analysis</u>

It is unclear as to whether or not the alternative analyses in areas relevant to naturally occurring asbestos (NOA) were adequately analyzed, as the Specific Plan (Steep Hillsides, 5.3.1) refers to the development only being able to move forward should the County amend its own policies, "*with respect to the disturbance of slopes 30 percent and greater, development of the Plan Area may occur consistent with those policies, subject...*". R-5-15 Is it the intent of the applicant and County staff to move this project forward without it currently fitting within the County policies? Are there other policies that County staff are currently prescribing as something that will be modified? A summary of requests, proposals, and actions to be taken by and of this project that are currently inconsistent with County policies should be clearly identified for the public to review to ensure that a full, complete, and transparent environmental analysis is made. Further, we request that in an effort to meet EIR transparency that a table be created which indicates all sections of the proposed specific plan; reference documents; policies; areas conflicting with policies; mitigation taken; etc. in relation to the analysis review area (e.g., Aesthetics; Air Quality; Etc.). R-5-16

<u>Inadequate Recreation Analysis</u>

The EIR's Recreation discussion (pp. 3.13 – 7) states, "*Currently, without private parks maintained by homeowners' associations, the El Dorado Hills CSD service area is deficient in neighborhood parks, village parks, and community parks.*" This statement is misleading due to the fact that many privately held/maintained parks within the District have been given credit toward their Quimby Parkland requirement(s) for the provision of those parks and recreation amenities. Therefore, the CSD continues to apply credit for the provision of parkland for those areas given such Quimby credit. The EIR should be revised accordingly. R-5-17

There appears to be a presumption within the EIR's Recreation analysis (pp. 3.13-8) that the CSD would utilize land within the project area identified as "Civic-Limited Commercial." The Project Proponent has presented a curiously zoned area within the project site for such use, but no direct communication with the CSD for the use of such land has occurred. The CSD requests immediate consultation and discourse regarding these assumptions, and through this letter indicates that it has not approved or agreed to any such assumptions.

R-5-18

Additionally, all new parks within the District must be maintained by an ongoing funding mechanism, such as a Lighting and Landscaping Assessment District. If the Project Proponent works directly with the CSD and provides such an ongoing maintenance funding mechanism, then it may be appropriate to consider the Civic-Limited Commercial site(s) as available and usable land for parkland dedication. However, the District has concerns that the EIR's analysis (pp. 3.13-9) indicates that the Project Proponent does not sincerely intend to dedicate the Civic-Limited Commercial site in such a manner when it states: *"Policy 6.18: The Project Proponent shall dedicate park land acreage consistent with the Quimby Park land dedication requirement. It is currently contemplated that the Project Proponent will dedicate a minimum of 13.32 acres of park lands to the El Dorado Hills CSD as specified in the Public Facilities Financing Plan and any associated Development Agreement, provided the Plan Area Build out to its maximum dwelling count of 1,000 units."* Until such time it is entirely inappropriate to apply consideration of that site as part of the parkland dedication and recreation analysis. Additionally, does the Project Proponent intend to withhold parkland until such time as it completes the build out of 1,000 homes or greater, as stated above? R-5-18 cont.

The analysis states that wireless utilities will be permitted on the designated open space sites (pp. 3.13 – 9). Have the impacts related to such wireless facilities been analyzed? If so, the public should have an opportunity to review those impacts, as open space in its most natural and unblemished form is cherished within the District, as demonstrated in the Measure E Ballot results aforementioned. The project site and Proponent shall not be permitted to obtain credit for open space within the plan area and dually obtain credit for wireless facilities. The District contends that should the wireless facility be visible from any point of designated open space with the plan area that said open space would be impacted and that these impacts must be further analyzed. R-5-19

The statement made in the EIR Alternative Analysis that *"Effects of the No-Project Alternative on the deterioration of existing neighborhood parks would therefore be expected to be greater than those associated with the proposed project..."* (pp. 4 – 18) is rather disconcerting and unfounded. If the No-Project Alternative has *already satisfy(ied) Quimby requirements,* vis-à-vis parkland already constructed in the El Dorado Hills Specific Plan, then how can the EIR accurately state that there would be a further *"deterioration of existing neighborhood parks...*and would present a greater impact than those presented by the proposed project. That is, parkland dedicated and developed within the El Dorado Hills Specific Plan was intended to meet the needs of the residents for that plan area, and the remainder homes to be built should have been included in the original parkland dedication consideration(s). R-5-20

The Alternative Analysis for this area of the EIR does not accurately analyze recreation opportunities. Approximately 100 acres of the proposed project site is currently zoned as Open Space and has a use of Recreation Facilities. Although the applicant proposes some active parkland and some open spaces, the aforementioned 100 acres is contiguous – only bisected by Serrano Parkway, and there is an under street passing large enough for pedestrians, golf carts, and even SUV's to utilize. More explicitly stated, 100 acres of contiguous open space / recreational facilities will be impacted by this project but it is not adequately analyzed in this EIR. Given the Measure E Ballot results and the multitude of communications between the District and the County and/or Project Proponent concerning this 100 acre property, the District believes that other feasible alternatives for the Recreation element of the EIR Alternative Analysis should have been considered. The District and applicant have been approached by private recreation companies with proposed projects for renewing the Former Executive Golf Course (i.e., the 100 acre property discussed here) with modern golf experiences that are proven to be successful in markets similar to the market that this property is in. Additionally, the R-5-21

District has unmet needs for recreation opportunities such as disc golf, which would both preserve the current physical characteristics of this site and meet the needs of residents. Please provide more detail as to why such alternatives were not considered or include consideration of these alternatives. The District would be happy to meet with the County and project application to discuss these potential uses for the site. R-5-21 cont.

The Recreation Reduced-Density Alternative does not include an provisions for public parks. This is therefore an unrealistic, "strawman" alternative intentionally made to be unpalatable to discourage earnest public discourse and decision-making. The omission of any public parks is almost punitive on the residents of the District to discourage any consideration of a potential density restriction on the applicant. More explanation as to why public parks were omitted in the plan area for this alternative must be described. Additionally, recognition that Quimby Act in-lieu fees would be used to purchase and provide parkland in other nearby areas must be described for a fair and transparent analysis to occur. R-5-22

The Recreation analysis fails to address listed restrictions for the proposed park and recreation sites within the Specific Plan, *"Prohibited improvement include indoor recreation centers, swimming pools, and large storage or maintenance buildings,"* and it is incumbent upon the EIR analysis to not selectively identify deficiencies in an agency's system while disregarding other deficiencies. That is to say, the impact analysis cited deficiencies in parkland classification (pp. 3.13 – 7) yet failed to analyze amenity deficiencies, which are proposed as being restricted from parks in this project, that are equally identified in the EIR-referenced CSD Master Plan (2007). The EIR analysis for the Recreation element is selective in nature and inadequate. R-5-23

<u>Inadequate Public Services and Utilities Analysis</u>

The analysis for current and future demand of water for the proposed project is inadequate and possibly erroneous. Table 3.12-3 (pp.3.12 – 20); Table 3.12-13 (pp. 3.12 - 50); Table 3.12 – 14 (pp. 3.12 – 50) and its accompanying description and supportive attachments, may omit current and actively requested entitlements that would trigger additional analysis on the impacts to water demand. Further, a summary of all current and proposed entitlements, by name and anticipated demand, for the identified water source, and backup water source(s), shall accurately reflect County(ies) records to ensure that an accurate analysis may be made of demands upon available and future water across the various precipitation conditions (i.e., wet; single dry; multiple dry), and shall be analyzed under current California drought restriction conditions, local drought restrictions, and the reasonable future drought restrictions should multiple dry years occur given the full execution of current and proposed entitlements tied to the aforementioned water supply sources. R-5-24

The "*uncertainties*" described in relation to the CVP Fazio water entitlement or the supplies anticipated under the El Dorado-SMUD Cooperation Agreement (UARP supply) are significant feasible uncertainties regarding the available water supply(ies) in relation to the demand created by this project. A more complete analysis of the impacts related to these *"uncertainties"* as though they were to come to fruition, up to and including a worst case scenario, should be presented for the public and policy makers to fully understand the feasible potential impacts to water supplies and current water users related to this project.

Recycled water development requirement (pp. 3.12 – 44) does not appear to consider reducing or mitigating impacts related to this area by simply stating, "Recycled water lines would not be extended to the Pedregal planning area." Why isn't the impact related to water use in the Pedgregal area addressed through comparable measures that are taken in the remainder of the project area when the need for additional recycled water collection and storage is addressed as an option for planning for water shortfall (pp. 3.12 – 55-56; Option #2)? R-5-24 cont.

The options presented for planning for additional water supplies given adverse conditions (pp. 3.12 – 55-57) merely presents opportunities, but no concrete plan of action for the feasible outcome of single- and multiple-dry years. As such, this discussion is vague and ambiguous and does not meet CEQA's requirements for good faith and earnest discussions of the potential weaknesses in water supply assumptions and the result if such assumptions prove unfounded in the future. What requirement will be upon the Project Proponent to ensure that mitigation of this impact is offset? The requirement cannot only fall upon the local water purveyor, as the impacts will be generated by the Project Proponent and approved of by the County of El Dorado.

Inadequate Greenhouse Gas Analysis And Mitigation

The EIR's analysis of greenhouse gas emissions compares the project's estimates GHG emissions with a hypothetical No Action Taken "NAT" scenario and concludes that the proposed project will produce about 21.7% fewer emissions that under the NAT scenario, which apparently is a hypothetical development of similar size, but without any GHG reduction measures taken. The District is concerned with the GHG modeling and its NAT assumptions and requests that the County reconsider its assumptions, or at least explain and support them with more evidence. The majority of the difference in GHG emissions between the project and the NAT scenario is the result of reductions in estimates of mobile source emitters (basically cars and vehicle trips). (See EIR Tables 3.6-3 through 3.6-7.) Please provide explanation and support for the assumption that mobile source emissions will be so reduced in the proposed project as compared to NAT. The District does not believe that mobile source emissions will be reduced by this much because of the rural location of El Dorado Hills and the fact that residents still commute extensive distances to Sacramento and other urban centers for employment and other amenities. R-5-25 Please further explain and provide evidence and documents showing that the assumptions about what trips will be eliminated or reduced by the proposed project are consistent with real-world conditions and practices by El Dorado Hills residents. Was any actual empirical ground-truthing of these assumptions made, by for instance surveys of existing residents and their travel / commute patterns and habits? Please identify the project features that contribute to the greatly reduced mobile source emissions as compared to the NAT.

Additionally, the County's use of the draft regional 21.7% reduction threshold is unsupported by any explanation as to how that threshold is consistent or appropriate to use as a proxy for assisting or achieving the Statewide GHG reduction goal. Similarly, even if 21.7% were accepted as an appropriate regional threshold, the EIR does not explain or support the assumption that for the region (or state) to achieve the chosen threshold reduction percentage the proposed project need only to achieve the same percentage reduction. In fact, it is well known that for the State (or a region) to achieve a target GHG reduction percentage will very likely require new developments like the proposed project to reduce GHG by a much greater percentage. This is largely because existing developments are unable (or very unlikely) to reduce their GHG emissions. Please provide data and explanation of how the EIR's methodology accounts for these issues. R-5-25 cont.

The EIR's GHG analysis states: "Indirect emissions would also be generated by electricity used to pump and convey water to the project site." (EIR at 3.6-9.) It explains: "Primary sources of emissions would include . . . water consumption, waste and wastewater generation . . . ." However, the analysis does not identify how much GHG emissions will increase or decrease depending on what sources of water are used for the proposed project. The EIR and WSA discuss a range of potential water supplies for the project. Accordingly, the EIR must identify the electricity usage and GHG emissions of each potential source to provide the public and decision-makers with a full understanding of impacts and the ability to choose or avoid particular water supply options. Without discussion and changes to address these issues, the EIR's conclusion that the project will have a less-than-significant impact on GHG emissions is unsupported and arbitrary, as is the related determination that no mitigation for GHG is required. R-5-26

Green House Gases can be directly correlated to energy consumption as a result of a project – a project such as this one. For instance, the electricity required to power the needs of future residents will cause additional GHG emissions as part of that energy production. Energy use for the provision of potable water and collection of wastewater should be analyzed in a net-zero frame of comparison. As the Project Proponent seeks a net-zero analysis they could consider onsite and offsite credit in the form of rooftop solar and covered parking solar. This analysis, and feasible measure for mitigation, would likely result in a more desirable product for the Project Proponent and enhance the quality of life for residents throughout the District, should the applicant seek full credit within the District boundaries. R-5-27

<u>Inadequate Analysis And Mitigation Of Naturally Occurring Asbestos Risks</u>

The EIR devotes entirely too little attention to the naturally occurring asbestos ("NOA") in the project vicinity, especially considering its conclusion that: "[P]ortions of the project would be located within areas known to contain NOA." (EIR at 3.2-11). The County published a NOA map in 2005 (attached), which clearly indicates that this project is in an area known to contain NOA or very near areas to contain NOA. First, more sampling of the proposed project site is necessary to adequately describe the environmental setting and the potential risk. Second, the reliance on mitigation measure AQ-4 to reduce the risk of NOA exposure to less than significant levels is unsupported and insufficient. Third, the most current analysis of NOA for the project site and nearby lands must be utilized for this analysis. R-5-28

AQ-4 is too vague and limited a mitigation measure to conclude it will reduce to less than significant levels a threat the EIR acknowledges "would be a potentially significant impact" otherwise. (EIR at 3.2-32.) There is no safe exposure level to asbestos and health effects usually arise many years later. As such, the mitigation must include (at least) constant observation of earthwork activities, not merely "periodic" as the EIR now promises. Furthermore, there must be constant (i.e. daily) air sampling and ground sampling for asbestos during construction. If any is located, construction should cease in that area and wait until after substantial rains have wetted the area before beginning again (regional sampling has shown a decrease in airborne asbestos in constriction areas in El Dorado Hills during rainy periods. The EIR is further non-committal about preparation of an "Asbestos Dust Mitigation Plan" stating "the project applicant shall prepare and submit" such a plan "if required by EDCAQMD." (EIR at 3.2-33.) Such plans should be prepared and included in the EIR prior to certification. In fact, this underscores the EIR's inadequacy because instead of inadequately surveying and sampling the project area to properly assess the occurrence of NOA, the EIR instead proposes to commence construction with "periodic" monitoring by geologists (with no air sampling) and then only after NOA is observed, will a plan be prepared. This puts the cart before the horse. The EIR must do a better job assessing, disclosing, and developing and describing mitigation for this potentially serious risk of kicking up NOA during project construction. R-5-28 cont.

Inadequate Analysis Of Potential Impacts To Wastewater Treatment Services

The EIR's cumulative effect analysis discloses that wastewater treatment capacity will likely be exceeded in the future. The EIR relies on construction of additional capacity as outlined in the El Dorado Hills WWFMP. (EIR at 3.12-61.) The EIR should provide more discussion of the WWFMP, its cost, the likelihood of its timely implementation as assumed by the EIR to conclude impacts to this utility service with be less-than-significant. Furthermore, the EIR must discuss the impacts if this presumed future source of wastewater treatment capacity does not materialize as anticipated. R-5-29

Inadequate Description And Analysis Of Energy Consumption - Water Quality From Use Of Potential Future Water Supply Sources

As stated above, the EIR states that any number of water sources may be used to serve the project. Some of these are uphill, some downhill, and one option is recycled water. These various water sources have different conveyance needs to serve the project. Please explain the different energy needs to pump and treat these various sources. Similarly, please describe any water quality differences between the sources (e.g.) water hardness or softness, trace contaminants and pollutants, metal, etc.). Also, please confirm that existing residents in the area will continue to receive water from the same sources and of the same quality, and that the proposed project will not result in substitution or switching of any existing supplies being delivered to existing residents. Without such information, the EIR is deficient in that it does not allow the public or decision makers to understand the energy impacts of the proposed project or choose feasible mitigation or alternatives that avoid these energy impacts. R-5-30

Inadequate Traffic Analysis And Mitigation

The CSD contends that traffic and circulation is a quality of life element for its residents and is concerned that an inadequate analysis has been conducted. It is incumbent upon the Project Proponent and County to ensure that all AB 32, SB 375, Local Air District (EDCAQMD), and Federal, State, and County environmental laws and goals are met. The EIR should identify clearly the status of how the Project and Project Proponent have met all such laws, regulations and goals. R-5-31a

The existing conditions for peak hour traffic volumes study (pp. 3.14 – 8) in *"study intersection"* indicates that data collection was conducted in the months of May and January. The data set is inadequate in that it does not identify the days of the week for data collection; the day range for data collection; and which El Dorado Hills schools were in regular session or out of session. In comparison, the US 50 traffic counts include vehicle classification data, days of the week that data was collected, and backup of data collected vis-à-vis verification against other data collection measures. Why wasn't data collection and reporting consistent across US 50 and local roadways/intersections? How can a complete analysis of the impacts be made without consistent data collection and reporting? The EIR must provide a consistent and comparable data to allow informed decision making and public participation.

A traffic LOS F is indicated at Francisco Drive/El Dorado Hills Blvd (pp. 3.14 – 9) in the impact analysis, which would then make further traffic impacts unacceptable, per the *Thresholds of Significance* in the County General Plan. Yet, Table 3.14-3 (pp. 3.14 – 11) indicates that the same intersection is LOS D. The analysis then continues to identify a recent improvement to the same intersection, but does not provide supportive data to quantify alleviation from the aforementioned LOS F. The analysis and justification for impacts and potential impact reduction at this intersection is inadequate, thus putting the proposed project out of compliance with the County General Plan.

Caltrans completed and certified the report Transportation Concept Report and Corridor System Management Plan, United States Route 50, District 3 on June 27, 2014. This report identifies portions of US 50 that are referenced to in the impact analysis as Segments #7 - #9, as indicated in Table 1 (pp. 7 of referenced Caltrans report). Caltrans indicates that US 50 within Sacramento is at a LOS F, with a Concept LOS E. That is, the goal for urban areas on US 50 is LOS E, and LOS D for rural areas. The segment of US 50 between Folsom Blvd (Segment #7), the Sacramento/El Dorado County Line (Segment #8) to El Dorado Hills Blvd, and on to Bass Lake Road (Segment #9) are now at LOS F, with a concept (i.e., Goal LOS) LOS E (see Table 13 on page 49 of the attached Caltrans report titled Transportation Concept Report and Corridor System Management Plan, United States Route 50, District 3). Continuing to add traffic impacts, which are so closely connected to the proposed project, will only exacerbate an already failed level of service for traffic and circulation. Further, the document states that, *"Any threshold standard LOS established by a local agency for the State Highway System (SHS) should not be lower than the Caltrans Concept LOS,"* (pp. 48 of Caltrans document attachment) which then begs to be addressed and analyzed further by the Project Proponent, the County, and within the impact analysis as to the extent of impacts and how mitigation will offset those impacts. Additionally, why does the impact analysis (pp. 3.14 – 18) utilize reference materials from 2008 and 2010 for their analysis, yet disregards the published dataset referenced here and attached by stating, *"The Highway Capacity Manual (Transportation Research Board 2010), includes three different tiers of analysis for freeway facilities, specifically, planning, design, and operations analyses. 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-*

R-5-31b

range planning efforts like the Highway 50 Corridor System Management Plan, which groups many freeway facilities into single analysis segments." Why isn't the breadth of coverage important here? Shouldn't the impact analysis be a complete analysis of project distinct impacts, further-reaching impacts along this primary corridor, and cumulative impacts? It appears as though selective datasets are being applied to elicit a desired set of impact assumptions for this area of the EIR. R-5-31b cont.

Mitigation measure TRA-1d indicates that five dedicated park-and-ride stalls will be situated at the Village Park (pp. 3.14 – 31, and section 4.6.3 of the Specific Plan; and Figure 4.1: Circulation of the Specific Plan), yet no discussion for this requirement has been communicated with the CSD – the prescribed future owner/operator of that park. The assumption that the CSD would prescribe to this mitigation supports an assertion on the CSD's behalf that a full and complete analysis, and reasonable mitigation measures, has not been performed at this time. The CSD must be engaged as to this potential requirement and a preliminary agreement must be made to the effect sought by the mitigation measure, and we ask, again, for an immediate R-5-32
meeting to discuss this and other issues implicating the District. An additional concern for the CSD is that an analysis of the impacts related to a proposed overcrossing of Highway 50 (see Section 4.7, 4.7.2, and Figure 4.16 of the Specific Plan) may adversely affect natural/open space lands, parkland, and parkland credit that the Project Proponent is identifying in their plan. The Project Proponent and EIR should clarify the details of this overcrossing and ensure that potential impacts are explored more thoroughly. R-5-33

<u>Inadequate Air Quality Analysis</u>

We ask the County to review and further assess the conclusion to the impact assessment (page 3.2-22) which states *"There is no feasible mitigation to reduce ROG emissions below the EDCAQMD's threshold" and "Accordingly, based on EDCAQMD's analysis criteria for consistency with applicable air quality plans, the proposed project would conflict with the 2009 Ozone Plan for the SFNA."* The project proponent and county have proposed some basic and minimal mitigation measures to reduce operational ROG and NOx emissions. In support of both public health and regional air quality, we request the EIR include an evaluation and quantification of additional measures and sustainable policies to mandate further pollutant reductions through required construction and design measures. Examples may include mandated solar equipment (passive and photovoltaic) for a specific portion of residential units constructed, use of color-containing stucco coatings to eliminate exterior coatings/VOC containing paints, highest possible SEER ratings on all HVAC equipment, use of high efficiency tankless water heaters, promoting ongoing public awareness and sustainable education through the life of the project (to 2035), etc. R-5-34

Criteria pollutant and GHG emissions estimates for energy consumption during project operations do not account for electrical demand from field lights, parking lot lighting, electric pumps, or other equipment at the 15 acre village park. Per the final calculation sheet in Appendix C (page 249), zero (0) electricity consumption was assumed for the "city park" which incorrectly underestimates potential emissions from night-time lighting and other park operations. We request that the EIR review future likely park operations and facilities with the EDHCSD representatives and revise the assumptions and resulting emission calculations. R-5-35

Fugitive dust and PM emissions estimates were calculated assuming "sand & gravel" in the SMAQMD Road Construction Emissions Model (Appendix C – pp. 225-248). This input is inconsistent with soil types identified in Appendix F, Attachment B - *Natural Resources Conservation Services Description of Soils Observed During Field Surveys*. The site specific soils observed and tested in the project area consist largely of decomposed rock, schists, serpentine, and loams.

R-5-36

Similarly, all construction models appear to exclude any import or export of any soils which seems inconsistent with site conditions and needs for clean fill and rock free materials for road and other site preparation construction needs. The resulting PM emission model inputs and calculation results for truck criteria pollutants and hauling fugitive PM emissions should be corrected accordingly. The County should further evaluate whether construction emissions and resulting NOA and PM emission impacts adequately account for necessary and anticipated drilling, blasting, and other heavy excavation activities in this area with the identified shallow soils over fractured bedrock. The EIR should be revised to account for such related construction emissions.

Reference on page 3.2-30 to further reductions in TAC risk to residents with implementation of CEDHSP Policy 8.59 *"...which requires installation of MERV-6 air filters on all residential central air or ventilation systems"* is not a permanent nor enforceable measure following the initial installation and construction. Frequent (up to quarterly) HVAC filter change-out by residents cannot be assured to meet MERV-6 standards, so, as currently described, this TAC reducing requirement should not be attributable to permanent health risk reductions for project occupants. The EIR should be revised accordingly so public and decision-makers do not falsely believe this requirement will protect public health. R-5-37

Fugitive dust and resulting NOA control measures and processes for consistent review as proposed for this project under a generic Dust Mitigation Plan and are not adequately specific to protect human health in this project area. We request the EIR include a plan that includes ongoing and constant site inspections during construction in areas with known NOA present as well as specific measures for watering, testing of exported and imported soils, and visual inspections by a qualified geologist and air quality PM inspector. R-5-38

Conclusion

The District appreciates the County's efforts in preparing the EIR and the opportunity to provide constructive comments to better understand the proposed project, potential feasible alternatives, potential environmental impacts, and potential mitigation for those impacts. We look forward to your responses, and would welcome working with the County to collaboratively address the District's concerns.

Kevin A. Loewen, Parks and Planning Director

Brent Dennis, General Manager

LETTER R-5

Transportation Concept Report and Corridor System Management Plan

United States Route 50

District 3

Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, the District 3 Office of System and Freight Planning makes every effort to ensure the accuracy and timeliness of the information contained in the TCR/CSMP. The information in the TCR/CSMP does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.

California Department of Transportation

Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

Approvals:

per	6-27-14		6/27/14
Marlon Flournoy	**Date**	**Jody Jones**	**Date**
District 3 Deputy Director		**District 3 Director**	
Planning and Local Assistance			

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ABOUT THIS DOCUMENT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by identifying deficiencies and proposing improvements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety, mobility, delivery, stewardship, and service.

The System Planning process is primarily composed of four parts: the District System Management and Development Plan (DSMDP), the Transportation Concept Report (TCR), the Corridor System Management Plan (CSMP), and the DSMDP Project List. The district-wide **DSMDP** is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The **TCR** is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. The **CSMP** is a complex, multi-jurisdictional planning document that identifies future needs within corridors experiencing or expected to experience high levels of congestion, and is a foundation document that supports the partnership-based, integrated management of various travel modes (transit, cars, trucks, pedestrians, bicycles) and infrastructure (rail, roads, highways, information systems, bike routes) in a corridor so that mobility along the corridor is provided in the most efficient and effective manner possible. The **DSMDP Project List** is a list of planned and partially programmed transportation projects used to recommend projects for funding. These System Planning products are also intended as resources for external stakeholders, the public, related Caltrans functional units, tribal governments, and partner regional and local agencies.

TCR/CSMP Purpose

California's State Highway System needs long-range planning documents to guide the logical development of transportation systems as required by CA Gov. Code §65086 and as necessitated by the public, stakeholders, and system users. The purpose of the TCR/CSMP is to evaluate current and projected conditions along the route, and communicate the vision for the development of each route in each Caltrans District during a 20-year planning horizon. The TCR/CSMP is developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, parallel and connecting roadways, transit, pedestrian, bicycle, freight, operational improvements, and travel demand management components of the corridor. The purpose of the CSMP update portion of this document is to continue with the momentum from the first generation document to achieve a seamless transportation system on urbanized segments of the corridor by revisiting the managed transportation network, updating the traffic forecast and performance measure data, and upgrading the key capital project lists with an emphasis on inclusion of projects such as Intelligent Transportation Systems (ITS) and Traffic Operations Systems (TOS) improvements.

STAKEHOLDER PARTICIPATION

Stakeholder participation was sought throughout the development of the U. S. Highway (US) 50 TCR/CSMP. Outreach involved internal and external stakeholders, regional and local agencies, advocacy groups, and the public. During the initial information resource gathering for the TCR/CSMP, stakeholders were contacted for their input related to their particular specializations, and to verify data sources used and data accuracy. As the document was finalized, stakeholders were asked to review the document for comments, edits, and for consistency with the intent of existing plans, policies, and procedures. The process of including and working closely with stakeholders adds value to the TCR/CSMP, allows for outside input and ideas to be reflected in the document, increases credibility, and helps strengthen public support and trust.

STATE AND LOCAL RESPONSIBILITY

Improvements to the State Highway System are the responsibility of both Caltrans and local agencies. Developments that add cumulative impacts to this route and the regional State Highway System may necessitate that local jurisdictions provide nexus based, proportional fair-share funding for future highway improvements. Developments or local circulation changes that will have significant traffic impacts to the highway should provide improvements to mitigate those impacts.

EXECUTIVE SUMMARY

This document is a combination of the TCR and the CSMP. These two documents complement each other, with the CSMP providing short- to mid-term planning for the urban section, and the TCR providing long-term planning for the rural section of the facility. These two documents were combined into this combined TCR/CSMP document to create greater planning coordination for the entire length of US 50. The combined TCR/CSMP is a long-term document, with a base year of 2012 and a horizon year of 2035.

US 50 is one of three remaining transcontinental routes signed with the U.S. Highway System shield in California. It begins at Interstate 80 (I-80) in West Sacramento and traverses portions of Yolo, Sacramento, and El Dorado Counties before passing into the State of Nevada. All 108 miles of US 50 in California lie within Caltrans District 3. US 50 serves as a major east-west connector. It is an officially designated Scenic Highway from Downtown Placerville to the western city limit of South Lake Tahoe.

The facility is roughly divided into two sections: the urban half, covered by the CSMP, and the rural half, covered by the TCR. The facility begins as a freeway in West Sacramento in Yolo County and continues through the cities of Sacramento, Rancho Cordova, and Folsom in Sacramento County. It then enters El Dorado County, passing through El Dorado Hills, Cameron Park, Shingle Springs, and Placerville. Approximately six miles east of Placerville the facility becomes a conventional highway to the California/Nevada State line. The Cedar Grove Exit marks the boundary between the CSMP area to the west and the TCR area to the east. The narrower, mountain section traverses small mountain communities and over 30 miles of the Eldorado National Forest, until it intersects with SR 89 near the City of South Lake Tahoe, after which it extends eastward through the City of South Lake Tahoe to the California/Nevada State line. In this section the facility is primarily used for recreational trips, particularly to reach Lake Tahoe during the peak summer travel and winter ski months. As a result, US 50 experiences strong directional peak traffic on weekends and holidays.

Concept Summary

The US 50 TCR/CSMP evaluates current and projected future traffic conditions with 2012 as the base year and with the 20-year build facility. Table 1 provides a summary of the existing facility, the 20-year build facility, and the ultimate facility concept, defined as the facility with projects and management strategies anticipated beyond the 20-year horizon. As discussed further in this document, the concept LOS for US 50 is level of service (LOS) D in rural areas and LOS E in urban areas. We recognize some segments of US 50 will not attain their respective operational concepts after the 20-year buildout of the facility. Therefore, ongoing efforts to manage and improve system performance will emphasize the system operations and management strategies discussed further on in this document.

Concept Rationale

The 20-year build facility for US 50 describes the long-term vision for how the facility will operate and what its configuration will be in the horizon year. This 20-year build facility concept is based on planned and programmed, and conceptual projects. The ultimate facility concept includes the construction of bus/carpool (HOV), and auxiliary (Aux) lanes. In the Corridor Performance section, Concept LOS is given for each segment in the base and horizon year. A minimum acceptable LOS is E for an urban segment and D for a rural one. Given greater accessibility and higher traffic in urban areas, LOS E is more appropriate and realistic for those segments while LOS D is more reasonable for a rural segment.

US 50 is an important transportation facility for the communities of Sacramento County, El Dorado County and of the Sierra Nevada, in particular Meyers, South Lake Tahoe, and the numerous recreational opportunities in those areas. US 50 also provides interregional connectivity to communities located in western Nevada. This TCR proposes change in the facility concept, balancing mobility of those communities, cost of improvements, and community character. In the segments in the Sacramento metropolitan area, a freeway and expressway concept is more appropriate because the facility serves commuters traveling to Sacramento and fewer local uses. In the rural segments (15 through 21), which experience lower traffic and provide access to properties, the conventional highway concept is appropriate due to its lesser impact on operations and the community.

TABLE 1: US 50 CONCEPT SUMMARY				
Segment #	Segment Description	Existing Facility*	20-Year Build Facility*	Ultimate Facility*
1	Interstate 80 to Yolo/Sacramento County Line	8F (6F btw Jefferson Blvd. ramps)	8F + ITS	8F + 2HOV + Aux Lanes + ITS + ICM
2	Yolo/Sacramento County Line to State Routes (SR) 99 and 51	8F	8F + 2HOV + Aux Lanes + ITS	8F+2HOV+Aux Lanes + ITS + ICM
3	SR 99 and SR 51 to Watt Ave.	8F	8F + 2HOV +ITS	8F + 2HOV + Aux Lanes + Transition + ITS + ICM
4	Watt Ave. to Zinfandel Dr.	8F + 2HOV	8F + 2HOV + Aux Lanes + ITS	8F + 2HOV + Aux Lanes + ITS + ICM
5	Zinfandel Dr. to Sunrise Blvd.	8F + 2HOV	8F + 2HOV + Aux Lanes + ITS	8F + 2HOV + Aux Lanes + Transition + ITS + ICM
6	Sunrise Blvd. to Folsom Blvd.	6F + 2HOV to Hazel Ave, 4F + 2HOV to Folsom Blvd	8F + 2HOV + ITS + Aux Lanes to Hazel Ave., 4F + 2HOV + ITS + Aux Lanes to Folsom	8F + 2HOV + ITS + ICM + Aux Lanes to Hazel Ave., 4F + 2HOV + ITS + ICM + Aux Lanes to Folsom
7	Folsom Blvd. to Sacramento/El Dorado County Line	4F + 2HOV	4F + 2HOV + Aux Lanes + ITS	4F + 2HOV + Aux Lanes + ITS + ICM
8	Sacramento/El Dorado County Line to El Dorado Hills Blvd. (Latrobe Road)	4F + 2HOV	4F + 2HOV + Aux Lanes + ITS	4F + 2HOV + Aux Lanes + ITS + ICM
9	Latrobe Road to Bass Lake Road	4F + 2HOV	4F + 2HOV + Aux Lanes + ITS	4F + 2HOV + Aux Lanes + ITS + ICM
10	Bass Lake Road to Cameron Park Drive	4F + 2HOV	4F + 2HOV + Aux Lanes + ITS	4F + 2HOV + Aux Lanes + ITS
11	Cameron Park Drive to So. Shingle Road (Ponderosa Rd.)	4F	4F + 2HOV + Aux Lanes + ITS	4F + 2HOV + Aux Lanes + ITS
12	Ponderosa Rd to Missouri Flat Road	4F	4F + 2HOV + Aux Lanes + ITS to Greenstone, 4F + Aux Lanes + ITS to Missouri Flat	4F + 2HOV + Aux Lanes + ITS to Greenstone, 4F + Aux Lanes + ITS to Missouri Flat
13	Missouri Flat Road to End of Freeway in Placerville	4F	4F	4F + Aux Lanes + ITS
14	End of Freeway in Placerville to Bedford Ave.	4E + Merge Lanes (Eastbound)	4E + Merge Lanes + ITS	4E + Merge Lanes + ITS + ICM
15	Bedford Ave. to Cedar Grove Exit	4F to Smith Flat, 4E to Camino	4F + to Smith Flat, 4E to Camino	4F + Aux Lanes + ITS to Smith Flat, 4E + ITS to Camino
16	Cedar Grove Exit to 0.67 mi east of Sly Park Road	4F	4F	4F + ITS
17	0.67 miles east of Sly Park Road to Ice House Road	3C, 2.0 mi; 4E, 5.3 mi; 3C, 0.3 mi	3C, 2.0 mi; 4E, 5.3 mi; 3C, 0.3 mi	3C + ITS, 2.0 mi; 4E + ITS, 5.3 mi; 3C + ITS, 0.3 mi
18	Ice House Road to Echo Summit	2C; 0.35 mi of 2-way left turn lane	2C; 0.35 mi of 2-way left turn lane	2C + ITS + ICM; 0.35 mi of 2-way left turn lane
19	Echo Summit to State Route 89 South/Luther Pass Road	2C	2C	2C + ITS + ICM + Bike Lanes
20	State Route 89 South/Luther Pass Road to State Route 89 North/Lake Tahoe Blvd	3C, 0.86 mi; 2C, 3.64 mi; 5C, 0.61 mi	3C, 0.86 mi; 2C, 3.64 mi; 5C, 0.61 mi	3C + ITS + ICM, 0.86; 2C + ITS + ICM, 3.64 mi; 5C + ITS + ICM, 0.61 mi
21	State Route 89 North/Lake Tahoe Blvd to Nevada State Line	5C	5C	5C + ITS + ICM + Bike Lanes

*Facility Type Codes: C=Conventional Highway, E=Expressway, F=Freeway, HOV=High Occupancy Vehicle Lanes, Aux=Auxiliary Lanes, ITS=Intelligent Transportation Systems, ICM=Integrated Corridor Management.

Proposed Projects and Strategies

The proposed projects and strategies on US 50 are limited by the Right of Way (ROW) constraints on the facility, as well as by financial, environmental, and political factors. In the urban section of US 50, existing development limits land purchases for highway expansion, and in the rural section land purchases are limited by National Forest land and environmental constraints. The largest projects on the facility consists of a bus/carpool (HOV) lane expansion from the SR 99/51 junction to Watt Avenue (Ave.) interchange and from the Cameron Park Road interchange to the Missouri Flat Road interchange. There are also a significant number of operational and Intelligent Transportation Systems (ITS) improvements that will be constructed on the facility. These improvements, to be constructed throughout the facility, include the installation of various ITS technologies, auxiliary lanes, transition lanes, passing lanes, ramp metering, intersection improvements, interchange improvements, ramp widening, bus/carpool lanes and connectors and other improvements appropriate to the context of the interchanges to be improved.

Integrated Corridor Management (ICM) is a part of the ultimate facility concept for the US 50 corridor. As an operational management strategy, it is particularly in locations where the ultimate concept LOS performance is unattainable on the 20-year buildout facility, and where further buildout cannot occur due to constraints and limitations such as those described above. ICM is a multimodal approach to managing transportation assets, allowing partner agencies to manage the transportation corridor as an integrated asset in order to improve travel time reliability and predictability, help manage congestion and provide travelers with better information and more choices.

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

US 50 is divided into 21 segments, the first 15 of which are on the CSMP corridor and highlighted in Table 2 below. As shown in Figure 1, the facility spans a large cross-section of California and is roughly evenly split between urban and rural sections.

TABLE 2: US 50 ROUTE SEGMENTATION

Segment #	Location Description	County	Begin Post Mile	End Post Mile
1	Interstate 80 to Yolo/Sacramento County Line	YOL	0	3.16
2	Yolo/Sacramento County Line to State Routes 99 and 51	SAC	L0.00	L2.48 = R0.00
3	State Routes 99 and 51 to Watt Ave.	SAC	R0.00	R5.34
4	Watt Ave. to Zinfandel Drive	SAC	R5.34	R10.92
5	Zinfandel Drive to Sunrise Boulevard	SAC	R10.92	12.5
6	Sunrise Boulevard to Folsom Boulevard	SAC	12.5	17.01
7	Folsom Boulevard to Sacramento/El Dorado County Line	SAC	17.01	23.14
8	Sacramento/El Dorado County Line to Latrobe Road	ELD	0	0.86
9	Latrobe Road to Bass Lake Road	ELD	0.86	R3.23
10	Bass Lake Road to Cameron Park Drive	ELD	R3.23	6.57
11	Cameron Park Drive to Ponderosa Rd	ELD	6.57	R8.56
12	Ponderosa Rd to Missouri Flat Road	ELD	R8.56	R15.06
13	Missouri Flat Road to End of Freeway in Placerville	ELD	R15.06	17.25
14	End of Freeway in Placerville to Bedford Ave.	ELD	17.25	18.11
15	Bedford Ave. to Cedar Grove Exit	ELD	18.11	R25.95
16	Cedar Grove Exit to 0.67 mi east of Sly Park Road	ELD	R25.95	R31.97
17	0.67 miles east of Sly Park Road to Ice House Road	ELD	R31.97	39.77
18	Ice House Road to Echo Summit	ELD	39.77	66.63
19	Echo Summit to State Route 89 South/Luther Pass Road	ELD	66.63	70.62
20	State Route 89 South/Luther Pass Road to State Route 89 North/Lake Tahoe Blvd	ELD	70.62	75.45
21	State Route 89 North/Lake Tahoe Blvd to Nevada State Line	ELD	75.45	80.44

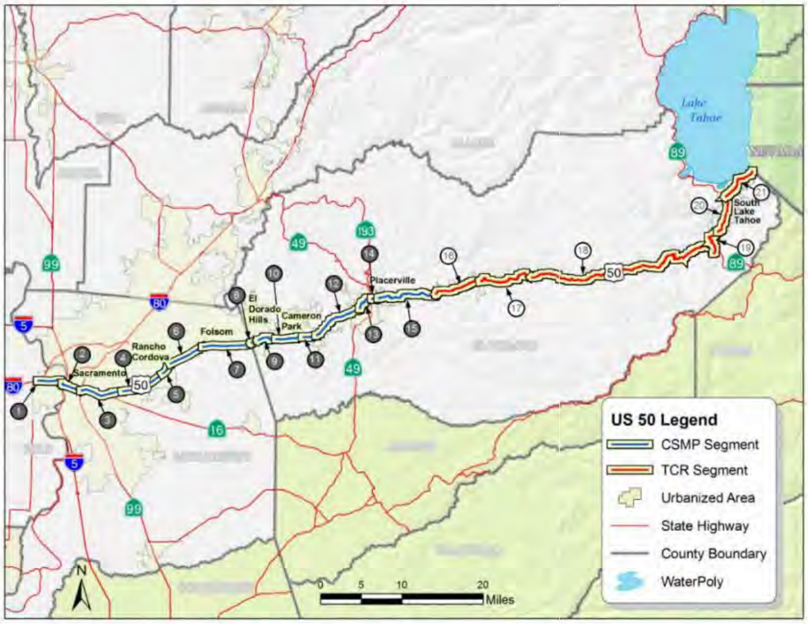

Figure 1: US 50 Route Segmentation Map

CSMP TRANSPORTATION NETWORK

The US 50 CSMP Transportation Network (managed network) includes US 50 from the US 50/Interstate 80 interchange in the City of West Sacramento to the US 50/Cedar Grove exit in the El Dorado County community of Camino, as well as select parallel roads, transit services, and bike routes. The parallel and connector roadways, transit, and bicycle route components of the managed network were selected for inclusion in the corridor in consultation with the respective local agencies. Changes in the managed network from the original US 50 CSMP include the following additions:

- Parallel and connecting roadways to US 50 in downtown Sacramento and in midtown Sacramento to Watt Ave. were added to close a gap that existed in the original CSMP. These roadways include portions of T Street (St.), Alhambra Boulevard (Blvd.), Broadway, Fruitridge Road (Rd.), Stockton Blvd., 65th St., Power Inn Rd., Florin-Perkins Rd., Folsom Blvd. In the City of Folsom, Iron Point Rd. was extended to Empire Ranch Rd. and in the City of Placerville, Jacquier Rd. and Carson Rd.
- Sacramento Regional Transit District bus routes 38 and 74, and an El Dorado County Transit Agency bus route from Placerville to Pollock Pines.
- Bicycle routes in downtown and midtown Sacramento including, but not limited, to 2nd Ave. and T St. In the City of Folsom, the Humbug Willow Creek bicycle trail was added and the American River Parkway trail was extended north. In and near the City of Placerville, the El Dorado bicycle trail was extended to Missouri Flat Rd.

As the CSMP concept matures, additional facilities may be added to the managed network. The CSMP transportation network is displayed in Figure 2.

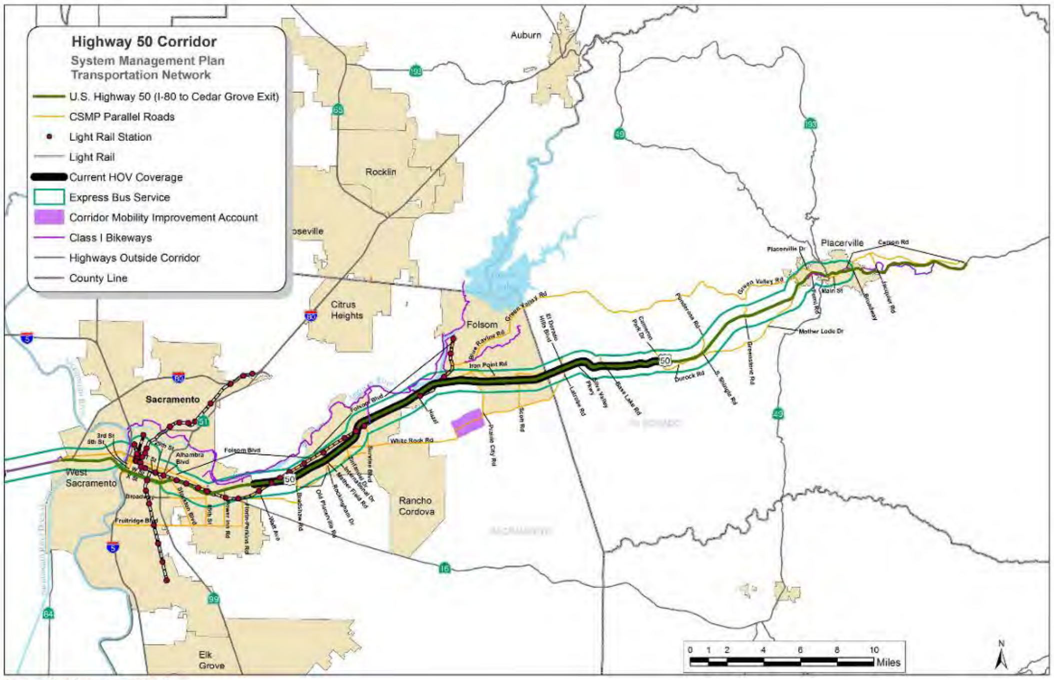

Figure 2: US 50 CSMP Transportation Network

ROUTE DESCRIPTION

Route Location

US 50 begins at the junction of I-80 and US 50 in West Sacramento and continues to beyond the Nevada state line. The urban CSMP portion runs from the beginning in West Sacramento to the Cedar Grove interchange in Camino. The CSMP portion runs through the Cities of West Sacramento, Sacramento, Rancho Cordova, Folsom, and Placerville. It also serves the unincorporated communities of Rosemont, El Dorado Hills, and Shingle Springs. For most of the CSMP portion the land is flat and begins to rise through the foothills in El Dorado County. US 50 joins with several other state highways, such as I-5, SR 99, SR 51, and SR 16 in Sacramento, and SR 49 in Placerville. The TCR portion starts at the Cedar Grove interchange and continues to Pollock Pines, the last community before the Eldorado National Forest. As US 50 enters the National Forest, it runs parallel to the South Fork American River for over thirty miles. The facility then separates from its parallel proximity to the river and heads north towards the end of the National Forest and junction with SR 89. Just after the SR 89 junction, the facility serves as a principle arterial for the unincorporated community of Meyers and for the City of South Lake Tahoe. SR 89 continues north and US 50 continues east as a conventional urban arterial through the City of South Lake Tahoe wherein it eventually crosses the California/Nevada State boundary.

Route Purpose and Major Route Features

US 50 serves the large Sacramento metropolitan area until east of Placerville, where it primarily serves recreational travel to the Sierra Nevada and Lake Tahoe. The facility provides convenient regional access to jobs and services in downtown Sacramento, Rancho Cordova, and Folsom, with peak hour traffic associated with daily commuting. East of the Sacramento metropolitan area, there are relatively few jobs, shopping, educational facilities, or other trip attractors along the highway until the facility reaches the City of South Lake Tahoe. The main attraction in the largely rural eastern half of the facility is the numerous recreation opportunities. The functional classification of the portion of US 50 between its beginning in West Sacramento and Canal St. in Placerville is classified in the California Road System as an "Other Freeway or Expressway." The portion from Canal St. in Placerville to the California/Nevada State boundary is classified an "Other Principal Arterial."St.

Route Designations and Characteristics

US 50 is designated a High Emphasis Route in the Interregional Transportation Strategic Plan (ITSP), the plan that guides development of the interregional transportation network. This designation means that the facility will be built to minimum standards for an expressway or freeway, in as much as environmental and ROW constraints allow. In terms of goods movement, US 50 is a part of the Surface Transportation Assistance Act (STAA) National Network until Sly Park Road, which permits larger trucks to traverse the route. This designation facilitates freight movement to the large population areas. At Sly Park Road, the designation becomes California Legal Network, which permits shorter trucks that can negotiate the mountain curves. As the route nears South Lake Tahoe, US 50 is designated a Terminal Route at the junction with SR 89, which permits STAA trucks to use the facility to reach their destinations.

Route designations and characteristics of US 50 for both the TCR and CSMP sections of the corridor are identified in Tables 3 and 4.

<table>
<tr><th colspan="13">TABLE 3: US 50 ROUTE DESIGNATIONS AND CHARACTERISTICS</th></tr>
<tr><th>Seg. #</th><th>Freeway & Express-way</th><th>National Highway System</th><th>Strategic Highway Network</th><th>Scenic Highway</th><th>Inter-regional Road System</th><th>High Empha-sis</th><th>Focus Route</th><th>Federal Functional Classifi-cation</th><th>Goods Move-ment Route</th><th>Truck Designa-tion</th><th>Rural/ Urban/ Urbanized</th></tr>
<tr><td>1</td><td rowspan="13">Yes-F</td><td rowspan="21">Yes</td><td rowspan="21">No</td><td rowspan="13">No</td><td rowspan="21">Yes</td><td rowspan="21">Yes</td><td rowspan="21">No</td><td rowspan="13">Other Freeway or Express-way</td><td rowspan="2">Yes</td><td rowspan="16">National Network</td><td rowspan="10">Urbanized</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="19">No</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td></tr>
<tr><td>8</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td></tr>
<tr><td>11</td><td rowspan="2">Rural</td></tr>
<tr><td>12</td></tr>
<tr><td>13</td><td rowspan="4">Urban</td></tr>
<tr><td>14</td><td>Yes-E</td><td>No: to Jct SR 49; Yes: from Jct SR 49</td><td>Other Freeway or Express-way / Other Principal Arterial</td></tr>
<tr><td>15</td><td>Yes-F/E/F</td><td rowspan="7">Yes</td><td rowspan="7">Other Principal Arterial</td></tr>
<tr><td>16</td><td rowspan="2">Yes</td></tr>
<tr><td>17</td><td>National Network / California Legal</td><td rowspan="3">Rural</td></tr>
<tr><td>18</td><td rowspan="4">No</td><td rowspan="3">California Legal</td></tr>
<tr><td>19</td></tr>
<tr><td>20</td><td rowspan="2">Urban</td></tr>
<tr><td>21</td><td>Terminal Access (STAA)</td></tr>
</table>

<table>
<tr><th colspan="10">TABLE 4: US 50 ROUTE AGENCIES, TRIBES AND TERRAIN</th></tr>
<tr><th>Seg. #</th><th>Metropolitan Planning Organization</th><th>Regional Transportation Planning Agency</th><th>Congestion Management Agency</th><th>County Transportation Commission</th><th>Local Agency</th><th>Tribes</th><th>Air District</th><th>Terrain</th></tr>
<tr><td>1</td><td rowspan="18">Sacramento Area Council of Goverments (SACOG)</td><td rowspan="7">SACOG</td><td>Yolo County Transp. District</td><td rowspan="7">N/A</td><td>West Sacramento</td><td rowspan="10">None</td><td>Yolo-Solano</td><td rowspan="7">Flat and Low Terrain</td></tr>
<tr><td>2</td><td rowspan="6">Sacramento Transportation Authority</td><td rowspan="2">City of Sacramento</td><td rowspan="6">Sacramento Metro</td></tr>
<tr><td>3</td></tr>
<tr><td>4</td><td>Sac. County; Rancho Cordova</td></tr>
<tr><td>5</td><td rowspan="2">Rancho Cordova</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td><td>Folsom</td></tr>
<tr><td>8</td><td rowspan="11">El Dorado County Transp. Commission (EDCTC)</td><td rowspan="14">N/A</td><td rowspan="11">EDCTC</td><td rowspan="5">El Dorado County</td><td rowspan="14">El Dorado</td><td rowspan="7">Foothills</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td></tr>
<tr><td>11</td><td rowspan="2">Shingle Springs Band of Miwok Indians</td></tr>
<tr><td>12</td></tr>
<tr><td>13</td><td>El Dorado County; Placerville</td><td rowspan="9">None</td></tr>
<tr><td>14</td><td>Placerville</td></tr>
<tr><td>15</td><td>Placerville; El Dorado County</td><td rowspan="5">Steep Terrain</td></tr>
<tr><td>16</td><td rowspan="4">El Dorado County</td></tr>
<tr><td>17</td></tr>
<tr><td>18</td></tr>
<tr><td>19</td><td rowspan="3">Tahoe Metropolitan Planning Organization (TMPO)</td><td rowspan="3">Tahoe Regional Planning Agency (TRPA)</td><td rowspan="3">N/A</td></tr>
<tr><td>20</td><td rowspan="2">El Dorado County; City of South Lake Tahoe</td><td rowspan="2">Rolling or Flat</td></tr>
<tr><td>21</td></tr>
</table>

COMMUNITY CHARACTERISTICS

US 50 begins in West Sacramento, which has mostly low-density residential and industrial land uses. It then continues to the dense urban core of downtown Sacramento, which is made up of a large office district and dense residential neighborhoods. As the facility travels east through Rancho Cordova, Folsom, and El Dorado Hills, the housing density gradually decreases.

Median household income follows a distinct pattern along US 50. It gradually increases from the low $50,000s in West Sacramento and continuing east through Sacramento and Rancho Cordova to $112,111 in Gold River, $95,143 in Folsom and $115,121 in El Dorado Hills. Median household income then decreases going east to $72,562 in Cameron Park and $53,385 in Placerville.

There are four main communities in the eastern rural portion of US 50: Camino, Pollock Pines, Meyers and South Lake Tahoe. Camino, an unincorporated community that is considered a census-designated place for statistical analysis, has over 1,700 residents with a median household income of $51,742 (2010 Census). Many of the residents work in Sacramento. Lying just east of Camino, Pollock Pines is a slightly larger community, a census-designated place of 6,871 people. Approximately 20 percent (%) of Pollock Pines housing units are vacant. In both Camino and Pollock Pines, the largest source of employment is in the Sacramento area. Camino residents travel on average 25 minutes to work, and Pollock Pines residents travel 34 minutes on average. Meyers has a population of approximately 3,000 while South Lake Tahoe has 21,403 residents. Meyers is an urbanizing community with a rural facility. South Lake Tahoe is a much more diverse community with a variety of trip attractors. The community is primarily oriented toward the tourism and recreation industries. Lake Tahoe, Casinos in Nevada, the Lake Tahoe Vacation Resort, the Lake Tahoe Airport, and the many ski resorts south of Lake Tahoe are the major draws in the South Lake Tahoe area, attracting trips to the facility.

LAND USE

Land uses along US 50 are varied and change from one community to another. West Sacramento has a mix of single family homes with industrial uses such as warehousing and the Port of West Sacramento. In downtown Sacramento there is a concentration of office buildings, entertainment, and a variety of dense, older housing. Continuing to the East Sacramento neighborhood, there is a mix of multi-family homes and single family homes with large trip attractors such as UC Davis Medical Center and California State University Sacramento (CSUS). As US 50 makes its way east to Rancho Cordova, the housing stock becomes predominantly single family home with limited multifamily home development.

In Rancho Cordova between Zinfandel Drive and Hazel Ave., there is significant office park development. Major trip attractors include Aerojet Rocketdyne, an aerospace corporation, and Mather Airport, a major air cargo hub. Further east in Folsom, El Dorado Hills, Cameron Park, and Placerville, residential densities decrease to larger lot single family homes, and most non-residential development is in retail commercial and limited office uses.

The western part of the corridor, near Placerville, has experienced rapid growth in the past decade as an increasing number of workers in the Sacramento area live in Camino and Pollock Pines. The land uses in this section are predominantly single family homes of 1-5 dwelling units (DU)/acre and 1 DU/acre. Growing agricultural and ranch uses increase seasonal visitor traffic, such as at Apple Hill during apple harvest season. In the Pollock Pines area there are some multifamily units and commercial, mostly small, businesses. After the Pollock Pines area, there is a long stretch of undeveloped forest land in the Eldorado National Forest. To the east, the land uses in South Lake Tahoe are more diverse, reflecting a larger community with a more diverse economic base. There are major nodes of commercial activity, such as at the SR 89/US 50 junction, and near the California/Nevada State line. US 50 is locally referred to as "Lake Tahoe Boulevard," and is the main street of the City, connecting these two commercial nodes. The rest of the city is mostly single-family residential housing.

US 50 is a vital transportation corridor for the economy of Sierra Nevada communities in El Dorado County. US 50 is particularly important to the economy of South Lake Tahoe and the surrounding communities that rely on Lake Tahoe and nearby ski resort tourism. Many of the residents of Camino and Pollock Pines drive west to Placerville and Sacramento for work, whereas the residents of the much more diverse Lake Tahoe communities have shorter commutes to nearby job sites.

SYSTEM CHARACTERISTICS

For the purpose of analysis, US 50 is divided into 21 total segments shown in Figures 3 through 23 below. Each segment is described in terms of its geography, classification, configuration, surrounding land uses, jurisdictions, trip attractors and features contributing to its operational characteristics.

Segment 1 consists of 3.2 miles of eight-lane freeway (six-lane between the Jefferson Blvd. ramps) from the facility's beginning at the junction of I-80 to the Yolo/Sacramento County line, extending through the City of West Sacramento. US 50 provides access to the Port of West Sacramento, several warehouses, and industrial properties along the facility. Raley Field, home to the River Cats baseball team, is also along the corridor and is a major trip attractor. It also allows easy access to downtown Sacramento and points east.

Segment 2 consists of eight lanes and spans the length of downtown Sacramento on 2.5 miles of freeway, from the Yolo/Sacramento County line to I-5 and ending at the intersection of SR 99/51. These important transportation connections from US 50 contribute to high traffic volumes, particularly during peak commute periods. Land uses along this corridor include older single family residential neighborhoods south of US 50 and commercial uses and multi-family residential north of US 50.


Figure 3: Segment 1 Map


Figure 4: Segment 2 Map

Segment 3 runs for 5.3 miles of eight-lane freeway from the junction of SR 99/51 to the City of Sacramento City line at Watt Ave. Major land uses along this segment include UC Davis Medical Center and CSUS. CSUS has a total of 28,000 students and almost 3,000 staff. There is a mix of land uses along this facility, consisting of mixed commercial and multi-family housing closer to downtown Sacramento with a higher percentage of single family housing and retail land uses as one travels east.

Segment 4 traverses the unincorporated Sacramento County community of Rosemont and half of the City of Rancho Cordova from Watt Ave. to Zinfandel Dr. It is 5.6 miles of freeway consisting of eight mixed flow lanes and two HOV lanes, and serves Mather Airport. Land uses along Segment 4 include single family residential with some multifamily residential as well as retail commercial and office commercial.

Figure 5: Segment 3 Map

Figure 6: Segment 4 Map

Segment 5 covers the core of Rancho Cordova on 1.6 miles of freeway consisting of eight mixed flow lanes and two HOV lanes from Zinfandel Dr. to Sunrise Blvd. This short segment has no significant single trip attractors. Predominant land uses along the segment consist of single family residential, retail commercial, and office commercial.

Segment 6 consists of 4.5 miles of freeway, from Sunrise Blvd. in Rancho Cordova to the Folsom Blvd. interchange in the City of Folsom. This segment is comprised of six mixed flow lanes and 2 HOV lanes from Zinfandel Dr. to Hazel Ave., and four mixed flow lanes with two HOV lanes from Hazel Ave. to Folsom Blvd. The major land uses along this segment include Aerojet Rocketdyne with its own off-ramp at Aerojet Dr. and big box retail along Sunrise Blvd. Other land uses include low density residential in the unincorporated community of Gold River.

Figure 7: Segment 5 Map

Figure 8: Segment 6 Map

Figure 9: Segment 7 Map

Figure 10: Segment 8 Map

Segment 7 covers almost the entirety of the City of Folsom over 6.1 miles from the Folsom Blvd. interchange to the Sacramento/El Dorado County line. This segment is a freeway consisting of four mixed flow lanes and two HOV lanes. Major trip attractors along the segment are Intel Corporation on Prairie City Rd., the outlet mall near Folsom Blvd., the Pallaido Cinemas, regional commercial facilities along Scott Rd. and numerous small businesses in Old Town Folsom. The predominant land uses along the facility are low density residential and some big box retailers. Currently, most land uses are on the north side of US 50. The south side of US 50 is now mostly occupied by Aerojet Rocketdyne and rangeland, but there are plans for residential and retail development for the area north of White Rock Rd. between Prairie City Rd. and the Sacramento/El Dorado County line.

Segment 8 extends 0.86 miles from the Sacramento/El Dorado County line to El Dorado Hills Blvd./Latrobe Rd. It is a freeway consisting of four mixed flow lanes and two HOV lanes. Land uses along this segment are almost exclusively low density residential with some office or commercial uses.

Figure 11: Segment 9 Map

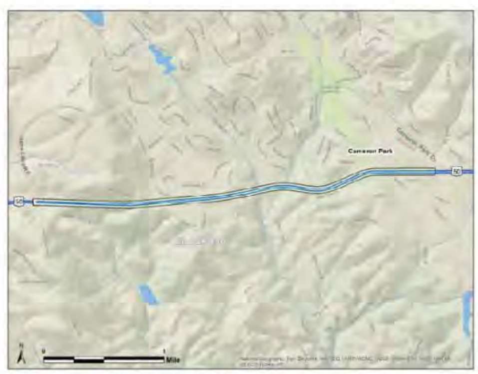

Figure 12: Segment 10 Map

Segment 9 extends 2.37 miles from Latrobe Rd. to Bass Lake Rd. It is a four-lane freeway with two HOV lanes. Land uses along this segment are almost exclusively low density residential with some office or commercial uses.

Segment 10 extends 3.34 miles from Bass Lake Rd. to Cameron Park Dr. This segment is a freeway consisting of four lanes with two HOV lanes. Land uses along this segment are almost exclusively low density residential with some office or commercial uses.

Figure 13: Segment 11 Map

Figure 14: Segment 12 Map

Segment 11 is a four-lane freeway that spans 1.99 miles of rolling hills in El Dorado County from Cameron Park Dr. to Ponderosa Rd. The community of Shingle Springs is an important attractor along this segment. Other land uses along the facility are residential land uses.

Segment 12 is a four-lane freeway spanning 6.5 miles of rolling hills in El Dorado County from Ponderosa Rd. to Missouri Flat Rd. The major attractants along this segment are local and regional commercial land uses along Missouri Flat Rd. Another main trip attractor on the facility is a tribal gaming facility on Red Hawk Parkway. The rest of the land uses along the facility are residential land uses, especially estate residential uses of minimum 5 acre lots.

Figure 15: Segment 13 Map

Figure 16: Segment 14 Map

Segment 13 is 2.2 miles of four-lane freeway that extends from Missouri Flat Rd. to the end of the freeway near Canal St. One of the major attractions along Segment 13 is the El Dorado Fairgrounds between Placerville Dr. and Ray Lawyer Dr. Other land uses include shopping in the vicinity of Missouri Flat Rd. and Placerville Dr. as well as low density residential land uses. The El Dorado County Government Center is adjacent to this segment.

Segment 14 is a short segment, consisting of 0.9 miles of four-lane expressway in the historic area of Placerville. The historic area has small businesses centered on Main St. with some residential uses north and south of Main St.


Figure 17: Segment 15 Map


Figure 18: Segment 16 Map

Segment 15 concludes the CSMP corridor with 7.8 miles from Bedford Ave. to the Cedar Grove Exit, which is a four-lane freeway from Bedford Ave. to Smith Flat, and a four-lane expressway from Smith Flat to the Cedar Grove Exit. The segment includes retail and office commercial, primarily along Main St. and Broadway, and low density residential land uses. Significant trip attractors and operational considerations occur on a seasonal basis, such as Apple Hill during apple harvest, tree sales during the winter holidays and growing wine industry with associated tourism. EDCTC is currently conducting a study to examine travel impacts of tourism between the San Francisco Bay Area and the Tahoe Basin, from which operational management strategies will be identified.

Segment 16 consists of 6.0 miles and is a four-lane rural freeway that ends at the freeway-to-conventional highway transition east of Sly Park Rd. No capacity increases are envisioned during the 20-25 year to maintain the concept level of service, although major trip attractors include the community of Pollock Pines (via Sly Park Rd.) and Jenkinson Lake (Sly Park Lake), a recreational trip attractor.


Figure 19: Segment 17 Map


Figure 20: Segment 18 Map

Segment 17 is a 7.6 mile facility between east of Sly Park Rd. to Ice House Rd. that switches between conventional highway and expressway. For the first six lane miles, the facility is a three-lane conventional highway. For the next 0.4 lane miles, the facility is a four-lane divided expressway, and the facility closes with 1.2 lane miles of two-lane conventional highway with a passing lane. A major attractor along this segment is the Crystal Basin Recreation Area. There are few other land uses that front this facility, so there are few planning conflicts.

Segment 18 is also in the rural environment in the Eldorado National Forest. This segment, which extends from Ice House Rd. to Echo Summit, is a 2-lane, conventional highway of 26.6 miles with six extents of passing lanes in both directions. A major attractor along this segment is Sierra at Tahoe ski resort. Caltrans conducts extensive snow removal operations along this segment during winter, with maintenance facilities including stations, sand houses and chaining areas at various locations.

Figure 21: Segment 19 Map

Figure 22: Segment 20 Map

Segment 19 is a two-lane conventional highway of 5.2 centerline miles. It descends from Echo Summit through the Eldorado National Forest to the SR 89 South junction, and extends through Meyers, an unincorporated community just to the south of South Lake Tahoe. There is an agricultural inspection facility on this segment in the town of Meyers. The Meyers Area Plan proposes intensifications of land use after final approval (to be determined), and increases in trip attraction may be anticipated.

Segment 20 consists of 4.8 miles of conventional highway through low-density residential development and past the Lake Tahoe Airport from the south junction with SR 89 to the north junction with SR 89. This segment begins as a two-lane facility with a two-way left turn lane passing through the unincorporated community of Meyers. At Pioneer Trail, it becomes a two-lane highway with narrow shoulders. Toward the end of the segment, the facility crosses into the City of South Lake Tahoe limits where it becomes four-lanes with a two-way left turn lane. Within the City of South Lake Tahoe, there are a wider variety of land uses, with a commercial strip forming most of the land uses. Numerous businesses have access within the city limits, where recent improvements included bicycle and pedestrian facilities along the highway.

Figure 23: Segment 21 Map

Segment 21 is a four-lane conventional urban arterial with a center turn lane that is 5.0 miles in length that passes through mixed land uses. The facility has sidewalks along some locations and Class II bicycle lanes throughout much of this segment. On this segment, the facility is the main street for South Lake Tahoe. As such, many of the largest commercial and public land uses front US 50 and have access on this conventional highway segment. South Tahoe Middle School, South Tahoe Police Department, numerous small businesses, resorts, and restaurants are located on this facility.

The System Characteristics for the Existing, 20-Year Build, and Ultimate Facility are summarized in Tables 5 and 6 on pages 22 and 23. The tables provide basic information about US 50 on each segment, including HOV characteristics, auxiliary lanes, and passing lanes. The existing facility identifies the highway under current conditions. The 20-Year Build Facility identifies the highway with improvements planned and programmed to be completed by the horizon year of 2035. The post 25-year Ultimate Facility is also listed to identify how the highway is envisioned for beyond the horizon year. The segments are determined based on logical termini including intersections, jurisdiction, changes in land use, and status of construction. All segment lengths are given in centerline miles.

TABLE 5: US 50 SYSTEM CHARACTERISTICS – EXISTING FACILITY

Seg. #	Existing Facility[1]							
	Facility Type	General Purpose Lanes	Lane Miles	Centerline Miles	HOV Lanes	HOV Characteristics	Auxiliary Lanes	Passing Lanes
1	F	8 / 6 / 8	23.645	3.156	--	--	--	--
2	F	8	39.664	4.958	--	--	--	--
3	F	8	22.88	2.86	--	--	59.90%	--
4	F	8	44.64	5.58	2	2+; Part-Time	6.40%	--
5	F	8	12.928	1.616	2	2+; Part-Time	--	--
6	F	6 / 4	24.558	4.51	2	2+; Part-Time	--	--
7	F	4	24.504	6.126	2	2+; Part-Time	--	--
8	F	4	3.56	0.89	2	2+; Part-Time	--	100%
9	F	4	9.36	2.34	2	2+; Part-Time	--	--
10	F	4	13.36	3.34	2	2+; Part-Time	--	--
11	F	4	7.96	1.99	--	--	--	--
12	F	4	26	6.50	--	--	4.62%	--
13	F	4	8.76	2.19	--	--	--	--
14	E	4	3.44	0.86	--	--	17.10%	--
15	F / E	4	31.344	7.836	--	--	0.50%	--
16	F	4	24.08	6.02	--	--	--	--
17	C / E / C	3 / 4 / 3	28.1	7.648	--	--	--	--
18	C	2	53.276	26.638	--	--	0.70%	15.70%
19	C	2	7.98	3.99	--	--	1.50%	--
20	C	3 / 2 / 5	11.46	4.83	--	--	--	--
21	C	5	19.96	4.99	--	--	--	--

[1] F = Freeway, E = Expressway, C = Conventional; 3 and 5 lanes include 2-way left turn lane

TABLE 6: US 50 SYSTEM CHARACTERISTICS – 20-YEAR BUILD FACILITY									
Seg. #	20-Year Build Facility[1]								Ultimate Facility
	Facility Type	General Purpose Lanes	Lane Miles	Centerline Miles	HOV Lanes	HOV Characteristics	Auxiliary Lanes	Passing Lanes	
1	F	8	25.248	3.156	--		--	--	8F + 2HOV + Aux Lanes + ITS + ICM
2	F	8	39.664	4.958	2	2+; Part-Time	--	--	8F+2HOV+Aux Lanes + ITS + ICM
3	F	8	22.88	2.86	2	2+; Part-Time	--	--	8F + 2HOV + Aux Lanes + Transition + ITS + ICM
4	F	8	44.64	5.58	2	2+; Part-Time	6.40%	--	8F + 2HOV + Aux Lanes + ITS + ICM
5	F	8	12.928	1.616	2	2+; Part-Time	100.00%	--	8F + 2HOV + Aux Lanes + Transition + ITS + ICM
6	F	6 / 4	24.558	4.51	2	2+; Part-Time	100.00%	--	8F + 2HOV + ITS + ICM + Aux Lanes to Hazel Ave., 4F + 2HOV + ITS + ICM + Aux Lanes to Folsom
7	F	4	24.504	6.126	2	2+; Part-Time	73.29%	--	4F + 2HOV + Aux Lanes + ITS + ICM
8	F	4	3.56	0.89	2	2+; Part-Time	100.00%	10.50%	4F + 2HOV + Aux Lanes + ITS + ICM
9	F	4	9.36	2.34	2	2+; Part-Time	32.48%	--	4F + 2HOV + Aux Lanes + ICM
10	F	4	13.36	3.34	2	2+; Part-Time	100.00%	--	4F + 2HOV + Aux Lanes + ITS
11	F	4	7.96	1.99	--		100.00%	--	4F + 2HOV + Aux Lanes + ITS
12	F	4	26	6.50	--		0.50%	--	4F + 2HOV + Aux Lanes + ITS
13	F	4	8.76	2.19	--	--	6.30%	--	4F + Aux Lanes + ITS
14	E	4	3.44	0.86	--	--	17.10%	--	4E + Aux Lanes + ITS
15	F / E	4	31.344	7.836	--	--	0.50%	--	4F + Aux Lanes + ITS to Smith Flat, 4E + ITS to Camino
16	F	4	24.08	6.02	--	--	--	--	4F + ITS
17	C / E / C	3 / 4 / 3	28.1	7.648	--	--	--	--	3C + ITS, 2.0 mi; 4E + ITS, 5.3 mi; 3C + ITS, 0.3 mi
18	C	2	53.276	26.638	--	--	--	--	2C + ITS + ICM; 0.35 mi of 2-way left turn lane
19	C	2	7.98	3.99	--	--	--	--	2C + ITS + ICM + Bike Lanes
20	C	3 / 2 / 5	11.46	4.83	--	--	--	--	3C + ITS + ICM, 0.86; 2C + ITS + ICM, 3.64 mi; 5C + ITS + ICM, 0.61 mi
21	C	5	19.96	4.99	--	--	--	--	5C + ITS + ICM

[1] F = Freeway, E = Expressway, C = Conventional; 3 and 5 lanes include 2-way left turn lane

[2] The number of lanes in the Concept Attainment column is for both directions required to achieve LOS E in Urban and LOS D in Rural areas along the corridor. It is meant to show the severity of future conditions and what it would take to achieve the Concept LOS. Caltrans is not suggesting that it is our plan to build the facility to achieve this LOS. We recognize the difficulty in achieving the desired LOS given the financial, environmental, right of way, and political constraints.

TRAFFIC OPERATIONS SYSTEM ELEMENTS

Caltrans District 3 seeks to optimize the transportation system. Two cost-effective methods include operational improvements and ITS improvements. Operational improvements include smaller-scale capital improvements that improve efficiency such as auxiliary lanes, express bus/carpool lanes, incident management, traffic demand management, and park and ride projects. ITS improvements can be categorized into four general classifications: driver information, monitoring, vehicle detection, and operations. These traffic operations system (TOS) elements, and transportation management facilities and services are discussed below by transportation mode.

Given the complexity of the corridor and its extensive geographic range, there are a wide variety of system management strategies and elements currently being implemented by jurisdictions and transportation service providers. Strategies and elements range from vehicle detection devices to traveler information systems to traffic flow control mechanisms. A common element among all the strategies and elements is data collection and analysis. Caltrans, SACOG, and local governments have partnered together on corridor performance data and system management in the Sacramento Transportation Area Network (STARNET).

The STARNET web application initial release took place in 2010. Features implemented so far include: Changeable Message Sign (CMS) display, speed data from Caltrans and Google, integration of Regional Transit and Yolo Transit to provide schedule and routing data, California Highway Patrol incident data, connectivity to the 511 systems (web and telephone), personalized traveler information with alerts based on time of day, lane closure data, Closed Circuit Television (CCTV) displays from Caltrans, City of Roseville and County of Sacramento. Near term initiatives include national weather service (NWS) alert data, increased transit data including real time location feed data from Yolo Transit and a City of Sacramento Police Computer Aided Design (CAD) feed. Web based applications include a commercial vehicle page, full feature website, low bandwidth page, mobile device page and under development applications for iPhone and Android smart phones. Caltrans Commercial Web Portal, City of Sacramento Traffic Operation Center (TOC), Sacramento County TOC, Roseville TOC, Elk Grove TOC and Citrus Heights TOC are contributing sources for the STARNET application. STARNET's associated management strategies can and will evolve as the application is implemented throughout the region and as additional features are added as development proceeds.

The SHS has an extensive set of system management strategies in operation. Some cities, counties, and transit operators also have robust system management elements and programs applied to their facilities or services. There are also specific instances of system management linkages among transportation modes and services at particular locations.

These strategies work as a system to gather, analyze, and disseminate information through the Caltrans Transportation Management Center (TMC). Information about collisions, other incidents, road closures, and emergency notifications are fed into this information hub and disseminated to public and private information users. The TMC operates 24 hours a day, seven days a week.

Caltrans is providing the latest in ITS technology to its urban freeways. As summarized in Table 7 and depicted in Figure 25 below, US 50 has had numerous ITS elements installed on the urbanized segments of the facility. Additional ITS elements are planned or programmed for the facility under a 20-Year Build scenario and under the Ultimate Facility Concept. These elements help improve travel times and overall facility performance.

Operational improvements and services utilized by Caltrans along the US 50 corridor are identified as follows:

Auxiliary lanes are used between interchange on- and off-ramps to improve weaving and merging movements to and from adjacent travel lanes. Auxiliary lanes give drivers more room to speed up and slow down when getting on or off a freeway. An auxiliary lane makes it easier for drivers to merge into freeway traffic, and reduces ramp congestion.

Transition lanes are similar to auxiliary lanes in function, but facilitate merging transitions for traffic over the distance of two or more interchanges. By functioning as "on-system frontage," transition lanes provide broader service for merging traffic and therefore alleviate bottleneck conditions and enhance travel lane throughput along freeway segments spread out over two or more interchanges. A graphic depiction of auxiliary and transition lanes are shown in Figure 24.

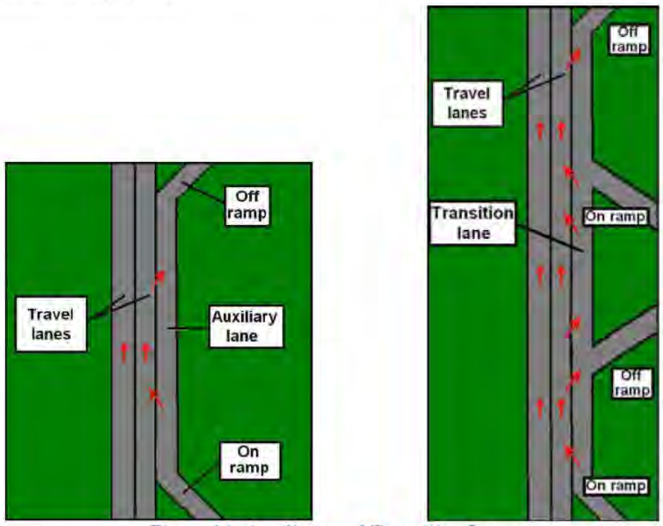

Figure 24: Auxiliary and Transition Lanes

Express Bus/Carpool Lanes sometimes referred to as HOV lanes are lanes for the exclusive use of vehicles carrying two or more occupants during the posted times dedicated to their use and can provide a travel time advantage to people who use the lanes. Express bus/carpool lanes stretch from Watt Ave. in Sacramento County to Cameron Park Dr. in El Dorado County.

Park-and-Ride Lots provide a place for commuters to park their cars and meet carpools, vanpools and buses. Some park and ride lots also provide bike lockers. A listing of lots is identified on Table 9 and shown in Figure 23 below.

Transportation Management Plans (TMP) are required by Caltrans Deputy Directive DD-60-R1 for *"all construction, maintenance, and encroachment permit activities on the State Highway System"*. All projects must be TMP Certified prior to being designated as "Ready to List". TMPs detail how a construction project will be implemented so that its impact to existing travel is minimized or mitigated.

Transportation Demand Management services include Transportation Management Associations (TMAs), employer subsidized transit passes and vanpools, the *511 Traveler Information Service*, carpool ride matching, the *Guaranteed Ride Home* program, and vanpool services. The overall intent is to reduce the number of vehicle trips using highways and roads. Many of these services are financially supported by or directly provided by EDCTC and SACOG. Area employers and office complex owners are also key supporters and funders of TDM programs at their work sites. A listing of TMAs is provided in the Stakeholders Acknowledgement section. Additional TMA information including a list of contacts can be found at: http://www.sacregion511.org/rideshare/tma.html.

Incident Management is an essential component of highway operations. Timely response to incidents reduces the amount of time lanes are blocked and speeds emergency response. A popular aspect of this program is the *Freeway Service Patrol,* which assists motorists whose vehicles break down along the highway due to flat tires, out of gas, or mechanical failure.

Traveler Information services for the corridor include web sites, which are hosted by Caltrans, the California Highway Patrol (CHP), the U.S. Weather Service, and a private company. Caltrans provides real-time data feeds to commercial/media information services, such as radio and TV stations, to help inform travelers of highway and traffic conditions. Among these is the Caltrans QuickMap web page, which can be found at the following URL: http://www.dot.ca.gov/ca511/trafficMapFaq.html.

TABLE 7: EXISTING US 50 ITS ELEMENTS

Seg. #	Cnty	PM	ITS Elements[1]								
			CCTV	CMS	EMS	ETR	HAR	RMS	RWIS	TMS	Grand Total
1	YOL	0.00 - 3.16	2	-	-	-	-	3	-	3	8
2	SAC	L0.00 - L2.48/R0.00	5	2	-	-	-	4	-	4	15
3		R0.00 - R5.34	5	2	1	-	-	11	-	8	27
4		R5.34 - R10.92	3	-	1	-	1	7	-	7	19
5		R10.92 - 12.50	1	-	1	-	-	3	-	1	6
6		12.50 - 17.01	2	-	-	-	-	6	-	4	12
7		17.01 - 23.14	1	1	-	-	-	8	-	6	16
8	ELD	0.00 – 0.86	-	1	-	-	-	1	-	1	3
9		0.86 - R3.23	-	-	-	-	-		-	2	2
10		R3.23-6.57	-	-	-	-	-	-	-	2	2
11		6.57 – R8.56	-	-	-	-	-	-	-	3	9
12		R8.56 – R15.06	-	-	-	-	-	2	-	4	6
13		R15.06 - 17.25	-	-	1	-	-	-	-	1	2
14		17.25 - 18.11	1	-	-	-	1	-	-	-	2
15		18.11 - R25.95	-	1	2	-	-	-	-	-	3
16		R25.95/31.97	-	1	1	-	1	-	-	-	3
17		R31.97/39.77	-	-	-	-	-	-	-	-	0
18		39.77/66.63	-	1	1	-	1	-	-	-	3
19		66.63/70.62	2	1	-	2	1	-	1	1	8
20		70.62/75.45	-	-	2	2	-	-	-	3	7
21		70.62/80.44	2	2	1	2	1	-	-	3	11
TOTAL			24	12	11	6	6	44	1	53	158

[1] CCTV = Closed Circuit Television, CMS = Changeable Message Sign, EMS = Extinguishable Message Sign, ETR = Electronic Tag Reader, HAR = Highway Advisory Radio, RMS = Ramp Metering Stations, RWIS = Road Weather Information System, TMS = Traffic Management Systems. ITS Elements Inventoried April 2013

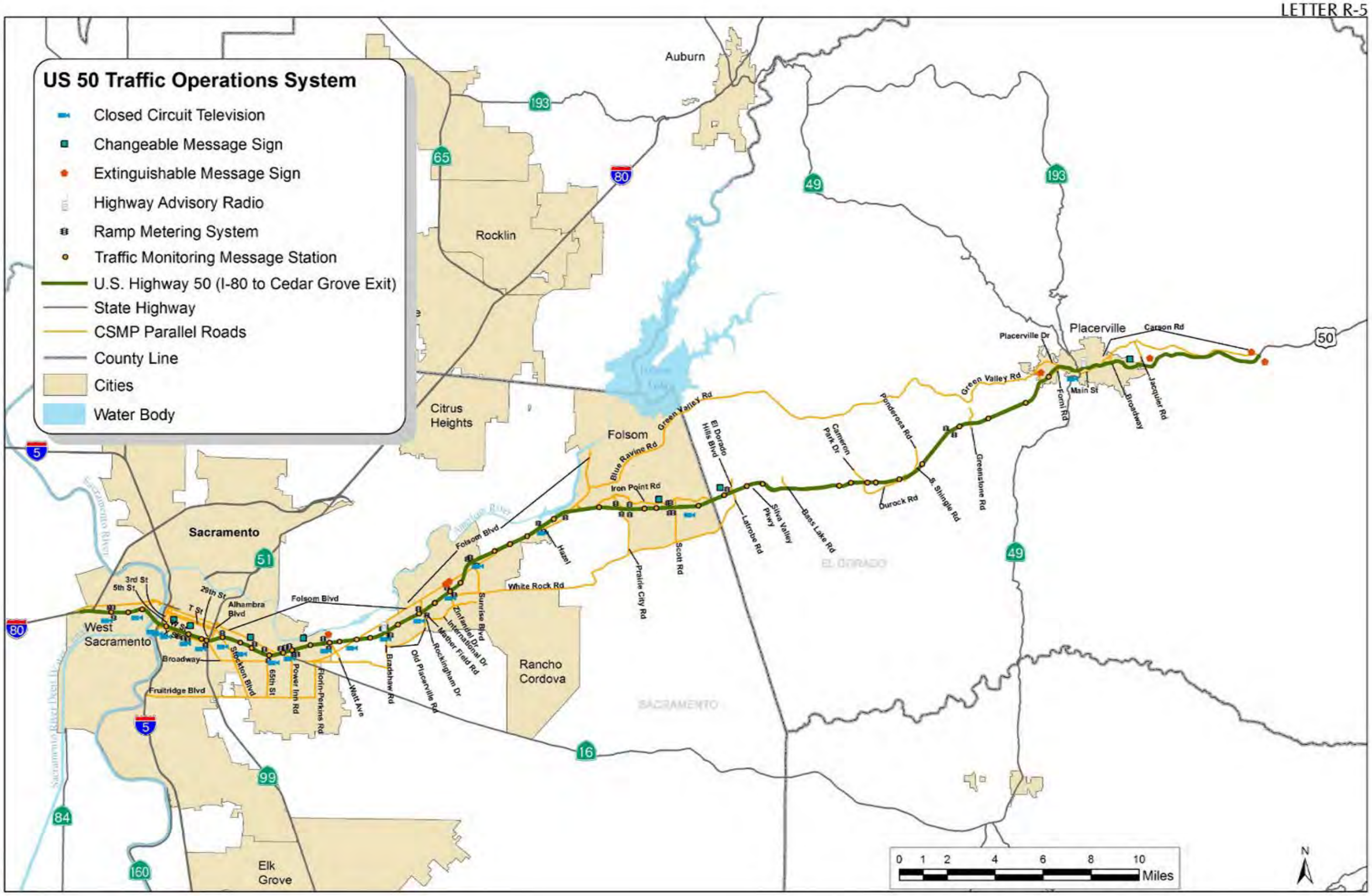

Figure 25: US 50 Traffic Operations System Map

PARALLEL AND CONNECTING ROADWAYS

Working with local agencies, Caltrans District 3 has identified several roads parallel to and connecting to US 50 in the CSMP portions of the facility, which are identified in Table 8 below and shown in Figure 2 on page 11 above. Together with transit and bicycle/pedestrian paths, the corridor functions as a whole to provide optimal system performance. It accomplishes this principally by offering alternatives to transportation along US 50 during times of peak commute or during an incident. Compared to 2009, the network of parallel and connecting roadways was expanded to include more roadways, creating a more complete system of urban streets. Major parallel and connecting roadways on the corridor are West Capitol Ave., Broadway, Stockton Blvd., Folsom Blvd., White Rock Rd., Sunrise Blvd., Iron Point Rd., Green Valley Rd., Cameron Park Dr., Mother Lode Dr., Placerville Dr., Broadway (in Placerville), and Main St.

A number of ITS elements utilized within the CSMP segments along the parallel and connecting roadways are as follows:

City of West Sacramento has one CCTV located on West Capitol Av. between Enterprise Blvd. and Capitol Mall.

City of Sacramento operates a TOC. Sensors in the street detect the passage of vehicles, vehicle speed, and the level of congestion. This information is received on a second-by-second (real-time) basis and is analyzed at the TOC.

Sacramento County also operates a TOC by gathering information through CCTV cameras, CMS, HAR, and a Fiber Optics (FO) network placed along major traffic corridors throughout the county.

City of Rancho Cordova installed CCTV cameras and a FO network on Folsom Blvd. in 2009. Currently, one CCTV exists on Sunrise Blvd. between US 50 and Folsom Blvd. Most major traffic corridors are on the network. The City contracts with the County of Sacramento to operate their systems through the County's TOC.

City of Folsom recently completed installing a FO system on all of the City's major corridors. Currently, the sole intersection that is monitored via camera is located on Iron Point Rd. and East Bidwell.

El Dorado County has three coordinated signals along Francisco Dr., at Green Valley Rd., the Market Place entrance (east side Safeway Center/west side Lake Forest Plaza), and Village Center Dr.

City of Placerville utilizes traditional control devices that includes traffic signals and stop signs. In addition, there is a CCTV at the intersection of US 50 and SR 49 (Spring St.).

TABLE 8: US 50 CSMP PARALLEL ROADWAY NETWORK							
Seg. #	Location		US 50		Parallel and Connector Roads		
	County	City	From	To	Roadway	From	To
1	YOL	West Sacramento	Interstate 80	YOL/ SAC County Line	West Capitol Ave.	Enterprise Blvd.	Capitol Mall
2	SAC	Sacramento	YOL/ SAC County Line	State Routes 99 and 51	W St.	5th St.	29th St.
					X St.	3rd St.	Alhambra Blvd.
					29th St.	W St.	T St.
					T St.	29th St.	Alhambra Blvd.
3			State Routes 99 and 51	Watt Ave.	Alhambra Blvd.	X St.	Folsom Blvd.
					Folsom Blvd.	Alhambra Blvd.	Watt Ave.
					Stockton Blvd.	Alhambra Blvd.	Fruitridge Rd.
					Broadway	5th St.	Alhambra Blvd.
					Broadway	Stockton Blvd.	65th St
					Fruitridge Rd./Seamas Ave	I-5	Florin Perkins Rd.
					65th St.	Fruitridge Rd.	US 50
					Power Inn Rd.	Fruitridge Rd.	US 50
					Florin Perkins Rd.	Fruitridge Rd.	Folsom Blvd.
4	SAC	Unincorp.	Watt Ave.	Zinfandel Dr.	Watt Ave.	Folsom Blvd.	US 50
					Folsom Blvd.	Watt Ave.	Bradshaw Rd.
		Rancho Cordova			Folsom Blvd.	Bradshaw Rd.	Sunrise Blvd.
					Bradshaw Rd.	Folsom Blvd.	Old Placerville Rd.
					Old Placerville Rd.	Bradshaw Rd.	Rockingham Dr.
					Rockingham Dr.	Old Placerville Rd.	Mather Field Rd.
					Mather Field Rd.	Rockingham Dr.	Folsom Blvd.
					International Dr.	Rockingham Dr.	Zinfandel Dr.
					Zinfandel Dr.	International Dr.	Folsom Blvd
5	SAC	Rancho Cordova	Zinfandel Dr.	Sunrise Blvd.	White Rock Rd.	Zinfandel Dr.	Sunrise Blvd
					Sunrise Blvd.	US 50	White Rock Rd.
					White Rock Rd.	Sunrise Blvd.	Rancho Cordova City limits
6	SAC	Rancho Cordova	Sunrise Blvd.	Folsom Blvd.	Folsom Blvd.	Sunrise Blvd.	Hazel Ave.
	SAC	Unincorp.	Sunrise Blvd.	Folsom Blvd.	White Rock Rd.	R. Cordova City limits	Prairie City
					Folsom Blvd.	Hazel Ave.	Iron Point Rd.
					Blue Ravine Rd.	Folsom Blvd.	Green Valley Rd.
					Prairie City Rd.	Iron Point Rd.	White Rock Rd.

TABLE 8: US 50 CSMP PARALLEL ROADWAY NETWORK

Seg. #	Location		US 50		Parallel and Connector Roads		
	County	City	From	To	Roadway	From	To
7	SAC	Folsom	Folsom Blvd.	Sacramento/ El Dorado County Line	Iron Point Rd.	Folsom Blvd.	Empire Ranch Rd.
					Folsom Blvd.	Iron Point Rd.	Blue Ravine Rd.
					Blue Ravine Rd.	Folsom Blvd.	Green Valley Rd.
					Prairie City Rd.	Iron Point Rd.	White Rock Rd.
					E. Bidwell/Scott Rd.	Iron Point Rd.	White Rock Rd.
		Unincorp.			White Rock Rd.	Grant Line Rd.	SAC/ELD Cty. Line
8	ELD	Unincorp.	Sacramento/ El Dorado County Line	El Dorado Hills Blvd.(Latrobe)	Green Valley Rd.	Blue Ravine Rd.	Cameron Park Dr.
					White Rock Rd.	SAC/ELD Cty. Line	Latrobe Rd.
					Latrobe Rd.	White Rock Rd.	US 50
					White Rock Rd.	Latrobe Rd.	Silva Valley Pkwy.
					Silva Valley Pkwy.	White Rock Rd.	Serrano Parkway
9	ELD	Unincorp.	Latrobe Road	Bass Lake Rd	Green Valley Rd.	Francisco Dr.	Deer Valley Rd.
					White Rock Rd.	Latrobe Rd.	Silva Valley Pkwy.
					Silva Valley Pkwy.	White Rock Rd.	Serrano Pkwy.
10	ELD	Unincorp.	Bass Lake Rd	Cameron Park Dr	Green Valley Rd.	Deer Valley Rd.	Cameron Park Dr.
					Cameron Park Dr.	Durock Rd.	US 50
11	ELD	Unincorp.	Cameron Park Dr.	So. Shingle Rd. (Ponderosa Rd)	Green Valley Rd.	Cameron Park Dr.	Ponderosa Rd.
					Durock Rd.	Cameron Park Dr.	South Shingle Rd.
12	ELD	Unincorp.	Ponderosa Rd.	Missouri Flat Rd.	Green Valley Rd.	Ponderosa Rd.	Missouri Flat Rd.
					South Shingle Rd.	Durock Rd.	US 50
					Mother Lode Dr.	South Shingle Rd.	Missouri Flat Rd.
13	ELD	Unincorp.	Missouri Flat Rd.	End of Freeway, Placerville	Green Valley Rd.	Missouri Flat Rd.	Placerville Dr.
					Forni Rd.	Placerville Dr.	Main St.
					Placerville Dr.	Forni Rd.	US 50
14	ELD	Placerville	End of Fwy., Placerville	Bedford Ave., fwy. start.	Main St.	Placerville Dr.	Bedford Ave.
15	ELD	Placerville	Bedford Ave., start of Fwy.	Cedar Grove Exit	Main St.	Bedford Ave.	Broadway
					Broadway	Main St.	Point View Dr.
					Jacquier Rd.	Point View Dr.	Carson Rd.
					Carson Rd.	Main St./ Broadway	US 50 at Cedar Grove Exit

TRANSIT AND RIDESHARE FACILITIES

Transit and rideshare services within the US 50 corridor are identified on Table 9 and delineated on the CSMP segments of this Plan in Figure 26 below. They are important alternatives to automobile travel that frees roadway capacity. In the urban segments of US 50, transit services are provided by Sacramento Regional Transit (SacRT), Yolo Bus, Folsom Stage Line, El Dorado Transit, and Amtrak. Yolo Bus offers services between West Sacramento in both traditional and commuter bus options. SacRT provides traditional bus service and light rail service on the Gold Line. Folsom Stage Line has traditional bus services to major points of interest in Folsom, and El Dorado Transit makes both Sacramento commuter and traditional bus services available in western El Dorado County. Folsom Stage Line provides service to the three light rail stations at the end of the Gold Line extension.

In addition to the bus and rail services within metropolitan Sacramento, there are intercity transit services available. Amtrak California offers intrastate rail connections within California on either the Capitol Corridor or the San Joaquin lines. There are also numerous connections through the train service with the Amtrak connector bus, Amtrak Thruway. These Amtrak buses have several destinations in California and Nevada that are not on the Amtrak California rail service lines, such as Yuba City, South Lake Tahoe, and Reno. In addition, interstate Amtrak services connect the US 50 corridor to Oregon and Washington on the Coast Starlight line and to the eastern United States on the California Zephyr line.

In the rural segments of US 50, transit services are limited. Available transit services are focused on the developed areas of the corridor. Camino and Pollock Pines have limited El Dorado Transit bus service from the center of Pollock Pines near the main grocery store to the Missouri Flat Transfer Center near Placerville. Tahoe Transportation District (TTD) also offers transit service through BlueGo. The main line for South Lake Tahoe runs from the SR 89 North junction to east of the state line. With one-hour headways, both transit systems are basic services and are not a viable alternative to automobile travel for many people. Funds are being sought to maintain and possibly expand transit service in the Lake Tahoe Basin.

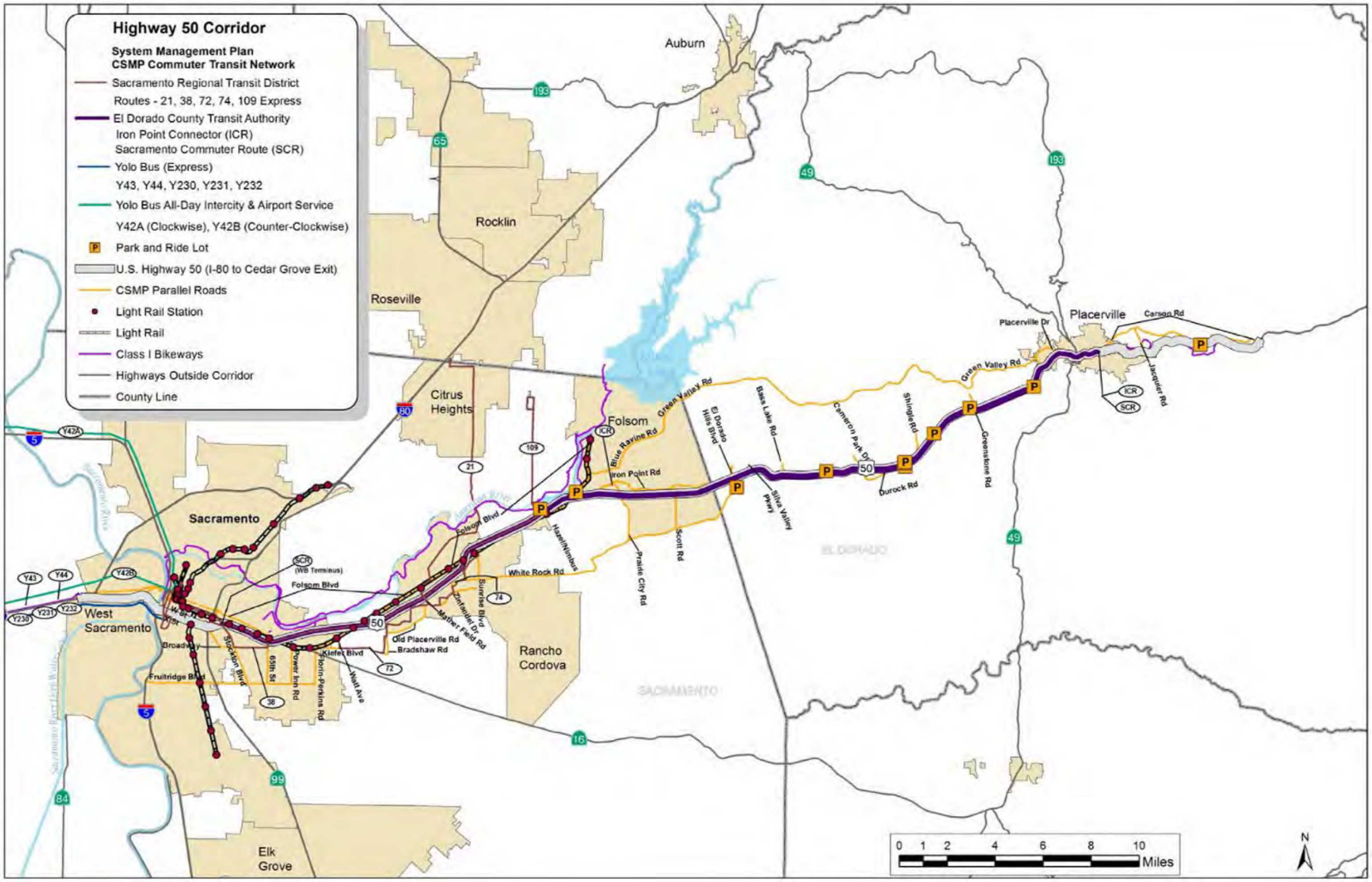

Figure 26: US 50 CSMP Network Transit Routes

Rideshare and park and ride facilities form a vital linkage in the transit system, allowing travelers to take transit when walking distances would otherwise limit its practicality. Park and ride lots can be operated by several different agencies, such as SacRT or local agencies. Caltrans has partnered with several local agencies to provide park and ride lots. These facilities are included in Table 9 below. Several of these lots also offer bicycle facilities such as lockers or stands. Additional Park and Ride lots information including specific location, capacity, and occupancy rates can be found at http://www.dot.ca.gov/dist3/departments/planning/systemplanningPR.htm.

TABLE 9: US 50 CORRIDOR TRANSIT SYSTEM				
Seg. #	**Mode & Collateral Facility**	**Name**	**Route End Points**	**Headway**
1	Traditional Bus	Yolo Bus	Downtown Sacramento; Davis; Woodland	Long
	Commuter Bus	Yolo Bus	Downtown Sacramento; Davis; Woodland	Long
	Amtrak Bus	Amtrak California	Major Cities in California	Long
	Amtrak Rail	Capital Corridor	Sacramento, Bay Area, Reno	Long
2	Traditional Bus	Sacramento Regional Transit (SacRT) and Yolo Bus	West Sacramento; Sacramento; Rancho Cordova	Short
	Commuter Bus	Yolo Bus	Yolo County; Folsom; El Dorado County;	Long
	Light Rail	SacRT Gold Line	Sacramento, Rancho Cordova, Folsom	Short
	Amtrak Bus	Amtrak California	Major Cities in California	Long
	Amtrak Rail	Capital Corridor	Sacramento, Bay Area, Reno	Long
3-6	Traditional Bus	Sacramento Regional Transit (SacRT)	Sacramento; Rancho Cordova; Fair Oaks	Short
	Commuter Bus	El Dorado County Transit Authority	Placerville, El Dorado Hills, Downtown Sacramento	Long
	Light Rail	SacRT Gold Line	Sacramento, Rancho Cordova, Folsom	Short
	Amtrak Bus	Amtrak California	Major Cities in California	Long
6	Park and Ride Lot	Hazel Park & Ride		
7	Traditional Bus	Folsom Stage Line	Places of Interest in Folsom	Short
	Traditional Bus	El Dorado County Transit Authority - Iron Point Connector	Placerville, Shingle Springs, Cameron Park, El Dorado Hills, Folsom	Long
	Light Rail	SacRT Gold Line	Sacramento, Rancho Cordova, Folsom	Short
	Park and Ride Lot	Folsom Iron Point Park & Ride		
8	Park and Ride Lot	El Dorado Hills Park & Ride		
		Cambridge Dr Park & Ride		
12	Park and Ride Lot	Ponderosa East and West Park & Ride Lots		
		Durock Park & Ride		
		Greenstone Park & Ride		
		Shingle Springs Park & Ride		
		Missouri Flat Park & Ride		

TABLE 9: US 50 CORRIDOR TRANSIT SYSTEM				
Seg. #	**Mode & Collateral Facility**	**Name**	**Route End Points**	**Headway**
8-15	Traditional Bus	El Dorado County Transit Authority	Cameron Park, Shingle Springs, Placerville	Short
	Traditional Bus	El Dorado County Transit Authority - Iron Point Connector	Placerville, Shingle Springs, Cameron Park, El Dorado Hills, Folsom	Long
	Commuter Bus	El Dorado County Transit Authority	Placerville, El Dorado Hills, Downtown Sacramento	Long
	Amtrak Bus	Amtrak California	Major Cities in California	Long
	Transit Station	Placerville Transit Station at Mosquito Rd.		
15	Park and Ride Lot	Camino Heights Park & Ride		
13-16	Traditional Bus	El Dorado County Transit Authority	Missouri Flat to Pollock Pines	Long
17-20	None			
21	Traditional Bus	BlueGo Bus Service	Jct. SR 89 North to State of Nevada	Long

A number of ITS elements utilized by Transit agencies along the corridor are as follows:

Yolo County Transit District (YCTD) uses a Global Positioning System (GPS) for locating buses in route, referred to as an Automatic Vehicle Location (AVL) system. The AVL System allows users to see where their bus is located within the last minute.

El Dorado County Transit Authority utilizes the GPS Zonar System for pre-trip inspections, maintenance, and real-time vehicle tracking.

Sacramento Regional Transit District (SacRT) has installed pre-emptive traffic signals at at-grade intersections along the Light Rail routes. SacRT has a GPS; however, it is only utilized for analysis purposes.

Computer-aided dispatch and Bus Rapid Transit are in the planning stages. In addition, SacRT has an online Trip Planning application to assist transit users. During special events such as the California State Fair, the Jazz Festival, the holiday seasons, and the Mather Field Air Show, SacRT operates additional service to connect events to light rail stations and offers free service to promote transit use during select events. The transit routes identified in the CSMP network are shown in Figure 5.

The Sacramento Valley Station in downtown Sacramento is the 7th busiest station in the national Amtrak system and serves as a multi-modal transfer facility. There are over 1.1 million passenger trips annually. Passengers can make connections with numerous local bus services as well as the SacRT light rail system.

Sacramento County installed pre-emptive traffic signals to give preferential signal timing to transit buses at selected locations that serve high priority transit corridors.

SACOG manages the 511 and rideshare programs that cost approximately $1 million per year, region-wide, to foster carpooling, transit ridership, vanpooling, and bicycling in all areas and corridors. The Regional Rideshare Program covers Placer, El Dorado, Sacramento, Yolo, Yuba, and Sutter counties. It is part of a statewide network of rideshare agencies that encourage alternative transportation modes for traveling.

BICYCLE FACILITIES

Bicycling constitutes an active transportation alternative to automobile use that can help reduce congestion and improve corridor performance. Bicycle facilities, particularly on parallel roads, are important to encourage bicycling. These bicycle facilities are located on both local parallel roads and on dedicated pathways, such as the American River Parkway Trail. Table 10 below gives details about the bicycle facilities in the corridor. Figures 27 and 28 show the bicycle routes included in the CSMP segments of this plan.

Bicycles are prohibited on the freeway portion of US 50, but are generally permitted on the conventional highway portion. Bicyclists are expected to use an alternate parallel bicycle facility where US 50 prohibits it. Bicyclists can ride on US 50 where not prohibited. While bikeway expansion on US 50 would improve bicycling on the facility, the environmental constraints, the high cost, and low bicycle ridership currently prohibit construction of bicycle facilities in the rural sections of US 50, particularly through the Eldorado National Forest. In the developed portions of the facility there are several opportunities for collaboration with local agencies to construct the bicycle facilities appropriate to the context.

Caltrans District 3 recently completed the *State Highway Bicycle Facility Plan* (SHBFP). This plan establishes policies for bicycle planning across a variety of areas, such as maintenance, operations, planning, and project management. Further, the plan includes a table and maps with recommended improvements to the bicycle transportation system, such as Class II bike lanes and Class III bike routes. These improvements are to be incorporated as funds allow or the highway segment is improved.

Several policy recommendations were made as to what types of bicycle facilities would be constructed on the SHS. Priority is to be given to ensuring consistency with local bicycle plans, unless the local proposal is inappropriate to the context of the roadway. Bicycle facilities are generally not appropriate in areas with limited access and high vehicular speeds. In particular, urban freeways are not appropriate for bicycle facilities. In these cases, Caltrans consults with local governments to identify alternative routes to segments closed to bicycles. Further, Class II bicycle lanes are appropriate on the SHS passing through town centers and in developed areas where no local routes exist. Class III bicycle routes on the SHS may be appropriate for town centers, developed areas, and some rural locations.

The SHBFP established several District actions that help achieve the plan's vision. These actions by various District 3 divisions are intended to further coordination among divisions. These actions include several measures such as communication between divisions and maintenance agreements with local governments regarding bicycle facility planning. The SHBFP can be viewed at http://www.dot.ca.gov/dist3/departments/planning/bike/D3SHBFP_June2013.pdf.

As part of the Environmental Improvement Program (EIP) for Lake Tahoe, Caltrans has constructed 2.25 miles of bikeways on the state highways near the lake and has plans for nine more miles, six of which are on US 50. These bikeways form part of the bicycling network, which is intended to provide travel around Lake Tahoe. The plans now call for Class II bike lanes from Meyers to the State Line. Currently, there are bike lanes from Trout Creek to Wildwood. The rest of the bike lanes are slated to be constructed by 2020.

Bicycle facilities in the corridor are not actively managed in the same manner as motor vehicle facilities. However, there are traffic operation systems that serve bicyclists such as dedicated bicycle lanes, bicycle detection loops at signalized intersections, video detection, other non-loop type detection, and bicyclist-activated signal change buttons. The City of Sacramento is installing video detection at some locations.

SacRT buses and the new light rail trains are equipped with bicycle racks. There are over 150 weatherproof bicycle lockers at 19 light rail stations. YCTD has the Bikes on Buses Program that allows bicycles to travel on any YOLOBUS.

The Sacramento Area Bicycle Advocates maintain an on-line hazard reporting system to allow users to report hazardous locations for bicyclist such as potholes, inadequate signal timing, hazardous railroad crossings, insufficient shoulder, and inadequate bikeway markings. The reports are then sent to the applicable jurisdiction. SACOG is creating an on-line route planning system for bicyclists. In addition, SACOG maintains bicycle maps on their website, which are currently being updated. These maps are included in the *SACOG Bicycle, Pedestrian, and Trails Master Plan,* which can be found at http://www.sacog.org/bikeinfo/download_bike_ped_trails_mp.cfm.
SACOG has also created an on-line route planning system for bicyclists, which can be found at http://www.sacregion511.org/bicycling/trips/.

TABLE 10: US 50 BICYCLE TRANSPORTATION NETWORK

Seg. #	County & City Location	Bicycle Access Prohibited	Bicycle Facility Type[1]	Parallel Bike Routes: Route	From	To	Facility Type
1	YOL, West Sacramento	Yes	Alt. Route	West Capitol Ave.	Yolo Causeway	Tower Bridge	Class II
2	SAC, Sacramento	Yes	Alt. Route	Tower Bridge	W. Capitol Ave.	Capitol Mall	C. I
2				Capitol Mall	Tower Bridge	3rd/5th Sts.	None
2				3rd/5th Sts.	Capitol Mall	T St.	None
2/3				T St.	3rd/5th Sts.	65th St.	C. II
3				65th St.	T St.	4th Ave.	None
3				4th Ave.	65th St.	Redding Ave.	None
3				Redding Ave.	4th Ave.	Folsom Blvd.	C. II
3				Folsom Blvd.	Redding Ave.	State Univ. Dr. East	C. II
3				State Univ. Dr. E.	Folsom Blvd.	Guy West Bridge	None
3				Guy West Bridge	State University Dr. East	Am. Riv. Pkwy. Bike Tr.	C. I
3				Alhambra Blvd.	2nd Ave.	Folsom Blvd.	C. II
3				Folsom Blvd.	Alhambra Blvd.	Watt Ave.	C. II
3				2nd Ave.	Riverside Blvd.	34th St.	C. II
3				Riverside/11th St.	T St.	2nd Ave.	C. II
3				18th/21st/34th Sts.	T St.	2nd Ave.	C. II
3				American River Parkway Bike Trail/Jedediah Smith Memorial Trail			C. I
3	SAC, Unincorp.	Yes	Alt. Route	La Riviera Dr./ College Town Dr.	Folsom Blvd.	State University Dr. East	C. II
3/4	SAC, Rancho Cordova	Yes	Alt. Route	Watt Ave. Trail	Am. Riv. Bike Tr.	La Riviera Dr.	C. I
4		Yes	Alt. Route	Folsom Blvd.	Watt Ave.	Bradshaw Rd.	C. III/None
4-7				Folsom Blvd.	Bradshaw Rd.	Iron Point Rd.	C. II
5				Folsom S. Canal Tr.	S. of Kiefer Blvd.	Am. Riv. Bike Tr.	C. I
5				American River Parkway Bike Trail/Jedediah Smith Memorial Trail			C. I
5/6	SAC, Unincorp.	Yes	Alt. Route	Sunrise Blvd. Trail	Am. Riv. Bike Tr.	Folsom Blvd.	None
6				Hazel Ave. Trail	Am. Riv. Bike Tr.	Folsom Blvd.	C. II
6	SAC, Folsom	Yes	Alt. Route	American River Parkway Bike Trail/Jedediah Smith Memorial Trail			C. I
7	SAC, Folsom	Yes	Alt. Route	Iron Point Rd.	Folsom Blvd.	Empire Ranch Rd.	C. II
7				Blue Ravine Rd.	Folsom Blvd.	Green Valley Rd.	C. II
7				Humbug-Willow Creek Tr.	Folsom-Auburn Rd.	Natoma St.	C. I
7				Natoma St.	H.-W. Creek Trail	Green Valley Rd.	C. II
10	ELD, Unincorp.	Yes	Alt. Route	Green Valley Rd.	SAC/ELD County Line	Cameron Park Dr.	C. II/None
12/ 13				Green Valley Rd.	Cameron Park Dr.	Placerville Dr.	None
13	ELD, Unincorp.	Yes	Alt. Route	Ray Lawyer Dr.	Placerville Dr.	Forni Rd.	C. II
13				Placerville Dr.	Ray Lawyer Dr.	Forni Rd.	C. II
13				ED Bike Trail	Ray Lawyer Dr.	Main St.	C. I

TABLE 10: US 50 BICYCLE TRANSPORTATION NETWORK

Seg. #	County & City Location	Bicycle Access Prohibited	Bicycle Facility Type[1]	Parallel Bike Routes			
				Route	From	To	Facility Type
13 / 14	ELD, Unincorp.	Yes	Alt. Route	Main St.	Forni Rd.	Bedford Ave.	C. I/II/III
13				ED Bike Trail	Missouri Flat Rd.	Forni Rd.	C. I
12	ELD, Placerville	Yes/No	Alt. Route/Non-Designated	ED Bike Trail	Bedford Ave.	Clay St.	C. I
		No	Non-Designated	ED Bike Trail	Clay St.	Los Trampas Rd.	C. I
13	ELD, Unincorp.	Yes	Alt. Route	None	Cedar Grove Exit	Sly Park Undercrossing	None
		No	Non-Designated	None	Sly Park Undercrossing	0.67 mi east of Sly Park Rd	None
17	ELD	No	Non-Designated	None	East of Sly Park Rd	Ice House Rd	None
18					Ice House Rd	Echo Summit	None
19					Echo Summit	SR 89 South/Luther Pass Rd	None
20	ELD, South Lake Tahoe	No	Non-Designated	Pioneer Trail	SR 89/Luther Pass Rd	SR 89/Lake Tahoe Blvd	C. II
21			Non-Designated	Pioneer Trail	SR 89/Lake Tahoe Blvd	East End Trout Creek Bridge	C. II
			Class II		East End Trout Creek Bridge	Ski Run Blvd	C. II
			Non-Designated		Ski Run Blvd	State Line	C. II

[1] Bicycle Facility Type indicates the type of bicycle facility on that segment. Class I Bike paths are separate ROWs for bicycles and pedestrians. Class II bike lanes are separate lanes for bicyclists. Class III Bike routes are roadways with signs designating the roadway for shared bicycle use. Alternate route indicates that a designated local road is to be used when the facility is closed to bicyclists. Finally, non-designated means that while the facility is not prohibited to bicyclists, there is no designated bicycle facility on the corridor.

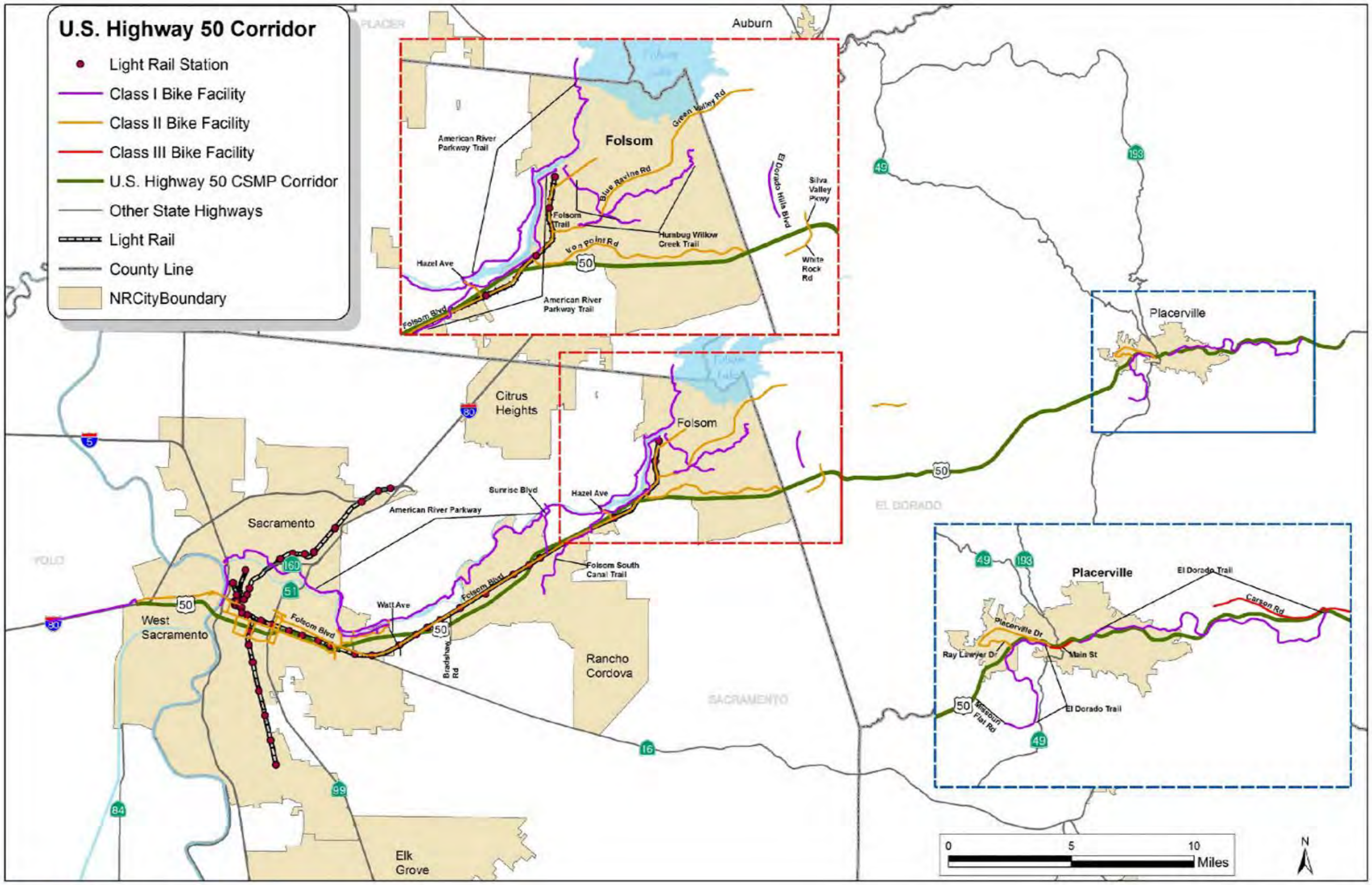

Figure 27: US 50 Corridor Bicycle Facilities Map

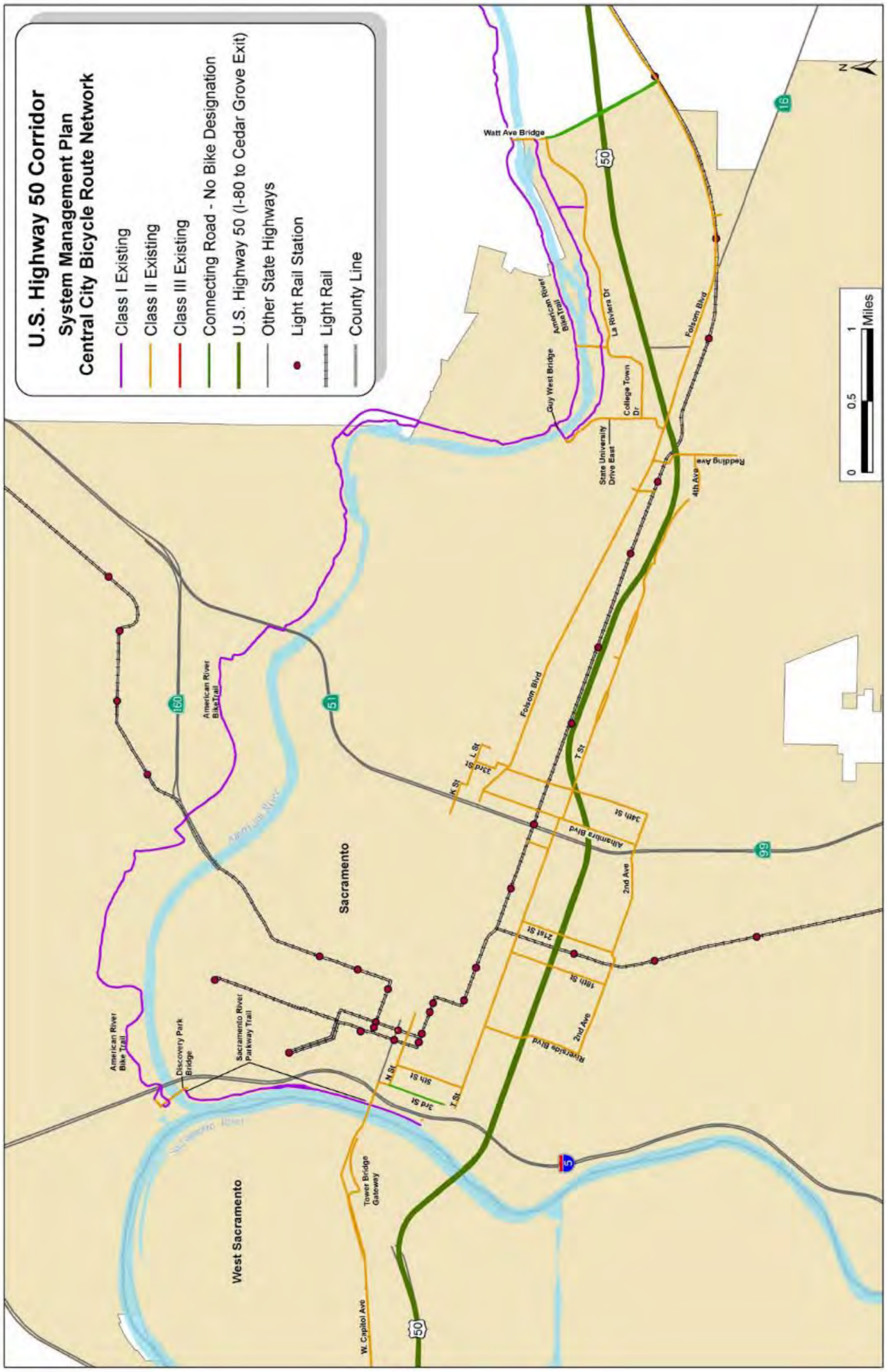

Figure 28: US 50 Corridor Bicycle Facilities Map (Inset)

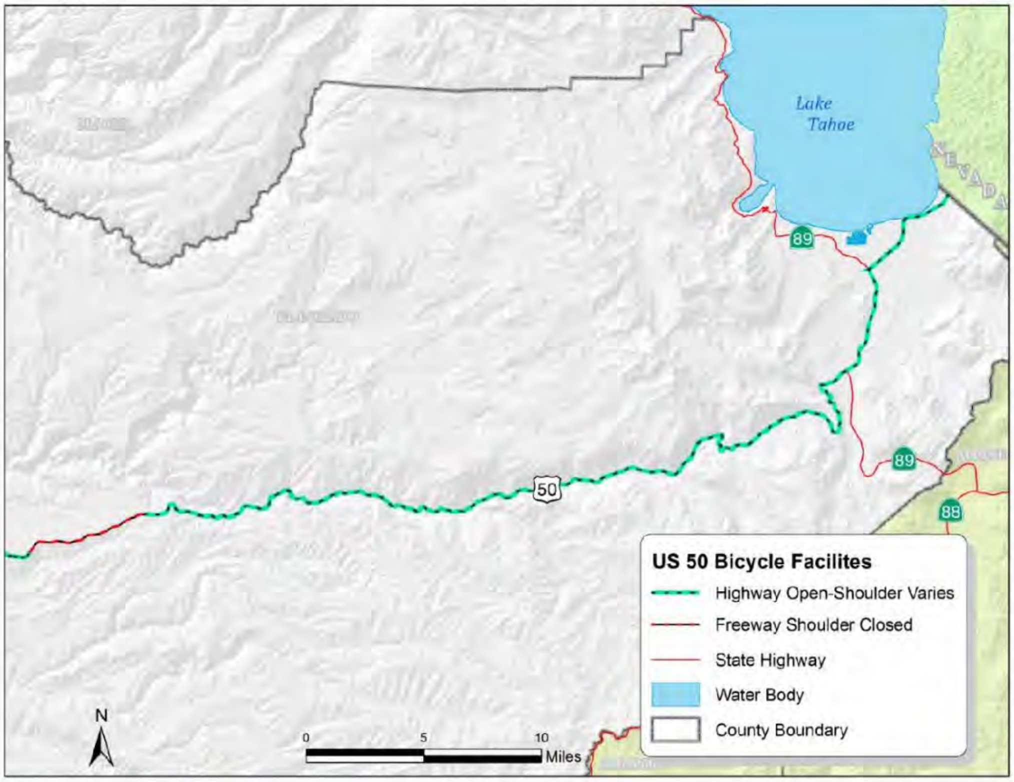

Figure 29: US 50 TCR Portion Bicycle Facilities

PEDESTRIAN FACILITIES

The pedestrian facilities on US 50 are identified in Table 11 below. In the Sacramento metropolitan area pedestrians are prohibited on US 50. For the rest of the corridor until near South Lake Tahoe, there are no pedestrian facilities due to the low pedestrian volumes. Pedestrian facilities can be very costly in areas with environmental or right-of-way constraints, especially in the Lake Tahoe area, so pedestrian sidewalks are not available in all areas. After the junction with SR 89 South near Lake Tahoe there are intermittent pedestrian facilities until the State line because US 50 functions as an urban street through the area.

As urban development takes place in the Sierra Nevada, it may become necessary to ensure pedestrian access in the conventional highway segments. For the Sacramento metropolitan areas, pedestrian bridges over US 50 could be needed. Parallel facilities could also provide a high level of service (LOS) for bicycle, pedestrian, and transit modes. In the South Lake Tahoe area, Caltrans has worked with local agencies through various agreements to develop pedestrian facilities on the state highway. Maintenance responsibilities for these and other pedestrian facilities are and will continue to be identified based on the physical and jurisdictional context of each facility. No plans are in the works for new pedestrian facilities on the urban segments or the segments within the Eldorado National Forest.

Caltrans District 3 is currently preparing the *Caltrans District 3 Complete Streets Plan* that will address the specific implementation of complete streets elements on the SHS within the District. A complete street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists appropriate to the function and context of the facility. Information regarding the addition of complete streets elements in the specific route or corridor will be included in each applicable TCR/CSMP. Caltrans will develop and implement the Plan in coordination with local and regional agencies.

TABLE 11: US 50 CORRIDOR PEDESTRIAN FACILITIES				
Seg. #	**Post mile**	**Location Description**	**Pedestrian Access Prohibited**	**Sidewalk**
1	0.00/3.16	I-80 to YOL/SAC County Line	Yes	No
2	L0.00/R0.00	YOL/SAC County Line to SR 99 and 51	Yes	No
3	R0.00/R5.34	SR 99 and 51 to Watt Ave.	Yes	No
4	R5.34/R10.92	Watt Ave. to Zinfandel Dr.	Yes	No
5	R10.92/12.50	Zinfandel Dr. to Sunrise Blvd.	Yes	No
6	12.50/17.01	Sunrise Blvd. to Folsom Blvd.	Yes	No
7	17.01/23.14	Folsom Blvd. to SAC/ED County Line	Yes	No
8	0.00/0.86	Sacramento/El Dorado County Line to Latrobe Rd.	Yes	No
9	0.86/R3.23	Latrobe Rd. to Bass Lake Rd.	Yes	No
10	R3.23/6.57	Bass Lake Rd. to Cameron Park Dr.	Yes	No
11	R6.57/R8.56	Cameron Park Dr. to Ponderosa Rd.	Yes	No
12	R8.56/R15.06	Ponderosa Rd. to Missouri Flat Rd.	Yes	No
13	R15.06/17.25	Missouri Flat Rd. to End of Freeway in Placerville	Yes	No
14	17.25/17.50	End of Freeway in Placerville to east of Canal St.	Yes	No
	17.50/17.70	East of Canal St. to Coloma Pedestrian OC (North side of US 50)	No	No
	17.70/18.11	Coloma Pedestrian OC to Bedford Ave.	Yes	No
15	18.11/20.741	Bedford Ave. to Newtown Rd. Overcrossing (OC)	Yes	No
	20.741/R25.95	Newtown Rd. OC to Cedar Grove Exit	No	No
16	R25.95 - R31.97	Cedar Grove Exit to 0.67 mi east of Sly Park Rd.	Yes	No
17	R31.97 - 39.77	0.67 miles east of Sly Park Rd. to Ice House Rd.	No	No
18	39.77 - 66.63	Ice House Rd. to Echo Summit	No	No
19	66.63 - 70.62	Echo Summit to State Route 89 South/Luther Pass Rd.	No	No
20	70.62 - 72.67	Junction with SR 89 South to Sawmill Rd.	No	Yes
	72.67 - 74.72	Sawmill Rd. to F St.	No	No
	74.72 - 75.45	F St. to SR 89 North/Lake Tahoe Blvd.	No	Yes
21	75.45 - 80.44	SR 89 North/Lake Tahoe Blvd. to State of Nevada	No	Yes

FREIGHT

There are three main types of freight facilities on the US 50 corridor as shown in Figure 29 and identified in Table 12. The first type of facility is the highway network. From the beginning of US 50 until Sly Park Rd, the facility is on the National Network, which allows trucks of Surface Transportation Assistance Act (STAA) dimensions to use the facility until that point. From Sly Park Rd until the junction with SR 89 South, US 50 is part of the California Legal network. This designation prohibits the longest truck lengths from using the facility. From SR 89 South until the state line, STAA trucks are allowed access only for terminal access, which is the permission to drive that route only to reach their destinations. Therefore, US 50 is only of limited use for goods movement. Most long distance haulers travel on I-5 and I-80.

Other important components of the highway network include the agriculture inspection station and the Riverton and Camino Commercial Vehicle Enforcement Facilities (weigh stations). The agriculture inspection station is located in Meyers and is intended to prevent invasive species from entering the State and causing serious damage to the State's agriculture industry. The commercial vehicle enforcement facilities protect the State's road infrastructure from commercial vehicles that are too heavy for facilities and could cause structural damage. Only commercial vehicles must stop at the enforcement facility.

The second type of freight facility is the Port of West Sacramento. This seaport is less than a mile south of US 50 and is easily accessible from Harbor Blvd. This Port primarily serves the import and export of agricultural goods and raw materials, in particular rice and cement. Further improvements of the surface transportation network and of the Sacramento River Deep Water Ship Canal will contribute to the attractiveness of the Port and increase freight volumes, making US 50 an even more important regional highway.

The third type of freight facility is represented by the airports in the corridor. Along US 50 there are two airports that impact goods movement: Mather Airport and the South Lake Tahoe Airport. Mather Airport has one of the longest runways in California and spacious warehousing on site from its time as an Air Force base. In 2011, Mather Airport handled 45,168 tons of cargo and plans to expand to accommodate future cargo deliveries. Caltrans is working with the airport and local agencies to ensure that development around the airport is compatible with airport operations.

The South Lake Tahoe Airport is owned by the City of South Lake Tahoe, but does not currently provide commercial scheduled air service. The airport provides another mode of access to southern Tahoe Basin communities and recreational venues. Air travelers using commercial airlines must currently reach South Lake Tahoe communities through the Reno and Sacramento International airports, and typically rent vehicles to drive to their destination into the basin. If commercial air service to the airport were restored, it could help reduce the number of vehicle trips and congestion on local roads. The City's Emergency Operations Center is located at the airport, and the airport also provides emergency air medical transport, County Search and Rescue, fire fighting, and law enforcement services to the region. The airport is served by several transit operators and private transit companies providing fixed routes, and on demand services that enhance regional connectivity and access for the Lake's residents and visitors. The City's only clean natural gas facility is located at the airport and fuels the City's clean fleet of vehicles. Lastly, the airport is used as a base of operations for Customs and Border Patrol drug interdiction, Fire Academy training, K-9 Hot Load training, and Fire Fest – a community fire education program.

Caltrans District 3 is preparing a district-wide Goods Movement Plan. The Plan will synthesize the findings of other goods movement related plans in the District and State, conduct a district-wide assessment of the District 3 Goods Movement network, propose a prioritization framework to identify and prioritize projects, and propose a list of prioritized projects for potential funding that will sustain or improve goods movement throughput. The plan will require significant outreach, collaboration, and consensus with stakeholders, including public agencies such as the Sacramento Area Council of Governments (SACOG), and the private sector entities such as the California Trucking Association. Findings from the study will be included in the California Freight Mobility Plan, and will be transferrable to other Caltrans Districts statewide for implementation. The District 3 Goods Movement Plan is scheduled to be finished in 2015. More information can be found at: https://sites.google.com/site/d03goodsmovement/.

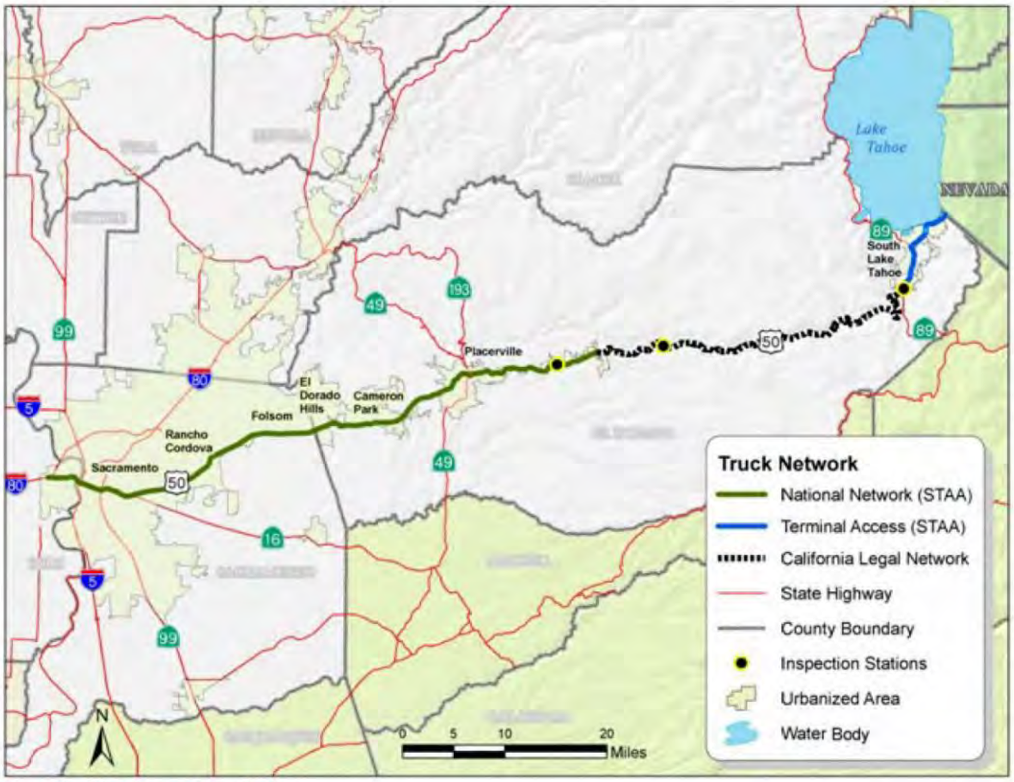

Figure 30: US 50 Truck Network Map

TABLE 12: US 50 FREIGHT FACILITIES			
Seg. #	Facility Type/Freight Generator	Location	Mode
1-21	Highway Network	National Network (STAA) to ED R31.297	Truck
		California Legal to ED PM 75.45	
		Terminal Access (STAA) to ED PM 80.44	
1 - 3	Industrial/Distribution Centers	YOL PM 1.209; SAC R3.682	Truck
1	Port of West Sacramento	YOL PM 1.094	Sea
4	Mather Airport	SAC PM R9.149	Air
20	Agriculture Inspection Station	ED PM 70.946	Automobile and Truck
17	Riverton Commercial Vehicle Enforcement Facility	ED PM 39.3	Truck
16	Camino Commercial Vehicle Enforcement Facility	ED PM R27.1	Truck

CORRIDOR PERFORMANCE MANAGEMENT

There are two major components of corridor performance management, which are performance measurement and performance monitoring.

PERFORMANCE MEASUREMENT

The use of performance measures with threshold standards is used to evaluate the degree of congestion along a highway segment or local parallel/connecting roadway, transit facility, and bicycle and pedestrian facility to determine the scope and schedule of system improvements needed to correct a performance deficiency. The performance measures used for the highway facility in this TCR/CSMP include Level of Service (LOS), Vehicle and Person Hours of Delay (VHD) at 60 MPH, Vehicle Miles Traveled (VMT), Peak Hour VMT, Peak Hour Volume over Capacity (V/C), and Peak Hour Average Speed. The tools used to determine the performance measures include Average Annual Daily Traffic (AADT), Truck AADT, Percent of Trucks, 5+ Axle Truck AADT, and 5 Axle Truck Percentage of AADT. The definitions, applicability, and sources of the baseline performance measures data used in this TCR/CSMP corridor are identified in Appendix C. This data is given for both the base (2012) and horizon (2035) years for all of US 50 where available. Basic system operation, truck traffic, and peak hour traffic performance data is summarized in Tables 13, 14, and 15 on the pages that follow.

LOS is a qualitative measure describing operational conditions within a traffic stream and perception of condition by users. Operational conditions are defined in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. LOS is defined into six levels with letter designations from A to F. LOS A represents the best operating conditions wherein there is ample maneuverability, no speed restrictions and no delays, while LOS F represents the worst operating conditions with traffic congestions, significant delays and little maneuverability (please see Appendix A for more information including data sources). LOS is accepted as a performance measure by the Federal Highway Administration and California, as well as almost all 49 other states.

The "*Concept LOS*" is based on District 3 standards, which are from the Caltrans District 3 District System Management and Development Plan (DSMDP). Typical Concept LOS standards in District 3 are LOS "D" in rural areas and LOS "E" in urban areas. Performance variations and interchange deficiencies within a corridor segment may inadvertently increase or decrease the LOS calculations, which may warrant additional detailed operational analysis. A local agency may set a higher LOS threshold standard consistent with community wishes and other local concerns. Caltrans as the owner and operator of the facility establishes the Concept Level of Service as the **minimum acceptable level of service**. Any threshold standard LOS established by a local agency for the State Highway System (SHS) should not be lower than the Caltrans Concept LOS. For those parts of the SHS where LOS may not be an appropriate measure to describe performance such as in locations designated as a "Transit Priority" area where the Caltrans Performance Measurement System (PeMS) is available, the Caltrans District 3 DSMDP (page 34) suggests using other performance measures including, but not limited to, Vehicle Travel Time (minutes) and Vehicle Hours of Delay (VHD).

LOS is one performance measure utilized by Caltrans in the review of proposed projects during the Intergovernmental Review/CEQA development review process to determine if proposed projects might cause significant impacts to the operation of the SHS. In segments of the SHS main line where the existing LOS is at or below the Concept LOS, any land use development should not directly or cumulatively lower the existing LOS. Any impacts exceeding this threshold will be viewed by Caltrans as significant and warrant appropriate mitigation. Any CEQA lead agency should coordinate with Caltrans as early in the development review process as feasible to jointly determine the most appropriate threshold standards of significance.

Data collection for non-auto modes is not as robust as what is needed for active system management. AADT and LOS were used in the 2009 CSMPs as performance measures for the local parallel/connecting roadways. However, the availability and year date consistency of this data varied between local city and county jurisdictions, which resulted in the data not being valuable to measuring roadway performance across the corridor. Consequently, this TCR/CSMP update does not include performance measures for the roadways.

Available Average Daily and Peak Hour Capacity were used in the 2009 CSMPs as performance measures for transit. No performance measures were identified for bicycle and pedestrian facilities. Following consultation with key external stakeholders for both bicycling and transit after adoption of the 2009 CSMPs, the progress in implementing the infrastructure improvements to close system gaps by improving and facilitating bicycling, pedestrian, and mass transit, as included in the applicable regional transportation plans, was determined to replace the performance measures reported in the 2009 CSMPs for bicycling, pedestrian, and transit facilities, and to be reported in subsequent CSMPs for bicycling, pedestrian, and transit modes. It is realized that the bicycle and pedestrian transportation networks need to be completed prior to developing meaningful performance measures that quantify deficiencies.

PERFORMANCE MONITORING

The goal of performance monitoring is to continuously and dynamically examine corridor performance to identify operational problems caused by traffic congestion and implement immediate, efficient, and effective system operations and improvement actions and strategies along the corridor, including capital improvements to generate the desired results. Where available, PeMS is utilized to monitor highway performance. In other corridor segments where PeMS is not available, HCS 2010 analysis is performed using traffic counts or tachometer (tach) runs to assess performance.

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TABLE 13: US 50 BASIC SYSTEM OPERATIONS

Seg. #	County	Post Miles	Distance (Miles)	Average Annual Daily Traffic			Level of Service (LOS)				Vehicle Miles Traveled (VMT)			Delay	
				Base Year (BY)*	No Build (Horizon Year (HY))*	Build (HY)	BY	No Build (HY)	Build (HY)	Concept LOS	BY	No Build (HY)	Build (HY)	Daily Vehicle Hours of Delay	Daily Person Hours of Delay
1	YOL	0.00/3.16	3.16	176,000	206,000	210,000	E	F	F	E	337,274	394,000	402,000	228	310
2	SAC	L0.00/L2.48(R0.00)	2.48	246,000	279,000	300,000	F	F	F	E	452,373	513,000	552,000	1,697	2,309
3		R0.00/R5.34	5.34	206,000	249,000	265,000	F	F	F	E	959,231	1,158,000	1,235,000	1,708	2,323
4		R5.34/R10.92	5.58	171,000	226,000	234,000	F	F	F	E	660,438	873,000	905,000	509	692
5		R10.92/12.50	1.58	141,000	196,000	204,000	E	F	F	E	194,349	271,000	281,000	204	278
6		12.50/17.01	4.51	117,000	160,000	161,000	F	F	F	E	630,648	862,000	866,000	565	768
7		17.01/23.14	6.13	91,000	113,000	132,000	F	F	F	E	521,760	645,000	759,000	158	215
8	ELD	0.00/0.86	0.86	91,000	100,000	110,000	F	F	F	E	81,060	89,000	98,000	59	80
9		0.86/R3.23	2.37	70,000	94,000	105,000	E	F	F	E	127,860	171,000	191,000	10	13
10		R3.23/6.57	3.34	61,000	86,000	84,000	D	F	D	E	207,994	294,000	286,000	51	70
11		6.57/R8.56	1.99	61,000	73,000	77,000	D	E	D	E	170,099	203,000	216,000	15	20
12		R8.56/R15.06	6.5	52,000	67,000	71,000	C	D	C	E	307,233	396,000	420,000	16	21
13		R15.06/17.25	2.19	49,500	59,000	67,000	D	D	E	E	129,242	153,000	176,000	6	9
14		17.25/18.11	0.86	52,000	59,000	58,000	C	C	C	D	37,604	43,000	42,000	132	179
15		18.11/R25.95	7.84	30,000	35,000	35,000	C	C	C	E / D*	180,361	212,000	213,000	31	43
16		R25.95/R31.97	6.02	19,900	24,880	24,900	B	C	C	E	108,240	135,300	135,420	Not available for TCR corridor	
17		R31.97/39.77	7.65	12,700	15,880	15,890	B	C	C	D	97,160	121,450	121,560		
18		39.77/66.63	26.64	13,100	16,380	16,390	E	F	F	D	351,840	439,800	440,190		
19		66.63/70.62	3.99	10,900	13,630	13,640	E	E	E	D	36,270	45,340	45,380		
20		70.62/75.45	4.83	19,000	23,750	23,770	E	F	F	D	68,450	85,560	85,640		
21		75.45/80.44	4.99	33,000	42,900	42,940	E	F	F	E	159,040	206,750	206,930		

Note: Please see Appendix A: Glossary for explanation of these terms and performance measures.
*- Concept LOS on a segment that contains both urban and rural portions

TABLE 14: US 50 TRUCK TRAFFIC DATA

Seg. #	County	Post Miles	Distance (Miles)	Average Annual Daily Truck Traffic (AADTT)	Total Trucks (% of AADT) (BY)	5+ Axle AADTT (BY)	5+ Axle Total Truck (% of AADT) (BY)
1	YOL	0.00/3.16	3.16	7,093	4.0%	3,120	1.8%
2	SAC	L0.00/L2.48(R0.00)	2.48	6,012	2.4%	2,515	1.0%
3		R0.00/R5.34	5.34	8,060	3.9%	2,137	1.0%
4		R5.34/R10.92	5.58	7,709	4.5%	1,964	1.1%
5		R10.92/12.50	1.58	7,811	5.5%	2,120	1.5%
6		12.50/17.01	4.51	7,488	6.4%	3,295	2.8%
7		17.01/23.14	6.13	5,824	6.4%	2,399	2.6%
8	ED	0.00/0.86	0.86	5,824	6.4%	2,399	2.6%
9		0.86/R3.23	2.37	4,200	6.0%	1,730	2.5%
10		R3.23/6.57	3.34	3,660	6.0%	1,508	2.5%
11		6.57/R8.56	1.99	3,660	6.0%	1,508	2.5%
12		R8.56/R15.06	6.5	3,120	6.0%	1,289	2.5%
13		R15.06/17.25	2.19	2,970	6.0%	1,227	2.5%
14		17.25/18.11	0.86	3,120	6.0%	1,376	2.6%
15		18.11/R25.95	7.84	1,860	6.2%	837	2.8%
16		R25.95/R31.97	6.02	1,393	7.0%	641	3.2%
17		R31.97/39.77	7.64	800	6.3%	384	3.0%
18		39.77/66.63	26.64	537	4.1%	200	1.5%
19		66.63/70.62	3.99	338	3.1%	141	1.3%
20		70.62/75.45	4.83	760	4.0%	228	1.2%
21		75.45/80.44	4.99	1,320	4.0%	139	0.4%

TABLE 15: US 50 PEAK HOUR TRAFFIC DATA

Seg. #	County	Post Miles	Volume			Directional Split			Volume/Capacity (V/C)			VMT		
			BY	No Build (HY)	Build (HY)	BY	No Build (HY)	Build (HY)	BY	No Build (HY)	Build (HY)	BY	No Build (HY)	Build (HY)
1	YOL	0.00/3.16	14,900	17,400	17,800	55%	52%	53%	0.93	1.02	1.06	25,041	29,300	29,800
2	SAC	L0.00/L2.48 (R0.00)	20,500	23,300	25,000	54%	52%	53%	1.14	1.26	1.37	33,921	38,500	41,400
3	SAC	R0.00/R5.34	20,100	24,300	25,900	56%	54%	52%	1.16	1.36	1.29	70,378	85,000	90,600
4	SAC	R5.34/R10.92	16,600	21,900	22,700	56%	54%	53%	1.05	1.21	1.25	75,883	100,300	103,900
5	SAC	R10.92/12.50	13,000	18,100	18,800	64%	58%	58%	0.89	1.06	1.01	15,716	21,900	22,700
6	SAC	12.50/17.01	11,300	15,400	15,500	64%	60%	60%	1.02	1.26	1.09	48,560	66,300	66,600
7	SAC	17.01/23.14	8,600	10,600	12,500	65%	63%	63%	1.04	1.27	1.33	39,119	48,400	56,900
8	ED	0.00/0.86	8,600	9,500	10,400	65%	66%	66%	1.08	1.24	1.14	6,640	7,310	8,070
9	ED	0.86/R3.23	7,000	9,400	10,500	65%	66%	66%	0.95	1.22	1.16	12,120	16,220	18,110
10	ED	R3.23/6.57	5,700	8,100	7,800	65%	66%	66%	0.75	1.02	0.74	17,060	24,130	23,440
11	ED	6.57/R8.56	5,600	6,700	7,100	65%	62%	64%	0.86	0.98	0.83	12,420	14,800	15,740
12	ED	R8.56/R15.06	4,150	5,300	5,700	65%	62%	64%	0.63	0.77	0.62	22,100	28,480	30,230
13	ED	R15.06/17.25	4,600	5,400	6,300	65%	63%	63%	0.73	0.84	0.96	9,750	11,500	13,200
14	ED	17.25/18.11	4,650	5,300	5,200	63%	60%	62%	0.00	0.00	0.00	3,535	4,000	4,000
15	ED	18.11/R25.95	3,250	3,800	3,800	63%	63%	65%	0.54	0.59	0.59	20,747	24,400	24,500
16	ED	R25.95/R31.97	2,650	3,310	3,320	67%	61%	63%	0.47	0.54	0.56	15,490	19,360	19,380
17	ED	R31.97/39.77	2,150	2,690	2,690	67%	63%	63%	0.41	0.47	0.48	16,450	20,560	20,580
18	ED	39.77/66.63	1,900	2,380	2,380	67%	61%	63%	0.88	1.00	1.03	51,030	63,790	63,840
19	ED	66.63/70.62	1,550	1,940	1,940	67%	61%	63%	0.71	0.81	0.84	5,820	7,280	7,280
20	ED	70.62/75.45	2,400	3,000	3,000	61%	55%	57%	0.99	1.13	1.17	9,260	11,580	11,590
21	ED	75.45/80.44	3,850	5,010	5,010	54%	50%	51%	0.66	0.80	0.80	15,910	20,680	20,700

BOTTLENECK AND CONGESTION ANALYSIS

The 2010 Highway Capacity Manual defines a bottleneck as "a road element on which demand exceeds capacity."

The bottleneck analysis evaluates specific causes of existing recurrent traffic congestion in the corridor. Freeway bottleneck locations that create mobility constraints are identified and documented, and their relative contribution to corridor-wide congestion is reported. The bottleneck locations were determined based on a combination of the use of 2012 PeMS data, probe vehicle tach runs, and field observations. This analysis was only performed for the CSMP portion of the facility.

Traffic congestion can be categorized as either recurrent or non-recurrent.

Recurrent congestion occurs repeatedly at the same place and time of day in a predictable pattern. Recurrent congestion is often associated with facility capacity limitations, changes in capacity, conflicting vehicle movements such as lane merges, inadequate number of transit vehicles to handle passenger loads, or other persistent physical conditions of the transportation facility.

Non-recurrent congestion is usually attributed to collisions, equipment malfunction, community events, weather, construction projects and other occasional occurrences. When transportation systems are close to their maximum carrying capacity, non-recurrent congestion is more likely to occur as there is little excess capacity in the system.

Prior to analyzing the congestion and bottlenecks located within the corridor, a review of the District 3 *2012 Mobility Performance Report* (MPR) was conducted. The MPR is prepared by each Caltrans District where PeMS is utilized. Headquarters Traffic Operations Division requests and compiles these District reports annually and quarterly. The freeway congestion data is identified by freeway route and county but does not contain specific CSMP segment data. This data, which lists Vehicle Hours of Delay at 60 MPH, provides an overall perspective of the level of congestion for each route, which can be compared to prior year data so that performance can be monitored. The data presented in the MPR also identifies the top ten bottlenecks during the AM Peak Period and PM Peak Period by freeway route and county and identifies Total and Average Vehicle Hours of Delay and the Average Duration, which again can be compared to prior year data for performance monitoring purposes. The MPR data is useful in providing an overall perspective of the performance of the freeway at the county level that can be compared to the CSMP corridor segment-specific performance data. US 50 in Sacramento and El Dorado Counties is included in the District 3 MPR's top ten congested freeways and bottleneck locations. The ranking of the US 50 corridor is listed as follows:

Traffic Congestion:

- **Vehicle Hours of Delay (VHD):** Total VHD at 60 miles per hour in both directions increased in 2012 over 2011 in both Counties applicable to the CSMP corridor. The results are as follows:

Route	County	2011	2012
US 50	SAC	1,121,970 VHD	1,294,019 VHD
	ELD	247,159 VHD	254,511 VHD

- **Top 10 Congested Freeways:** Based on the VHD of all District 3 Freeway urban corridors in the Sacramento area, the congestion comparison of US 50 for 2011 and 2012 was ranked with the other corridors. As identified below, the US 50 corridor is becoming slightly more congested relative to other freeways in the District.

Route	County	2011 Rank	2012Rank
US 50	SAC	3	2
	ELD	8	8

- **Top Bottleneck Locations:** The bottleneck comparisons of US 50 for 2011 when available and 2012 by locations and rankings listed below can change from year to year, and may be indicative of temporary bottlenecks (i.e. short-term construction activities or special events) rather than major geometric constraints that require major operational strategies or capital expansion. Rankings are in comparison to all state highways in the greater Sacramento area of District 3 during both the AM peak and PM peak time periods and by direction. As identified below, US 50 captures several bottlenecks in the District top ten worst bottlenecks. These bottlenecks come in two main groups. The first and more severe group is between I-5 and SR 99 downtown, where several highways converge. The second group is near Howe Ave, close to Sacramento State and a bridge across the American River.

County	Route	Location	Time of Day	2011 Av. Daily VHD	2012 Av. Daily VHD	2011Av. Duration (min)	2012 Av. Duration (min)	2011 Rank	2012 Rank
Eastbound									
SAC	50	16^{th} St.	PM	75	141	64	122	21	6
Westbound									
SAC	50	Occidental Dr.	AM	8	145	3	54	N/A	5
SAC	50	NB Howe Ave.	AM	55	126	18	49	5	8
SAC	50	15^{th} St.	PM	118	285	32	59	13	5

Along with the MPR information, additional PeMS data was complied and analyzed so that congestion and bottleneck locations on the individual route segments within the CSMP corridor could be further refined and causality defined.

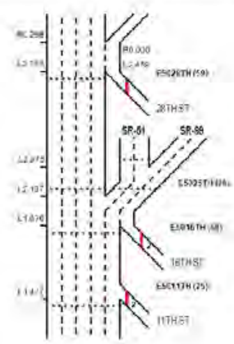
It should be noted that while both the MPR data and the data collected by District 3 Travel Forecasting and Modeling utilized PeMS, the data was collected for different time periods, and duration and delay thresholds between the two data sets vary. As such, while both data sets are generally consistent with each other, there may be some variation. Further work is being conducted to refine the identification and causality of bottlenecks within the corridor.

Table 16 shows a summary of the US 50 eastbound and westbound bottlenecks, while the analysis that follow the table discuss each bottleneck, including location and possible causality. Minor or hidden bottlenecks are those that are not as defined (or severe) as the major bottlenecks. Bottlenecks in the chart are listed in order of probability of formation. Please note that the graphics accompanying the bottlenecks are not to scale.

Bottlenecks in the eastbound direction during the PM peak period are at 16th St., 48th St., Folsom Blvd., 28th St., Howe/Power Inn, west of Scott Rd., and Sunrise Blvd. In the AM peak the sole bottleneck is at 16th St. Bottlenecks in the westbound direction during the PM peak period are at 25th St., 15th St., Stockton Blvd., and 59th St. In the AM peak the bottlenecks are at Watt Ave., Occidental Dr., El Dorado Hills Blvd., and Howe Ave.

Causalities for these bottlenecks range from high-traffic demand (congestion), heavy weaving/merging areas, or physical constraints such as lane drops, lack of ramp meters, incomplete HOV network, incomplete auxiliary lane network, poorly coordinated traffic signals and an off-ramp queue (Sunrise Blvd.).

TABLE 16: US 50 BOTTLENECK ANALYSIS DATA								
Seg. #	Location	County	Time of Day	Post Miles	Probability of Bottleneck Forming	Avg Queue Length (Miles)	Avg Delay (Veh Hrs)	Avg Duration (Minutes)
Eastbound								
2	16th St.	SAC	PM	L1.567	97.4%	0.45	141	122
2	16th St.		AM	L1.567	46.8%	0.49	63	51
2	28th St		PM	L2.394	50.6%	1.52	283	58
3	48th St.		PM	R1.453	71.8%	1.11	193	79
3	NB Howe/Power Inn		PM	R3.88	41.7%	0.72	74	56
5	SB Sunrise Blvd.		PM	12.4	21.8%	0.89	57	45
6	Folsom Blvd.		PM	16.901	53.8%	1.72	93	54
7	West of Scott Rd.		PM	20.7	23.7%	1.95	93	54
Westbound								
8	El Dorado Hills	ELD	AM	0.5	30.1%	0.95	54	46
4	NB Watt Ave.	SAC	AM	R5.4	39.1%	1.14	71	36
3	Occidental Dr.		AM	R4.5	34.0%	1.31	145	54
3	NB Howe Ave.		AM	R3.8	24.4%	1.46	126	49
3	Stockton Blvd		PM	R.595	54.5%	1.26	129	43
3	59th St.		PM	R1.9	48.1%	1.52	156	52
2	25th St.		PM	L2.166	80.1%	1.05	108	53
2	15th St.		PM	L1.351	64.7%	2.25	285	59

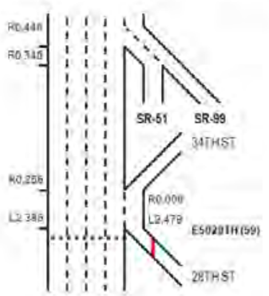


Eastbound Bottleneck Analysis

A. 16th St. Bottleneck (Both AM and PM)

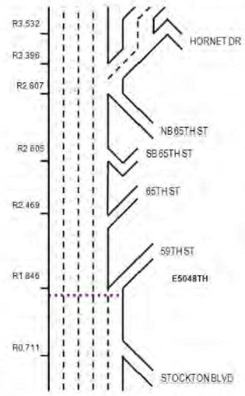
The bottleneck at 16th St. is caused by heavy volume of merging traffic, which causes weaving between vehicles merging onto US 50 and diverging vehicles for the SR 51 and SR 99 connectors. Merging traffic from the on-ramps has to cross 2+ lanes of traffic and diverge directly across diverging vehicles for SR 51 and SR 99 connectors. The combination of heavy volumes and diverging traffic approaching the SR 51 and SR 99 connectors creates bottlenecks that are exacerbated during peak hours.

B. 16th St. (See A Above)



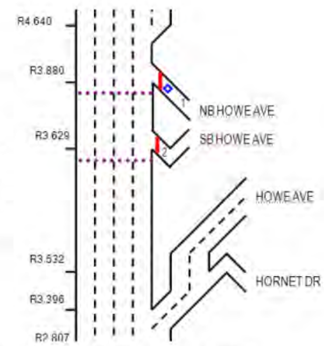
C. 28th St. Bottleneck

The bottleneck at 28th St. is caused by heavy demand, the downstream lane drop, as well as diverging traffic at the 28th St. on-ramp. Past the on-ramp, there is a slight uphill grade and horizontal curve that contributes to the formation of a bottleneck.



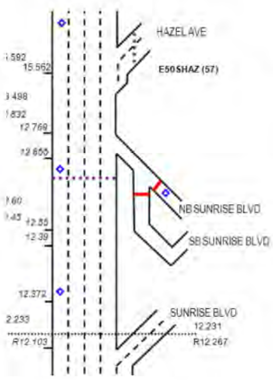
D. 48th St. Bottleneck

The bottleneck approximately located at 48th St. is due to the additional traffic merging from SR 51 and SR 99, combined with a lane drop at 59th St. This queue extends upstream past the off-ramp to SR 51 and SR 99. These off-ramps are bottlenecks in themselves, which spill back and choke the US 50 mainline.



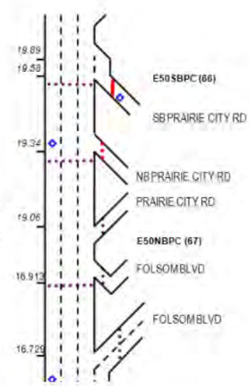
E. Howe/Power Inn

The bottleneck at Howe Ave. is due to the entering traffic from Howe Ave. Two Howe Ave. on-ramps feed into US 50 eastbound: southbound Howe Ave. loop on-ramp and northbound Howe Ave. direct ramp, approximately 300 feet apart. The Watt Ave. off-ramp is just downstream with heavy existing volumes; therefore the segment between Howe and Watt is characterized by heavy weaving.



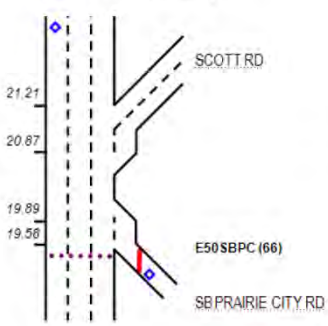
F. Sunrise Blvd Bottleneck

At Sunrise Blvd., the right-most lane exits, and high volumes of automobiles enter the facility from the large employment centers in Rancho Cordova. As a result, there is a large volume of vehicles queued at Sunrise off-ramp which spills back and negatively affects the US 50 mainline.



G. Folsom Blvd

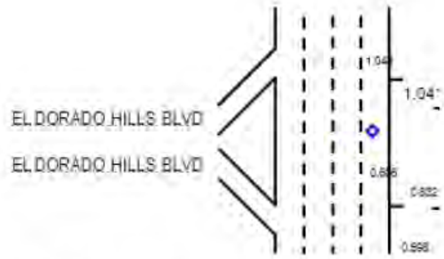
The right-most lane exits to Folsom Blvd., leaving one HOV lane and two regular lanes along the US 50. The bottleneck is caused by this lane drop as well as the quick merge at the Folsom on-ramp.



H. West of Scott Road Bottleneck

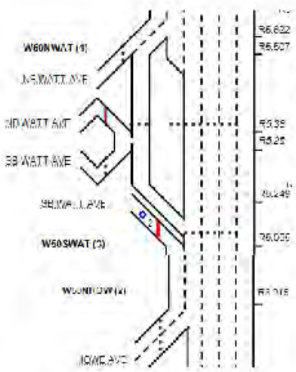
The bottleneck at Scotts Rd. is due to heavy demand and merging traffic from both southbound and northbound Prairie City on-ramps.

Westbound Bottleneck Analysis



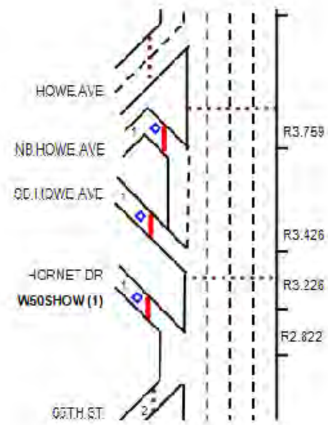
A. El Dorado Hills Blvd Bottleneck

The bottleneck at El Dorado Hills Blvd is caused by heavy demand on El Dorado Hills Blvd. and traffic from El Dorado Hills Blvd. merging with existing westbound US 50 traffic.



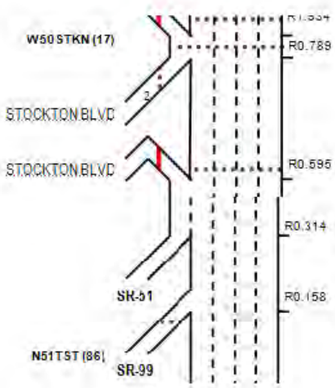
B. Occidental Dr. Bottleneck/Watt Ave. Bottleneck

The bottleneck at Watt Ave. is due to the lane drop at the Watt Ave. exit and merging traffic from the Watt Ave. on-ramp, which conflict with traffic on US 50. The auxiliary lane stretches all the way to the Howe Ave. exit. Last second weaving from vehicles merging along the auxiliary lane, before the Howe Ave. exit, creates a spill back effect on US 50 and contributes to the sections bottleneck.



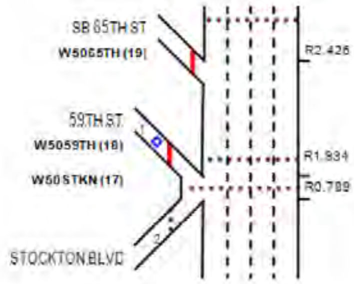
C. Howe Ave Bottleneck

The Howe Ave. bottleneck is caused by a grade change and the merging traffic entering from northbound and southbound Howe Ave. on-ramps and Hornet D.r on-ramp.



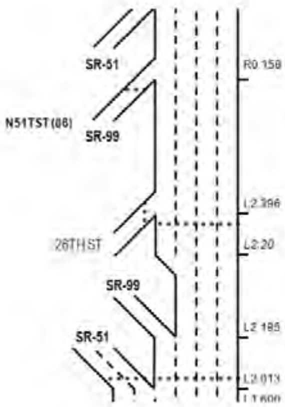
D. Stockton Blvd Bottleneck

Bottleneck at Stockton Blvd. is due to vehicles merging onto US 50 and diverging to SR 99 and SR 51 along the same auxiliary lane. High volume of weaving between entering and exiting vehicles on US 50 increases the likelihood of bottlenecks in this segment is increased during peak hours.



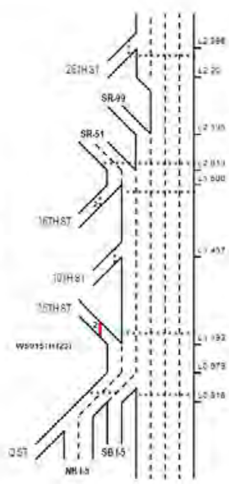
E. 59th St. Bottleneck

Vehicles merging onto US 50 from the 59th St. on-ramp, conflict with traffic on US 50 and weaving at the two most right lanes create a bottleneck. This bottleneck is exacerbated and/or worse from the spill back effect of the Stockton Blvd. bottleneck.



F. 25th St. Bottleneck

The bottleneck approximately at 25th St. is due to a lane drop and merging traffic from SR 99 and SR 51 connectors onto US 50. Vehicles on US 50 experience a slight horizontal curve and a lane drop approaching the SR 99 connector. A small stretch of US 50 is reduced to three lanes, but is widened back to four lanes after the SR 99 interchange. The high volume of weaving and diverging traffic, along with the downstream lane drop and slight horizontal curve, contribute to the overall sections bottleneck.



G. 15th St. Bottleneck

The bottleneck approximately at I-5 is caused by a conflict between entering SR 99 and SR 51 traffic and exiting I-5 traffic as well as the queues formed on the ramps to I-5, which spill back onto US 50. The number of lanes in this section reaches a maximum of 6 and then drops to 4 as two lanes exit at the I-5 freeway. This bottleneck is exacerbated during the peak periods when it stretches upstream to the lane drop before SR 99.

KEY CORRIDOR ISSUES

A number of significant issues provide challenges for the segments of US 50 discussed in this document, including the complicated physical, environmental, and commercial setting of the highway.

Roadway configuration is a critical issue for transportation on US 50. Lanes drop off at some specific locations, causing a bottleneck to be activated at times. Further, there is an incomplete set of auxiliary lanes on the facility, causing operational problems at those locations. Constructing auxiliary lanes would allow easier merging onto and exiting from the facility. Further the system of HOV lanes needs to be expanded to include the entire Sacramento urban area. The HOV lanes begin at Watt Ave. and run until the Cameron Park Area. Constructing HOV lanes in downtown Sacramento and West Sacramento would significantly improve traffic flow and reduce congestion.

Improvements to ITS on US 50 could also greatly improve traffic flow. Implementing ramp metering on all appropriate onramps would greatly increase throughput on the facility by reducing platooning and resulting bottlenecks. Another ITS implementation strategy is signal coordination on key arterials and freeway ramp intersections. Other ITS implementation strategies are forthcoming in the District 3 *ITS/Operational Improvement Plan* (ITS/Ops Plan).

Transit improvements have also been identified for the corridor to improve traffic. To increase transit ridership, more funding is necessary for capital and operations on expanded lines and enhanced service. For example, double tracking of the light rail Gold Line to Folsom is necessary to decrease headways at stations east of the Sunrise Blvd. station. At-grade rail crossings, in downtown Sacramento and along Folsom Blvd. going east, cause delay to motorists, bicyclists, and pedestrians. Coordination between local and regional agencies will be critical in making service improvements to transit along the corridor.

There are also deficiencies in the bicycle and pedestrian facilities on the corridor. Pavement deficiencies, maintenance issues, and gaps and barriers within the bicycle route network make active transportation modes less attractive to travelers and contribute to higher automobile usage. Keeping bicycle facilities in usable order will require the close cooperation of local agencies along the corridor. Bicyclist-activated signal change devices will also greatly improve transportation on the corridor. Finally, coordination between transit operators and bicyclists can make great improvements on transit access and bicycle storage to promote increased alternative transportation.

Recreational traffic is an important issue in US 50 transportation. This traffic is highly directional and heavily concentrated in certain times of year (ski season and summer recreation season). Traffic on this route is concentrated on weekends, particularly Fridays and Saturday mornings to Lake Tahoe and Sunday afternoons from Lake Tahoe, during the ski season and during the summer, and to the Apple Hill area during fall. Because of the difficulty of planning for these conditions, the El Dorado County Transportation Commission (EDCTC) applied for and received grants from the State to study the impact of tourism on travel and mobility issues associated with agritourism. The *Bay to Tahoe Basin Recreation and Tourism Travel Impact Study* is currently in development and will provide important information and recommendations regarding recreational travel within this corridor, covering several counties and transportation facilities and the *Sustainable Agritourism Mobility Study* will begin developing recommendations regarding agritourism mobility in the corridor in winter 2015.

Additionally, EDCTC has identified operational issues between the Smith Flat interchange and east of the Upper Carson Road/Camino intersection in the *Camino Area Parallel Capacity/Safety Study*. Transportation issues include at-grade access to US 50, left turn conflicts across US 50, increasing average daily local and interregional traffic, growth in the area, lack of alternate routes, seasonal traffic to and from Apple Hill and other local events, and seasonal access to recreation in the Lake Tahoe Region. These operational issues were further explored in a PSR-PDS that EDCTC completed in December 2009.

Large rock slides have required closure of US 50 and the need for a detour for traffic crossing the Sierra. Caltrans has partnered with El Dorado County and the Eldorado National Forest to detour traffic at the US 50/Sly Park Road turn-off which connects with Mormon Emigrant Trail, which connects with SR 88.

Climate also is an issue that the US 50 corridor must confront. During most of the year, the weather is warm and travel to Lake Tahoe is unimpeded. During the winter, access to much of the facility is restricted to vehicles with four-wheel drive or chains, and chain control locations are conveniently located throughout the corridor. This chain requirement, the inclement weather, and use of traction material on the road have a detrimental impact on the road pavement, which deteriorates more rapidly than other facilities' pavements. Special attention must be paid to ensure that US 50 is maintained in good condition. In addition, snow removal in the area is not provided on bicycle facilities during the winter months.

Another key corridor issue is the lack of right of way for modification or enhancement of the facility in some locations. The urban facility from West Sacramento to Folsom is surrounded by urban development, and expansion would be prohibitively expensive. From Folsom until Placerville there is room to expand US 50 to accommodate new development in western El Dorado County, but careful corridor planning is essential in preserving ROW for future lane expansion. Through most of the Eldorado National Forest US 50 is a two-lane conventional highway, with protected forest, steep cliffs, or mountainside, thus making modification considerably more difficult. In developed areas, such as South Lake Tahoe, the facility serves built out areas, and modifying the facility would be prohibitively costly. There is some ability to expand capacity in Camino and Pollock Pines. In planning for future facility improvements coordination with local agencies will prove vital.

Bus/Carpool Lane Degradation

A recent report, the *2011 California HOV Lane Degradation Determination Report*, determined that US 50 bus/carpool lanes are degraded in the eastbound evening and the westbound morning periods. According to federal law, a bus/carpool lane is degraded when during the peak morning or evening period the average speed drops below 45 mph for at least 10% of the time in a 180-day period. The degraded segments are from Sunrise Blvd. (PM 12.5) to halfway between Hazel Av. and Folsom Blvd. (PM 16.311) in both directions. The segments are listed as slightly degraded, 14.5% of the time degraded for eastbound evening and 18.3% of the time degraded for westbound morning. This pattern roughly reflects commuting patterns to and from downtown Sacramento and Rancho Cordova employment opportunities. Because this report uses data from before the opening of the bus/carpool lanes from Watt Ave. to Sunrise Blvd. in 2012, the conditions may have changed on the ground.

As a result of this report and the degraded bus/carpool lane conditions, Caltrans must take action to improve bus/carpool lane performance. According to the federal transportation law, Moving Ahead for Progress in the 21st Century Act (MAP 21), Caltrans must enact measures to improve bus/carpool lane performance within 180 days of the determination of degradation, or Caltrans must otherwise face sanctions of withheld funds or withheld project approval.

CORRIDOR CONCEPT FACILITY

<u>CONCEPT RATIONALE</u>

"Concept LOS" and *"Concept Facility"* have traditionally been used in Caltrans TCRs and CSMPs to reflect the minimum level or quality of operations acceptable for each route segment and the highway facility needed in

the next 20 years and beyond. The *"Base Year"*, *"No Build"*, *"Build"*, and *"Concept"* LOS for US 50 are identified in Table 13 by segment. The *Concept* LOS is LOS D in rural areas and LOS E in urban areas. The *"20-Year Build Facility"* and *"Ultimate Facility Concept"* for US 50 are shown above in Table 6. The *20-Year Build Facility* includes all projects expected to be completed within the 20-year horizon (2031), while the *Ultimate Facility Concept* includes all projects with an expected completion year beyond the 20-year horizon. Projects have been identified below as *Projects and Strategies*.

Over one-half of US 50 segments are forecasted to operate under LOS "F" conditions in 20 years under the *"No Build," "Build,"* and *"Concept"* scenarios. The No-Build scenario is the current facility with future traffic volumes. The Build scenario is the current facility plus planned and programmed SHS projects with future traffic volumes. The *Ultimate Facility Concept* is the facility needed to meet District performance standards for a particular segment. Many segments within the US 50 TCR/CSMP cannot be improved to perform at the District standard of E for urban areas due to financial, environmental, right of way, or political constraints. For these segments, targeted operational improvements, Intelligent Transportation Systems (ITS), and Integrated Corridor Management (ICM) including Transportation Demand Management (TDM) and active multimodal corridor management strategies will be needed to assist in achieving the Concept LOS, which are reflected in the programmed, planned, and conceptual project lists located in Tables 18 through 22. Planning and deployment of ITS and operational improvements within District 3 will be articulated in the *District 3 ITS/Operational Improvement Plan* and the *District 3 Concept of Operations Plan*, both in development.

Additionally, measures to reduce travel demand on the highway such as increased use of transit and development of parallel local road facilities may be explored as a means to prevent further LOS threshold degradation on the SHS and will be considered in the CEQA development process, provided that the reduction is quantified to the satisfaction of Caltrans. Moreover, the District *3 Complete Streets Implementation Plan* as described previously in this document, and the *District 3 State Highway Bicycle Facility Plan* identify locations for construction of pedestrian and bicycle facilities that will further reduce local vehicular trips on state highway facilities.

PROJECTS AND STRATEGIES

Projects and strategies to achieve the LOS and facility concept have two categories of funding status: fiscally constrained and fiscally unconstrained.

Fiscally constrained projects and strategies are projects that can be implemented using committed, available, or reasonably available revenue sources.[1]

Fiscally unconstrained projects and strategies are conceptual transportation improvements without an identified funding source and may be funded if reasonable additional resources become available.[2]

In addition to the funding status categories, there are three types of transportation improvements or actions: programmed, planned, and conceptual. Projects and strategies to achieve facility concept are grouped into (1) highway planned and programmed projects and strategies, (2) highway conceptual projects and strategies, and (3) off-highway corridor projects.

Planned and Programmed Projects and Strategies

A ***programmed improvement or action*** is a project listed in a near-term programming document identifying funding amounts by year, such as the State Transportation Improvement Program (STIP) or the State Highway Operations and Protection Program (SHOPP).

A ***planned improvement or action*** is a project listed in a fiscally constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure, including SHOPP plan projects.

Conceptual Projects and Strategies

Conceptual improvement or action is a project that is needed to maintain mobility or serve multimodal users, but is not currently included in a fiscally constrained plan and is not currently programmed. Conceptual projects are all fiscally unconstrained projects derived from documents such as local and regional General Plans, and Caltrans System Planning Documents.

Highway planned and programmed projects along the US 50 corridor are listed in Table 17, highway conceptual projects along the corridor are listed in Table 18, and off-highway corridor projects are listed in Tables 19 through 21.

To improve the bus/carpool lane segments with degraded performance, several projects have been proposed and are listed in this CSMP. Chief among these projects is the extension of bus/carpool lanes from Watt Ave. to the Oak Park Interchange, which will improve traffic flow on the entire facility. Several traffic operations projects will also improve the performance of the bus/carpool lanes. These projects include an auxiliary lane from Zinfandel Dr. to Sunrise Blvd., ramp metering, and a transition lane between the slip-on and off-ramps at Sunrise Blvd. Transit projects, such as shuttle service to light rail stations in Rancho Cordova, and bus stop and light rail station enhancements, will make transit a more attractive alternative to freeway travel. Finally, numerous bicycle and pedestrian improvements are planned for the corridor, creating a further alternative to travel on US 50. In the mean time, before these projects are built, increased enforcement by the California Highway Patrol (CHP) of minimum bus/carpool lane occupancies and more rapid Freeway Service Patrol response will yield improved bus/carpool lane performance. Further information on these actions can be found in the *2013 California High Occupancy Vehicle Lane Degradation Action Plan.*

TABLE 17: HIGHWAY PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Seg. #	Description	Programmed or Planned[1)]	Location, County, Lead Agency, Post Mile	Purpose	Source[2)]	Total Cost Estimate (x $1,000)[3)]	Completion Year[3)]
1	IC improvements	Programmed	Jefferson Blvd. YOL PM 2.495	System Management	2035 SACOG MTP/MTIP	26,450	2022
1	Install ramp meters; modify ramp design	Programmed	South River Rd. YOL PM 2.926	System Management	2035 SACOG MTP/MTIP	22,625	2020
1	Install Weigh-In-Motion (WIM) Station on SR 50 and I-80 Ramp	Planned	I-80 Junction. YOL PM 0.00	Weigh Stations and Weigh-in-Motion Stations	2014 SHOPP	2,000	2020
1-6; 20-21	Upgrade closed caption televisions (CCTV)	Programmed	80 locations in urban areas. Various PM.	Modify existing ITS elements	2014 SHOPP	2,640	2020
2	IC reconstruction including Bus/Carpool connectors	Planned	Oak Park IC. SAC PM L2.137	System Expansion	2035 SACOG MTP	300,000	2035
2/3/4	Construct Bus/Carpool lanes	Partially Programmed	Watt Ave. to Downtown Sacramento. SAC PM L0.00- R5.37	Priority Congestion Relief,System Expansion	2035 SACOG MTP	68,315	2020
3	Replace existing communication lines with fiber optics to improve performance	Planned	SR 99 and 51 to Watt Ave. SAC PM L0.00-R5.37	Modify existing ITS elements	2013 10 Year SHOPP Plan	952	2023
3-7	Upgrade Comm systems	Programmed	178 locations in urban areas. Various PM, routes and counties.	Modify existing ITS elements	2014 SHOPP	4600	2019
4	Construct aux lanes	Planned	NB Howe Ave. on ramp to SB Howe Ave. on ramp. SAC PM R3.68	Priority Congestion Relief,System Management	2035 SACOG MTP	3,746	2020
4	Construct aux lanes	Planned	Bradshaw Rd. overcrossing to Mather Field Rd. overcrossing. SAC PM R7.8-R9.5	Priority Congestion Relief,System Management	2035 SACOG MTP	3,700	2020
4	IC modification	Planned	Mather Field Rd. SAC PM R9.505	Interchange Modification	2035 SACOG MTP	5,647	2025
5	Bike/Ped OC of US 50 to connect Olson Dr to Prospect Dr	Planned	Olson Dr. to Prospect Park Dr. SAC PM R11.30	System Management	2035 SACOG MTP	8,500	2035
5	Construct aux lanes EB & WB	Planned	Sunrise Blvd. to Zinfandel Dr. SAC PM R10.92-12.5	System Management	2035 SACOG MTP	6,844	2035

TABLE 17: HIGHWAY PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Seg. #	Description	Programmed or Planned[1)]	Location, County, Lead Agency, Post Mile	Purpose	Source[2)]	Total Cost Estimate (x $1,000)[3)]	Completion Year[3)]
5/6	Construct transition lane WB	Planned	Sunrise Blvd. slip off ramp to Sunrise Blvd. slip on ramp. SAC PM 12.5	Priority Congestion Relief,System Management	2035 SACOG MTP	4,107	2035
6	Upgrade video wall at Regional Transportation Management Center (RTMC)	Planned	RTMC east of Sunrise Blvd. SAC PM 12.96	Modify existing ITS elements	2013 10 Year SHOPP Plan	2,000	2023
6	Multi-modal corridor improvements & IC improvements	Programmed	Hazel Ave. SAC PM 15.76	System Management	2035 SACOG MTP	85,000	2020
6/7	Natoma Overhead: widen EB US 50 and add HOV lane at on ramp, add ramp meter	Programmed	Folsom Blvd. and Natomas Overcrossing. SAC PM 16.90-17.40	Priority Congestion Relief,System Management	2013 10 Year SHOPP Plan	6,821	2015
6/7	Add aux lanes EB	Planned	Sunrise Blvd. to Scott Rd. SAC PM 12.5-21.5	System Management	2013 DSMDP	3,500	2025
6/7	Construct new IC at US 50/Rancho Cordova Pkwy. including aux lanes on US 50 btwn Hazel Ave. & Sunrise Blvd. and 4 lane arterial connection to US 50 off Rancho Cordova Pkwy. to White Rock Rd.	Partially Programmed	Rancho Cordova Pkwy. SAC PM 12.5-15.76	System Expansion	2035 SACOG MTP	100,000	2020
7	Construct new 4 lane IC	Programmed	Empire Ranch Rd. SAC PM 23	System Management	2035 SACOG MTP	38,552	2035
7	Construct new 4 lane IC	Planned	Oak Ave Pkwy. SAC PM 20.3	System Management	2035 SACOG MTP	84,646	2035
7	Ramp modifications & overpass widening	Planned	East Bidwell St./Scott Rd. IC. SAC PM 21.5	System Management	2035 SACOG MTP	3,740	2020
9	IC Phase 1	Programmed	Silva Valley Pkwy. IC ELD PM R1.65	System Management	2035 SACOG MTP/MTIP	52,375	2016
8	Construct Auxiliary Lanes - WB	Planned	WB, El Dorado Hills Blvd./Latrobe Rd. to future Empire Ranch Rd. IC. ELD PM 0.00-0.86	Priority Congestion Relief,System Management	2035 SACOG MTP	3,688	2035

TABLE 17: HIGHWAY PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Seg. #	Description	Programmed or Planned[1)]	Location, County, Lead Agency, Post Mile	Purpose	Source[2)]	Total Cost Estimate (x $1,000)[3)]	Completion Year[3)]
8	IC Improvements-EB Ramps	Planned	El Dorado Hills Blvd. ELD PM 0.86	System Management	2035 SACOG MTP/MTIP	5,904	2035
9	Construct Class 1 Ped/Bike overcrossing, El Dorado Hills Blvd	Programmed	El Dorado Hills Blvd. Area. ELD PM 1.183	System Management	2035 SACOG MTP/MTIP	6,783	2028
9	IC Improvements Ph 1, WB auxillary lane between Silva Valley Rd & Bass Lake Rd.	Planned	Bass Lake Rd. IC. ELD PM R1.65-R3.23	System Management	2035 SACOG MTP	20,829	2035
9	IC Phase 2	Planned	Silva Valley Parkway IC. ELD PM R1.65	System Management	2035 SACOG MTP	14,200	2035
10	Construct Aux. Lanes - WB	Planned	Bass Lake Rd. to Cambridge Rd. ELD PM R3.23-4.962	System Management	2035 SACOG MTP	23,640	2035
10	Construct Auxiliary Lanes - EB	Planned	Cambridge Rd. to Cameron Park ICs, WB Cameron Park to Bass Lake Rd. Ics. ELD PM R3.23-6.57	System Management	2035 SACOG MTP	15,500	2035
10	IC Improvements-Ph 1, EB/WB Ramps	Planned	Cambridge Rd IC. ELD PM 4.962	System Management	2035 SACOG MTP	10,645	2035
10-12	Construct Aux. Lanes - EB	Planned	Cambridge Rd. to Ponderosa Rd. ELD PM 4.962-R8.564	System Management	2035 SACOG MTP	14,550	2035
10/11	IC Improvements	Planned	Cameron Park Dr. ELD PM 6.57	System Management	2035 SACOG MTP	58,737	2035
12	IC; Realign WB Offramp with Wild Chaparral Dr and signalize intersection; Realign 0.25 Mile of North Shingle Rd at Ponderosa Rd	Programmed	Ponderosa Rd IC/ North Shingle Rd. ELD PM R8.564	System Management	2035 SACOG MTP/MTIP	5,020	2024
12	Bus/Carpool Lanes (Phase 3)	Planned	Ponderosa Rd. to Greenstone Rd. ELD PM R8.56-R12.19	System Expansion	2035 SACOG MTP	34,730	2035
12	Durock Rd Realignment; signalize new intersection	Planned	Ponderosa Rd. IC/ Durock Rd. ELD PM 8.564	System Management	2035 SACOG MTP/MTIP	7,152	2026
12	IC Improvements	Planned	South Shingle Rd. IC. ELD PM R8.564	System Management	2035 SACOG MTP	23,088	2035

TABLE 17: HIGHWAY PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

Seg. #	Description	Programmed or Planned[1)]	Location, County, Lead Agency, Post Mile	Purpose	Source[2)]	Total Cost Estimate (x $1,000)[3)]	Completion Year[3)]
12	IC Improvements Ph 1 & 2	Planned	El Dorado Rd. ELD PM 14.011	System Management	2035 SACOG MTP	10,803	2035
13	IC Improvements Ph 2A & Ph 3	Planned	Western Placerville ICs, Ph 2A & Ph 3. ELD PM 15.83-16.503	System Management	2035 SACOG MTP/MTIP	23,374	2030
13	Local Road Improvements Ph 2B & 2C; improvements to Ray Lawyer Dr & Forni Rd	Programmed	Western Placerville ICs, Ph 2B & 2C. ELD PM 15.83-16.503	System Management	2035 SACOG MTP/MTIP	6,748	2018
13	Local Road Improvements Ph 1B-Realign Fair Lane to correct curve & construct Class II Bike Lanes, sidewalks & retaining walls	Programmed	Western Placerville ICs, Ph 1B, ELD PM 16.276	System Management	2035 SACOG MTP/MTIP	1,589	2014
14, 16, 18, 19, 21	Upgrade HAR systems	Planned	25 locations in rural areas. Various PM, routes and counties.	Modify existing ITS elements	2016 SHOPP	2670	2021
15	EB signalization and ramp lengthening	Planned	Broadway. ELD PM 18.517	System Management	2035 SACOG MTP	2,000	2035
15	Construct new IC	Planned	Mosquito Rd. ELD PM 18.52	System Management	2035 SACOG MTP	60,000	2035
15	Construct undercrossing, median barriers, modify local connectors, operational/ safety improvements	Planned	Camino Operational/ Safety Improvements. ELD PM 24.052	System Management	2035 SACOG MTP	33,900	2035
19	Upgrade RWIS systems	Planned	18 locations in rural areas. Various PM, routes and counties.	Modify existing ITS elements	2016 SHOPP	2300	2021
20	Construct roundabout or install signal at junction	Planned	Junction SR 89 in Meyers. ELD PM 70.64	System Management	2035 TMPO RTP	5,000	2020
20	Intersection improvements	Planned	Pioneer Trail in Myers. ELD PM 71.477	System Management	2035 TMPO RTP	2,000	2020
20/ 21	Signal synchronization - Install Adaptive Traffic Signal Control	Planned	19 locations in El Dorado County. Various PM.	System Management	ITS/OPS Project List	1,000	Long
21	Create new Loop Rd	Partially Programmed	Park Ave to Stateline. ELD PM 80.149-80.44	System Management	2035 TMPO RTP	75,000	2017

TABLE 17: HIGHWAY PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES							
Seg. #	**Description**	**Programmed or Planned**[1)]	**Location, County, Lead Agency, Post Mile**	**Purpose**	**Source**[2)]	**Total Cost Estimate (x $1,000)**[3)]	**Completion Year**[3)]
21	Signal improvements	Planned	SR 89 (the "Y") to Nevada State line. ELD PM 75.456-80.44	Priority Congestion Relief,System Management	2035 TMPO RTP	5,000	2015

1) Programmed include those projects that are partially and fully funded. Definitions of Programmed, Planned, and Conceptual projects can be found in Appendix A.

2) Note, only SHOPP projects that improve Mobility and are Mandated for furthering Complete Streets are included. A complete listing of SHOPP projects can be viewed at http://ctips.dot.ca.gov/citrix/metaframexp/default/reports.asp.

3) Total Cost and Completion Year Estimates are from listed Source. Additional project details and programming information can be found in the District 3 DSMDP at http://www.dot.ca.gov/dist3/departments/planning/systemplanningDSMDP.htm, 2012 SACOG MTP project list at http://www.sacog.org/2035/files/MTP-SCS/appendices/A-1%20Project%20List.pdf, 2012 SACOG MTIP Appendix 3 project list at http://www.sacog.org/mtip/2013-2016/adoption/pdf/2013%20MTIP%20Transmittal%209-26-12.pdf, 2012 TMPO RTP, Chapter 6 project list at http://tahoempo.org/rtp_final/TAHOE%20RTP%2006%20Funding%20and%20Impl.pdf, and CT Programming at http://ctips.dot.ca.gov/citrix/metaframexp/default/reports.asp .

There are several conceptual projects identified in Table 18 below that are proposed for construction on US 50 in the long term, beyond year 2025. These projects consist of HOV lanes, ITS/Operations projects, interchange improvements, and bicycle/pedestrian projects. Because these projects are of an undefined time frame, they are subject to revision.

TABLE 18: HIGHWAY CONCEPTUAL PROJECTS AND STRATEGIES						
Seg. #	**Description**	**Location, County, Lead Agency, Post Mile**	**Purpose**	**Source**[1)]	**Total Cost Estimate (x $1,000)**[2)]	**Completion Year**[2)]
1	Construct HOV lanes (Sections B)	Davis to downtown Sacramento (Sections B & C). YOL PM 0.0-3.156	Construct HOV lanes to relieve congestion	2035 SACOG MTP	(see section A)	2035
2	Construct HOV lanes (Section C)	Davis to downtown Sacramento (Section C). SAC PM L0.36-0.02	Construct HOV lanes to relieve congestion	2035 SACOG MTP	(see section A)	2035
3 - 6	Ramp meter improvements on both directions	Stockton Blvd. to Folsom Blvd. SAC PM 0.6-17.01	Improve facility performance through operational enhancements	ITS/OPS Project List	8,000	2016
12/ 13	Interchange Improvements Ph 2	Missouri Flat Interchange. ELD PM R15.06	Interchange improvements to accommodate local development	2013 DSMDP	20,000	2035
11	Bus/Carpool Lanes (Phase 2B)	Cameron Park Dr. to Ponderosa Rd. IC. ELD PM 6.57-R8.56	System Expansion	2035 SACOG MTP	22,637	2035

TABLE 18: HIGHWAY CONCEPTUAL PROJECTS AND STRATEGIES						
Seg. #	Description	Location, County, Lead Agency, Post Mile	Purpose	Source[1)]	Total Cost Estimate (x $1,000)[2)]	Completion Year[2)]
13 - 19	El Dorado 50 ITS	In El Dorado County from Missouri Flat Rd to Echo Sandhill. ELD PM R15.06-67.295	Improve facility performance through ITS enhancements	ITS/OPS Project List	2,600	Long
19 - 21	Construct Class II Bike Lane	S. Upper Truckee Rd. to Stateline Rd.	Accommodate bicyclists as part of the Environmental Improvement Program (EIP)	2013 D3 SHBFP	4,800	Long

1) Note, only SHOPP projects that improve Mobility and are Mandated for furthering Complete Streets are included. A complete listing of SHOPP projects can be viewed at http://ctips.dot.ca.gov/citrix/metaframexp/default/reports.asp.

2) Total Cost and Completion Year Estimates are from listed Source. Additional project details and programming information can be found in the District 3 DSMDP at http://www.dot.ca.gov/dist3/departments/planning/systemplanningDSMDP.htm, 2012 SACOG MTP project list at http://www.sacog.org/2035/files/MTP-SCS/appendices/A-1%20Project%20List.pdf, 2012 SACOG MTIP Appendix 3 project list at http://www.sacog.org/mtip/2013-2016/adoption/pdf/2013%20MTIP%20Transmittal%209-26-12.pdf, 2012 TMPO RTP, Chapter 6 project list at http://tahoempo.org/rtp_final/TAHOE%20RTP%2006%20Funding%20and%20Impl.pdf, and CT Programming at http://ctips.dot.ca.gov/citrix/metaframexp/default/reports.asp .

Off-Highway US 50 Corridor Projects

The original US 50 CSMP from 2009 contained off-highway projects on parallel roads, bicycle routes, and transit systems. These projects, while not under Caltrans' direct purveyance, have an impact on freeway operations of US 50 by offering alternatives to travel on the highway. These alternatives reduce traffic on the freeway and improve overall functioning of the corridor. These off-highway projects as identified in Tables 20 through 22 below are either on parallel roads, cross US 50 ROW, are transit projects, or are bicycle and pedestrian projects.

TABLE 19: OFF-HIGHWAY PARALLEL AND CONNECTING ROADS PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
1	Streetscape improvements, including wider sidewalks, flatter road cross-section, reconfigure lanes, roundabout, utility relocation, new lighting, and substantial planting and hardscape treatments.	Programmed	West Capitol Ave, Westacre Rd. to Harbor Blvd.	2035 SACOG MTP/MTIP
3	Widen to 5 lanes	Planned	65th St., US 50 to Broadway	2035 SACOG MTP
3	Widen to 6 lanes	Planned	Power Inn Rd., Fruitridge Rd. to 14th Ave.	2035 SACOG MTP
3	Streetscape project including pedestrian and bicycle improvements, a raised landscaped median, landscaped planters, improvements to signal operations, frontage landscaping, and enhanced connections to transit facilities.	Programmed	Folsom Blvd., Power Inn Rd. to Watt Ave.	2035 SACOG MTP/MTIP
4	Widen to 4 lanes	Planned	Mather Blvd., Rockingham Rd. to Zinfandel Dr.	2035 SACOG MTP
6	Widen to 6 lanes with special treatments. Intersection improvements at White Rock, Folsom Blvd., Coloma Rd., Zinfandel Dr., Gold Express, and Gold Country.	Planned	Sunrise Blvd., White Rock Rd. to American River	2035 SACOG MTP
6	On existing 6-lane White Rock Rd., from Sunrise Blvd. to Luyung Dr.: construct improvements. From Luyung Dr. to Grant Line Rd.: widen and reconstruct from 2 to 4 lanes.	Programmed	On White Rock Rd.: Sunrise Blvd. to Luyung Dr.; Luyung Dr. to Grant Line Rd.	2035 SACOG MTP/MTIP
6	Grant Line Expressway Phase I: Widen four lanes and complete remaining sections of four lane Expressway. Intersection improvements at Jaeger Road, Keifer Blvd, International Drive and Jackson Highway.	Planned	Grant Line Rd., Jackson Hwy. to White Rock Rd.	2035 SACOG MTP
6-7	Easton Valley Pkwy.: Construct New Road: 4 Lanes	Programmed	Hazel Ave. to Prairie City Rd.	2035 SACOG MTP
7	Widen from 2 to 4 lanes	Planned	Prairie City Rd., US 50 to White Rock Rd.	2035 SACOG MTP
7	Widen from 2 to 4 lanes	Planned	White Rock Rd., Prairie City Rd to El Dorado County Line	2035 SACOG MTP

TABLE 19: OFF-HIGHWAY PARALLEL AND CONNECTING ROADS PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
7	Widen to 6 lanes	Planned	Iron Point Rd., Black Diamond Dr. to Prairie City Rd.; Outcropping Way to Broadstone Pkwy.	2035 SACOG MTP
7	Widen from 2 to 6 lanes	Planned	Scott Rd., US 50 to White Rock Rd.	2035 SACOG MTP
8	Widen from 2 to 4 lanes, divided	Planned	White Rock Rd., Sacramento County Line to Manchester Dr.	2035 SACOG MTP
8	Construct new 2 lane arterial road to extend Saratoga Way from its current terminus at Finders Way in El Dorado Hills to the Sacramento County Line / Iron Point Rd.	Planned	Saratoga Way, Iron Point Rd/Sacramento County Line to Finders Way	2013 El Dorado County CIP
8/9	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.	Planned	On Green Valley Rd. from County line to Francisco Dr.	2035 SACOG MTP
9	Widen to 6 lanes, divided. Construct interchange.	Planned	White Rock Rd., Latrobe Rd. to Silva Valley Pkwy.	2035 SACOG MTP
9	Widen from 2 lanes undivided to 4 lanes divided, with interchange; includes curb, gutter, sidewalk and Class II bike lanes	Planned	White Rock Rd., Monte Verde Dr. to Silva Valley Pkwy.	2035 SACOG MTP
9	Widen to 4 lanes	Planned	Green Valley Rd., Francisco Dr. to Deer Valley Rd.	2035 SACOG MTP
10/11	Widen to 5-lanes: 2 NB through lanes (with right and left turn pockets) and 3 SB through lanes (with dual right turn lanes at Robin Ln.). Project includes median and signal modification at Coach Ln. intersection, realignment of Robin Ln. intersection for future extension to Rodeo Dr. and construction of a new traffic signal.	Planned	Cameron Park Dr., Cameron Park Dr. to Coach Ln.	2035 SACOG MTP
12	Intersection improvements	Planned	Green Valley Rd and Deer Valley Intersection	2035 SACOG MTP

TABLE 19: OFF-HIGHWAY PARALLEL AND CONNECTING ROADS PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
12	Replace the existing 2 lane functionally obsolete bridge with a new 2 lane bridge	Programmed	Green Valley Rd. and Indian Creek	2035 SACOG MTP/MTIP
12	Widen Green Valley Rd. to two 12-ft lanes with paved shoulders. Project includes adding six left-turn pockets.	Planned	Deer Valley Rd to Lotus Rd	2035 SACOG MTP
13	Widen to 4 lanes of traffic, a dual left turn lane, sidewalks, and bike lanes on both sides.	Planned	Placerville Dr. from Fair Ln. to Ray Lawyer Dr.	2035 SACOG MTP
13	Widen to 4 lanes of traffic, a dual left turn lane, sidewalks, and bike lanes on both sides.	Planned	Placerville Dr. from Ray Lawyer Dr. to Cold Springs Rd.	2035 SACOG MTP
13	Widen bridge to 5 lanes, 2 through lanes in each direction and a median turn lane. Widening will include bike lanes and sidewalks.	Programmed	Bridge over Hangtown Creek Bridge, 0.3 mi west of Cold Springs Rd.	2035 SACOG MTP/MTIP
13	Widen to 4 lanes of traffic, a dual left turn lane, sidewalks, and bike lanes on both sides.	Planned	Placerville Dr. from Cold Springs Rd. to US 50	2035 SACOG MTP
13	Replace existing structurally deficient 2 lane bridge with new 2 lane bridge over Weber Creek, widen and realign Green Valley Rd. at bridge approaches, and drainage improvements.	Programmed	Green Valley Rd. and Weber Creek	2035 SACOG MTP/MTIP
15	Construct 700-foot of new 2-lane road. Includes sidewalks to City collector street standards between Broadway and Main St. New road will extend Main St. down Spanish Ravine Road.	Planned	Main St., Broadway, and Spanish Ravine Rd.	2035 SACOG MTP
15	Construct roundabout	Planned	Main St., Cedar Ravine Rd., and Clay St.	2035 SACOG MTP
15	Install traffic signals	Planned	Intersection with Broadway. and Blairs Ln.	2035 SACOG MTP

TABLE 20: OFF-HIGHWAY TRANSIT PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
1 - 2	9 mile urban streetcar network connecting the Intermodal Terminal in downtown Sacramento to West Sacramento	Programmed	West Sacramento and downtown Sacramento	2035 SACOG MTP/MTIP
2	Light rail station improvements: Add 2 shelters, surveillance camera, pedestrian signage, 2 visible message signs	Programmed	29th St. Light Rail Station	2035 SACOG MTP/MTIP
2	North-south alignment, relocating bus berths, providing enhanced passenger connections, relocating passenger vehicle and bicycle parking.	Programmed	Sacramento Valley Station	2035 SACOG MTP/MTIP
2	Complete makeover and rehab. of the depot to make it fully usable. Accommodation of high speed trains, commuter rail, light rail, streetcars, transit bus lines, intercity buses.	Planned	Sacramento Valley Station	2035 SACOG MTP
2 - 7	Enhancement of bus stops and light rail stations	Programmed	Various bus stops and light rail stations	2035 SACOG MTP/MTIP
3	Streetscape project with pedestrian and bicycle improvements, a raised landscaped median, planters, improvements to signal operations, frontage landscaping, and connections to transit facilities.	Programmed	On Folsom Blvd, from Power Inn Rd to Watt Ave	2035 SACOG MTP/MTIP
3 - 4	Modify freeway interchange. Construct multi-modal improvements with a bicycle and pedestrian path.	Programmed	US 50/Watt Ave Interchange	2035 SACOG MTP/MTIP
4	Streetscape Project: On Folsom Blvd. Includes landscape and safety improvements for bicycle and pedestrian access to transit. Phase IV.	Planned	Bradshaw Rd to Sunrise Blvd	2035 SACOG MTP
4	Rail Crossing Projects: Plan and construct a rail grade separation for RT's Gold Line	Planned	Bradshaw Rd, Mather Field Rd, Routier Rd, and Zinfandel Dr.	2035 SACOG MTP
4 - 5	Phase 1 of Loop Streetcar (7.5 miles)	Planned	Rancho Cordova Town Center	2035 SACOG MTP
7 - 8	Construct a 250-space park-and-ride facility near Empire Ranch Interchange	Planned	South of US 50 near Empire Ranch Interchange	2035 SACOG MTP
7 - 8	Construct a regional fueling station for transit operators	Planned	Sacramento/El Dorado County Line	2035 SACOG MTP
13	Construct 150 space park and ride lot on south side of US 50 between proposed Ray Lawyer Dr eastbound off-ramp and realigned Forni Road	Programmed $1.1 million CMAQ on March 6, 2014	South of US 50 near Ray Lawyer Dr	SACOG MTIP

TABLE 21: OFF-HIGHWAY BICYCLE AND PEDESTRIAN PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
4	Bicycle facility improvements at light rail station	Planned	Watt Ave Light Rail Station	SACOG MTP/MTIP
4	Add sidewalks and enhance pedestrian and disabled access.	Programmed	West side of Mather Field Road, between Folsom Blvd and Rockingham Dr. Known as the Mather Railroad Spur Rails to Trails Project	SACOG MTP/MTIP
4	Class I bike path along the south bank of the American River	Conceptual	Watt Ave. to Gristmill Park	Conceptual Project
4	Overcrossing of US 50 at Railroad ROW	Conceptual	Between Routier Rd. and Mather Field Rd.	Conceptual Project
4 - 6	Develop plan for citywide bicycle system	Planned	City of Rancho Cordova	SACOG MTP/MTIP
4 - 6	Class I bike path	Planned	From Mosher Rd. to White Rock Rd.	2013 RBPTMP
5 - 6	Provide a bicycle/pedestrian connection	Planned	Douglas Rd to Folsom South Canal Bike Trail	SACOG MTP/MTIP
6 - 7	Bicycle overcrossing of US 50	Planned	Folsom Blvd.	SACOG 2013 Regional Bicycle, Pedestrian, and Trails Master Plan (2013 RBPTMP)
7	Construct Class I bicycle path - Humbug-Willow Creek Trail/Lake Natoma Bikeway	Planned	Blue Ravine Rd to Lake Natoma Trail	SACOG MTP/MTIP
7	Overcrossing of Folsom Blvd at Humbug-Willow Creek Pkwy	Planned	Folsom Blvd at Humbug-Willow Creek Pkwy	SACOG MTP/MTIP
7	Construction of a Class I bike path parallel to US 50	Planned	Empire Ranch Rd to Alder Creek	SACOG MTP/MTIP
7 - 8	Construct Class II bike lanes as part of Saratoga Way extension	Planned	On Saratoga Way, from Finders Way to County Line	SACOG MTP
8	Bicycle/pedestrian overcrossing of US 50	Planned	El Dorado Hills Blvd.	SACOG MTP
8/9	White Rock Rd. Class II bike lanes	Planned	El Dorado County Line to Silva Valley Pkwy	2013 RBPTMP

TABLE 21: OFF-HIGHWAY BICYCLE AND PEDESTRIAN PROJECTS				
Seg. #	**Description**	**Planned or Programmed**	**Location, County**	**Source**
9	Silva Valley Pkwy. Class II bike lanes	Planned	White Rock Rd to Harvard Wy.	2013 RBPTMP
9	Sliva Valley Pkwy. Class I bike path and Class II bike lanes	Programmed CMAQ March 6, 2014	Class I bike path Harvard Way to Appian Way; Class II bike lanes Appian Way to Green Valley Road	SACOG MTIP
10	Class II bike lanes	Planned	On Country Club Dr., from Bass Lake Rd. to Cambridge Rd.	2013 RBPTMP
10	Class II bike lanes	Planned	On Country Club Dr., from Cameron Park Dr. to Cambridge Rd.	2013 RBPTMP
9	Design and construct a Class I bike path within the powerline easement operated by the Sacramento Municipal Utility District (SMUD)	Programmed	El Dorado Hills Blvd to Silva Valley Pkwy (Phase 1 from Silva Valley Parkway to New York Creek was completed and Phase II was programmed CMAQ 3/6/14	SACOG MTP/MTIP
13	Class I bike path	Planned	Missouri Flat Rd. to Mother Lode Dr.	2013 RBPTMP
12	Class II bike lanes	Planned	On Mother Lode Rd., Lindberg Ave. to Missouri Flat Rd.	2013 RBPTMP
12/13	Bicycle/pedestrian overcrossing of US 50	Planned	Missouri Flat Rd.	2010 Placerville Non-Motorized Transportation Plan
13	Widen Placerville Dr and construct sidewalks and Class II bike lanes on both sides	Planned	Cold Springs Rd to US 50	SACOG MTP/MTIP
13	Widen Placerville Dr and construct sidewalks and Class II bike lanes on both sides	Planned	Fair Ln to Ray Lawyer Dr	SACOG MTP/MTIP
13	Widen Placerville Dr and construct sidewalks and Class II bike lanes on both sides	Planned	Ray Lawyer Dr to Cold Springs Rd	SACOG MTP/MTIP
15	Design and construct a Class I bike path along the El Dorado Trail. Bike and pedestrian overcrossing.	Programmed	Clay St to Bedford Ave	SACOG MTP/MTIP
15	Class I bike path parallel to US 50	Planned	Halcon Rd. to Snows Rd. near Camino	2013 RBPTMP
15	Extend El Dorado Trail Class I bike path	Programmed CMAQ 3/6/14	Los Trampas Dr to Halcon Rd in Camino	2013 RBPTMP

APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS

Acronyms and Important Abbreviations

AADT - Annual Average Daily Traffic
ADT - Average Daily Traffic
BY - Base Year
CALTRANS - California Department of Transportation
CEQA – California Environmental Quality Act
CHP – California Highway Patrol
CSMP - Corridor System Management Plan
CSUS – California State University, Sacramento
DSMP - District System Management Plan
DU - Density Unit
EDCTC - El Dorado County Transportation Commission
EIP - Environmental Improvement Program
FHWA - Federal Highway Administration
HCM - Highway Capacity Manual
HOV – High Occupancy Vehicle
HY - Horizon Year
I-5 – Interstate 5
I-80 – Interstate 80
ICM – Integrated Corridor Management
ITS - Intelligent Transportation System
ITSP - Interregional Transportation System Plan
LOS - Level of Service
MAP-21 – Moving Ahead for Progress in the 21st Century Act
MPO - Metropolitan Planning Organization
MPR – Mobility Performance Report
MTIP - Metropolitan Transportation Improvement Program
MTP - Metropolitan Transportation Plan
PeMS – Performance Measurement System
PM - Post Mile
ROW – Right of Way
RTIP – Regional Transportation Improvement Program
RTP – Regional Transportation Plan
RTPA - Regional Transportation Planning Agencies
SACOG - Sacramento Area Council of Governments
SHBFP – State Highway Bicycle Facilities Plan
SHOPP - State Highway Operation and Protection Program
SHS - State Highway System
SR - State Route
STAA - Surface Transportation Assistance Act
TCR - Transportation Concept Report
TDM – Transportation Demand Management
TMPO - Tahoe Metropolitan Planning Organization
TOC – Traffic Operations Center
TOS – Traffic Operations Systems
TRPA - Tahoe Regional Planning Agency
TTD - Tahoe Transportation District

V/C – Volume-to-Capacity Ratio
VHD – Vehicle Hours of Delay
VMT - Vehicle Miles Traveled

Definitions

AADT – Annual Average Daily Traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Traffic Counting is generally performed by electronic counting instruments moved from locations throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes.

Base Year- The year that the most current data is available to the Districts.

Bikeway Class I (Bike Path) – Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.

Bikeway Class II (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.
Bikeway Class III (Bike Route) – Provides for shared use with pedestrians or motor vehicle traffic.

Capacity – The maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Capital Facility Concept – The 20-25 year vision of future development on the route to the capital facility. The capital facility can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility (Intercity Passenger rail, Mass Transit Guideway, etc.), grade separation, and new managed lanes.

Concept LOS – The minimum acceptable LOS over the next 20-25 years.

Conceptual Project – A conceptual improvement or action is a project that is needed to maintain mobility or serve roadway users, but is not currently included in a financially constrained plan and is not currently programmed. It could be included in a General Plan or in the unconstrained section of a long-term plan.

Corridor – A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as information purposes and not analyzed in the TCR.

Facility Concept – Describes the facility and strategies that may be needed within 20-25 years. This can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility, non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, transportation demand management and incident management.

Facility Type – The facility type describes the state highway facility type. The facility could be freeway, expressway, conventional, or one-way city street.

Freight Generator – Any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Horizon Year – The year that the future (20-25 years) data is based on.

ITS – Intelligent Transportation System improves transportation safety and mobility and enhances productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. Intelligent transportation systems encompass a broad range of wireless and wire line communications-based information and electronics technologies to collect information, process it, and take appropriate actions.

LOS – Level of Services is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:

LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.

LOS B is also indicative of free-flowing conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.

LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.

LOS D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.

LOS E reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.

LOS F a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Multimodal – The availability of transportation options using different modes within a system or corridor, such as automobile, subway, bus, rail, or air.

System Operations and Management Concept – Describes the system operations and management elements that may be needed within 20-25 years. This can include non-capacity increasing operational improvements (auxiliary Lanes, channelizations, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristics (e.g., High Occupancy Vehicle lane to High Occupancy Toll lane), TMS Field Elements, Transportation Demand Management, and Incident Management.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Planned Project – A planned improvement or action is a project in a financially constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure.

Post Mile – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a count to the next county line. The milepost values start over again at each county line. Milepost values usually increase from south to north or west to east depending upon the general direction the route follows within the state. The milepost at a given location will remain the same year after year. When a section of road is relocated, new milepost (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the remainder of the route within the county will remain unchanged.

Programmed Project – A programmed improvement or action is a project in a near-term programming document indentifying funding amounts by year, such as the State Transportation Improvement Program or the State Highways Operations and Protection Program.

Route Designation – A route's designation is adopted through legislation and identifies what system the route is associated with on the State Highway System. A designation denotes what design standards should apply during project development and design. Typical designations include but not limited to National Highway System (NHS), Interregional Route System (IRRS), and Scenic Highway System.

Rural – Fewer than 2,500 in population designates a rural area. Limits are based upon population density as determined by the U.S. Census Bureau.

Segment – A portion of a facility between two points.

TDM – Transportation Demand Management programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telework, and alternative work hours. Transportation Demand Management strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

TMS – Transportation Management System is the business processes and associated tools, field elements and communications systems that help maximize the productivity of the transportation system. TMS includes, but is not limited to, advanced operational hardware, software, communications systems and infrastructure, for integrated Advanced Transportation Management Systems and Information Systems, and for Electronic Toll Collection System.

Post-25 Year Concept – This dataset may be defined and re-titled at the District's discretion. In general, the Post-25 Year concept could provide the maximum reasonable and foreseeable roadway needed beyond a 20-25 year horizon. The post-25 year concept can be used to identify potential widening, realignments, future facilities, and rights-of-way required to complete the development of each corridor.

Urban Cluster – 2,500 to 49,999 in population designates an urban cluster. Limits are based upon population density as determined by the U.S. Census Bureau.

Urbanized Area – Over 50,000 in population designates an urbanized area. Limits are based upon population density as determined by the U.S. Census Bureau.

VMT – Is the total number of miles traveled by motor vehicles on a road or highway segments.

APPENDIX B: RESOURCES

California Road System (CRS) Maps, http://www.dot.ca.gov/hq/tsip/hseb/crs_maps/
Camino CDP.
http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1
El Dorado Transit. http://www.eldoradotransit.com/
Interregional Transportation Strategic Plan (ITSP). http://www.dot.ca.gov/hq/transprog/ocip/te/itsp.pdf
Pollock Pines CDP, California. http://quickfacts.census.gov/qfd/states/06/0658030.html
South Lake Tahoe (city), California. http://quickfacts.census.gov/qfd/states/06/0673108.html
South Lake Tahoe Zoning Map. http://www.cityofslt.us/DocumentCenter/Home/View/60
Tahoe Transportation District. http://www.tahoetransportation.org/southtahoe
Truck Networks on California State Highways: District 3.
http://www.dot.ca.gov/hq/traffops/trucks/truckmap/truckmap-d03.pdf
Zoning Maps. http://www.edcgov.us/Government/Planning/Zoning_Maps.aspx
http://quickfacts.census.gov/qfd/states/06/0659444.html
http://www.csus.edu/oir/Data%20Center/University%20Fact%20Book/University%20Fact%20Book.html

APPENDIX C: DATA RESOURCES

Base Year ADT: 2011 Caltrans Traffic Volumes on California State Highways Book
LOS: Used HCS in conjunction with data from this table
Base Year VMT: 2011 Caltrans Traffic Volumes on California State Highways Book (Link Based)
Horizon Year Volumes and VMT based on SACSIM model growth and SHI growth factors
Truck Data: 2011 Annual Average Daily Traffic on California State Highways Book
Base Year Peak Hour Volumes and Directional Split: 2011 Caltrans Traffic Volumes on California State Highways Book
Peak Hour VMT: 2011 Caltrans Traffic Volumes on California State Highways Book (Link Based)
Horizon Year Directional Splits based on SACSIM model projections in conjunction with 2011 Caltrans Traffic Volumes on California State Highways Book
V/C: HCS used in conjunction with data from this table

APPENDIX D: MAPS OF BICYCLE IMPROVEMENTS

The following reproduce the maps of bicycle improvements as given in the District 3 State Highway Bicycle Facility Plan.

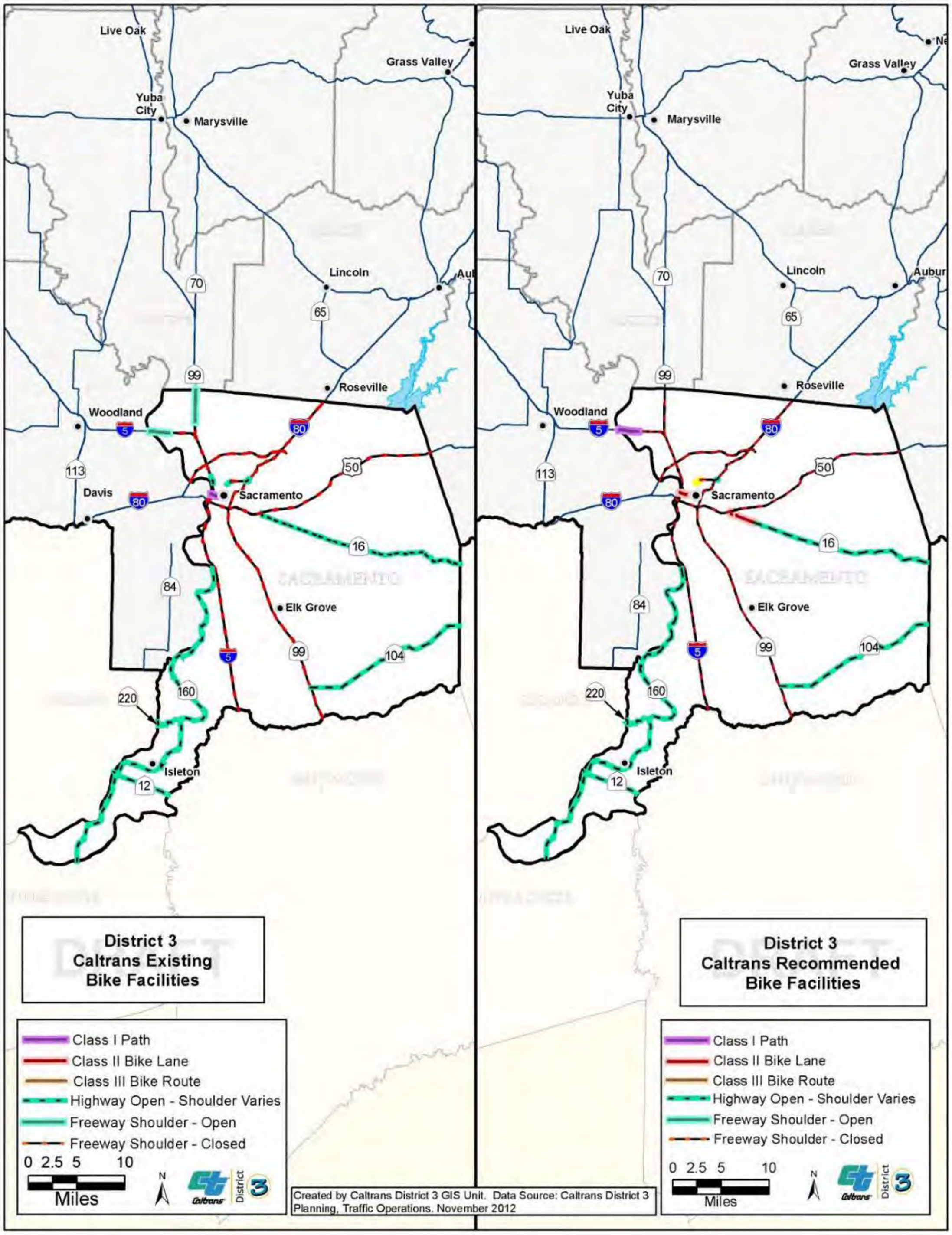


Figure 1: Sacramento County Facility Improvements

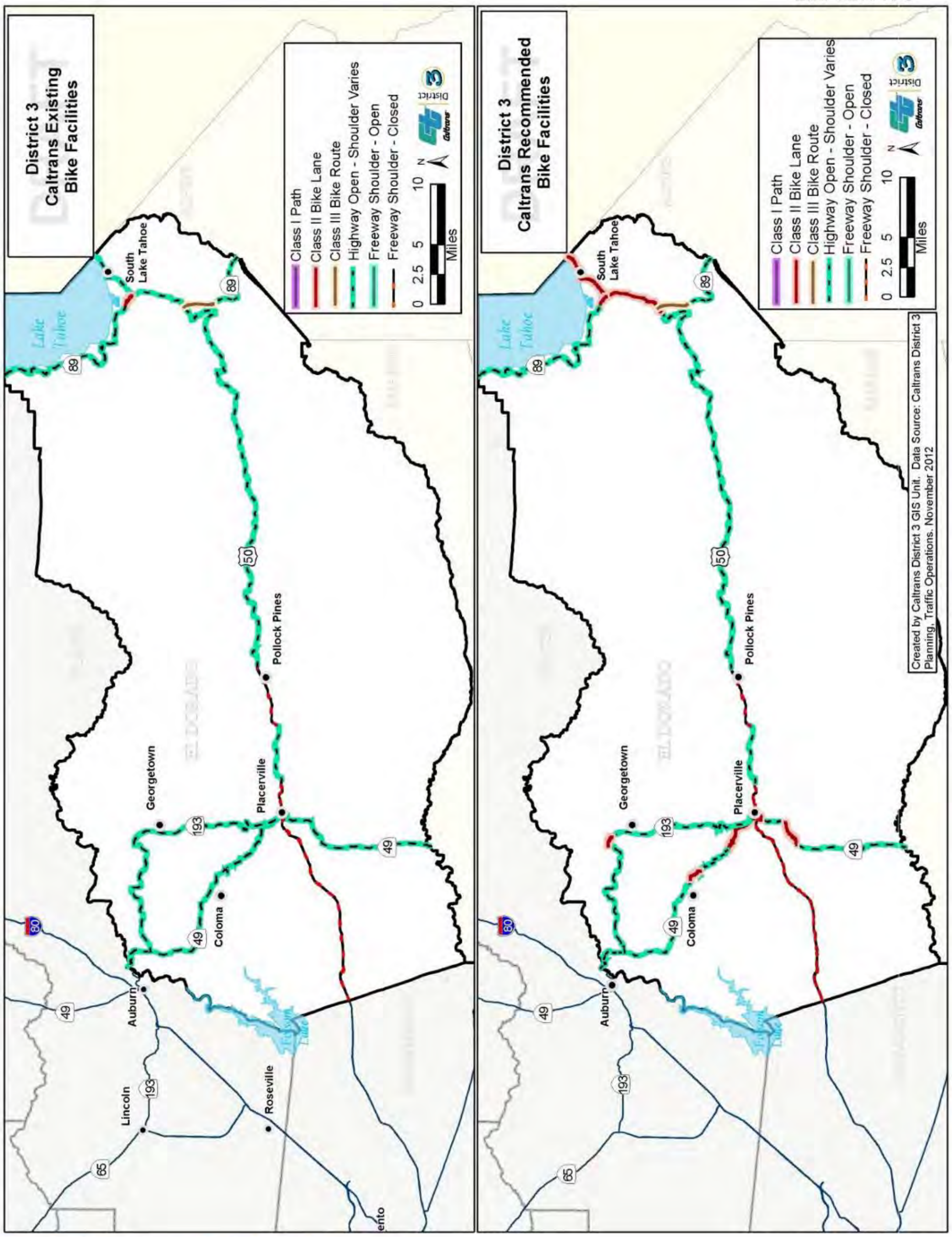


Figure 2: El Dorado County Bicycle Facility Improvements

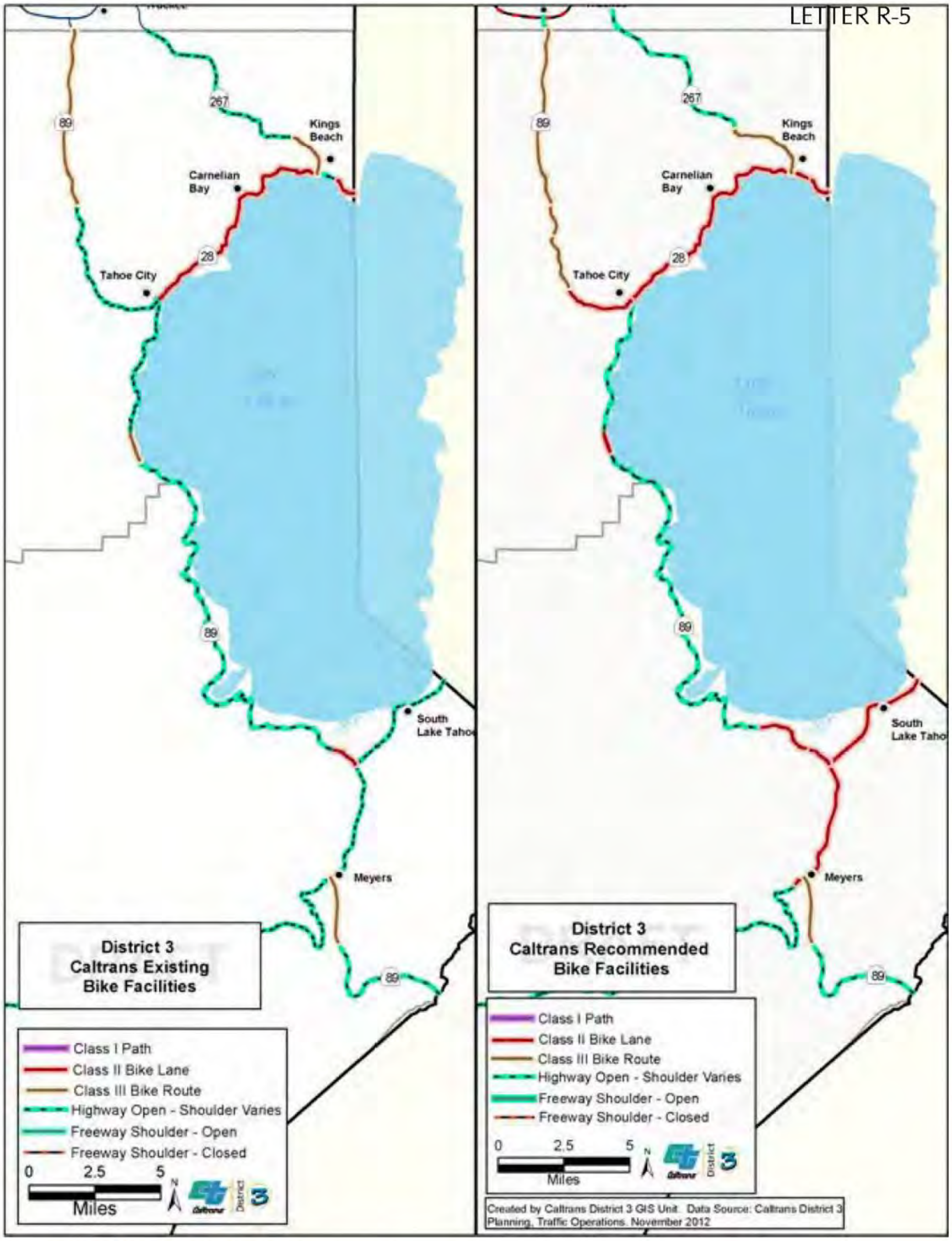


Figure 3: Lake Tahoe Area Bicycle Facility Improvements

COMMUNITY DEVELOPMENT AGENCY

LONG RANGE PLANNING

2850 Fairlane Court, Placerville, CA 95667
Phone (530) 621-4650, Fax (530) 642-0508

**NOTICE OF AVAILABILITY
OF A DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE CENTRAL EL DORADO HILLS SPECIFIC PLAN
(State Clearinghouse No. 2013022044)**

Date: **November 20, 2015**
To: **Interested Agencies and Individuals**
From: **Community Development Agency**

The Community Development Agency-Long Range Planning Division, as the Lead Agency, has prepared a Draft Environmental Impact Report (DEIR) for the proposed specific plan identified as Central El Dorado Hills Specific Plan (CEDHSP). The DEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Sections 2100 et seq. and the CEQA Guidelines (14 California Code of Regulations [CCR] Sections 1500 et seq.).

DOCUMENT AVAILABILITY AND REVIEW PERIOD: This DEIR is available for public and agency review for a 60-day period **beginning Friday, November 20, 2015 and ending Tuesday, January 19, 2016**. The purpose of this comment period is to consider the content of the DEIR and the potential environmental impacts that may result from project implementation, not the positive or negative attributes of the Project itself. Comments pertaining to the impact analysis, criteria and thresholds, mitigation measures, and alternatives presented in the DEIR will be considered by the County during preparation of the Final EIR (FEIR). The FEIR will include copies of comments and the County's responses to comments pertaining to the environmental analysis provided in the DEIR.

The DEIR and supporting information may be reviewed and/or obtained at the following locations:

Community Development Agency **2850 Fairlane Court, Building C** **Placerville, CA 95667**	**El Dorado County Library** **345 Fair Lane** **Placerville, California 95667**	**El Dorado County Library** **7455 Silva Valley Pkwy.** **El Dorado Hills, CA 95762**
Community Development Agency Long Range Planning Website http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx		

All written public and agency comments on the DEIR must be received by 5:00 PM on **Tuesday, January 19, 2016** and should be directed to: County of El Dorado Community Development Agency Long Range Planning Division, **Attention: Rommel (Mel) Pabalinas, 2850 Fairlane Court, Placerville, CA 95667**. Please include the name of the contact person of your agency, if applicable. Comments may be submitted via email to **cedhsp@edcgov.us**. Comments submitted via email must either be included in the body text of the message or as an attachment in Microsoft® Word or Adobe® PDF format. Comments may also be submitted via fax to (530) 642-0508.

Although not required by CEQA, the County will be hosting an informational open house about the Project and the DEIR. There will be no formal presentation or discussion, but County staff and its consultants will be available to provide information about the Project, the environmental review process, and to answer questions of a general nature. Comment cards will be available for those wishing to submit written comments on the DEIR during the open house.

All persons interested are invited to attend the open house, which will be held at the following location at the date and time specified. It is recommended that the County's website be consulted to confirm the open house date and time, or by contacting Mr. Rommel (Mel) Pabalinas.

**Wednesday, December 2, 2015
6:00PM – 8:00PM
Oak Meadow Elementary School - Gymnasium
7701 Silva Valley Pkwy El Dorado Hills, CA 95762**

PUBLIC MEETINGS AND HEARINGS: For more information on the meeting schedule or to sign-up for email notification on this project, please visit
http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx

PROJECT INFORMATION

PROJECT TITLE/ APPLICATIONS:	Central El Dorado Hills Specific Plan Project File Nos. A14-0003, SP12-0002, SP86-0002-R-2, Z14-0005, PD14-0004, TM14-1516, DA14-0003
PROJECT APPLICANT:	Serrano Associates, LLC 4525 Serrano Pkwy, El Dorado Hills, CA 95762
PROJECT DESCRIPTION:	The proposed project site covers 341 acres north of U.S. Highway 50, south of Green Valley Road and Folsom Lake, along El Dorado Hills Boulevard approximately 0.72 miles east of the Sacramento–El Dorado County line, 1.5 miles west of Bass Lake Road and north of U.S. Highway 50 in the El Dorado Hills Area (Assessor's Parcel Nos. 121-160-05, 121-120-24 (portion); 121-040-20, -29, -31; 120-050-01, -05).
PROJECT DESCRIPTION:	The proposed project would provide for development of up to 1,000 dwelling units, 11 acres of civic-limited commercial use (50,000 square feet of commercial use), 15 acres of public village park, 1-acre neighborhood park and 168 acres of natural open space in the center of the El Dorado Hills community. The proposed project consists of two planning areas: Serrano Westside and Pedregal. The Serrano Westside planning area would complement the existing Serrano development with gated residential neighborhoods and would include civic or commercial development and a public village park. The Pedregal planning area would have residential neighborhoods, which may or may not be gated. The CEHSP also includes infrastructure and roadway improvements. (Please refer to the DEIR document for more detailed project description and associated figures.) To implement the proposed development, the applicant is requesting amendments to the El Dorado County General Plan Land Use Diagram and the existing El Dorado Hills Specific Plan Land Use Map and rezoning, approval of a large-lot tentative map, in addition to adoption of the CEDHSP.
ENVIRONMENTAL IMPACTS:	This DEIR discusses the potential significant environmental impacts that may result from the Project, including but not limited to: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Hazardous Materials, Hydrology and Water Quality, Noise, Public Utilities, and Transportation.

COMMUNITY DEVELOPMENT AGENCY – LONG RANGE PLANNING DIVISION
DAVID DEFANTI, Assistant Director
Date: November 20, 2015

Response to R-5, El Dorado Hills Community Services District, Kevin Loewen, 11/20/2015

R-5-1: The comment is a cover letter identifying the commenter's submittal and a subsequent email that attachments referenced in the original submittal had not been provided but were being submitted separately. The attachments consisted of the Notice of Availability for the CEDHSP Draft EIR, the entire US 50 Transportation Concept Report and Corridor System Management Plan dated 2014 prepared by Caltrans, and an electronic copy of the EDHCSD's comments.

R-5-2: This comment is an introductory comment expressing a general opinion that the Draft EIR should be revised and recirculated in order to address certain issues raised by the EDHCSD. The Draft EIR was revised and recirculated in April 2016 to apply new methodology for analysis of GHG impacts resulting from recent case law. Other issues raised by the commenter, which are addressed in the following responses, did not result in new or more severe significant impacts that would result in the need to revise and recirculate any other sections of the Draft EIR.

R-5-3: The comment expresses general concerns that the project will result in environmental impacts that may affect quality of life of residents in the EDHCSD's service area, and that further analysis and discussion of certain issues in the Draft EIR would provide for better-informed decisions and public participation. Quality of life is a social concern and not an effect subject to CEQA analysis (*Preserve Poway v. City of Poway* (2016) 245 Cal.App.4th 560). The concerns are addressed in the following responses.

R-5-4: The comment discusses the November 2015 CSD Advisory Measure E and the ballot results of this advisory measure. It does not raise any issue regarding the adequacy of the environmental analysis. See Master Response 2 (CSD Advisory Measure E). No further response is necessary.

R-5-5: The commenter states that the No-Project Alternative is fatally flawed because it includes development. The No-Project Alternative examines the potential impacts that would occur if the project were not approved. The Draft EIR, Section 4.3.1 (page 4-9) explains the assumptions for the No Project Alternative and the rationale for those assumptions. As provided in CEQA Guidelines Section 15130, the examination considers the effect of reasonably foreseeable development that would occur under existing planning and zoning designations. As stated in footnote 1 on page 4-9:

> As provided by State CEQA Guidelines Section 15126(e)(3)(A), a discussion of the No-Project Alternative will usually proceed along one of two lines: a "plan-to-plan" comparison when the project is the revision of an existing land use plan, such as the proposed project; or—if the project is other than a land use plan (e.g., a development project on identifiable property)—a comparison of the environmental effects of the property remaining in its existing state against the environmental effects if the proposed project is approved. The plan-to-plan comparison is the appropriate analysis for this EIR, and a No-Project Alternative under which the project site remains in its existing state does not require evaluation in this Draft EIR.

As described on page 4-9, the No-Project Alternative assumes the land uses within the project area would remain as currently entitled (Serrano Village D1, Lots C and D) and as current General Plan land use designations allow (Pedregal and the former golf course). The analysis addresses the entire area within the proposed CEDHSP, and not just lands that are within the El Dorado Hills Specific Plan, as the commenter appears to be stating.

Therefore, the analysis of the No-Project Alternative in the EIR adequately complies with CEQA requirements for the no project alternative analysis and no additional analysis is required.

R-5-6: An EIR is required to consider "a range of reasonable alternatives to the project, or to the location of the project" (CEQA Guidelines Section 15126.6(a)). The commenter has misinterpreted the CEQA Guidelines as it relates to evaluation of alternate "development sites" (i.e., offsite alternative), which is the focus of this comment.

Among the alternatives the lead agency may wish to consider is an alternative location for the project, and CEQA Guidelines Section 15126.6(f)(2) provides guidance regarding the need for such an evaluation. As stated in the guidelines, *the key question and first step in the analysis is whether any of the significant effects on the project would be avoided or substantially lessened by putting the project in another location* [emphasis added]. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. Although consistency with project objectives is a factor in determining which alternatives, generally, may be evaluated, the extent to which an alternative location meets project objectives is not the criterion for determining what, if any, offsite locations should be evaluated in the alternatives analysis.

The Draft EIR (page 4-3) identifies the significant and unavoidable impacts of the CEDHSP, which are: construction and operational criteria air pollutant emissions, cumulative cultural resources impacts, and construction noise. The RDEIR identifies operational GHG emissions as significant and unavoidable. The CEDHSP EIR also conservatively considered noise from cargo aircraft flying into Mather Airport as a significant and unavoidable impact. Development of the CEDHSP project features at the Marble Valley property would not avoid or substantially lessen any of the construction and operational air quality or construction noise impacts. The Marble Valley property has archaeological resources and historic properties, so any development would still contribute to cumulative cultural resources impacts, and this impact would not be avoided. The Marble Valley site is not in the direct arrival path for Mather, but this impact reduction alone would not justify consideration of the Marble Valley property as a viable alternative location, given the scope and magnitude of the other impacts that have regional implications. Consequently, there is not a compelling reason that the Marble Valley property should have been evaluated as a potential offsite alternative. The County can use its power of eminent domain only for the acquisition of land that is for a public purpose, not for private development project purposes. Therefore, it would be inappropriate to consider this as an alternative, as suggested by the commenter.

R-5-7: The commenter opines that the analysis of aesthetic impacts of alternatives is inadequate because the lighting impact of the No-Project Alternative is characterized as similar to the proposed project. The conclusion regarding lighting is based on the fact that the No-Project Alternative would not be subject to CEDHSP Policy 6.13 (which requires all parking lighting fixtures to be shielded), Policy 8.20 (which provides that 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), and design standard B.2.10 (which provides that street lighting will be limited). These would act in concert to limit the light and glare produced by the project.

R-5-8: The commenter suggests that project renderings of the alternatives are necessary for analysis. Section 3.1, *Aesthetics*, of the Draft EIR includes photosimulations that represent the project in the context of the existing environment. The photosimulations portray before and after representations of the project site. Representative trees are shown in the photosimulations because similar landscaping is found in the surrounding existing residential tracts. The actual design of the buildings that would be constructed in the project is unknown, so the "full project rendering" requested by the commenter would not be feasible, and making assumptions concerning project design would require a high level of speculation. Likewise, to create accurate nighttime renderings, detailed plans with light standard types/heights, light types, lumens of those lights, etc. are required. Preparing a nighttime rendering at the specific plan level, with the level of detail currently available, would be highly speculative. An EIR is not required to speculate (CEQA Guidelines Section 15145), and the level of detail provided in the CEDHSP Draft EIR analysis corresponds with the level of detail known about the project (CEQA Guidelines Section 15146).

R-5-9: The commenter asks for detail regarding actual tree counts and trunk diameters.

As presented on page 3.3-32 of the Draft EIR, the threshold of significance for Impact BIO-1 is:

- Conflict with any local policies or ordinances protecting biological resources, such as the County General Plan oak canopy retention standards.

When the Draft EIR was written, the County policy regarding oak woodland canopy was County General Plan policy (Policy) 7.4.4.4. Quantification of the number of trees affected by the proposed project is not required to determine compliance with Policy 7.4.4.4, which covers acreages and percentages of oak woodlands canopy. The ECORP Bio Resources/Oak Mitigation/BRS and Habitat Mitigation Plan/El Dorado Hills BRS and Oak IHMP, which are included in Appendix F in the Draft EIR, includes an in-depth discussion of Policy 7.4.4.4. Impact BIO-1 on page 3.3-36 of the Draft EIR discusses required retention of oak canopy and replacement acreages necessary to comply with Policy 7.4.4.4. This analysis is adequate and was accurate at the time of the circulation of the Draft EIR in November 2015.

Since that time, the County has adopted a revised Oak Resources Mitigation Plan, which addresses impacts to acreages of oak woodlands and impacts to individual and heritage oak trees. ECORP prepared a new analysis in 2017, calculating acreages of oak woodland and conducting an inventory of trees (*Oak Resources Technical Report, Oak Woodlands and Oak Tree Individuals, Central El Dorado Hills Specific Plan*). The 2017 study is appended to this document (Appendix F) and the analysis under Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat, has been revised to reflect the revised thresholds and the results of this study (see Chapter 3, *Changes and Errata to the Draft EIR and Partial Recirculated Draft EIR*). The impacts to individual oaks are addressed in that discussion.

As stated in the Draft EIR, in the discussion of Impact BIO-1 on page 3.3-36:

> The County General Plan policy would require retention of 80.15 acres of oak woodland canopy and replacement for the loss of up to 14.15 acres of oak woodland canopy at a 1:1 ratio. Implementation of the IHMP developed for the project would retain 80.15 acres of the existing oak woodland canopy and replace 14.15 acres of oak woodland canopy. In the development areas, maintenance and replacement of dead trees would be enforced through the project's Master Owners' Association, El Dorado Hills Community Services District (CSD) Design Review Committee, or the County. Therefore, the project would comply with the County General Plan and permanent impacts would be reduced to a less-than-significant level.

The Draft EIR includes data about oak woodland impacts for the alternatives using the same approach as for the evaluation of the proposed project. Table 4-1 on page 4-8 in Section 4.0, Alternatives Analysis, identifies the acreage of oak woodland impacts for each alternative. The requirements to comply with General Plan Policy 7.4.4.4 related to oak woodlands would also apply to the alternatives, and CEDHSP Policy 5.15 incorporates these requirements.

R-5-10: The comment addresses perceived inadequacies in the proposed mitigation for impacts to oak woodlands. The Draft EIR describes the loss of oak woodland canopy and the mitigation for that loss in Impact BIO-1, beginning on page 3.3-34. Revisions to the acreage calculations and addition of impacts to individual oaks are provided in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*. As discussed there, the project would fully comply with "Option A," the County oak woodland preservation and replacement policy, or with the ORMP as required, as well as four mitigation measures. A Biological Resources Study has been completed for the project site and an Important Habitat Mitigation Program has been prepared (see Draft EIR Appendix F). The Important Habitat Mitigation Program describes in detail how the project would comply with Option A, and includes a proposed revegetation and restoration plan with specifications for planting/re-planting, maintenance, irrigation, and monitoring of survival. Replacement trees would be planted on the project site, at locations identified in the Important Habitat Mitigation Program. Compliance with Option A and the Program would be the responsibility of the developer. 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 would 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.

Since the circulation of the Draft EIR, the County has adopted a revised Oak Resources Mitigation Plan, which addresses impacts to acreages of oak woodlands and impacts to individual and heritage oak trees. ECORP prepared a new analysis, calculating acreages of oak woodland and conducting an inventory of trees. This study is appended to this document (Appendix F) and the analysis under Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat, has been revised to reflect the revised thresholds and the results of this study. As indicated in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document, a 1:1 mitigation ratio is required for oak woodland impacts and impacts on individual and heritage oaks are also considered. The approach implemented for mitigation would be determined by the plan in place at the time that development applications are submitted. Should the CEDHSP be amended in the future, that amendment would be subject to additional environmental analysis pursuant to CEQA. New or substantially more severe impacts to oak woodlands would require preparation of a subsequent EIR. In addition, the amendment would be subject to applicable County oak woodland regulations.

R-5-11: The commenter indicates that mitigation for riparian woodland should occur within District boundaries. The mitigation measures and the oak tree mitigation ordinance would be applied across the project area, and will be in compliance with local, state, and federal requirements.

R-5-12: The commenter asks how impacts to wetlands can be less than significant with mitigation and still result in direct and permanent impacts. The Draft EIR identifies the potential impacts of the project, without mitigation, then describes the severity of impact that would occur with mitigation applied. The reference to "direct and permanent impacts" is to the former. The reference to "less than significant with mitigation" is to the latter. The specific mitigation required for loss of waters of the United States would be established by USACE, which has sole authority over mitigation, as discussed in Impact BIO-3. Mitigation Measures BIO-3a and BIO-3b, described under Impact BIO-3 (beginning on page 3.3-41), describe performance standards for that mitigation.

The CSD has no authority to dictate how mitigation credit would be assigned. There is no universal prohibition on “dual credit.” For example, approved mitigation banks throughout the state commonly provide credits for multiple species on the same site when the site’s habitat would support such species.

R-5-13: The commenter suggests a “Net Zero Water and Energy Alternative” that would not add to the area’s demand for water and energy. Alternatives are a means of considering methods by which a significant impact of the project can be mitigated (see CEQA Guidelines Section 15126.6(b)). The WSA and supporting documents prepared for this project (see EIR Appendix K) show that it can be served by EID without resulting in shortage or exceedance of projected future water supplies. EID is the supplier of water to the project and is responsible for long-range planning of water supplies. Under Water Code Section 10910, EID is responsible for providing the WSA and assuring its accuracy.

Further, as discussed in Impact PSU-10 in Section 3.12, *Public Services and Utilities*, the project would not have a significant effect on energy. In addition to the energy conservation features described in the Sustainability section of the proposed CEDHSP, Mitigation Measure GHG-1 (see page 3-23 of the RDEIR) provides that all Village Residential-Low and Village Residential Medium-Low developments would be required to install rooftop solar power to meet minimum baseload electricity needs (expected average system size is 4 kilowatts [kW]) further reducing the project’s impact. Therefore, because neither water supply nor energy rises to the level of a significant impact, there is no reason to examine the suggested alternative.

R-5-14: This comment addresses water supply. See Response to Comment **R-5-13** and Master Response 1 (Water Supply). The mandatory orders to conserve are not unique to El Dorado Hills. They are part of a statewide drought response. Droughts are not uncommon in California, and water agencies such as EID have standard drought response programs in their Urban Water Management Plans. Temporary conservation efforts are not an indication of the long-term ability to serve the project with water.

R-5-15: This comment relates to the analysis of NOA for the alternatives. NOA risk is analyzed in Section 3.2, *Air Quality*. See Master Response 3 (Naturally Occurring Asbestos). The commenter has misinterpreted subsection 5.3.1 in the Specific Plan (pages 5-3 and 5-4). The first part of the “Steep Hillsides” subsection clearly states large areas of steep hillsides are included in the Plan Area’s open space land use designation and restricted from development, in accordance with County Policy 7.1.2.1. The analysis of potential NOA impacts is based on the proposed land use designation plan shown in Figure 2-4b in the Draft EIR, which shows the locations of open space where development would not occur. The second part of subsection 5.3.1 provides flexibility in the project *if* [emphasis added] the County modifies its policies with respect to disturbance of slopes 30 percent or greater. Should the County modify the policy in a manner that could allow development, as provided for in the Specific Plan, CEQA review would be required and the CEDHSP would need to be amended. Any proposal and its associated CEQA document would be made available to the public for review and comment prior to the County’s consideration of any approvals, among other requirements.

R-5-16: This comment addresses the consistency of the project with the General Plan. The proposed entitlements for the project are listed in Section 2.3.1 on page 2-7 in the Draft EIR. These include amendments to the General Plan and El Dorado Hills Specific Plan land use designations for the proposed land uses. Neither the County nor the applicant are proposing revisions to General Plan

Policy 7.1.2.1 (nor any other General Plan policy) to accommodate the project, as the comment implies.

The Draft EIR complies with requirements for evaluating consistency with applicable plans. For example, Appendix B in the Draft EIR provides a comprehensive evaluation of consistency with General Plan policies, as required by CEQA Guidelines Section 15126. The analysis in Appendix B supplements the analysis of consistency with applicable land use plans provided in Impact LU-2 on page 3.9-9 in the Draft EIR. The Draft EIR also includes an analysis of project consistency with the 2013 Ozone Plan (Impact AQ-1 on page 3.2-20) as well as the AB 32 Scoping Plan regarding GHG emissions in the RDEIR (Impact GHG-2 on page 3-24).

As stated on page 3.9-9 in Section 3.9, *Land Use Planning and Agricultural Resources*, the General Plan (page 7) directs that in implementing the General Plan, it must be applied comprehensively. No single policy can stand alone in the review and evaluation of a development project. It is the task of the Board of Supervisors, consistent with State law, to weigh project benefits and consequences up against the General Plan as a whole. In order to approve the CEDHSP, the County is required to make findings of General Plan consistency, which are included in the Staff Report, which is available on the County's website at http://www.edcgov.us/Government/Planning/Planning_Commission.aspx

The project, as currently proposed and if approved, would be required to proceed in accordance with the relevant policies in the CEDSHP as well as the County's General Plan policies and current provisions for development as set forth in the Land Development Code.

R-5-17: The comment notes that the discussion of parks is unclear regarding the deficit of parks. The text of the first paragraph of Impact REC-1 in Section 3.13, *Recreation*, has been amended for clarity as follows:

> Currently, without counting the private parks maintained by homeowners' associations, the El Dorado Hills CSD service area is deficient in public neighborhood parks, village parks, and community parks. Further, as described under Section 3.13.1, *Existing Conditions*, the El Dorado Hills CSD anticipates that the amount of neighborhood parks and special use areas would be deficient regardless of the additional parks and open space of the project.

R-5-18: This comment pertains to the eventual use of the parcel indicated "C-LC" in the CEDHSP. The specific use of the proposed Civic-Limited Commercial (C-LC) site has not been determined. The developer is required to meet the provisions of the Quimby Act, meaning that park and recreation exactions would be levied at the time of subdivision map approval and not at such time as 1,000 or more homes are built. Under the full build scenario, required Quimby parkland dedication is 13.32 acres (Draft EIR, page 3.13-8). The CEDHSP exceeds this requirement by providing 15 acres of village park and a 1-acre neighborhood park. Thus, the planned parks satisfy Quimby Act requirements. The applicant has included a range of possible uses in the C-LC district, should the EDHCSD want to explore the use of that site for additional athletic fields or administrative space. If the EDHCSD determines it does not want to the site for CSD uses, the CEDHSP does not obligate the EDHCSD to accept the land or to develop it.

R-5-19: The commenter notes that wireless facilities are mentioned as a permitted use within open space and asks if these were analyzed. No wireless facilities are currently proposed for the open space within the project, and the applicant is not requesting approval to construct cell towers. The applicant is not proposing any parkland credit for wireless facilities within the open space. There are no designs, configurations, or locations of such facilities known, or whether such facilities would ever be proposed for the open space. Without this specific information, any analysis would be speculative. Pursuant to CEQA Guidelines Section 15145, speculation is not required. The CEDHSP document provides standards regarding cell towers, and sets forth whether cell towers are permitted or not permitted in certain land uses. A Conditional Use Permit application would need to be submitted to the County by the service provider, and it would be within the County's discretion to approve or deny the application. Siting requirements for a cell tower would be determined by the County as part of the Conditional Use Permit.

R-5-20: The commenter objects to the characterization of the comparative impacts on parks in the alternatives analysis. Under the No-Project Alternative, approximately 2.05 acres of new park and recreation facilities would be required as part of future residential subdivision proposals. Under the project, 13.3 acres of new park and recreation facilities would be required. The project, however, proposes 16 acres of parks plus 11 acres of civic–limited commercial site that could be used for recreation uses. The No-Project Alternative is judged to have a greater impact than the project because it provides a smaller per capita increment of new park and recreation facilities.

R-5-21: The commenter suggests an alternative whereby the old golf course would be re-opened as a golf or disc golf course. The Draft EIR considered an All Parks and Open Space Alternative in Section 4.5.3, where the reasons for rejecting that alternative from further analysis are explained. This alternative, with the assumption that the proposed bicycle/pedestrian path would still be installed, would not meet many of the project objectives. These include the following:

- Fulfill regional land use objectives by achieving Metropolitan Transportation Plan/Sustainable Communities Strategy Consistency. The MTP/SCS identifies the project site as "developing community," about which the MTP/SCS states: "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." Restoration of the golf course would not be consistent with this use.
- Curtail suburban sprawl. Leaving nearly 100 acres of open space to be surrounded by development does not curtail suburban sprawl.
- Assist in meeting future RHNA needs. This alternative would not assist in meeting the County's RHNA for the 2022–2030 Housing Element Update by introducing new lands zoned multifamily.
- Broaden the housing stock in El Dorado Hills. This alternative would not maximize opportunities for higher-density housing as an alternative to single-family detached dwellings, nor offer land uses to accommodate various lot sizes, densities, and product types to satisfy the market demands of existing and future household types, sizes, and income levels (County General Plan Goal HO-1), including the senior population (County General Plan Goal HO-4).
- Utilize existing infrastructure and public services. A 100-acre golf course in the center of this suburb would not promote compact land use patterns in Community Regions to maximize existing public services, such as water, wastewater, parks, schools, solid waste, fire protection, law enforcement, and libraries, thus accommodating new growth in an efficient manner (County General Plan Goal 5.1).
- Encourage future transit opportunities. The alternative would not establish higher density development in the El Dorado Hills Community Region within walking distance of El Dorado Hills Boulevard that would improve the feasibility of future transit services, thus reducing traffic congestion and offer alternative transportation choices to a range of users (County General Plan Goal TC-2).

The alternative was not examined in the Draft EIR and does not require evaluation herein, as suggested by the commenter, because it does not meet many of the project objectives.

Additionally, as noted in the CEDHSP (page 2-8), the project applicant and the El Dorado Hills Community Services District independently hired NGF Consulting to investigate the long- term operational feasibility of the golf course. NGF Consulting, determined that the golf course operation was economically infeasible. See also Master Response 2 (2015 El Dorado Hills Community Services District Advisory Measure E).

R-5-22: The Recreation Reduced-Density Alternative does provide for public parks, which meet the County's Quimby Act requirements for park and recreation facilities. As noted by the CSD itself in comment R-5-17, developments that provide private parks are given credit for Quimby Act compliance. The Quimby Act allows the construction of park and recreation facilities and payment of in-lieu fees to meet its park and recreation land requirement. If the requirement is fully met by the dedication of park and recreation land, including private parks as it is in the alternative, no in-lieu fees can be collected.

R-5-23: The commenter requested that the EIR address restrictions and deficiencies related to recreational facilities. The project is not required to include indoor recreation centers, swimming pools, or large storage and maintenance buildings if it does not choose to build them. CEQA does not apply to the deficiencies in the system unless a project's effect on such deficiencies results in an adverse physical effect on existing facilities of that type. (*City of Hayward v. Board of Trustees of the California State University* (2015) 242 Cal.App.4th 833)

R-5-24: This comment addresses the water supply analysis. The WSA and supporting documents prepared for this project as required under Water Code Section 10910 et seq. (see Draft EIR Appendix K) show that it can be served by EID without resulting in shortage or exceedance of projected future water supplies. This includes normal, dry, and multiple-dry years. EID is the supplier of water to the project and is responsible for long-range planning of water supplies. Pursuant to Water Code Section 10910, EID is responsible for providing the WSA and assuring its accuracy. Please see also Master Response 1 (Water Supply).

Extension of recycled water lines to the Pedregal planning area is not necessary to ensure that the project would have an adequate water supply, nor would it necessitate measures in the remainder of the project area.

Appendix K of the Draft EIR includes a memorandum from Tully and Young dated May 30, 2014 that describes in greater detail than in the WSA EID's options for acquiring additional water in the future. EID's 2013 Integrated Water Resources Master Plan describes the plans for water acquisition, storage, treatment, and distribution in the future. These plans are reflected in the WSA.

R-5-25: This comment requests further explanation of assumptions used in the GHG analysis. The GHG analysis for the project was revised to be consistent with the California Supreme Court's decision in *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204, and the revised analysis was made available for review and comment as part of the RDEIR for the project. The analysis explains how the selected efficiency-based threshold for GHG emissions was developed. The analysis does not rely on a 21.7 percent reduction threshold. For a detailed description of the threshold used for this project, the reader is directed to the discussion under the heading "Threshold Approach" in Section 3.6.2, beginning on page 3-7 of the RDEIR. In addition, please see Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*, Section 3.6, Greenhouse Gases, in this Final EIR for additional analysis of the project's consistency with GHG regulatory programs. This analysis is included in the FEIR to supplement the RDEIR considering the 2018 Court of Appeals decision in *Golden Door Properties/Sierra Club vs. County of San Diego* (September 28, 2018, 27 Cal.App.5th 892).

As discussed in Section 3.6, *Greenhouse Gas Emissions*, of the RDEIR, the proposed CEDHSP includes numerous policies and design standards that would result in fewer emissions than typical projects of this type. Similarly, the bicycle/pedestrian connections would simplify non-motorized connections between residential and commercial areas, which should somewhat reduce vehicle trips. In addition, Mitigation Measure GHG-1: Revise CEDHSP policies to include additional measures to further reduce operational GHG emissions requires the installation of solar power on residential units to reduce energy consumption (see page 3-23 of the RDEIR).

The commenter is incorrect in assuming that new development will be responsible for meeting the greatest portion of GHG reductions toward the statewide 2020 goal. New development, by nature of improved energy efficiency and reduced water use resulting from continued improvements to the California Building Code, would be much less GHG intensive than existing development. Most GHG emissions related to buildings are from existing development and reducing those emissions would be crucial to meeting the statewide goal. New development, even if it produced no GHGs from buildings, would have no effect on reducing the existing levels of GHG emissions from existing building stock.

R-5-26: The commenter states that the EIR must quantify GHG emissions associated with all potential sources of water identified in the WSA. Tables 3.6.4 and 3.6.5 in Section 3.6, *Greenhouse Gas Emissions* under Impact GHG-1b beginning on page 3-17 of the RDEIR, include the estimated project GHG emissions from energy use water consumption in 2020 and 2035, respectively. The options that would be undertaken by EID to provide water to the project are outside the purview of this EIR. The decisions regarding the options are the responsibility of EID, the decisions have not been made (and future infrastructure has not been designed), and the County cannot dictate to EID what those decisions would be. The GHG analysis has made reasonable assumptions regarding the energy use necessary to provide water and derived GHG emissions from those assumptions.

R-5-27: The County recognizes the commenter's opinion that "[e]nergy use for the provision of potable water and collection of wastewater should be analyzed in a net-zero frame of comparison." As discussed under Impact GHG-1a, the project would employ a number of features to reduce its GHG emissions through energy and water conservation. These policies are consistent with the *Assembly Bill 32 Scoping Plan* and the *2017 Climate Change Scoping Plan*. However, there is no local, state, or federal mandate that the project be net-zero in energy use or GHG emissions. Please see Response to Comment **R-R-3-2**.

R-5-28: This comment states that the EIR pays too little attention to NOA. See Response to Comment **I-7-13**. As regarding mitigation of NOA, see Responses to Comments **I-11-46** and **I-11-47** and Master Response 3 (Naturally Occurring Asbestos).

R-5-29: The commenter states that the EIR should provide more discussion of the WWTP expansion including cost and likelihood. The EID 2013 Wastewater Facilities Master Plan is described in the cumulative impact analysis in Chapter 5, *Other CEQA Considerations*, as well as in Section 3.12.1 under the heading *El Dorado Irrigation District Wastewater Facilities Master Plan*. The estimated costs of the various system improvements evaluated in the Wastewater Facilities Master Plan are presented in that plan in Table 9.3: Estimated Capital Costs for the Recommended Plan. The cost of expanding the El Dorado Hills Wastewater Treatment Plant would be $70.9 million. This is not yet budgeted in the EID 2016 capital improvement program (CIP), however, includes funding for a feasibility study to look at alternatives for construction of a permanent, efficient, and cost effective replacement to meet the 26 MGD firm capacity as well as environmental review and a Basis of Design report to develop a program schedule and cost estimate. This indicates EID's commitment to moving forward with the expansion.

R-5-30: This comment requests information about the energy needs associated with the potential water sources. The information requested by the commenter is not reasonably available and is not necessary to an informed decision because it is an economic issue that is not related to environmental impacts. (CEQA Guidelines Section 15131; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184) EID has not indicated that the project would result in the substitution or switching of existing supplies. The WSA, approved by the EID Board of Directors, assures that water is available to the project without adversely affecting the ability to supply water elsewhere within the EID service area.

R-5-31(a): The commenter states that the EIR should identify how the proposed project complies with SB 375, AB 32, and other regulations. The CEDHSP is not required to be consistent with the MTP/SCS adopted by SACOG pursuant to SB 375. Nonetheless, it is consistent with the policies and land use density and building intensity standards of the MTP/SCS, as discussed on page 3-3 of the RDEIR. The proposed project would develop residential land uses to help meet forecasted growth within unincorporated El Dorado County. Consistent with SACOG goals, the CEDHSP would create a mixed used and pedestrian friendly and walkable community. The land use design would minimize off-street parking to help reduce vehicle trips and support alternative transportation. CEDHSP policies would also provide short- and long-term bicycle parking, as well as dedicated parking for PEV and pre-wiring for future PEV charging stations. These policies would support alternative transportation within the community, which could help reduce per capita GHG emissions from passenger vehicles consistent with SACOG's MTP/SCS and SB 375.

While many of the policies in the CEDHSP are consistent with the goals of AB 32, total emissions in 2020 would exceed the 1,100 metric ton CO_2e regional threshold, which is derived from the AB 32 reduction target for 2020 (Tables 3.6-3, 3.6-4, and 3.6-5 in the RDEIR). While use of the project-level (1,100 metric ton) threshold is not expressly applicable to specific plans, the analysis nonetheless analyzes emissions against the threshold to ensure a conservative analysis. Accordingly, it is concluded that implementation of the project may conflict with AB 32. This would be a significant impact, as documented in the Draft EIR and RDEIR. Please also see Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR*, Section 3.6, Greenhouse Gases, in this Final EIR for additional analysis of the project's consistency with GHG regulatory programs.

The EIR identifies and discusses applicable federal, state, regional, and local laws and regulations in Chapters 3 through 5 and the RDEIR discusses them in Section 3.6. The project would comply with all applicable laws and regulations.

R-5-31(b): The Draft EIR's 2015 traffic analysis and an updated traffic analysis completed in 2017 were prepared using the County's methodology and appropriate data and adequately identifies the project's impacts. The following addresses the specific issues raised by the commenter pertaining to the traffic analysis.

All traffic counts are consistent in that they are collected mid-week when local schools are in session. This Final EIR contains the Transportation Impact Analysis appendices, which include the traffic count sheets. The commenter will be able to see the exact date of each intersection and freeway count to confirm consistency.

The commenter is confusing the intersection analysis of El Dorado Hills Boulevard/Francisco Drive with the roadway segment analysis for El Dorado Hills Boulevard between Francisco Drive and Governor Drive. The intersection operated at LOS F under existing conditions. However, since then, the intersection has been improved and now operates at an acceptable LOS. This is reflected in an updated traffic analysis prepared in 2017 and revised Table 3.14-7 presented in Chapter 3, *Changes and Errata to the Draft EIR and Recirculated Draft EIR* in this Final EIR.

As stated in the comment, Caltrans' Concept LOS is LOS E for segments of US 50 near the proposed project. This is the LOS threshold Caltrans sets for those particular segments of US 50. The County's General Plan LOS threshold is LOS E inside the Community Regions. This means Caltrans and the County have the same LOS threshold for US 50 at the County Line.

The commenter is incorrect in the assertion that the latest dataset was not used for the analysis and is confusing dataset with the methodology used to evaluate impacts. The latest version of the Highway Capacity Manual 2010 methodology was used to evaluate impacts and is not a dataset. The "dataset" referenced by the commenter is a Caltrans document. Caltrans' *Transportation Concept Report and Corridor System Management Plan, United States Route 50*, dated June 2014 (TCR/CSMP) is generally used to prioritize state and federal funding for Caltrans transportation facilities. The report contains this disclaimer:

> *Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, the District 3 Office of System and Freight Planning makes every effort to ensure the accuracy and timeliness of the information contained in the TCR/CSMP. The information in the TCR/CSMP does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.*

See Response to Comment **I-11-87** for an explanation of LOS on US 50.

R-5-32: The commenter has misinterpreted Mitigation Measure TRA-1d as it relates to the CEDHSP. Subsection 4.6.3, *Park-and-Ride Location*, in the CEDHSP (page 4-27) states that the CEDHSP provides for a park-and-ride location in the Serrano Westside portion of the plan area, in proximity to US 50 and as a joint-use facility for El Dorado Transit and the El Dorado Hills CSD. The Village Park (VP) land use designation is identified as a potential location. As stated on page 4-27, as many as 50 parking stalls *may* [emphasis added] be reserved for park-and-ride stalls during weekday business hours. The CEDHSP does not mandate that the stalls *shall* [emphasis added] be in the VP land use designation, nor does Mitigation Measure TRA-1d specify the VP designation. Rather, the mitigation measure identifies an option should a park-and-ride facility in the VP designation not be completed. As explained under the *Transit* subheading in Impact TRA-1 (Draft EIR page 3.14-29), the required number of park-and-ride spaces generated by the project is five stalls. The Draft EIR mentions the VP land use designation as a possible location for those five stalls. However, Mitigation Measure TRA-1d does not rely exclusively on the availability of parking in the VP land use designation to fully mitigate the project's impacts. It does require that five stalls be provided elsewhere. The applicant has not committed the El Dorado Hills CSD to provide parking, either through project design, or through Mitigation Measure TRA-1d, as suggested by the commenter.

R-5-33: The commenter asks about the impacts of the proposed US 50 overcrossing on parks and open space. As stated in Chapter 2, Section 2.3.3, *Project Features*, of the Draft EIR:

> The proposed project, specifically the Serrano Westside planning area, would provide a paved bicycle and pedestrian trail that would connect to and enhance existing trails and would also provide a new location for safe, dedicated bicycle/pedestrian overcrossing connection, replacing the existing location proposed as part of the El Dorado Hills interchange, to areas south of US 50.

The list of offsite improvements in the same section of the Draft EIR includes:

- A new location for the planned US 50 pedestrian overcrossing connecting the southwestern corner of the Serrano Westside planning area north of US 50 to Post Street/Mercedes Lane south of US 50.

Figure 2-9, *Offsite Improvement Areas*, also shows the identified possible location for the US 50 pedestrian crossing. As stated in the Draft Specific Plan, the north end of the overcrossing is proposed in the VP land use designation because it would provide a significant linkage between the trails proposed within the project to the Town Center development south of US 50 and the south end of the overcrossing would be at Town Center Lake, where there are existing pedestrian linkages. The overcrossing would be consistent with Strategy E.3 in the EDHCSD's 2016 Master Plan Update, which encourages the expansion of trails to provide bicycle and pedestrian access to parks and connections to the regional trail system to reduce GHG emissions. The overcrossing would also be consistent with Strategies A.3, A.4, C.7, C.10, and C.12 which aim to develop a system of accessible connections to promote connectivity between parks and open spaces, trails, recreational facilities, schools employment centers, and other community destinations.

The proposed project does not include a specific design of this facility, only a potential alternate location to that previously contemplated as part of the US 50/El Dorado Hills Boulevard/Latrobe Road interchange improvements that have been constructed.

The environmental impacts of the proposed alternative location for the pedestrian crossing are analyzed in the Draft EIR as part of the proposed project because the Specific Plan reserves space for such use. As stated on page 1-2 in the Draft EIR:

> Offsite improvements associated with the proposed project, including connections to existing infrastructure such as water and wastewater are included in the project. Each of these offsite improvements is examined to determine potential impacts. Where feasible, mitigation measures are recommended. The offsite improvements are analyzed to the extent detail available at the time that this Draft EIR was prepared and later environmental review based on review of this EIR may be required once infrastructure details are known.

Biological resources within the offsite improvement areas were examined in 2013 and 2014 and these studies are discussed on page 3.3-10 and listed in Table 3.3-1. As noted in the *Environmental Setting* discussion, waters of the United States (marsh and perennial creek) occur within the alternative location of the US 50 pedestrian overcrossing (page 3.3-17 and Figure 3.3-2 of the Draft EIR). Impacts on biological resources for offsite improvements, including the potential pedestrian overcrossing, are addressed beginning on page 3.3-57 of the Draft EIR. Impact BIO-15 discusses the potential impact to waters of the United States and provides mitigation measures to reduce these impacts to a less-than-significant level. The exact acreages of impacts are not provided because the exact location and design of the improvements are not known at this time.

Once design details are known, further environmental review of potential pedestrian overcrossing impacts beyond those described in the Draft EIR would be required, as stated in Chapter 1 of the Draft EIR.

Regarding parkland credit, the use of land in the VP land use designation for the landing for the overcrossing would not result in the project not meeting its requirement for parkland dedication. The required Quimby parkland dedication is 13.32 acres (Draft EIR, page 3.13-8). The CEDHSP exceeds this requirement by providing 15 acres of village park (VP) that would be publicly accessible, and a 1-acre neighborhood park. Thus, the planned parks exceed Quimby Act requirements. The potential point of connection north of US 50 is in the VP land use designation, not in natural/open space, so there would be no effect on open space credit. The footprint of the north end of the overcrossing where it connects to trails within the VP land use designation was assumed to be less than 1.2 acres as shown on Figure 3.3-2, and therefore, even if all of that area were to be used for the overcrossing, the amount of parkland would not be reduced below the required amount. The environmental impacts of the VP land use are addressed throughout the Draft EIR.

R-5-34: The comment states that the air quality analysis is inadequate and asks that the County reassess the significant and unavoidable impact conclusion based on some suggested measures. The current analysis in Section 3.2, *Air Quality*, as revised in Chapter 3, *Changes and Errata to the Draft EIR and Partial Recirculated Draft EIR*, is adequate. Some of the additional measures requested by the commenter are already incorporated into the project or the mitigation measures. Solar power installation would be required under Mitigation Measure GHG-1 (beginning on page 3-23 of the RDEIR). Mitigation Measure GHG-1 provides that all Village Residential-Low and Village Residential Medium-Low developments would be required to install rooftop solar power to meet minimum baseload electricity needs (expected average system size is 4 kilowatts [kW]). Mitigation Measure GHG-1 also provides that CEDHSP Policy 8.4 would be extended to require installation of 220/240 volt garage circuits to support EV charging in all Village Residential-Low and Village Residential Medium-Low designations. Mitigation Measure AQ-2a requires the use of low-VOC coatings during construction.

The County has imposed substantive requirements through the cited mitigation measures, in addition to the sustainability standards contained in the proposed CEDHSP. No additional mitigation measures are necessary.

R-5-35: The commenter states that energy and GHG analysis do not account for park uses. The EIR has undertaken a reasonable analysis of lighting energy use given the information available at this time. No park facilities have been designed, the size and specifications of light fixtures, if any, are unknown, and a more detailed analysis would involve making purely speculative assumptions. Pursuant to CEQA Guidelines Section 15145, speculation is not required.

R-5-36: The commenter objects to the construction assumptions used in the air quality analysis, The EIR analysis in Section 3.2, *Air Quality*, uses accepted techniques and standard assumptions in the estimation of fugitive dust and PM emissions. Specially, emissions from offsite improvements were estimated using the SMAQMD Roadway Construction Emissions Model (RCEM). The RCEM is specifically designed to quantify emissions from linear projects based on limited user inputs for the project type, size, and construction year. The selection of soil type does not have a measurable impact on fugitive dust from the offsite improvements given their small size and because water trucks would be used to control emissions. Emissions from building construction were estimated using CalEEMod. Similar to the RCEM, CalEEMod is designed to quantify land use development emissions based on user inputs for the project type (e.g., residential), size (e.g., 50 units), and general construction timeframe. The model takes into account pollutant emissions from truck hauling and the use of non-road construction equipment. Because the amount of grading, the cut and fill balance, and other construction specifics are not known, model defaults were used to define all equipment and material movement assumptions. CalEEMod is the accepted model for conducting air quality analyses, and use of model defaults is standard practice when project-specific information is not available. It is currently unknown if drilling, blasting, or other excavation would uncover NOA. However, if in an NOA area and required by EDCAQMD, fugitive dust would be controlled pursuant to Mitigation Measures AQ-2a and AQ-4.

R-5-37: The commenter suggests that reference to a CEDHSP policy regarding air filters be removed. As shown in Table 3.2-10 in the Draft EIR, background cancer risk and non-cancer health hazards would be below the EDCAQMD-designated cancer risk threshold of 100 per million and hazard index threshold of 10. Accordingly, there would be no substantial adverse risk to project occupants even if minimum efficiency reporting value (MERV)-6 air filters were not implemented. The Draft EIR refers to MERV-6 filters for informational purposes, noting that they would further reduce risks if pursued.

R-5-38: See Response to Comment **I-7-13**. As regarding mitigation of NOA, see Responses to Comments I-11-46 and I-11-47 and Master Response 3 (Naturally Occurring Asbestos).

From: **Marshall Cox** <mcox@edhfire.com>
Date: Thu, Feb 18, 2016 at 3:55 PM
Subject: Central EDH DEIR review - FIRE COMMENTS
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us>

Hi Mel,

Here are comments from Fire in regards to the Central EDH DEIR. Please confirm you have received this email. Thanks.

Best regards,

Marshall Cox

Fire Marshal

El Dorado Hills Fire Department

1050 Wilson Blvd., El Dorado Hills, CA 95762

www.edhfire.com

(916) 933-6623 ext. 1017

(916) 817-9339 cell

(916) 933-5983 fax

mcox@edhfire.com

EL DORADO HILLS
FIRE DEPARTMENT

"Serving the Communities of El Dorado Hills, Rescue and Latrobe"

January 19, 2016

Rommel Pabalinas, Project Planner
El Dorado County Planning Department
2850 Fair Lane
Placerville, CA 95667

Re: **Central EDH Specific Plan – DEIR – Fire Comments**

Dear Mr. Pabalinas:

The El Dorado Hills Fire Department, on behalf of The Rescue Fire Department, has reviewed the above referenced project and submits the following comments regarding the ability to provide this site with fire and emergency medical services consistent with the El Dorado County General Plan, State Fire Safe Regulations, as adopted by El Dorado County and the California Fire Code as amended locally. Any omissions and/or errors in respect to this letter, as it relates to the aforementioned codes, regulations and plans, shall not be valid, and does not constitute a waiver to the responsible party of the project from complying as required with all Codes, Standards, Local Ordinances, and Laws.

1. All comments written in our letter dated May 9, 2013 entitled "**Central El Dorado Hills Specific Plan, Draft 1 Comments"** remain standing comments.

2. All comment written in our letter dated January 2, 2014 entitled "**Central El Dorado Hills Specific Plan, Draft 2 Comments"** remain standing comments.

All comments below are specific to the DEIR review and are in addition to, or supplemental of, the comments as listed above:

3. The potable water system with the purpose of fire protection for this development shall be approved by the El Dorado Hills Fire Department. More detail as to square footage and construction type will be required for these calculations. R-6-1

4. This development shall install Mueller Dry Barrel fire hydrants, or any other type of hydrant which conforms to El Dorado Irrigation District specifications for the purpose of providing water for fire protection. The spacing between hydrants in this development shall not exceed 500 feet in residential areas, and 300 feet in commercial areas. The exact location of each hydrant shall be determined by the Fire Department.

5. In order to enhance nighttime visibility, each hydrant shall be painted with safety white enamel and marked in the roadway with a blue reflective marker as specified by the Fire Department and State Fire Safe Regulations.

1050 Wilson Boulevard ▪ El Dorado Hills, California 95762 ▪ Telephone (916) 933-6623 ▪ Fax (916) 933-5983 ▪ www.edhfire.com

6. Approved fire apparatus access roads shall be provided for every facility, building, or portion of a building. The fire apparatus access roads shall comply with the requirements of Section 503 of El Dorado Hills County Water District Ordinance 36 and shall extend to within 150 feet of all portions of each facility and all portions of the exterior of the first story of the building as measured by an approved route around the exterior of the building or facility.

    a. Depending on final heights of each building, the final layout of fire apparatus access roads shall be determined and approved by the fire code official with consideration of whether a ladder truck or ground ladders would be used for firefighting operations.

7. The potential connection between the Park Drive extension and Silva Valley Parkway, if built, would provide an increase to the public level of service in emergency situations by allowing decreased response times by emergency personnel to the residents of the communities around it, as well as providing additional egress routes in cases of a mass evacuation scenario.

8. This development shall be prohibited from installing any type of traffic calming device that utilizes a raised bump/dip section of roadway.

    1. The roundabout discussed on page 11 of the PFFP Executive Summary document shall be reviewed for compliance by the El Dorado Hills Fire Department prior to its proposed implementation.

    2. Section 4.5.1 of the Public Review Draft August 2015 document shall have the last line amended to state "Traffic Circles and all other traffic calming devices or techniques shall be reviewed for approval by the El Dorado Hills Fire Department prior to any proposed implementation." R-6-1 cont.

    3. Section 4.5.2 shall be reviewed for approval by the El Dorado Hills Fire Department prior to any proposed implementation. As currently described by the applicant, all center islands, neck-downs and bulb-outs shall be prohibited.

9. All fire apparatus access roadways and driveways shall be designed to provide an approved turning radius with a minimum 40 foot inside radius and 56 foot outside radius.

10. All gates shall meet the El Dorado Hills Fire Department Gate Standard B-002.

11. In order to provide this development with adequate fire and emergency medical response during construction, all access roadways and fire hydrant systems shall be installed and in service prior to combustibles being brought onto the site as specified by the Fire Department, Standard B-003.

12. This development shall be conditioned to develop, implement, and maintain a Wildland Fire Safe Plan that is approved by the Fire Department as complying with the State Fire Safe Regulations.

13. Lots that back up to wildland open space shall be required to use non-combustible type fencing.

14. All parking restrictions as stated in the El Dorado Hills County Water District Ordinance 36 shall be in effect. All streets with parking restrictions will be signed or marked with red curbs as described in the El Dorado County Regional Fire Protection Standard titled "No Parking-Fire Lane." All curbs in the parking lot(s) that are not designated as parking spaces will be painted red and marked every 25 feet "no parking fire lane." This shall be white letters on a red background, as per El Dorado County Standard B-004.

    1. Figure 4.5: Local 33' Residential Street (single-loaded) and Figure 4.6: Local 33' Residential Street shall be prohibited from parking on either sides of the streets.

2. Figure 4.7 shall be increased to a minimum of 30' in order to allow parking on one side of the street.

3. Figure 4.8: Local 29' Residential Cul-de-Sac shall be prohibited from parking on either side of the street.

4. Figure 4.9: Typical Cul-de-Sac does not meet compliance with local regulations. See note 9 above for minimum turning radius.

5. Table B.1 and B.2 shall be reviewed for approval by the El Dorado Hills Fire Department. As currently escribed, turnarounds and parking on streets (based on widths) shall be revised to meet local requirements.

15. A secondary means of egress shall be provided prior to any construction or the project can be phased.

16. All roadway plans, both public and private, shall be provided to the El Dorado Hills Fire Department for review to ensure compliance will all local laws and regulations. R-6-1 cont.

17. Any parcels greater than one acre shall conform to Title 14 SRA Fire Safe Regulations requirements for setbacks (minimum 30' setback for buildings and accessory buildings from all property lines).

18. Prior to June 1st each year, there shall be vegetation clearance around all EVA's (Emergency Vehicle Access) and the property in accordance with Public Resources Code Section 4291 and the conditioned Wildland Fire Safe Plan.

19. If this project decides on designing a trail-type system, the access points to the open space trail system, consideration shall be given to access points in order to allow for emergency vehicle access (specifically for a smaller vehicle such as an ambulance). Gates or removable bollards may be installed and locked with a low priority KNOX lock. The street curbs adjacent to the trail access point shall be painted red.

20. The landscaping plan shall be reviewed by the Fire Department to ensure that trees, plants, and other landscaping features proposed to be adjacent to the Fire Apparatus Access roads, Fire and Life Safety equipment, and near address locations on buildings and monuments will not impede fire apparatus access or visual recognition.

Contact Marshall Cox at the El Dorado Hills Fire Department with any questions at 916-933-6623 ext. 1017.

Sincerely,

EL DORADO HILLS FIRE DEPARTMENT

Marshall Cox
Fire Marshal

Response to R-6, El Dorado Hills Fire Department, Marshall Cox, 2/18/2016

R-6-1: This is an informational comment letter in which the El Dorado Hills Fire Department proposes Conditions of Approval to be applied to future development applications and tentative maps. They do not address the analysis or conclusions of the Draft EIR concerning fire hazards. No further response is required.

LETTER R-RECIRC-1

el dorado county edctc TRANSPORTATION COMMISSION

2828 Easy Street Suite 1, Placerville, CA 95667 | 530.642.5260 | www.edctc.org

June 6, 2016

County of El Dorado
Community Development Agency
Planning Services
2850 Fairlane Court
Placerville, CA 95667

RE: Central El Dorado Hills Specific Plan – Recirculation of the Draft Environmental Impact Report (RDEIR)

Dear Mr. Pabalinas

The El Dorado County Transportation Commission (EDCTC) appreciates the opportunity to review and provide comment on the recirculated DEIR referenced above. EDCTC values the partnership and collaboration with El Dorado County to continue to maintain and improve transportation and mobility throughout El Dorado County. EDCTC staff has reviewed the RDEIR for consistency with the guiding principles, goals, objectives, and policies of the 2015 El Dorado County Regional Transportation Plan (RTP). The proposed project is located north of US Highway 50 and between El Dorado Hills Boulevard to the west and Silva Valley Parkway to the east. The project is within EDCTC's jurisdiction as well as the greater Sacramento urbanized area under the jurisdiction of the Sacramento Area Council of Governments (SACOG).

The following comments are based on the RDEIR and are provided to identify issues and opportunities with the proposed project as the project relates to the implementation of the 2015 RTP. R-R-1-1

RTP Consistency
The proposed project references specific *Project Objectives* of which some are aligned directly with goals and objectives of the 2015 RTP. These parallel objectives include:

- Fulfill regional land use objectives by achieving Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) Consistency.
  - The 2015 RTP feeds directly into the SACOG MTP/SCS to serve as the Western Slope of El Dorado County portion of this SACOG planning effort.
  - Under the Memorandum of Understanding between SACOG and EDCTC, SACOG oversees and performs the air quality conformity analysis for the region, which includes the integration of the RTP into the MTP/SCS.
- Support the maintenance of and improvement to an integrated multi-modal transportation system which is safe, efficient, accessible, and convenient for all users throughout, within, and beyond the region.
  - The proposed project highlights the importance of non-motorized, automobile, and transit mobility as an integral component of the project objectives through encouragement of future transit facilities and multi-

modal connectivity between the new residential units and commercial/activity centers.
    - The proposed project includes new roadways and roadway improvements that will help to fulfill the goal of a connected and efficient roadway network.
- Promote a safe, convenient, and efficient non-motorized transportation system which is part of a balanced overall system for all users.
    - The proposed project includes some elements of bicycle and pedestrian facilities within the planning areas which will ultimately connect to existing and future facilities beyond the planning boundaries. R-R-1-1 cont.
    - The proposed project highlights the importance of a bicycle/pedestrian overcrossing of US Highway 50 to provide access north and south of the highway connecting residents with Town Center.
- Integrate local and regional land use, air quality, and transportation planning to create a transportation system which supports the needs of the system user, enhances the economy, preserves the environment, reduces greenhouse gases, and protects the community character.
    - The proposed project includes a multitude of land use types ranging from commercial, park, open space, and residential combined with a transportation network which includes consideration of all modes for all users.

RTP Inconsistency

The proposed Vehicle Circulation (2.3.3.1) on page 2-10 of the RDEIR makes no reference to sidewalks or Class II bike lanes on any of the proposed roadways or improvements to existing roadways. 2015 RTP Policies 4 and 11 under Goal: Non-Motorized Transportation, Objective A, encourage that Class II and Class III facilities be included with all new development and that complete streets and context sensitive solutions which fit the character of the community be included in all transportation investments. R-R-1-2

The proposed project references a new location for the planned US Highway 50 bicycle and pedestrian overcrossing (POC) connecting the southwestern corner of Serrano Westside planning area to Post Street/Mercedes Lane near the Nugget Market in Town Center south of US Highway 50. While this element is consistent with the 2015 RTP, more detail is needed to understand the planning of this new POC location. Previously the POC was to be built adjacent the newly constructed El Dorado Hills Boulevard/Latrobe Road Interchange. The new POC location near Nugget Market would need to connect to the bicycle and pedestrian facilities along Latrobe and El Dorado Hills Boulevard to eliminate the current safety concerns of cyclists and pedestrians crossing under US Highway 50 at the new interchange. R-R-1-3

If you have any questions regarding these comments or require additional information, please contact me at (530) 642-5263 or wdeloria@edctc.org.

Sincerely,

Woodrow Deloria

Response to R-RECIRC-1, EDCTC, Woodrow Deloria, 6/6/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

R-R-1-1: The commenter notes project objectives that align directly with goals and objectives of the 2015 RTP. This comment does not address the adequacy of the RDEIR, and no further response is necessary.

R-R-1-2: The commenter notes inconsistencies with the 2015 RTP. The commenter notes that Section 2.3.3.1 of the RDEIR makes no reference to sidewalks or Class II bike lanes and therefore the project is inconsistent with 2015 RTP policies 4 and 11 under Goal: Non-Motorized Transportation, Objective A. Section 4 of the CEDHSP provides more detailed information about bicycle and pedestrian facilities associated with roads. Sidewalks are to be incorporated into many minor collectors, and local and residential streets. A class II bike lane is proposed and illustrated in Figure 2-7, Preliminary Trail Circulation Plan, of the Draft EIR and RDEIR. This comment does not address the adequacy of the RDEIR, and no further response is necessary.

R-R-1-3: The commenter notes that the proposed project includes a new location for the US Highway 50 bicycle/pedestrian overcrossing and indicates that the location would need to connect the bicycle and pedestrian facilities along Latrobe Road and El Dorado Hills to eliminate current safety concerns. As indicated in Figure 2-7 in the Draft EIR and RDEIR, the overcrossing would connect proposed Class I bicycle paths on either side of the highway. Please see Responses to Comments R-5-33 and S-2-2 regarding the proposed location of the overcrossing as it relates to the location of the overcrossing that was envisioned as part of the recently completed US 50/El Dorado Hills Boulevard/Latrobe Road interchange project.

LETTER R-RECIRC-2

El Dorado Hills
COMMUNITY SERVICES DISTRICT

May 19, 2016

Rommel Pabalinas, Project Planner
El Dorado County Planning Department
2850 Fairlane Court
Placerville, CA 95667

RE: **RDEIR for Central El Dorado Hills Specific Plan (A14-0003, SP12-0002, SP86-0002-R-2, Z14-0005, PD14-0004, TM14-1516, DA14-0003)**

Dear Mr. Pabalinas:

The El Dorado Hills Community Services District ("EDHCSD") appreciates the opportunity to review and comment upon the above referenced Recirculated Draft Environmental Impact Report ("RDEIR") for the Central El Dorado Hills Specific Plan ("CEDHSP" or "project"). EDHCSD intends to provide comments on the RDEIR elements, but writes at this time to request an extension to the public review and comment period from the current 45 days to 90 days. Such an extension is warranted for the following reason: R-R-2-1

1) Revised Material in RDEIR Requires Extensive Technical Review
EDHCSD cannot fulfill its duties to diligently review and comment on the RDEIR, as the technical material related to greenhouse gas emissions is not typically an expertise area that staff possesses. EDHCSD is increasingly concerned with the impacts related to GHG's and seeks to ensure that those impacts identified in the RDEIR are properly identified, understood, and considered for appropriate mitigation. R-R-2-2

The CEDHSP is proposed to be an additional development within the El Dorado Hills Community Services District boundaries. The EDHCSD has a mission to: *Enhance the quality of life for El Dorado Hills residents through innovative, responsible leadership and by providing superior services and facilities.* Well-planned growth requires thoughtful analyses, which in turn requires time and resources. The EDHCSD respectfully requests that the RDEIR's public review and comment period be extended to provide a total of at least 90 days of review time.

(CEDHSP RDEIR Request for Review Period Extension)

Should you have any questions or comments regarding the concerns expressed in this letter, please contact me at (916) 614-3233.

Sincerely,

Kevin A. Loewen
Director of Parks and Planning
El Dorado Hills Community Services District

Response to R-RECIRC-2, Kevin Loewen, 5/19/2016

R-R-2-1: The El Dorado Hills CSD requested a 90-day public review period and extension to review the RDEIR. The commenter's specific reasons for this request are described in more detail later and are addressed in Response's to Comments **R-R-2-1**.

R-R-2-1: The El Dorado Hills CSD states that an extended review period is necessary because the technical material presented in the RDEIR is not typically an expertise area that CSD staff possesses. A GHG analysis was included in the November 2015 Draft EIR, which was circulated for a total of 90 days, twice the standard review period required in Section 15087 of the State CEQA Guidelines (see Response to Comment I-7-3). The GHG analysis in the RDEIR uses different thresholds to evaluate impacts and evaluates impacts in light of the California Supreme Court decision in Cente*r for Biodiversity et al. v. California Department of Fish and Wildlife* (62 Cal.4th 204) referred to as the "Newhall Ranch" decision, but the approach to the technical analysis is not fundamentally different than the GHG analysis in the November 2015 Draft EIR. The analysis in the RDEIR examines the potential GHG impacts of the project using a revised approach that acknowledges there are multiple potential pathways for evaluating project-level GHG emission and analyzes both near-term and post-2020 emissions. Therefore, while the analysis has been revised, it is primarily separated to examine construction and operation emissions at two points in time. Only the impact significance conclusion for the 2035 conditions changed and none of the modeled emissions data presented in the Draft EIR were revised. The RDEIR was available for 45 days, as required by CEQA.

DATE: June 3, 2016

El Dorado County
Development Services Department
Planning Division
2850 Fairlane Court, Building C
Placerville, CA 95667
c/o: Rommel Pabalinas
email: CEDHSP@edcgov.us
Fax: 530-642-0508

El Dorado Hills
COMMUNITY SERVICES DISTRICT

Re: Public Comments on Partially Recirculated Central El Dorado Hills Specific Plan Draft Environmental Impact Report

Dear Mr. Pabalinas:

This letter provides the comments of the El Dorado Hills Community Services District ("District" or "CSD") regarding El Dorado County's Partially Recirculated Central El Dorado Hills Specific Plan Draft Environmental Impact Report ("EIR"). The District has previously submitted concerns for the EIR – with the level of analysis and disclosure in the EIR, and took issue with the sufficiency of certain conclusions and analyses in the EIR. This comment letter is intended to address only elements of the recirculated EIR. R-R-3-1

Significant and Unavoidable GHG Emissions – Inadequate Analysis for Mitigation Measures

There are several statements that the GHG emissions from this project will be significant and unavoidable, such as for a No-Project Alternative (EIR 4-11 at 4.3.1.5), and for a Reduced Density Project Alternative (EIR 4-13 at 4.3.2.5), and for the Reduced Wetland Impact Alternative (EIR 4-16 at 4.3.3.5), and for Other CEQA Considerations such as cumulative impacts (EIR 5-8 at 5.2.2.6). The *Significant and Unavoidable Impacts* section (EIR 5-9 at 5.3) clearly states that, "A significant and unavoidable impact is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level." The District continues to contend that additional mitigation measures to reach a Net-Zero impact are feasible, or at least warranted for analysis given the severity of these impacts. The District's prior comments provided the following statement toward GHG emissions: R-R-3-2

> Green House Gases can be directly correlated to energy consumption as a result of a project – a project such as this one. For instance, the electricity required to power the needs of future residents will cause additional GHG

emissions as part of that energy production. Energy use for the provision of potable water and collection of wastewater should be analyzed in a net-zero frame of comparison. As the Project Proponent seeks a net-zero analysis they could consider onsite and offsite credit in the form of rooftop solar and covered parking solar. This analysis, and feasible measure for mitigation, would likely result in a more desirable product for the Project Proponent and enhance the quality of life for residents throughout the District, should the applicant seek full credit within the District boundaries.

It is incumbent upon the Project Proponent, EIR preparers, and project approvers to consider and analyze feasible mitigation measures and alternatives. A Net-Zero analysis and/or alternative deserves consideration.

R-R-3-2 cont.

Conclusion

The District appreciates the County's efforts in preparing the EIR and the opportunity to provide constructive comments to better understand the proposed project, potential feasible alternatives, potential environmental impacts, and potential mitigation for those impacts. We look forward to your responses, and would welcome working with the County to collaboratively address the District's concerns.

Kevin A. Loewen

Kevin A. Loewen, Parks and Planning Director

1021 Harvard Way El Dorado Hills, CA 95762 (916) 933-6624 (916) 941-1627 fax www.edhcsd.org

Response to R-RECIRC-3, El Dorado Hills Community Services District, Kevin Loewen, 6/3/2016

R-R-3-1: The El Dorado Hills CSD notes that the comment letter is intended to address only elements of the RDEIR, but that the CSD had previously submitted comments related to the November 2015 Draft EIR (Letter R-5). The County's responses to the CSD's February 16, 2016 letter are provided in Responses to Comments **R-5-1** through **R-5-38**.

R-R-3-2: The CSD contends that additional mitigation measure are feasible to reach a net-zero GHG impact and reiterates its previous comment R-5-27 on the November 2015 Draft EIR, that the County should consider an analysis and/or alternative addressing net-zero GHG emissions As indicated in the discussion under Impact GHG-1b of the RDEIR (pages 3-17 through 3-24), a number of energy efficiency measures have been incorporated into the CEDHSP. There is no local, state, or federal mandate that the project be net-zero in GHG emissions.

The CSD also suggests that the EIR consider parking lot solar arrays to reduce the project's use of non-renewable energy sources. The proposed CEDH Specific Plan already includes the following policies related to on-site solar power generation:

POLICY 8.9

Solar canopies, intended to both shade parking lots and generate renewable energy, shall be encouraged.

POLICY 8.22

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);
- 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;
- Standard rooftop mechanical equipment shall be located in a manner that does not preclude the installation of solar panels;
- 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 ; 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.

POLICY 8.23

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.

The suggested mitigation is similar to the standards set out in the proposed project. Accordingly, it need not be integrated into the project.

The remainder of this response examines a Net Zero GHG Emission alternative. A Net Zero GHG Emission alternative would involve the same level of development as the proposed project, but would result in a net zero GHG emissions impact. Identical to the project, land uses developed by the Net Zero GHG Emission Alternative would generate 10,096 metric tons of carbon dioxide equivalent (CO_2e) per year, after implementation of quantifiable CEDHSP policies and Mitigation Measure GHG-1. Mobile sources (i.e., vehicle trips) would be the primary source (74%) of emissions, followed by energy use (13%), area sources (8%), waste generation (4%), and water consumption (1%). Under the Net Zero GHG Emission Alternative, GHG emissions generated by these sources would be reduced to net zero solely through the procurement of emission offsets (Option 1). A second approach would be to incorporate net zero energy (ZNE) construction to greatly reduce GHG emissions from structures and purchase emission offsets for the GHG emissions from transportation that cannot be reduced by construction standards (Option 2).

A "carbon offset" enables a development project to compensate for its GHG emissions and associated environmental impact by financing reductions in GHG emissions elsewhere. Purchased offsets deliver essential financing to renewable energy, forest protection, and other emission reducing projects that would not otherwise be financially viable. There are several existing voluntary offset exchanges that have been validated by the California Air Resources Board (CARB), including the California Action Reserve Voluntary Offset Registry, American Carbon Registry, and Verified Carbon Standard. These exchanges satisfy the basic criterion of additionality (i.e., the reductions would not happen without the financial support of purchased offsets) and have established processes and protocols for quantifying and verifying emissions reductions).

The Climate Action Reserve also operates the Climate Forward program. Climate Forward is similar to an offset program in that funds are used to mitigate project-level emissions at offsite locations, but is distinctly different in that it is an "ex-ante" program. That is, unlike offsets that are issued after the GHG reduction has already been generated, the goal of Climate Forward is to provide upfront investment for specific, innovative, and creative projects that will produce future GHG reductions. Developers and lead agencies identify the projects they'd like to fund, providing flexibility to select projects that maximize cost effectiveness and/or achieve secondary environmental or community co-benefits. Climate Forward is consistent with industry standard GHG accounting principles and relies on standardized and conservative offset quantification methodologies that have been vetted and approved by public and private stakeholders. Emission reductions would be real, permanent, and additional.

Option 1: Under Option 1, it is assumed the 10,096 metric tons of CO_2e generated each year by operation of the Net Zero GHG Emission Alternative would be offset through the purchase of carbon offsets or through some other accredited program (e.g., Climate Forward). The cost per offset varies depending on the program, market, and transaction volume. Based on information provided by offset providers listed on the Climate Action Reserve's Offset Marketplace, current fees range from $2 to $20 per metric ton, with a median price of $11 per metric ton. The cost to offset 10,096 metric tons would therefore range from about $20,000 to $201,000 per year. Since emission would be generated annually, offsets would need to be purchased in perpetuity. Assuming a 40-year project lifespan, this equates to approximately $807,000 to $8 million, depending on the offset type and market. A mechanism would need to be put in place to purchase the necessary credits each year.

This calculation does not account for any associated broker fees, planning and monitoring expenses, or market escalation, and as such, future costs are likely to be greater.

Option 2: This option would consist of two components: construction of residences and public buildings to ZNE standards and purchase of offsets to avoid the remainder of the project's GHG emissions. This would reduce the number of carbon credits needed in comparison to Option 1 by reducing the GHG emissions from the project's buildings. ZNE buildings rely on energy conservation and onsite renewable energy generation to meet their heating, cooling, and electricity needs. ZNE construction would effectively eliminate all building energy emissions (amounting to 1,275 metric tons of CO_2e per year), and the remainder of annual emissions (8,821 metric tons of CO_2e) would be offset, as described above, to achieve overall net zero GHG emissions.

Studies show that the components of a new ZNE home have an incremental cost, after incentives, of $2 to $8 per square foot (Energy Upgrade California 2016). Based on the anticipated land use types and CalEEMod defaults for building square footages, 1.2 million square feet of residential and commercial building space would be constructed, which equates to a total one-time cost of about $2.4 to $9.6 million. Annual costs to offset the remaining 8,821 metric tons of CO_2e would be approximately $17,000 to $176,000, based on the offset range described above, and the lifetime cost would be about $705,000 to $7.1 million, assuming a 40-year project lifespan. When added to the one-time construction cost for ZNE buildings, total lifetime costs for achieving ZNE buildings and net zero emissions equates to approximately $3.1 to $16.7 million. This calculation does not account for any additional construction charges, broker fees, planning and monitoring expenses, or market escalation, and as such, future costs are likely to greater.

Implementation of the Options. Implementing the purchase of GHG emissions credits for operational offsets over a 40-year period under Options 1 and 2 would require establishment of a program that includes the following components:

- An entity with the authority and knowledge to administer the program for 40 years
- A mandatory minimum standard for the quality of emissions credits to be purchased (needed in order to ensure that credits will be effective in reducing emissions)
- Annual inventories of GHG emissions from the project by emissions sector (needed in order to know how many offsets must be purchased each year). For Option 1: mobile sources, energy use, area sources, waste generation, and water consumption. For Option 2: mobile sources, area sources, waste generation, and water consumption.
- Consultation with market brokers to identify available credits
- Documentation and verification of the inventories
- An equitable method of determining the annual fee imposed on property owners to finance purchase of the credits and the cost of administering the program
- A means of collecting the annual fee from property owners

Option 2 also includes constructing the project's residential and public buildings to achieve ZNE. As noted above, ZNE buildings would not be sufficient to bring the project to zero net GHG emissions because 74% of the emissions are attributable to mobile sources. The County would require ZNE buildings as a condition of approval of the project, for example either through the development agreement, or as a specific plan policy to be enforced at the time that the future subdivision tentative and parcel maps are approved. The cost of this part of Option 2 would be passed directly to the future property owners through the cost of the home or condominium, or the rental rate of future apartments.

Feasibility.

Option 1. All of the components listed above are necessary to successfully implement Option 1. Examining the feasibility of each of the necessary individual components can offer insight into the feasibility of Option 1 as a whole.

- ***Entity with the authority and knowledge to administer the program for 40 years.*** The County does not have the authority to collect an annual fee from property owners and residents for purposes of purchasing emissions credits. It may only collect fees for services. Therefore, the responsibility would logically fall to the Homeowners' Association (HOA) or Associations formed within the Project. HOAs are enabled by the Davis-Stirling Act (Civil Code Section 4000, et seq.) to manage a planned development (Civil Code Sections 4080 and 4175). This includes the power to levy assessments to perform its obligations under its governing documents (Civil Code Section 5600-5625). Running a program for the annual purchase of emissions credit is not a typical task for an HOA, and it would likely require hiring or contracting with someone who has the technical knowledge to run the program. However, that can be done and this is feasible.

  Whether an HOA can be depended upon to manage for 40 years a technically challenging program requiring continuous monitoring and the assessment of annual fees is unknown. That would be dependent upon the continued commitment of future HOA boards to the program and would be outside of the County's authority to directly enforce. For example, failure to perform the annual budget accounting requirements of Civil Code Section 5300 could result in an HOA being unable to continue to levy or to increase the necessary fee under Civil Code Section 5605. Similarly, if an HOA board voted to end the program prematurely, there may be no method by which to force them to continue the program. As a result it is infeasible to be able to guarantee continuing and effective administration of the program.

- ***A mandatory minimum standard for the quality of emissions credits to be purchased.*** CARB has endorsed protocols to quantify and report GHG emission reductions from numerous sources (e.g., urban forests, mine methane, livestock projects). Emissions credits purchased from a source that is compliant with those protocols can be depended upon as providing quality credits. This is feasible.

- ***Annual inventories of GHG emissions from the project by emissions sector*****.** In order to know how many offsets must be purchased each year, the HOA will need to undertake annual inventories of the expected GHG emissions from the project. Annual inventories and cost adjustments are necessary if the HOA is to meet its annual budget reporting requirements under Civil Code Section 5300. This will entail inventorying miles driven and types of vehicle for mobile sources; examining PG&E records for energy use; inventorying emissions from area sources; quantifying waste generation; and examining EID records for water consumption. Experiences with ZNE developments such as U.C. Davis' West Village have shown that even ZNE buildings can produce GHG emissions if resident behavior results in unexpected levels of energy use. The annual survey is needed to ensure that this is taken into account so that the proper number of credits are purchased. The annual survey may be too intrusive into individual activities to be successfully accomplished. Absent the ability to guarantee full cooperation by all future homeowners, renters, and property owners, detailed annual inventories may be infeasible.

- ***Consultation with market brokers to identify available credits*.** The fee charged to property owners will need to include sufficient revenue to cover the administrative costs, including outside consultations. This is within the authority of the HOA and is feasible.
- ***Documentation and verification of the inventories.*** This will take technical expertise. That can be provided by consultants and included in the administrative costs being reimbursed by program fees. It is feasible.
- ***An equitable method of determining the annual fee imposed on property owners to finance purchase of the credits and the cost of administering the program.*** Not all properties are the same. Future GHG emissions generation levels can vary by property as a result of the activities undertaken by residents. Pursuant to Civil Code Section 5600(b), an HOA "shall not impose or collect an assessment or fee that exceeds the amount necessary to defray the costs for which it is levied." To be equitable and minimize the potential for challenges to the fees, the fee collected should be related to the GHG emissions of a given property. For example, a home with minimal landscaping using minimal irrigation water should not be assessed the same annual fee as a home with substantial irrigation use, all other things being equal. Determining the annual fee will be similar to the "nexus" studies done for purposes of determining public agency impact fees. It is feasible.
- ***A means of collecting the annual fee from property owners.*** There is no available means of publicly financing the cost of the annual credit purchases. The usual mechanisms of a Mello-Roos Community Services District or a benefit assessment cannot be used for this purpose. However, an HOA would probably have the authority to collect the annual fee under the Davis-Stirling Act where its governing documents make it a requirement. Provided that future apartment complexes and townhomes are incorporated into the planned development associated with the HOA, as well as the single-family homes, fee collection to cover all GHG emissions would be feasible. If apartment complexes and townhomes are not incorporated into the HOA, then fee collection (purchase of full credits) would be infeasible.

Option 1 appears to be infeasible when viewed in its entirety. There are reasonable doubts over whether an HOA could successfully manage this technically complex program over a long period, particularly with the need for detailed annual inventories to enable the fee to be assessed. There may also be an issue with ensuring that all parts of the development, including the apartment complexes and any condominiums, are governed by the HOA that presumably would administer the program. Finally, because it would not be a real party in interest as a property owner within the planned development, the County may be unable to enforce this option should the HOA fail to fulfill its duties at some future point.

Option 2. The ZNE building component of Option 2 would directly add to the sales price of new homes and the construction costs of apartments and townhomes. For large custom homes, the increase in sales price may be relatively small because of the high value of such homes. For example, a 4,000- square-foot custom home would, at $8/square foot, cost an additional $32,000. A home of similar size in Serrano is currently listed for about $1.2 million. In this example, the cost of ZNE construction would add about 3% to the cost of that home. Another Serrano home of approximately 8,000 square feet in area is currently listed for about $3 million. There, the cost of ZNE construction would add about 2% to the cost of the home. (Redfin 2016)

Existing homes in Serrano on lots under 0.5 acres do not generally demand those sale prices. As a result, the incremental increase in sales price would be somewhat more marked. For example, for a 2,400- square=foot home currently listed for $530,000, the ZNE cost (assumed to be $8/square foot) would add approximately 3.6% to the cost of the home. For a 3,180 square foot home currently listed for $650,000, the ZNE cost would add approximately 3.9% to the cost of the home. (Redfin 2016)

The marginal cost of ZNE construction would be greatest when considering apartments and townhomes. If the complex contains 100 dwelling units averaging 800 square feet in floor area (assuming marginal ZNE cost to be $6/square foot), the additional cost of construction would be $480,000. There are no apartment complexes currently on the market in El Dorado Hills, so a value for this type of complex is difficult to determine. However, the cost of ZNE construction might add 5% or more to the cost of the complex (e.g., $480,000 is 5% of $9.6 million). This would be reflected in higher rents. Depending on the market for high-end apartments, this may make construction financing more difficult to obtain.

While absolute conclusions cannot be drawn from this data, Option 2 would result in only relatively small increases in home costs for larger homes. This may be feasible for the market to bear, particularly if marketed as saving the future homeowner substantial energy costs over the life of the home. However, it is clear that the additional cost of ZNE construction could result in a substantial increase in the cost of high-density development. That would affect 530 of the 1,000 total residential units proposed under the project. Because rents would need to be higher in order to recover those costs, Option 2 would undercut the Project's objectives of assisting in meeting the County's future Regional Housing Needs Allocations and broadening the housing stock in El Dorado Hills. The inconsistency with key project objectives related to housing makes Option 2 **infeasible**.

Reference:

Energy Upgrade California. 2016. "Net Zero Energy Frequently Asked Questions." Available: <http://www.californiaznehomes.com/#!faq/cirw>. Accessed: September 1, 2016.

Redfin. 2016. Available: https://www.redfin.com/neighborhood/40594/CA/El-Dorado-Hills/Serrano-Village. Accessed: September 1, 2016

From: **Marshall Cox** <mcox@edhfire.com>
Date: Mon, Jun 6, 2016 at 3:03 PM
Subject: Central EDH Specific Plan DEIR
To: Rommel Pabalinas <rommel.pabalinas@edcgov.us> R-R-4-1

Best regards,

Marshall Cox

Fire Marshal

El Dorado Hills Fire Department

1050 Wilson Blvd., El Dorado Hills, CA 95762

www.edhfire.com

(916) 933-6623 ext. 1017

(916) 817-9339 cell

(916) 933-5983 fax

mcox@edhfire.com

EL DORADO HILLS FIRE DEPARTMENT

"Serving the Communities of El Dorado Hills, Rescue and Latrobe"

January 19, 2016

Rommel Pabalinas, Project Planner
El Dorado County Planning Department
2850 Fair Lane
Placerville, CA 95667

Re: **Central EDH Specific Plan – DEIR – Fire Comments**

Dear Mr. Pabalinas:

The El Dorado Hills Fire Department, on behalf of The Rescue Fire Department, has reviewed the above referenced project and submits the following comments regarding the ability to provide this site with fire and emergency medical services consistent with the El Dorado County General Plan, State Fire Safe Regulations, as adopted by El Dorado County and the California Fire Code as amended locally. Any omissions and/or errors in respect to this letter, as it relates to the aforementioned codes, regulations and plans, shall not be valid, and does not constitute a waiver to the responsible party of the project from complying as required with all Codes, Standards, Local Ordinances, and Laws.

1. All comments written in our letter dated May 9, 2013 entitled "**Central El Dorado Hills Specific Plan, Draft 1 Comments"** remain standing comments.

2. All comment written in our letter dated January 2, 2014 entitled "**Central El Dorado Hills Specific Plan, Draft 2 Comments"** remain standing comments.

All comments below are specific to the DEIR review and are in addition to, or supplemental of, the comments as listed above:

3. The potable water system with the purpose of fire protection for this development shall be approved by the El Dorado Hills Fire Department. More detail as to square footage and construction type will be required for these calculations.

4. This development shall install Mueller Dry Barrel fire hydrants, or any other type of hydrant which conforms to El Dorado Irrigation District specifications for the purpose of providing water for fire protection. The spacing between hydrants in this development shall not exceed 500 feet in residential areas, and 300 feet in commercial areas. The exact location of each hydrant shall be determined by the Fire Department.

5. In order to enhance nighttime visibility, each hydrant shall be painted with safety white enamel and marked in the roadway with a blue reflective marker as specified by the Fire Department and State Fire Safe Regulations.

1050 Wilson Boulevard ▪ El Dorado Hills, California 95762 ▪ Telephone (916) 933-6623 ▪ Fax (916) 933-5983 ▪ www.edhfire.com

6. Approved fire apparatus access roads shall be provided for every facility, building, or portion of a building. The fire apparatus access roads shall comply with the requirements of Section 503 of El Dorado Hills County Water District Ordinance 36 and shall extend to within 150 feet of all portions of each facility and all portions of the exterior of the first story of the building as measured by an approved route around the exterior of the building or facility.

    a. Depending on final heights of each building, the final layout of fire apparatus access roads shall be determined and approved by the fire code official with consideration of whether a ladder truck or ground ladders would be used for firefighting operations.

7. The potential connection between the Park Drive extension and Silva Valley Parkway, if built, would provide an increase to the public level of service in emergency situations by allowing decreased response times by emergency personnel to the residents of the communities around it, as well as providing additional egress routes in cases of a mass evacuation scenario.

8. This development shall be prohibited from installing any type of traffic calming device that utilizes a raised bump/dip section of roadway.

    1. The roundabout discussed on page 11 of the PFFP Executive Summary document shall be reviewed for compliance by the El Dorado Hills Fire Department prior to its proposed implementation.

    2. Section 4.5.1 of the Public Review Draft August 2015 document shall have the last line amended to state "Traffic Circles and all other traffic calming devices or techniques shall be reviewed for approval by the El Dorado Hills Fire Department prior to any proposed implementation."

    3. Section 4.5.2 shall be reviewed for approval by the El Dorado Hills Fire Department prior to any proposed implementation. As currently described by the applicant, all center islands, neck-downs and bulb-outs shall be prohibited.

9. All fire apparatus access roadways and driveways shall be designed to provide an approved turning radius with a minimum 40 foot inside radius and 56 foot outside radius.

10. All gates shall meet the El Dorado Hills Fire Department Gate Standard B-002.

11. In order to provide this development with adequate fire and emergency medical response during construction, all access roadways and fire hydrant systems shall be installed and in service prior to combustibles being brought onto the site as specified by the Fire Department, Standard B-003.

12. This development shall be conditioned to develop, implement, and maintain a Wildland Fire Safe Plan that is approved by the Fire Department as complying with the State Fire Safe Regulations.

13. Lots that back up to wildland open space shall be required to use non-combustible type fencing.

14. All parking restrictions as stated in the El Dorado Hills County Water District Ordinance 36 shall be in effect. All streets with parking restrictions will be signed or marked with red curbs as described in the El Dorado County Regional Fire Protection Standard titled "No Parking-Fire Lane." All curbs in the parking lot(s) that are not designated as parking spaces will be painted red and marked every 25 feet "no parking fire lane." This shall be white letters on a red background, as per El Dorado County Standard B-004.

    1. Figure 4.5: Local 33' Residential Street (single-loaded) and Figure 4.6: Local 33' Residential Street shall be prohibited from parking on either sides of the streets.

1050 Wilson Boulevard ▪ El Dorado Hills, California 95762 ▪ Telephone (916) 933-6623 ▪ Fax (916) 933-5983 ▪ www.edhfire.com

2. Figure 4.7 shall be increased to a minimum of 30' in order to allow parking on one side of the street.

3. Figure 4.8: Local 29' Residential Cul-de-Sac shall be prohibited from parking on either side of the street.

4. Figure 4.9: Typical Cul-de-Sac does not meet compliance with local regulations. See note 9 above for minimum turning radius.

5. Table B.1 and B.2 shall be reviewed for approval by the El Dorado Hills Fire Department. As currently escribed, turnarounds and parking on streets (based on widths) shall be revised to meet local requirements.

15. A secondary means of egress shall be provided prior to any construction or the project can be phased.

16. All roadway plans, both public and private, shall be provided to the El Dorado Hills Fire Department for review to ensure compliance will all local laws and regulations.

17. Any parcels greater than one acre shall conform to Title 14 SRA Fire Safe Regulations requirements for setbacks (minimum 30' setback for buildings and accessory buildings from all property lines).

18. Prior to June 1st each year, there shall be vegetation clearance around all EVA's (Emergency Vehicle Access) and the property in accordance with Public Resources Code Section 4291 and the conditioned Wildland Fire Safe Plan.

19. If this project decides on designing a trail-type system, the access points to the open space trail system, consideration shall be given to access points in order to allow for emergency vehicle access (specifically for a smaller vehicle such as an ambulance). Gates or removable bollards may be installed and locked with a low priority KNOX lock. The street curbs adjacent to the trail access point shall be painted red.

20. The landscaping plan shall be reviewed by the Fire Department to ensure that trees, plants, and other landscaping features proposed to be adjacent to the Fire Apparatus Access roads, Fire and Life Safety equipment, and near address locations on buildings and monuments will not impede fire apparatus access or visual recognition.

Contact Marshall Cox at the El Dorado Hills Fire Department with any questions at 916-933-6623 ext. 1017.

Sincerely,

EL DORADO HILLS FIRE DEPARTMENT

Marshall Cox
Fire Marshal

Response to R-RECIRC-4, El Dorado Hills Fire Department, Marshall Cox, 6/6/2016

The RDEIR is a focused document that discusses greenhouse gas emissions. This comment letter is not related to GHG emissions or the adequacy of the RDEIR.

R-R-4-1: The El Dorado Hills Fire Department sent its comment letter on the November 2015 Draft EIR dated January 19, 2016 (Letter R-6). Please see Response to Comment **R-6-1**.

Comments and Responses—State Agencies

LETTER S-1

From: **McFarlin, Darin@CALFIRE** <Darin.McFarlin@fire.ca.gov>
Date: Wed, Dec 9, 2015 at 10:35 AM
Subject: Central El Dorado Hills Specific Plan
To: "Rommel Pabalinas (rommel.pabalinas@edcgov.us)" <rommel.pabalinas@edcgov.us>

Just wanted to make sure you still had a copy of this letter I wrote in 2013… S-1-1

Darin McFarlin

Fire Captain

Pre-Fire Management

CAL FIRE

Amador-El Dorado Unit

2840 Mt. Danaher Road

Camino, CA 95709

(530) 708-2723

LETTER S-1

DEPARTMENT OF FORESTRY AND FIRE PROTECTION
2840 Mount Danaher Road
Camino, CA 95709
(530) 644-2345
Website: www.fire.ca.gov

February 25, 2013

To: El Dorado County Development Services Department, Planning Division
Rommel Pabalinas
2580 Fairlane Court, Building C
Placerville, CA 95667

Re: Central El Dorado Hills Specific Plan
SP12-0002

To ensure the safety of residents living in the proposed project, two means of access and egress shall be provided in the event of an emergency needing evacuation. Roads shall be a minimum road width of 20 feet per the California Fire Code unless increased road width is required by DOT.

(2010 California Fire Code, California Code of Regulations, Title 24, Part 9, Chapter 5, Section 503) or *(Title 14, California Code of Regulations, Division 1.5, Chapter 7, Subchapter 2, Article 2. Emergency Access, Section 1273.01 of the Fire Safe Regulations).*

The maximum length of a dead end road shall not exceed **800** feet for parcels zoned for **less than one** acre.

(Title 14, California Code of Regulations, Division 1.5, Chapter 7, Subchapter 2, Article 2. Emergency Access, Section 1273.09 of the Fire Safe Regulations).

S-1-1 cont.

Dead End Roads: Pursuant to Title 14, California Code of Regulations, Article 2, Section 1273.09, of the SRA Fire Safe Regulations, the maximum length of a dead-end road, including all dead-end roads accessed from the dead-end road, shall not exceed the following cumulative lengths, regardless of the numbers of parcels served:

- *parcels zoned for less than one acre------800 feet*
- *parcels zoned for 1 acre to 4.99 acres-----1320 feet*
- *parcels zoned for 5 acres to 19.99 acres -------2640 feet*
- *parcels zoned for 20 acres or larger --------5280 feet*

If you have any questions regarding this matter, feel free to contact me for additional information.

Sincerely,
/s/ Darin McFarlin
Darin McFarlin
Pre-Fire Engineer

Response to S-1, CALFIRE-Amador El Dorado, Darin McFarlin, 12/9/2015

S-1-1: This is an informational comment about project design, identifying access and egress requirements. It does not address the analysis or conclusions of the Draft EIR concerning fire hazards. No further response is required.

From: **Cunningham, Eileen R@DOT** <eileen.cunningham@dot.ca.gov>
Date: Fri, Feb 19, 2016 at 3:36 PM
Subject: Central El Dorado Hills Specific Plan DEIR Comments
To: "rommel.pabalinas@edcgov.us" <rommel.pabalinas@edcgov.us>
Cc: "Fredericks, Eric B@DOT" <eric.fredericks@dot.ca.gov>, "Scott Morgan (Scott.Morgan@OPR.CA.GOV)" <Scott.Morgan@opr.ca.gov>

Hi Mel,

Please find our comments on the Central El Dorado Hills Specific Plan DEIR attached.

Please let me or Eric know if you have any questions.

Have a nice weekend.

Eileen Cunningham

Regional Planning Liaison/Intergovernmental Review Coordinator

Division of Planning and Local Assistance

California Department of Transportation, District 3

(916) 274-0639 | eileen.cunningham@dot.ca.gov

LETTER S-2

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
2379 GATEWAY OAKS DRIVE, STE 150 - MS 19
SACRAMENTO, CA 95833
PHONE (916) 274-0638
FAX (916) 263-1796
TTY 711

Serious drought.
Help save water!

February 19, 2016

032015-ELD-0049
03-ELD-50 1.08/R1.655
A14-0003/SP86-0003/SP12-0002/Z14-0005/PD14-0004/TM14-1516

Mr. Mel Pabalinas
County of El Dorado
Community Development Agency
Planning Services
2850 Fairlane Court
Placerville, CA 95667

Central El Dorado Hills Specific Plan – Draft Environmental Impact Report (DEIR)

Dear Mr. Pabalinas:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review for the project referenced above. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this project for impacts to the State Highway System in keeping with our mission, vision and goals for sustainability/livability economy, and safety/health. We provide these comments consistent with the state's smart mobility goals that support a vibrant economy, and build communities, not sprawl. The proposed project includes the development of up to 1,000 dwelling units, 11 acres of civic- limited commercial use (50,000 square feet of commercial use), 15 acres of community active park, a one-acre neighborhood park, and 169 acres of open space. The project site is located Directly north of United States Highway 50 (US 50), between El Dorado Hills Boulevard and Silva Valley Parkway interchanges in El Dorado Hills. The following comments are based on the Draft Environmental Impact Report (DEIR).

Hydraulics

1. The Drainage Analysis (Appendix I) using XP-Stormwater Wastewater Management Model (XP-SWMM) indicates that the post project conditions will increase the flow to the double box culverts for a hundred-year storm from 630 cubic feet per second (cfs) to 735 cfs (an increase of sixteen percent). Further, page 4 states, "No analyses of the Town Center facilities have been done as part of the CEDHSP [Central El Dorado Hill Specific Plan] study. It has S-2-1

been assumed that the Town Center facilities were designed assuming fully developed conditions upstream of Highway 50." Such an assumption is not acceptable for such a drastic increase in flow.

2. In response to comments by the County of El Dorado, a further analysis downstream of US 50 was done based on previous studies by others. Caltrans finds this unacceptable.
3. For a project of this magnitude and proposed increases in flows to Caltrans culverts, a detailed study based on actual surveys of the channel upstream and downstream of US 50 to downstream of Latrobe Road is required.
4. Actual field conditions and factual "n" values are required to be modeled (preferably using Hydraulic Engineering Center River Analysis System (HEC-RAS)) and the model should be provided to Caltrans for review.
5. The datum used for the water surface elevations as well as elevations of all culverts and structures within the limits of the study should be clearly stated. Elevations of all structures, roads, and water surfaces must co-relate to a common datum.
6. Adverse impacts to private properties south of US 50 resulting from increased flows are not acceptable to Caltrans.
7. Models of the channel upstream and downstream of US 50 across Town Center Boulevard, White Rock Road, Concordia Drive, and across Latrobe Road must demonstrate that there are no adverse impacts to any adjacent properties. A consistent datum must be used throughout the entire model.

S-2-1 cont.

Transportation Impacts

1. The Pedestrian and Bicycle Circulation section (Page 3.14-28-29) indicates that there is a plan (by others) to relocate the planned Pedestrian Overcrossing (POC) across US 50 to connect to the off-street bike path at the planned community park to the El Dorado Hills Town Center. Please provide additional details regarding the proposed POC location and construction year. When the El Dorado Hills/Latrobe interchange reconstruction was approved by Caltrans, it was understood that a POC would be built on the east side of the interchange to serve those pedestrians within the interchange vicinity, north of US 50, to improve passage to the town center and properties near Latrobe Road. Caltrans is supportive of bicycle and pedestrian overcrossings of US 50 which provide connectivity to adjacent facilities and trip generators. Caltrans also wants to ensure pedestrians and bicyclists can comfortably navigate through the El Dorado Hills/Latrobe interchange. S-2-2
2. Mitigation Measure TRA-1a (Pay applicable TIM Fees towards improvement of the Francisco Drive/El Dorado Hill Boulevard intersection, Page 3.14-30) does not include signalization. As indicated in Table 3.14-7 (Page 3.14-25), the intersection currently operates at Level of Service (LOS) F utilizing unsignalized all-way stop control (AWSC). The intersection is signalized is the cumulative scenario. A signal warrant analysis should be performed for this intersection. S-2-3
3. Figure 12 (US 50 Freeway Mainline and Ramp Peak Hour Traffic Volumes – Cumulative Conditions, Page 82) appears to contain several errors regarding traffic volumes, specifically the Cumulative Plus Project scenario. The Cumulative No Project volumes appear to be S-2-4

LETTER S-2

reasonable and the Cumulative Plus Project scenario volumes should simply be the summation of the Cumulative No Project Volumes and the Project Only Trip assignment volumes shown in Figure 7 (Page 45). However, the Cumulative Plus Project volumes are inconsistent with that calculation. Please revise the Cumulative Plus Project volumes in Figure 12. Also, there may be a need to recalculate the Cumulative Plus Project LOS in Table 17 (Pages 83-85) and roadway mitigation in Table 21 (Page 99) (if applicable) if the erroneous volumes were used. Please ignore the recalculation request if the correct volumes were used and the volume errors were isolated to only Figure 12. S-2-4 cont.

Encroachment Permit

Any work in the state's right of way requires an encroachment permit. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating the state's right-of-way must be submitted to: Charles Laughlin, California Department of Transportation, District 3, Office of Permits, 703 B Street, Marysville, CA 95901. There may be additional conditions to satisfy before a permit is granted once project details are further refined and submitted to the Office of Permits. S-2-5

Transportation Management Plan (TMP)

If it is determined that traffic restrictions and detours are needed on or affecting State highways, a TMP or construction Traffic Impact Study may be required of the developer for approval by Caltrans prior to construction. TMPs must be prepared in accordance with Caltrans' *Manual on Uniform Traffic Control Devices.* Further information is available for download at the following web address: http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd2012/Part6.pdf. The applicant may need to submit a traffic management plan to the Caltrans District 3 Traffic Manager: Bob McNew, California Department of Transportation, District 3, District Traffic Manager, 3165 Gold Valley Drive, Rancho Cordova, CA 95742. S-2-6

Please provide our office with copies of any further actions regarding this project.

If you have any questions regarding these comments or require additional information, please contact Eileen Cunningham, Intergovernmental Review Coordinator, at (916) 274-0639 or eileen.cunningham@dot.ca.gov.

Sincerely,

Eric Fredericks

ERIC FREDERICKS, Chief
Office of Transportation Planning – South Branch

c: Scott Morgan, State Clearinghouse

Response to S-2, Caltrans, Eileen Cunningham, 2/19/2016

S-2-1: The commenter requests additional quantified analysis of stormwater flows, and that such analysis should use a different model than used in the project's 2014 drainage analysis and a supplemental analysis performed in 2015, which are both included in Appendix I of the Draft EIR. The XP-SWMM model used in the drainage study is a widely used, standard model that is appropriate for a specific plan for purposes of estimating stormwater flows.

Impacts WQ-4 and WQ-5, beginning on page 3.8-21 of the Draft EIR, discuss drainage patterns and systems within the project area. As noted in this discussion, the analysis shows that the proposed project would not result in adverse impacts on private properties south of US 50 because post-development flows would not exceed pre-development flows (Draft EIR page 3.8-22, third paragraph). The County's Small MS4 Permit requires development projects to control the volume, rate, and duration of runoff to minimize the potential for increased water surface elevations that could cause or exacerbate downstream flooding. CEDH Specific Plan Policy 7.4 requires that stormwater detention basins be reviewed and approved by the County prior to, or concurrently with, the first small lot tentative subdivision maps, and the Policy 7.5 requires the prevention of increases in potential flood hazard or damage to surrounding policies.

Pursuant to CEQA Guidelines Section 15204, "CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters." Other than a request to use a different model with extensive inputs, the commenter did not provide any analysis using the HEC-RAS model that shows conclusion different than that presented in the drainage study and Draft EIR. Additional quantification and modeling requested by the commenter is not required at this time, and would not alter the conclusions of the analysis.

S-2-2: This comment is directed to project design and reiterates Caltrans' support for a pedestrian overcrossing across US 50. The location of the overcrossing shown in the Draft EIR is an alternative location. Please see Response to Comment **R-5-33**. No timeline has been developed. At such time as the overcrossing project moves forward, the County will coordinate with Caltrans on specific details, and project-level CEQA review will be required.

S-2-3: A peak hour signal warrant analysis for the Francisco Drive/El Dorado Hills Boulevard intersection was prepared, and the results are presented in the Transportation Impact Analysis (Appendix L, Table 24 of the Draft EIR).

S-2-4: The Draft EIR's traffic volume data in Figure 12 (Transportation Impact Analysis page 82) were correct at the time the traffic study was prepared in 2016. The cumulative plus project volumes were derived by the use of the El Dorado County travel demand model, which takes into account the new roads and connections that will be in place by 2035. By virtue of creating new connections, the travel patterns will change as people gravitate to the most convenient route. Simply adding cumulative no-project volumes to project-only trips, as suggested by the commenter, does not take into account the potential for changing trip patterns and the benefit of new connections, alternative modes, or alternative routes. The traffic study was updated in 2017 to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives. The results of the updated 2017 traffic study are presented in Chapter 3, *Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR*, of this document. Table 10 of the 2017 study added to Appendix L presents the calculations of cumulative impacts. No recalculation of the data is needed.

S-2-5: This is an informational comment only. If during the design phase it is determined that work is proposed within the state's right of way, an application for an encroachment permit would be submitted.

S-2-6: This is an informational comment only. If it is determined during the design phase that traffic restrictions and detours are needed on or affecting the state highways, a transportation management plan or construction traffic impact study would be prepared and submitted to Caltrans for approval prior to construction.

LETTER S-3

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

CALIFORNIA
Water Boards

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PLANNING DEPARTMENT

Central Valley Regional Water Quality Control Board

18 December 2015

Rommel Pabalinas
County of El Dorado
2850 Fairlane Court, Building C
Placerville, CA 95667

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COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, CENTRAL EL DORADO HILLS SPECIFIC PLAN/ FILE NOS: A14-0003/ SP86-0003/ SP12-0002/ Z14-0005/ PD14-0004/ TM14-1516 PROJECT, SCH# 2013022044, EL DORADO COUNTY

Pursuant to the State Clearinghouse's 20 November 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environment Impact Report* for the Central El Dorado Hills Specific Plan/ File Nos: A14-0003/ SP86-0003/ SP12-0002/ Z14-0005/ PD 14-0004/ TM14-1516 Project, located in El Dorado County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38. S-3-1

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at: http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf S-3-1 cont.

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality. S-3-2

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to S-3-3 restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]
The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

S-3-3 cont.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit
Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

S-3-3 cont.

Waste Discharge Requirements – Discharges to Waters of the State
If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit
If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov. S-3-3 cont.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

S-3-3 cont.

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Response to S-3, Central Valley Regional Water Quality Control Board, Stephanie Tadlock, 12/18/2015

S-3-1: The commenter provides a discussion of Basin Plans and states that an antidegradation analysis is a required element of the National Pollutant Discharge Elimination System and waste discharge requirements permitting processes. Water quality considerations and permitting are discussed in Section 3.8, *Hydrology, Water Quality, and Water Resources*, of the Draft EIR, beginning on page 3.8-1.

S-3-2: The commenter states that the environmental document must evaluate impacts on both surface and groundwater quality. Impacts on surface water and groundwater quality are addressed in Impacts WQ-1 WQ-5, WQ-6, and WQ-11, beginning on pages 3.8-19, 3.8-23, 3.8-24, and 3.8-26, respectively.

S-3-3: The commenter provides guidance related to permits required by the Central Valley Regional Water Quality Control Board. These requirements are discussed under *Regulatory Setting* in Section 3.8.1 of the Draft EIR, beginning on page 3.8-1. These are regulatory requirements and the project would comply with all that are applicable.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
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DIRECTOR

June 7, 2016

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PLANNING DEPARTMENT

Rommel (Mel) Pabalinas
El Dorado County
2850 Fairlane Court, Building C
Placerville, CA 95667

Subject: Partial Recirculated Draft EIR Central El Dorado Hills Specific Plan
SCH#: 2013022044

Dear Rommel (Mel) Pabalinas:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on June 6, 2016, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. S-R-1-1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

LETTER S-RECIRC-1

SCH#	**2013022044**
Project Title	Partial Recirculated Draft EIR Central El Dorado Hills Specific Plan
Lead Agency	El Dorado County

Type	**EIR** Draft EIR
Description	The proposed project would provide for development of up to 1,000 dwelling units, 11 acres of civic-limited commercial use (50,000 sq. ft. of commercial use), 15 acres of community active park, a 1-acre neighborhood park, and 169 acres of open space (168 acres of natural open space and a 1-acre neighborhood park) in the center of the El Dorado Hills community. The proposed project consists of two planning areas.

Lead Agency Contact

Name	Rommel (Mel) Pabalinas				
Agency	El Dorado County				
Phone	(530) 621-5355	*Fax*			
email					
Address	2850 Fairlane Court, Building C				
City	Placerville	*State*	CA	*Zip*	95667

Project Location

County	El Dorado						
City							
Region							
Lat / Long	38° 39' 59" N / 121° 04' 27" W						
Cross Streets	El Dorado Hills Blvd/Serrano Prkwy & El Dorado Blvd./Wilson & Olson Wy.						
Parcel No.	121-160-05; 121-040-20; 121-040-29, 121-040-31; 121-120-24; 120-050-01; 120-050-05						
Township	9,10 N	*Range*	8E	*Section*	Many	*Base*	MDM

Proximity to:

Highways	Hwy 50
Airports	
Railways	
Waterways	Carson Creek
Schools	Oak Ridge HS, Rolling Hills Middle; Oak Meadow ES: Silva Valley
Land Use	High-Density and multi-family residential, open space

Project Issues	Other Issues

Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 3 S; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission

Date Received	04/22/2016	*Start of Review*	04/22/2016	*End of Review*	06/06/2016

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to S-RECIRC-1, SCH, Scott Morgan, 6/7/2016

S-R-1-1: The letter documents the close of the public comment period on June 6, 2016 and acknowledges that the County has complied with the review requirements for draft environmental documents pursuant to CEQA. The letter also notes that no state agencies have commented as of this date.

Comments and Responses—Tribal Organization

LETTER T-1

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Danny Rey, Secretary | Brenda Adams, Treasurer | Calvin Moman, Council Member

December 15, 2015

Community Development Agency
County of El Dorado
2850 Fairlane Court
Placerville, CA 95667

Subject: Draft Environmental Impact Report for the Central El Dorado Hills Specific Plan (State Clearing House No. 2013022044)

Dear Community Development Agency,

Thank you for providing additional 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 whose service area includes El Dorado, Nevada, Placer, 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.

We are currently reviewing the information provided by your agency in order to ascertain whether the project could affect cultural resources that may be of importance to the UAIC. Please continue to send us copies of the proposed project's environmental documents so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The information gathered will provide us with a better understanding of the project and the cultural resources on site and is invaluable for consultation purposes. Finally, please contact us if you find any Native American cultural resources in, or around, your project area.

Thank you again for taking these matters into consideration, and for involving the UAIC in the planning process. We look forward to reviewing the additional documents requested. Please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or email at mguerrero@auburnrancheria.com if you have any questions.

T-1-1

Sincerely,

Gene Whitehouse,
Chairman

CC: Marcos Guerrero, CRM

EL DORADO COUNTY
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LONG RANGE PLANNING

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

MIWOK
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United Auburn Indian Community
of the Auburn Rancheria

Tribal Office
10720 Indian Hill Road
Auburn, CA 95603

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County of El Dorado
2850 Fairlane Court
Placerville, CA 95667

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Response to T-1, United Auburn Indian Community, Gene Whitehouse, 12/16/2015

T-1-1: The commenter states that the UAIC is reviewing information provided to evaluate any potential effect the CEDHSP might have on cultural resources. The commenter also requests any additional copies of any archaeological reports completed for the project. They also ask for copies of future environmental documents for the project and to be notified of any Native American cultural resources found within the project area.

The Tribe is a consulting party with both the County and the US Army Corps of Engineers for this project. As part of the consultation, the County provided the tribe with copies of all archaeological reports on October 31, 2013 and placed the tribe on the mailing list for all notices and CEQA documents related to the CEDHSP. Mitigation Measure CUL-1a requires, among other things, the USACE to develop more specific protocols for the management of unanticipated discoveries of Native American resources as part of the Historic Property Treatment Plan to ensure that cultural-affiliated tribes are notified. In the unlikely event of the unanticipated discovery of Native American remains during project construction, procedures under state law will be carried out to identify the Most Likely Descendent, which will be designated by the California Native Heritage Commission.

Chapter 3
Changes and Errata to the Draft EIR and the Partial Recirculated Draft EIR

This chapter describes revisions that have been made to the Draft EIR and the Partial Recirculated Draft EIR. Underlining indicates where additions were made to the original text. ~~Strikeout~~ indicates where the original text was deleted.

CEQA Guidelines Section 15132 provides that a Final EIR must include, among other things, the Draft EIR or a revision of the draft. This chapter identifies the text changes that have been made to the Draft EIR and Partial Recirculated Draft EIR. The changes are arranged by the chapter or section of the Draft EIR or Partial Recirculated Draft EIR in which they are found and referenced by page number. For the reader's convenience, the changes are presented in the context of the paragraph in which they are found. Additions are shown as underlined text; deletions are shown as strikethroughs.

The Recirculated Partial Draft EIR superseded some portions of the Draft EIR related to Greenhouse Gas Emissions. The chapters and sections belonging to the Partial Recirculated Draft EIR are identified as such.

Note that these changes do not include revisions to the Executive Summary or the Introduction chapter. The Executive Summary has been rewritten to reflect the combining of the Draft EIR and Recirculated Partial Draft EIR and precedes Chapter 1, *Introduction*, of this Final EIR. The Introduction has been updated to explain the organization of the Final EIR document.

Changes Throughout the Document

In response to comment I-R-13-1, the numbers in front of fourth level headings have been removed in the Final EIR.

To be consistent with the recently completed General Plan amendment, R1-PD (Single-Family Residential-Planned Development) has been replaced with R1-PD (Single-Unit Residential-Planned Development) throughout the Final EIR.

Chapter 1, Introduction

In response to comments and to provide clarification, the following text is added to the Chapter 7, References bullet under Section 1.5 on page 1-6:

All of the items listed in Chapter 7, excepting confidential information, are available for review during normal business hours at the County Community Development Agency offices: 2850 Fair Lane, Building C.

Chapter 2, Project Description

In response to comment I-R-13-1, introductory text in the RDEIR on page 1 above the Project Setting has been replaced with the introductory text in the DEIR on page 2-1 above the Project Setting. This corrects a typographical/formatting error which resulted in a footnote being incorporated into the text of the document.

The following typo has been corrected and text added in the second paragraph on page 2-1:

The CED~~S~~HSP provides the basis for the County's consideration of all subsequent discretionary and ministerial project approvals and entitlements in the proposed project area. The CEDHSP, in conjunction with the applicable policies of the General Plan, elements of the County Code and other relevant requirements, will govern the design of the CEDHSP's subdivisions, including the size of lots and types of improvements that will be required as conditions of approval.

The first sentence under Section 2.1.3, Surrounding Land Uses on page 2-4 has been revised as follows:

~~The~~ Portions of the Serrano Westside planning area ~~is~~ are adjacent to existing office and retail uses to the south and west (Raley's and La Borgata), and existing residential uses to the east (the Serrano Community) (Figure 2-3). The proposed Serrano Westside development would surround the El Dorado Hills Fire Station (on Wilson Boulevard off of El Dorado Hills Boulevard) to the north, east, and south. To the north and northeast are undeveloped land, an archery range, and two schools (Oak Ridge High School and Silva Valley Elementary School). The Serrano Westside planning area is immediately north of US 50 and less than 2 miles south of Folsom Lake.

Section 3.1, Aesthetics

The following text on page 3.1-5 has been revised to clarify Design Review.

~~Though El Dorado Hills is not an officially designated design district, d~~ Development projects in El Dorado Hills Community Services District (CSD) are distributed to local design review committees, including the Design Review committee ~~under the El Dorado Hills Community Services District (CSD),~~ for review, input, and advice.

The following text has been added to Impact AES-2 on page 3.1-11 to clarify vista views.

Impact AES-2: Have a substantial adverse effect on a scenic vista (less than significant with mitigation)

Scenic vista views would be affected by vegetation removal and construction of the residential subdivision associated with the proposed project. Vista views are likely to ~~see~~ include more visible project elements than ground-level views of the proposed project because viewers can see out and over the proposed project from vista vantages located on hillsides around the project area because they are at a higher elevation than the proposed project. The proposed project would result in the removal of oak trees and an alteration of grasslands and oak woodlands to developed residential, commercial, and park uses. These changes would be visible in scenic vista views that are fairly available through the project vicinity, as illustrated in Figures 3.1-3 (Simulation 1) and 3.1-4

(Simulation 2) that show existing conditions and the proposed conditions of the CEDHSP. However, the project would preserve open space areas, designated as OS, including the oak woodlands associated with Serrano Villages D1, Lots C and D, currently entitled for residential development under the El Dorado Hills Specific Plan (EDHSP). County policies, zoning ordinances, design review, and the proposed CEDHSP ensure that the proposed project would be well-designed, sensitive to the site's natural and aesthetic resources, and seek to minimize the visual intrusion on the landscape by preserving oak trees and other aesthetic qualities and features of the site to the degree feasible.

In response to comment I-11-10, Mitigation Measure AES-2 on page 3.1-12 has been revised as follows:

Mitigation Measure AES-2: Apply aesthetic design treatments to buildings within oak woodland and grassland areas

<u>Appendix B, Site Design Standards, of the Central El Dorado Hills Specific Plan shall include Section B.6, Building Design Standards, as follows. These requirements will be adopted as Conditions, Covenants and Restrictions with approval of individual subdivision maps and planned development permits.</u>

<u>B.6 BUILDING STANDARDS</u>

Buildings associated with the proposed project that are to be located in oak woodland and grassland areas will be designed to blend with the surrounding built and natural environments so that these structures complement the visual landscape. The following measures will be applied <u>subject to County review and approval upon issuance of building permits</u>.

- Roofing materials within oak woodlands will be colored using a shade that is two to three shades darker than the general surrounding area.
- Building facades within oak woodlands shall be painted in mid-range to darker earth tones to help buildings blend better within the oak canopy. Lighter beiges and tans, which would make buildings stand out and contrast against the oak canopy, will be avoided.
- Roofing materials within grasslands will use colors that are similar to the mid-range earth toned colors used on existing residences because these colors blend well within grassland areas and provide visual continuity with surrounding development.
- Building facades within grasslands shall be painted in mid-range earth tones to help buildings blend better within grassland areas. Very light off-whites, beiges, and tans that make buildings stand out and contrast against grassland areas, will be avoided.

In response to comment I-11-11, Mitigation Measure AES-4 on page 3.1-15 has been revised as follows:

Mitigation Measure AES-4: Design proposed noise barriers to be visually consistent with existing noise barriers in the project vicinity

Existing noise barriers in the project vicinity utilize a combination of solid barriers, earthen berms, and landscaping to mitigate the effects of noise and improve site aesthetics. The earthen berms and landscaping not only improve the quality of views along roadways, but also act to screen and reduce the visibility and apparent scale of the solid barrier. Any noise barriers constructed ~~as a result of the proposed project~~ <u>along Serrano Parkway and El Dorado Hills Boulevard, and Park Drive Extension (see Figure 3.10-2 in the Draft EIR) within the Central El</u>

Dorado Hills Specific Plan shall be designed and constructed in a manner as to complement and blend with nearby existing noise barriers. ~~Therefore, new~~ New noise barriers ~~built along Serrano Parkway and El Dorado Hills Boulevard~~ shall be visually consistent with the design of existing ~~and proposed~~ noise barriers in the project vicinity, such as the noise wall at the southeast corner of El Dorado Hills Boulevard and Harvard Way and the shallow berm along Serrano Parkway. The design will include similar dimensions, barrier materials, berm dimensions, and plant species as the existing barriers along El Dorado Hills Boulevard and Serrano Parkway and the barriers proposed to be installed east of the project area.

Section 3.2, Air Quality

In early 2017, the CEDHSP traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR in November 2015, to be consistent with the County's 2016 Capital Improvement Program,[1] *and to recognize the opening of the new Silva Valley Parkway Interchange. Additionally, to address language in Voter Initiative Measure E (Initiative to Reinstate Measure Y's Original Intent), a near-term analysis was conducted to assess traffic impacts at the 10-year mark, in 2027. The results of the revised traffic study were used to update the air quality analysis, updating the existing conditions and air quality impacts based on the traffic operations and projections, and adding a near-term analysis. Analysis did not result in the identification of any new or worsened impacts.*

The following revisions have been made to Table 3.2-1 on page 3.2.-2 to reflect revised information.

[1] Since the preparation of the updated Traffic Impact Study, the County has adopted the 2017 CIP, however, no changes that would affect this study were included in the 2017 CIP.

Table 3.2-1. National and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards[a]	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None[b]	None[b]
	8–hour	0.070 ppm	~~0.075 ppm~~ 0.070 ppm[c]	~~0.075 ppm~~ 0.070 ppm[c]
Particulate matter (PM10)	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual mean	20 μg/m^3	None	None
Fine particulate matter (PM2.5)	24-hour	None	35 μg/m^3	35 μg/m^3
	Annual mean	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
Carbon monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
	8-hour (Lake Tahoe)	6 ppm	None	None
Nitrogen dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur dioxide[d]	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.14 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day average	1.5 μg/m^3	None	None
	Calendar quarter	None	1.5 μg/m^3	1.5 μg/m^3
	3-month average	None	0.15 μg/m^3	0.15 μg/m^3
Sulfates	24-hour	25 μg/m^3	None	None
Visibility reducing particles	8-hour	–[e]	None	None
Hydrogen sulfide	1-hour	0.03 ppm	None	None
Vinyl chloride	24-hour	0.01 ppm	None	None

Source: California Air Resources Board ~~2013~~ 2016a.

μg/m^3 = micrograms per cubic meter.

ppm = parts per million.

[a] National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

[b] The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for State Implementation Plans.

[c] The federal 8-hour standard of 75 parts per hundred million was lowered to 70 parts per hundred million on October 1, 2015.

[d] The annual and 24-hour national ambient air quality standards for sulfur dioxide only apply for 1 year after designation of the new 1-hour standard to those areas that were previously nonattainment for 24-hour and annual NAAQS.

[e] The California ambient air quality standards for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70%.

In response to comment I-7-13, the following text has been added to the Regulatory Setting, after Goal 6.3 on page 3.2-5 regarding naturally occurring asbestos (NOA):

- General Plan Policy 6.3.1.1 (requires 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 have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods).

El Dorado County Code

The following code addresses NOA.

- Chapter 8.44 of the County Code, including Sections 8.44.030 (General Requirements for Grading, Excavation and Construction Activities), 8.44.050 (General Procedures for Abatement and Penalties), and 8.44.060 (Real Estate Transfer Disclosure).

Existing air quality conditions have been updated. The text on page 3.2-8 has been updated as follows, Table 3.2-2 has been replaced, and revisions have been made to Table 3.2-3 as follows.

Table 3.2-2 summarizes ozone and PM10 levels for the last 3 years for which complete data are available (~~2012-2014~~ 2016-2018). As shown in Table 3.2-2, the Placerville-Gold Nugget Way station has experienced frequent violations of the ozone standards. At least ~~6~~ 18 violations of the state 24-hour PM10 standard were recorded ~~each year~~ in 2017 at the Sacramento-Branch Center Road station, and 24 violations in 2018. As discussed above, the CAAQS and NAAQS represent concentration limits of criteria air pollutants needed to adequately protect human health and the environment. Existing violations of the ozone and PM10 ambient air quality standards indicate that certain individuals exposed to this pollutant may experience certain health effects, including increased incidence of acute and chronic cardiovascular and respiratory ailments.

Table 3.2-2. Ambient Criteria Air Pollutant Monitoring Data (2016-2018)

Pollutant Standards	2016	2017	2018
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.112	0.104	0.115
Maximum 8-hour concentration (ppm)	0.094	0.084	0.099
Number of days standard exceeded[a, b]			
CAAQS 1-hour (>0.09 ppm)	9	1	8
CAAQS 8-hour (>0.070 ppm)	45	21	31
NAAQS 8-hour (>0.070 ppm)	41	18	28
Particulate matter (PM10)[c]			
National[d] maximum 24-hour concentration (μg/m^3)	45.0	79.0	200.0
National[d] second-highest 24-hour concentration (μg/m^3)	43.0	64.0	148.8
State[e] maximum 24-hour concentration (μg/m^3)	44.0	81.0	212.0
State[e] second-highest 24-hour concentration (μg/m^3)	43.0	63.0	157.0
National annual average concentration (μg/m^3)	18.6	20.8	26.5
State annual average concentration (μg/m^3)[f]	18.9	21.3	27.4
Number of days standard exceeded[b]			
NAAQS 24-hour (>150 μg/m^3)[f]	0	0	6
CAAQS 24-hour (>50 μg/m^3)[f]	0	18	24

Source: California Air Resources Board 2019.
ppm = parts per million.
NAAQS = National Ambient Air Quality Standards.
CAAQS = California Ambient Air Quality Standards.
μg/m^3 = micrograms per cubic meter.
mg/m^3 = milligrams per cubic meter.

[a] An exceedance of a standard is not necessarily a violation, as each pollutant has specific criteria on which a violation of the state and federal standards would occur.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California approved samplers.

[d] Measurements usually are collected every 6 days.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

Table 3.2-3. Federal and State Attainment Status for the Project Area

Criteria Pollutant	Federal Designation	State Designation
O_3 (8-hour)	~~Severe 15~~[a] Moderate nonattainment (P)[a]	Nonattainment
CO	Attainment	Unclassified
PM10	Attainment	Nonattainment
PM2.5	Moderate nonattainment (P)	Unclassified
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen sulfide	(No federal standard)	~~Attainment~~ Unclassified
Visibility reducing particles	(No federal standard)	Unclassified

Source: California Air Resources Board ~~2013~~ 2018; U.S. Environmental Protection Agency ~~2013~~ 2019.

CO = carbon monoxide.
PM10 = particulate matter less than or equal to 10 microns.
PM2.5 = particulate matter less than or equal to 2.5 microns.
NO_2 = nitrogen dioxide.
SO_2 = sulfur dioxide.

~~[a] Areas within the "severe 15" nonattainment class have an 8-hour ozone design value between 0.113 and 0.119 ppm.~~

[a] (P) Designation applies to the Project area portion of the El Dorado County.

In response to comments I-3-1 and I-11-38, the following information on criteria pollutant health effects has been added to the Environmental Setting, after Criteria Pollutants of Concern on page 3.2-7.

As discussed above, the federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants: ozone, CO, lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM), which consists of PM 10 microns in diameter or less (PM10) and PM 2.5 microns in diameter or less (PM2.5). Ozone ~~and NO_2~~ ~~are~~ is considered a regional pollutant~~s~~ because ~~they (or their~~ its precursors~~)~~ combine to affect air quality on a regional scale. Pollutants such as CO, NO_2, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally. PM is both a local and a regional pollutant. The primary criteria pollutants of concern generated by the CEDHSP ~~in the study area~~ are ozone precursors (~~including~~ ROG and NO_X), CO, and PM[2, 3]. ~~Principal characteristics surrounding these pollutants are described below.~~

All criteria pollutants can have human health and environmental effects at certain concentrations. The ambient air quality standards for these pollutants (Table 3.2-1) are established to protect public health and the environment within an adequate margin of safety (CAA Section 109). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants, and form the scientific basis for new and revised ambient air quality standards.

[2] As discussed above, there are also ambient air quality standards for SO_2, Pb, sulfates, hydrogen sulfide, vinyl chloride, and visibility particulates. However, these pollutants are typically associated with industrial sources, which are not included as part of the project. Accordingly, they are not evaluated further.

[3] Most emission of NOx are in the form of NO (Reşitoğlu 2018). Conversion to NO_2 occurs in the atmosphere as pollutants disperse downwind. Accordingly, NO_2 is not considered a local pollutant of concern for the proposed project and is not evaluated further.

Principal characteristics and possible health and environmental effects from exposure to the primary criteria pollutants generated by the project are discussed below.

Ozone

Ozone, or smog, is photochemical oxidant that is formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in ozone formation, NO_X also directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens due to impairments to the immune system.

Ozone poses a higher risk ~~health threat~~ to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors ~~as well as to healthy people~~. Exposure to ozone at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. Environmental Protection Agency 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50% decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. Environmental Protection Agency 2019b).

In addition to human health effects ~~Additionally~~, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. Ozone can also act as a corrosive and oxidant, resulting in property damage such as the degradation of rubber products ~~respiratory irritant that can cause severe ear, nose, and throat irritation and increases susceptibility to respiratory infections. It is also an oxidant that causes extensive damage to plants through leaf discoloration and cell damage. It can cause substantial damage to~~ and other materials ~~as well, such as synthetic rubber and textiles~~.

~~Reactive Organic Gases~~

~~Reactive organic gases are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG, but rather by reactions of ROG to form secondary pollutants such as ozone.~~

~~**Nitrogen Oxides**~~

~~Nitrogen oxides are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens~~

Carbon Monoxide

Carbon monoxide is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. In the study area, high CO levels are of greatest concern during the winter, when periods of light winds combine with the formation of ground-level temperature inversions from evening through early morning. These conditions trap pollutants near the ground, reducing the dispersion of vehicle emissions. Moreover, motor vehicles exhibit increased CO emission rates at low air temperatures. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects to ambient CO (California Air Resources Board 2019).

Particulate Matter

Particulate matter consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of particulates are now generally considered: respirable particles with an aerodynamic diameter of 10 micrometers or less, or PM10, and ~~inhalable~~ fine particles with an aerodynamic diameter of 2.5 micrometers or less, or PM2.5. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading.

Particulate pollution can be transported over long distances and both PM10 and PM2.5 may adversely affect ~~the~~ human health, especially for ~~respiratory system, especially in those~~ people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lunch function, and increased respiratory symptoms. In 2008, CARB estimated that annual PM2.5 emissions for the entire Sacramento Metropolitan Area[4] causes 90 premature deaths, 20 hospital admissions, 1,200 asthma and lower respiratory symptom cases, 110 acute bronchitis cases, 7,900 lost work days, and 42,000 minor restricted activity days (Sacramento Metropolitan Air Quality Management District 2013a). Depending on its composition, both PM10 and PM2.5 can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. Environmental Protection Agency 2019c).

[4] Sacramento Metropolitan Area includes: Sacramento and Yolo counties and portions of Placer, Solano, and El Dorado counties.

In response to comment I-11-29, a typographical error in Table 3.2-4 is corrected.

Table 3.2-4. Sensitive Receptors in the Project Vicinity

Sensitive Receptor	Approximate Distance from Project Area
Froggie Frontier Preschool	400 feet northwest of Pedregal
St. Stephen's Lutheran Church	600 feet northwest of Pedregal
Residences (single- and multi-family)	25 feet from Pedregal and Serrano Westside (direction varies)
Senior Housing and Care Facilities	300 feet west of Serrano Westside
Cornerstone Christian Church	300 feet west of Serrano Westside
Lakehills Covenant Church	1,000 feet south of Serrano Westside
Oak Meadow Elementary School	1300 feet east of Serrano Westside
Silva Valley Elementary School	700 feet east of Serrano Westside
El Dorado County Library	900 feet east of Serrano Westside
Rolling Hills Middle School	1,500 feet northeast of Serrano Westside
Oak Ridge High School	200 feet northeast east of Serrano Westside
Source: Distances estimated using Google Earth.	

To add near-term (2027) analysis based on revisions to the traffic study to address Voter Approved Measure E, the following revisions are made to the text of the third paragraph under "Operations" on page 3.2-15.

The analysis of CO impacts was conducted using the ARB's EMFAC2011 model, CALINE4 dispersion model, and P.M. peak hour traffic data in the transportation impact assessment (Appendix L). Existing (~~2012~~ 2016), near-term (2027), and cumulative (2035) traffic conditions were modeled to evaluate CO hot spot concentrations at four study area intersections.

In December 2018, the California Supreme Court issued its decision in Sierra Club v. County of Fresno (226 Cal.App.4th 704). Additional analysis and information has been added throughout Chapter 3.2, Air Quality, in response to the Supreme Court's decision, and in response to comments I-3-4, I-11-19, and I-11-38. The text explains why a quantitative analysis correlating project-generated criteria pollutant emissions to specific health consequences (e.g., increased cases of asthma) is not technically feasible given existing models and tools. Where appropriate, information regarding potential health risks from exposure to project-generated emissions has been added to the chapter in narrative form.

The following headers have been revised in the Environmental Impacts, Local Air District Thresholds section beginning on pages 3.2-17 and 3.2-18.

Construction-Generated Regional Ozone Precursors

Operations-Generated Regional Ozone Precursors

Operations-Generated Regional and Local CO and PM10

In response to the California Supreme Court's decision in Sierra Club v. County of Fresno *and comments I-3-4, I-11-19, and I-11-38, the following text has been revised in the Environmental Impacts, Health-Based Threshold for Project-Generated Pollutants of Human Health Concern section beginning on page 3.2-18.*

~~Health-Based Thresholds for Project-Generated Pollutants of~~ Human Health Concern

The California Supreme Court's decision in *Sierra Club v. County of Fresno* (6 Cal. 5th 502) (hereafter referred to as the Friant Ranch Decision) reviewed the long-term, regional air quality analysis contained in the EIR for the proposed *Community Plan Update* and *Friant Ranch Specific Plan* (Friant Ranch Project). The Friant Ranch Project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment under the NAAQS and CAAQS for ozone and PM2.5. The Court found that the EIR's air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that environmental documents must attempt to connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

~~The May 27, 2014 Fifth Appellate District Court decision *Sierra Club et al. v. County of Fresno County et al*. concluded that an EIR should not only identify but also adequately evaluate the public health consequences associated with increasing air pollutants.[5]~~ As discussed in Section 3.2.1, *Existing Conditions*, all criteria pollutants that would be generated by the proposed project are associated with some form of health risk (e.g., asthma, lower respiratory problems ~~asphyxiation~~). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and Pb are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern generated by the CEDHSP are ozone precursors (ROG and NO_X), CO, and PM (including DPM).

Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the CEDHSP (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). ~~In particular~~ For these reasons, ozone precursors (ROG and NO_X) contribute to the formation of ground-level ozone ~~affect air quality~~ on a regional scale. Emissions of ROG and NOx generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollution may be transported over long-distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects ~~related to~~ from exposure to ~~ozone~~ increased ozone or regional PM concentrations are ~~therefore~~ the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. Moreover, exposure to regional air pollution does not guarantee that an individual will experience an adverse health effect—as discussed above, there are large individual differences in the intensity of symptomatic responses to air pollutant. These differences are influenced, in part, by the underlying health condition of an individual, which cannot be known.

[6] For example, SCAQMD's analysis of their 2012 Air Quality Attainment Plan showed that modeled NOx and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD's Rule 1315 showed that emissions of NOx and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (South Coast Air Quality Management District 2015).

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Appendix C summarizes many of these 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 described in Appendix C, while there are models capable of quantifying ozone and secondary PM formation and associated health effects, these tools were developed to support regional planning and policy analysis and ~~Existing models~~ have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project-generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with any degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the SJVAPCD and South Coast Air Quality Management District (SCAQMD), who provided amici curiae briefs for the Friant Ranch legal proceedings. In its brief, SJVAPCD (2015) acknowledges that while health risk assessments for localized air toxics, such as DPM, are commonly prepared, "it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task." SJVACPD further notes that emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information," and that any such information should not be "accurate when applied at the local level." SCAQMD (2015) presents similar information in their brief, stating that "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels".[6] ~~would produce meaningless results. In other words, minor increases in regional air pollution from project-generated ROG and~~ ~~NO_X would have nominal or negligible impacts on human health.~~ SMAQMD (2019) also acknowledges "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".

~~Consequently, an analysis of impacts on human health associated with project-generated regional emissions is not included in this analysis.~~ As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. ~~Increased~~ Emissions ~~of ozone precursors (ROG and NO_X)~~ generated by the project could increase photochemical reactions and the formation of tropospheric ozone and secondary PM, which at certain concentrations, could lead to ~~respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways~~ increased incidence of specific health consequences. Although these health effects are associated with ozone and particulate pollution, the effects are a result of

[6] For example, SCAQMD's analysis of their 2012 Air Quality Attainment Plan showed that modeled NOx and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD's Rule 1315 showed that emissions of NOx and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (South Coast Air Quality Management District 2015).

cumulative and regional ~~ROG and NOX~~ emissions. Thus, the project's incremental contribution cannot be ~~of the project~~ traced to specific health outcomes on a regional scale ~~from criteria pollutant~~, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis. All feasible mitigation is being applied to reduce construction- and operational-generated emissions of ozone precursors and PM to the extent possible. Please refer to Impact AQ-2 for a discussion of project-generated emissions and a description of feasible mitigation. See ~~emissions would be limited and cannot be solely traced to the project. Please refer to~~ Impact AQ-3 for a discussion of cumulative impacts.

Localized Project-Generated Criteria Pollutants (PM and CO) and Air Toxics (DPM)

~~Because~~ Localized pollutants generated by a project are deposited and potentially affect population near the emissions source. ~~can directly affect adjacent sensitive receptors,~~ Because these pollutants dissipate with distance, emissions from individual projects can result in direct health impacts to adjacent sensitive receptors. Models and thresholds have been developed to quantify these potential effects and evaluate their significance (CAPCOA 2009, OEHHA 2015, EDCAQMD 2002, CARB 2000).~~the analysis of project-related impacts on human health focuses only on those localized pollutants with the greatest potential to result a significant, material impact on human health. This is consistent with the current state-of-practice and published guidance by EDCAQMD (2002); California Air Pollution Control Officers Association (CAPCOA) (2009); OEHHA (2003); and ARB (2000), the analysis in this EIR focuses only on those pollutants with the greatest potential to result in a significant, material impact on human health, which are (1) DPM, (2) locally concentrated CO (i.e., CO hot-spots), and (3) NOA.~~ Locally adopted thresholds and analysis procedures for ~~each~~ the localized pollutants of concern associated with the proposed plan (DPM[7], CO, and NOA)[8]~~pollutant~~ are identified below.

Diesel Particulate Matter

EDCAQMD has adopted a fuel-based screening threshold for DPM in which projects that consume less than 37,000 gallons of fuel over the construction period are considered to have a less-than-significant impact (Resolution 079-2002). Modeling indicates that the proposed project would exceed this screening threshold.

EDCAQMD considers health risks from projects that exceed this screening level to be significant if the lifetime probability of contracting cancer is greater than ten in one million or if ground-level concentration of non-carcinogenic toxic air contaminants would result in a HI of greater than 1. EDCAQMD CEQA Guidelines do not identify a threshold for cumulative exposure to background TAC. Accordingly, the Bay Area Air Quality Management District's cumulative cancer risk threshold of 100 per million was used to evaluate receptor exposure to health risks, based on guidance provided by the EDCAQMD (Baughman pers. comm. C).

[7] DPM is the primary TAC of concern for mobile sources—of all controlled TACs, emissions of DPM are estimated to be responsible for about 70% of the total ambient TAC risk (California Air Resources Board 2000). Given the risks associated with DPM, tools and factors for evaluating human health impacts from project-generated DPM have been developed and are readily available. Conversely, tools and techniques for assessing project-specific health outcomes as a result of exposure to other TAC (e.g., benzene) remain limited. These limitations impede the ability to evaluate and precisely quantify potential public health risks posed by TAC exposure.

[8] Although SO_2 NO_2, and lead may also concentrate locally, the project does not represent a significant source of these pollutants at the local level. Accordingly, they are not discussed or evaluated further.

Carbon Monoxide Hot-Spots

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hot-spots" may have a greater likelihood of developing adverse health effects (as described in Section 3.2.1., *Existing Conditions*). CO concentrations in excess of the CAAQS could result in a CO hot-spot and would constitute a significant impact (El Dorado County Air Quality Management District 2002). Projects that do not generate CO concentrations in excess of the health-based CAAQS would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

Naturally Occurring Asbestos

EDCAQMD considers a project to have a significant impact if the proposed project does not comply with the applicable regulatory requirements outlined in Rule 223-2 to control NOA.

In response to comment I-11-43, text in the conclusion of Impact AQ-1 on page 3.2-22 has been revised as follows.

Accordingly, based on EDCAQMD's analysis criteria for consistency with applicable air quality plans, the proposed project ~~could~~ would conflict with the ~~2009~~ 2013 Ozone Plan for the SFNA. This impact would be significant and unavoidable, and no additional mitigation is available to reduce the impact to a less-than-significant level.

In response to the California Supreme Court's decision in Sierra Club v. County of Fresno and comments I-3-4, I-11-19, and I-11-38, the following text has been revised in Impact AQ-2a beginning on page 3.2-23.

As shown in Table 3.2-6, construction of the proposed project would exceed the EDCAQMD's threshold for ROG in 2019 through 2024, 2029, and 2030. These emissions and exceedances correspond to the application of architectural coatings. The proposed project would also exceed EDCAQMD's NO_X threshold in 2016 through 2019, although combined NO_X and ROG emissions in 2017, 2018, 2021, and 2024 would not exceed the EDCAQMD's total ozone threshold of 164 pounds per day. NO_X emissions would be primarily associated with use of heavy-duty off-road equipment (e.g., bulldozers). Based on the results presented in Table 3.2-6, construction-related combined emissions of ozone precursors would be considered a significant impact for 2019, 2020, 2022, 2023, 2029, and 2030. These emissions, could contribute to ozone ground-level formation in the MCAB, which at certain concentrations, can contribute to short- and long-term human health effects, if left unmitigated.

In response to the California Supreme Court's decision in Sierra Club v. County of Fresno and comments I-3-4, I-11-19, and I-11-38, the following text has been revised in Impact AQ-2a beginning on page 3.2-24.

As shown in Table 3.2-7, although the proposed project would exceed EDCAQMD's NO_X threshold in 2017, combined NO_X and ROG emissions would not exceed 164 pounds per day. As noted above, EDCAQMD's thresholds were developed in consideration of existing air quality concentrations and attainment designations under the NAAQS and CAAQS. Emissions below these thresholds are minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. As such, construction emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the MCAB would be degraded. Accordingly, construction emissions would result in a less-than-significant impact with implementation of Mitigation Measures AQ-2a through AQ-2c.

In response to comments I-18-11, I-3-1, and I-11-49, Mitigation Measure AQ-2b on page 3.2-25 has been revised as follows.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions

The project applicant will ensure that the heavy-duty off-road equipment used during construction achieves a project-wide fleet-average reduction of 30% for NO_X and 45% for DPM, compared with the most recent CARB fleet average at the time of construction. This can be achieved by using equipment with EPA Tier 3 or Tier 4 engines, as necessary, or through other means, as described below. The applicant shall provide documentation of compliance with this measure to EDCAQMD and El Dorado County Community Development prior to initiation of any ground-disturbing activities.

The project applicant will ensure that the heavy-duty off-road equipment used during construction until ~~from 2016 to~~ 2022 will be equipped with an EPA Tier 3 or cleaner engines, except for specialized construction equipment in which an EPA Tier 3 engine is not available. Consistent with advancements of the statewide fleet average, the project applicant will ensure that all off-road diesel-powered equipment used during construction from 2023 to 2030 will be equipped with an EPA Tier 4. This requirement will ensure construction equipment remains cleaner than the fleet-wide average.

The project applicant may pursue an alternative compliance program to achieve a minimum project-wide fleet-average reduction of 30% for NO_X and 45% for DPM, compared with the most recent ARB fleet average at time of construction. Use of Tier 3 and Tier 4 engines and the ~~30%~~ performance standards are not mutually exclusive, and reductions needed to meet the ~~30%~~ performance standards may be achieved through use of higher tier engines. Other ARB-approved best available control technologies, including lean NO_X catalysts, exhaust gas recirculation, selective catalytic reduction, alternative fuels, and diesel particulate filters, may also be pursued. If the project applicant elects to pursue the ~~30%~~ performance standards, they shall submit evidence to EDCAQMD and El Dorado County prior to the start of construction that the 30% NOx and 45% DPM performance standards will be met with the selected equipment. The mitigated analysis is currently based on compliance with the latter program (30% NO_X performance standard), because exclusive use of Tier 3 and Tier 4 engines would be sufficient to meet the performance standard. (Tier 3 engines are estimated to achieve a 38% to 39% NO_X reduction relative to Tier 2 engines [current fleet-wide average], and Tier 4 engines are estimated to achieve a 89% to 91% reduction relative to Tier 3 engines [project fleet-wide average in 2023]). Note that the mitigated analysis does not currently account for DPM reductions. Accordingly, actual DPM emissions generated during construction of the plan will be lower than what is presented in the Table 3.2-7 with implementation of this mitigation.

For clarification, the text of Mitigation Measure AQ-2c on page 3.2-25 has been revised as follows.

Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan

The project applicant shall comply with EDCAQMD Rule 223-1 and incorporate all feasible and practicable fugitive dust control measures. Emission reduction measures will include, at a minimum (as applicable), the measures identified in Draft EIR Appendix D. Additional measures may be identified by the EDCAQMD or contractor as appropriate. All measures shall be incorporated into a Fugitive Dust Control Plan, which will be submitted to and approved by EDCAQMD prior to the start of any construction activity.

In response to the California Supreme Court's decision in Sierra Club v. County of Fresno and comments I-3-4, I-11-19, and I-11-38, the following text has been revised in Impact AQ-2b beginning on page 3.2-27.

Although the CEDHSP policies would contribute to substantial criteria pollutant reductions, ROG emissions would still exceed EDCAQMD's pollutant threshold of 82 pounds per day. These emissions would be primarily the result of personal consumer products and architectural coatings on private residences. There is no feasible mitigation to reduce ROG emissions below the EDCAQMD's threshold. Consequently, the impact of daily ROG emissions on air quality during proposed project operation would be significant and unavoidable. The impact of daily PM10 emissions would also be significant and unavoidable.

Because unmitigated ROG and PM emissions would exceed the thresholds, which were developed by EDCAQMD in 2002 in consideration of achieving attainment status under the CAAQS for ozone and PM, operational ROG and PM emissions from the CEDHSP would contribute a significant level of air pollution within El Dorado County, the SFNA, and MCAB. El Dorado County is currently in nonattainment for the ozone CAAQS and NAAQS, the PM2.5 NAAQS, and the PM10 CAAQS (see Table 3.2-3). Certain individuals residing in areas that do not meet the CAAQS or NAAQS could be exposed to pollutant concentrations that cause or aggregative acute and/or chronic health conditions (e.g., asthma, lost work days, premature mortality). While implementation of the project would contribute to existing and future air pollution, project-generated operational emissions represent approximately 0.06%, 0.03%, and 0.03% of SFNA ROG, NOx, and PM2.5 emissions, respectively (Sacramento Metropolitan Air Quality Management District 2013a, El Dorado County Air Quality Management District et al. 2017)[9]. Given the small size of this contribution, the specific magnitude and locations of any potential changes in regional ozone or secondary PM formation, and associated health consequences, from these additional emissions cannot be quantified with any level of certainty due to the dynamic and complex nature of regional pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure), as well as the unique and individual-specific responses to pollution exposure, which are unknown for the SFBA and MCAB populations. Similar limitations exist for precisely modeling project-level health consequences of directly-emitted

[9] SFNA ROG, NOx, and PM2.5 emissions reported in the regional attainment plans are 84 to 110 tons per day, 49 to 101 tons per day, and 26 to 27 tons per day, respectively, depending on the analysis year (Sacramento Metropolitan Air Quality Management District 2013a, El Dorado County Air Quality Management District et al. 2017). CEDHSP ROG, NOx, and PM2.5 emissions are 96, 30, and 16 pounds per day, respectively, which equates to 0.05, 0.02, and 0.01 ton per day, respectively.

PM. However, it is known that public health will continue to be affected in El Dorado County so long as the region does not attain the CAAQS or NAAQS.

In response to the California Supreme Court's decision in Sierra Club v. County of Fresno and comments I-3-4, I-11-19, and I-11-38, the following text has been revised in Impact AQ-2c beginning on page 3.2-27.

As shown in Table 3.2-9, combined construction and operational emissions would exceed EDCAQMD's threshold for ROG in 2030 and EDCAQMD's threshold for NO_X in 2019[10], even with implementation of Mitigation Measures AQ-2a and AQ-2b and quantified CEDHSP polices. There is no feasible mitigation beyond Mitigation Measures AQ-2a and AQ-2b and CEDHSP policies to reduce these emissions below EDCAQMD's threshold. Accordingly, the impact on air quality resulting from daily ROG emissions in 2030 and daily NO_X emissions in 2019 during combined project construction and operation would be significant and unavoidable. The impact of daily PM10 emissions during these years would also be significant and unavoidable.

To correct a typographical error and to be consistent with formatting throughout the document, the text of Impact AQ-4a has been revised as follows. As indicated in the last sentence on page 3.2-29, implementation of mitigation measure AQ-2b is necessary to reduce this impact to a less than significant level. This is further clarified with the below text revisions. There is no new or worsened impact. The text has also been revised to further clarify why a site-specific health risk assessment and quantification of potential cancer and non-cancer risks is not feasible based on the available level of detail for this plan-level analysis, pursuant to the Supreme Court's decision on Friant Ranch.

Impact AQ-4a: Expose sensitive receptors to substantial diesel particulate matter concentrations during construction (less than significant with mitigation)

Project construction would generate DPM, resulting in the exposure of nearby existing sensitive receptors (e.g., residences) to increased DPM concentrations. Similarly, new residents that occupy the project area prior to completion of the entire project may be exposed to a portion of construction-generated DPM. Cancer health risks associated with exposure to diesel exhaust are typically associated with chronic exposure, in which a ~~7~~30-year exposure period is assumed. In addition, DPM concentrations, and, thus, cancer health risks, dissipate as a function of distance from the emissions source.

As described above, several residential and educational land uses are within 1,000 feet of the project area (see Table 3.2-3). Although proximity to receptors indicates the potential for a significant health risk, air quality management agencies recognize that other variables, such as duration of the construction period, types of construction equipment, and the amount of onsite diesel-generated PM2.5 exhaust, can influence DPM concentrations and the potential for a project to result in increased health risk. Accurately quantifying DPM concentrations and predicting associated health risks (e.g., excess cancer cases) requires detailed site-specific information on the locations of specific construction activity. Given the preliminary level of design at this time, the inventory of

[10] The emissions analysis presented in the EIR assumes construction would occur between 2016 and 2030. While actual construction of the project will begin later than anticipated in the EIR, the amount of construction and relative timing of various phases remain unchanged. The analysis presented in the EIR is now likely conservative because emission factors decrease as a function of time. In other words, construction occurring in 2025 will result in fewer emissions compared to that same amount of construction in 2020.

construction-generated DPM was prepared based on generalized project information and model defaults (see Table 3.2-7). Specific details on the timing and locations of individual equipment and vehicles are currently unavailable, and as such, a quantitative HRA is not possible. Based on the mass emission results, the greatest potential for DPM emissions would occur between 2017 and 2019 when construction of land uses within the planning areas would overlap with construction of several offsite improvements (see Table 3.2-7). Construction activities during this time would be spread among the two planning areas and offsite locations, as opposed to at a single location. Similar geographic dispersion would occur throughout construction.

As shown in Table 3.2-7, construction activities would generate only minor amounts of DPM; maximum PM10 exhaust emissions are estimated to range from 1 to 8 pounds per day, with maximum emissions generated in 2019. Construction of the entire project would occur over a 15-year period, which is shorter than the 70- to 30-year exposure period typically associated with increased cancer health risks. Moreover, best available control technologies implemented ~~to control NO_X~~ pursuant to Mitigation Measure AQ-2b ~~may have corresponding~~ would substantially reduce DPM emissions ~~benefits~~. Mitigation Measure AQ-2b outlines a performance standard for heavy-duty off-road equipment to achieve a project-wide fleet-average DPM reduction of 45%, compared with the most recent CARB fleet average at the time of construction. This performance standard may be met through a variety of CARB-approved best available control technologies. For example, level three diesel particulate filters are verified to reduce DPM by 85%, relative to uncontrolled levels (California Air Resources Board 2018). Several other control technologies are also available to reduce DPM, including use of electric-powered equipment and engines that meet Tier 3 or Tier 4 emission standards. Use of a performance standard, as required by Mitigation Measure AQ-2b, as opposed to a single equipment-specific control (e.g., all electric powered equipment), provides construction contractors with flexibility to select technologies that are the most cost-effective and appropriate at the time of construction. Because reduction technologies and air quality regulations are constantly changing, and it is highly likely additional control strategies will be developed throughout the course of construction, this type of mitigation also provides for continued protection of public health without precluding new control measures or existing technologies that may become economically feasible with changing market conditions.

~~(e.g., diesel particulate filters can achieve up to an 85% DPM reduction, compared with unfiltered engines). As shown in Table 3.2-7, construction activities would generate only minor amounts of DPM; maximum PM10 exhaust emissions are estimated to range from 1 to 8 pounds per day, with maximum emissions generated in 2019.~~ Implementation of Mitigation Measure AQ-2b would reduce construction-related health risks to existing and new receptors. New resident exposure during construction ~~emissions~~ would be further reduced by CEDHSP Policy 8.59, which requires installation of air filters that achieve a minimum efficiency reporting value (MERV) of 6 on all residential central air or ventilation systems. Accordingly, construction activities are not anticipated to result in an elevated cancer risk for exposed persons or exceed the EDCAQMD significance thresholds. Consequently, construction-related DPM emissions impacts would be less than significant with mitigation.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X and DPM emissions

Impact AQ-4c beginning on page 3.2-31 is revised as follows to reflect the results of the revised traffic study and incorporate the near-term (2027) analysis and Table 3.2-11 is replaced. The text has also been revised to further clarify that operation of the project would not would not expose sensitive receptors to significant pollutant concentrations or health effects associated with CO emissions.

Impact AQ-4c: Expose sensitive receptors to substantial carbon monoxide concentrations during operation (less than significant)

Traffic generated by the proposed project would have the potential to create CO hot spots at nearby roadways and intersections. Existing (~~2012~~ 2016), near-term (2027), 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). CO concentrations were modeled at the following study area intersections, as identified in the transportation impact assessment for the proposed project (Appendix L). These intersections generally represent the intersections with the highest peak-hour PM traffic volumes or intersection delay under existing, near term, and cumulative conditions.

- El Dorado Hills Boulevard/U.S. 50 Westbound Ramps/Saratoga Way
- Latrobe Road/U.S. 50 Eastbound Ramps
- Latrobe Road/Town Center Boulevard
- Latrobe Road/White Rock Road
- Charter Way/Silva Valley Parkway/Apian Way
- Wilson Boulevard/El Dorado Hills Boulevard
- ~~Green Valley Road/Francisco Drive~~
- ~~El Dorado Hills Boulevard/Francisco Drive~~
- ~~El Dorado Hills Boulevard/Saratoga Way/Park Drive~~
- ~~Latrobe Road/Town Center Boulevard~~

Table 3.2-11 presents the results of the CO hot spot modeling and indicates that CO concentrations are not expected to contribute to any new localized violations of the 1-hour or 8-hour ambient air quality standards. The traffic analysis completed by Fehr & Peers (Appendix L) supports this result; the proposed project would not affect any intersections currently experiencing more than the SMAQMD's intersection screening criterion of 31,600 vehicles per hour.[11] Likewise the proposed project would not contribute substantial traffic to a tunnel or overpass or affect the mix of vehicles in the study area relative to the county average. Projects that meet these conditions are considered by SMAQMD to have a less-than-significant impact on local CO concentrations (Sacramento Metropolitan Air Quality Management District ~~2013~~ 2016). The EDCAQMD recognizes SMAQMD's screening criteria as a valid approach for evaluating potential CO impacts (Baughman pers. comm. A). Consequently, implementation of project would not result in CO concentrations in excess of the health protective CAAQS or NAAQS, and therefore, would not expose ~~exposure of~~ sensitive receptors to significant pollutant concentrations that could result in adverse health effects. This impact ~~CO hot spots~~ would be ~~a~~ less than significant ~~impact~~.

[11] SMAQMD considers CO impacts to be less than significant if a project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.

Table 3.2-11. Modeled Carbon Monoxide Concentrations at Modeled Intersections

		~~Existing~~ [b]				~~Cumulative~~ [b]			
		~~No Project~~		~~Proposed Project~~		~~No Project~~		~~Proposed Project~~	
~~Intersection~~	~~RE~~[a]	~~1-hr~~[c]	~~8-hr~~[d]	~~1-hr~~[c]	~~8-hr~~[d]	~~1-hr~~[c]	~~8-hr~~[d]	~~1-hr~~[c]	~~8-hr~~[d]
~~Green Valley Road/ Francisco Drive~~	~~1~~	~~6.7~~	~~2.6~~	~~6.8~~	~~2.7~~	~~3.5~~	~~0.4~~	~~3.5~~	~~0.4~~
	~~2~~	~~6.5~~	~~2.5~~	~~6.6~~	~~2.5~~	~~3.5~~	~~0.4~~	~~3.5~~	~~0.4~~
	~~3~~	~~7.3~~	~~3.0~~	~~7.4~~	~~3.1~~	~~3.6~~	~~0.4~~	~~3.6~~	~~0.4~~
	~~4~~	~~5.9~~	~~2.0~~	~~5.9~~	~~2.0~~	~~3.4~~	~~0.3~~	~~3.4~~	~~0.3~~
~~El Dorado Hills Boulevard/Francisco Drive~~	~~5~~	~~5.7~~	~~1.9~~	~~6.0~~	~~2.1~~	~~3.3~~	~~0.2~~	~~3.3~~	~~0.2~~
	~~6~~	~~6.0~~	~~2.1~~	~~6.4~~	~~2.4~~	~~3.4~~	~~0.3~~	~~3.4~~	~~0.3~~
	~~7~~	~~5.4~~	~~1.7~~	~~5.6~~	~~1.8~~	~~3.4~~	~~0.3~~	~~3.4~~	~~0.3~~
	~~8~~	~~6.2~~	~~2.2~~	~~6.5~~	~~2.5~~	~~3.6~~	~~0.4~~	~~3.6~~	~~0.4~~
~~El Dorado Hills Boulevard/Saratoga Way/Park Drive~~	~~9~~	~~6.3~~	~~2.3~~	~~6.8~~	~~2.7~~	~~3.5~~	~~0.4~~	~~3.5~~	~~0.4~~
	~~10~~	~~7.0~~	~~2.8~~	~~7.6~~	~~3.2~~	~~3.7~~	~~0.5~~	~~3.7~~	~~0.5~~
	~~11~~	~~6.8~~	~~2.7~~	~~7.4~~	~~3.1~~	~~3.5~~	~~0.4~~	~~3.6~~	~~0.4~~
	~~12~~	~~7.9~~	~~3.4~~	~~8.9~~	~~4.1~~	~~3.7~~	~~0.5~~	~~3.7~~	~~0.5~~
~~Latrobe Road/Town Center Boulevard~~	~~13~~	~~6.9~~	~~2.7~~	~~6.9~~	~~2.7~~	~~3.6~~	~~0.4~~	~~3.6~~	~~0.4~~
	~~14~~	~~7.9~~	~~3.4~~	~~7.5~~	~~3.2~~	~~3.7~~	~~0.5~~	~~3.7~~	~~0.5~~
	~~15~~	~~8.1~~	~~3.6~~	~~7.0~~	~~2.8~~	~~3.6~~	~~0.4~~	~~3.6~~	~~0.4~~
	~~16~~	~~9.0~~	~~4.2~~	~~9.2~~	~~4.3~~	~~3.9~~	~~0.6~~	~~3.9~~	~~0.6~~

~~RE = receptor.~~

[a] ~~Receptors 1 through 16 were placed 9.8 feet from the traveled way at each intersection corner.~~

[b] ~~Background concentrations of 3 and 0 parts per million (ppm) were added to the modeling 1- and 8-hour results, respectively.~~

[c] ~~The federal and state 1-hour standards are 35 and 20 ppm, respectively.~~

[d] ~~The federal and state 8-hour standards are 9 and 9.0 ppm, respectively.~~

Table 3.2-11. Modeled Carbon Monoxide Concentrations at Modeled Intersections

		Existing (2016)[b]				Near-Term (2027)				Cumulative (2035)[b]			
		No Project		Project		No Project		Project		No Project		Project	
Intersection	RE[a]	1-hr[c]	8-hr[e]	1-hr[c]	8-hr[e]	1-hr[c]	8-hr[e]	1-hr[c]	8-hr[e]	1-hr[c]	8-hr[e]	1-hr[c]	8-hr[e]
15 El Dorado Hills Boulevard/ US 50 WB Ramps/ Saratoga Way	1	3.5	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
	2	3.7	0.5	3.7	0.5	3.7	0.5	3.7	0.5	3.8	0.6	3.8	0.6
	3	3.5	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
	4	3.6	0.4	3.7	0.5	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
16 Latrobe Road/ US 50 EB Ramps	5	3.5	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.6	0.4
	6	3.7	0.5	3.8	0.6	3.8	0.6	3.8	0.6	3.9	0.6	3.9	0.6
	7	3.6	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
	8	3.6	0.4	3.7	0.5	3.7	0.5	3.7	0.5	3.8	0.6	3.8	0.6
17 Latrobe Road/ Town Center Boulevard	9	3.4	0.3	3.5	0.4	3.5	0.4	3.5	0.4	3.6	0.4	3.6	0.4
	10	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5	3.7	0.5	3.7	0.5
	11	3.5	0.4	3.6	0.4	3.7	0.5	3.7	0.5	3.9	0.6	3.9	0.6
	12	3.5	0.4	3.5	0.4	3.5	0.4	3.5	0.4	3.6	0.4	3.6	0.4
18 Latrobe Road/ White Rock Road	13	3.4	0.3	3.4	0.3	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
	14	3.4	0.3	3.5	0.4	3.5	0.4	3.6	0.4	3.6	0.4	3.6	0.4
	15	3.5	0.4	3.5	0.4	3.6	0.4	3.6	0.4	3.8	0.6	3.7	0.5
	16	3.4	0.3	3.5	0.4	3.6	0.4	3.6	0.4	3.7	0.5	3.7	0.5
5 Charter Way/ Silva Valley Parkway/ Apian Way	17	3.2	0.1	3.2	0.1	3.3	0.2	3.3	0.2	3.3	0.2	3.3	0.2
	18	3.2	0.1	3.2	0.1	3.3	0.2	3.3	0.2	3.3	0.2	3.3	0.2
	19	3.2	0.1	3.2	0.1	3.3	0.2	3.3	0.2	3.3	0.2	3.3	0.2
	20	3.2	0.1	3.2	0.1	3.3	0.2	3.3	0.2	3.3	0.2	3.3	0.2
9 Wilson Boulevard/ El Dorado Hills Boulevard	21	3.4	0.3	3.5	0.4	3.4	0.3	3.5	0.4	3.5	0.4	3.5	0.4
	22	3.5	0.4	3.5	0.4	3.5	0.4	3.5	0.4	3.6	0.4	3.6	0.4
	23	3.4	0.3	3.5	0.4	3.5	0.4	3.5	0.4	3.5	0.4	3.6	0.4
	24	3.4	0.3	3.5	0.4	3.4	0.3	3.5	0.4	3.6	0.4	3.6	0.4

RE = receptor.

[a] Receptors 1 through 16 were placed 3 meters from the traveled way at each intersection corner.

[b] Background concentrations of 3.0 and 0 ppm were added to the modeling 1- and 8-hour results, respectively.

[c] The federal and state 1-hour standards are 35 and 20 ppm, respectively.

[d] The federal and state 8-hour standards are 9.0 and 9.0 ppm, respectively.

[e] Concentrations modeled using CALINE4.

For clarification and in response to input from the EDCAQMD, the title of Mitigation Measure AQ-4 on page 3.2-33 has been revised as follows.

Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan ~~and perform naturally occurring asbestos evaluations during site grading as necessary~~ <u>in accordance with EDCAQMD Rule 223-2</u>

To correct a typographical error, the text of Impact AQ-6 on page 3.2-33 has been revised as follows. As indicated in the last sentence of the construction impact discussion on page 3.2-34, implementation of mitigation measure AQ-4 is necessary to reduce this impact to a less than significant level. There is no new or worsened impact.

Impact AQ-6: Violate any air quality standard or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to toxic air contaminants, CO concentrations, or NOA or generate odors as a result of construction and operations of offsite improvements (less than significant <u>with mitigation</u>)

To be consistent with the formatting throughout the document, the following text has been added to the bottom of page 3.2-34, following the impact discussion.

<u>Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan in accordance with EDCAQMD Rule 223-2</u>

Section 3.3, Biological Resources

The CEDHSP includes an oak species-focused Important Habitat Management Plan (IHMP) that addressed impacts on oak canopy calculated using LIDAR, and provides measures to reduce the percentage of oak canopy affected to comply with Option A of the County's General Policy 7.4.4.4. This analysis and mitigation was presented in the Draft EIR circulated for public review in November 2015.

Since the circulation of the Draft EIR, the County has revised its oak management strategy. The Draft EIR for the Oak Resources Management Plan (ORMP) was circulated for public comment for a 45-day period ending on August 15, 2016. The ORMP was adopted in October 2017. The ORMP addresses "oak woodland" as opposed to "oak canopy," and does not calculate that area using the same methods. Therefore, while the acreage of impact has changed, this is the result of calculation methods prescribed by County policy, not any change to the proposed CEDSHP project or project area. Additionally, the ORMP provides new thresholds and mitigation requirements, providing a number of ways to mitigate for the loss of oak woodland and individual oak trees.

Though the ORMP has been adopted, it is currently under litigation and though no injunction has been filed, it is possible that the ORMP could be overturned. Because, at this time, the timing and outcome cannot be guaranteed, the following text revisions are made to the CEDSHP FEIR to incorporate compliance with the ORMP. The impact conclusion remains the same and no new or worsened impacts were identified. The mitigation implemented will be determined by the County regulation in place at the time the development entitlement applications are submitted.

To reflect these changes, the regulatory section of the Draft EIR, beginning on page 3.3-7 has been updated as indicated below.

Local

El Dorado County General Plan

The relevant biological resources goals, objectives, and policies from the 2004 *El Dorado County General Plan* (County General Plan) Conservation and Open Space Element (El Dorado County 2004) are listed below. The full text of these goals, objectives, and policies can be found in Appendix B, which provides an analysis of the project's consistency with County General Plan policies as required under State CEQA Guidelines Section 15125.

- Goal 7.3, *Water Quality and Quantity*, addresses conservation, enhancement and management of water resources and includes Objective 7.3.3, *Wetlands*, and implementing policies 7.3.3.1, 7.3.3.4, and 7.3.3.5; and Objective 7.3.4, *Drainage*, and implementing policies 7.3.4.1 and 7.3.4.2.
- Goal 7.4*, Wildlife and Vegetation Resources*, addresses the identification, conservation and management of wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value, and includes Objective 7.4.1, *Rare, Threatened, and Endangered Species*, and implementing policy 7.4.1.6; Objective 7.4.2, *Identify and Protect Resources*, and implementing policy 7.4.2.2; Objective 7.4.4, *Forest and Oak Woodland Resources*, and implementing policies 7.4.4.4, and 7.4.4.5; and Objective 7.4.5, *Native Vegetation and Landmark Trees*, and implementing policy 7.4.5.1.

Objective 7.4.4 outlines two options for mitigating impacts to oak woodland habitat as defined in the Interim Interpretive Guidelines (El Dorado County 2007). In 2008 however, the County adopted the El Dorado County Oak Woodland Management Plan (OWMP) to implement the oak woodland protection policies under Option B and provide for in-lieu payment of mitigation fees. ~~However, the County's adoption of the OWMP was challenged in court by the Center for Sierra Nevada Conservation, which claimed, in part, that the County had not complied with CEQA. In 2012, the Court of Appeals upheld the CEQA challenge to the OWMP. The case then returned to the Superior Court, which issued a Writ of Mandate setting aside the CEQA document for the OWMP and the related oak tree ordinance (developed under Policy 7.4.5.2) until additional CEQA analysis is performed.~~

In 2014, through a series of public workshops, the County determined that a mitigation and conservation approach to biological resource policies would most effectively meet the County's objectives. This approach is reflected in revisions to General Plan Policy 7.4.2.8 and retains the OWMP, renamed the Oak Resources Management Plan (ORMP), but omits the requirements for an INRMP. The revised Policy 7.4.2.8 establishes a comprehensive Biological Resources Mitigation Program to govern evaluation, impact assessment, and mitigation for biological resources within the County. Under this policy, development projects within the County that require discretionary approval would be required to submit a biological resources study that meets requirements of Policy 7.4.2.8, which include identifying impacts on each habitat type, and meeting mitigation and mitigation monitoring requirements.

Oak Resources Management Plan and Oak Resources Conservation Ordinance

The Oak Resource Management Plan (ORMP) defines mitigation requirements for impacts on oak woodlands, individual native oak trees, and Heritage Oaks and outlines the County's strategy for oak resource management and conservation. The Oak Resources Conservation Ordinance implements the ORMP.

Mitigation for impacts on oak resources can be achieved through a combination of on-site planting and in-lieu fees. Per the requirements of the ORMP, all of a project's oak woodland impacts must be mitigated at a 1:1 ratio where 50% or less of on-site oak woodlands are impacted. In addition, the California Public Resources Code (PRC) 21083.4 requires that replacement planting not account for more than 50% of the total oak woodland mitigation requirement. Therefore, no more than half of a project's oak woodland impact mitigation requirement would be implemented in the form of an in-lieu fee payment to the County. The current in-lieu fee for oak woodlands is $8,285 per acre of impacted woodland. For individual trees, replacement requirements are based on an inch-for-inch replacement of the combined diameters of the trees remove. 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.

A preliminary jurisdictional determination for the Serrano Westside planning area and offsite infrastructure improvement areas was issued December 27, 2017 (SPK-2009-00387). A preliminary jurisdictional determination for the Pedregal area was issued on June 7, 2011 (SPK-2006-00102). The text on page 3.3-10, and Table 3.3-2 on page 3.3-14 were revised as follows to acknowledge verification of the delineation.

Summary of Biological Surveys

Onsite Project Area

Biological surveys were conducted in 2005, 2006, 2008, 2009, 2011, 2012, 2013, and 2015 by ECORP Consulting, Inc. biologists, and a reconnaissance survey was conducted on May 23, 2013, by ICF biologists. The survey types, dates, location, and personnel involved in documenting waters of the United States and botanical, wildlife, and fisheries resources are summarized in Table 3.3-1. Data from these surveys were used in preparation of Section 3.3.1, *Existing Conditions*.

Vegetation community surveys, delineations of waters of the United States, and special-status species surveys were conducted within most of the Serrano Westside planning area and all of the Pedregal planning area. An 85-acre area in the northeast section of the Serrano Westside planning area was added to the project in 2013 (referred to as the "85-acre addendum area"), and surveys of this area included a preliminary wetland assessment, mapping of vegetation communities, and an assessment-level survey for special-status species habitat, an early-season special-status plant survey in April 2015, and a late-season plant survey in June 2015. The April 2015 special-status plant survey included visits to reference sites for all of the rare plants on the survey list for which public reference sites exist. It was confirmed the species were in bloom before commencing field work. Herbarium collections were reviewed for those species that do not have a public reference site available. Protocol-level surveys for special-status wildlife species were not conducted in the 85-acre addendum area. In addition to the 85-acre addendum area, a small section of the Serrano Westside boundary in the southeastern-most corner was added to the project area after verification of the wetland delineation. In December 2017, USACE completed the preliminary jurisdictional determination for all of the Serrano Westside planning area; and in June 2011, USACE completed the preliminary jurisdictional determination for the Pedregal planning area. ~~The wetlands and other waters of the United States depicted in this area are preliminary in nature and subject to verification by USACE.~~

Offsite Infrastructure Improvement Areas

The proposed project includes nine proposed or potential offsite infrastructure improvement areas outside the CEDHSP area, including water lines, pedestrian crossings, and the potential connection to Silva Valley Parkway. The proposed or potential alignments for these improvements have been generally identified, as shown in Figure 2-9; however, the exact locations have not been determined. As such, offsite infrastructure improvement boundaries include a 250-foot study area radius from the approximate impact footprint. These alignments were not included in the vegetation community and special-status species surveys conducted for the Serrano Westside and Pedregal planning areas; however, a preliminary wetland assessment and special-status species assessment was conducted to map potential areas of wetlands, open water, and habitat for special-status species (ECORP Consulting 2014d). The offsite infrastructure improvement areas were included in the preliminary jurisdictional determination for the Serrano Westside planning area, which has been completed. Additional details of these improvement areas are provided in Chapter 3, Section 3.12, *Public Services and Utilities*. Table 3.3-1 also includes the dates and general results of biological surveys conducted in the offsite infrastructure improvement areas.

Table 3.3-2. Vegetation Communities and Drainages in the Project Area and Offsite Infrastructure Improvement Areas

Community Type	CEDHSP Project Area[a] (acres)	Offsite Infrastructure Improvement Areas~~[b]~~ (acres)
Oak woodland	152.350	1.275
Riparian woodland	11.500	13.81
Annual grassland	153.850	51.41
Seasonal wetland	0.072	0.702
Seasonal wetland swale	0.297	0.916
Seep	0.242	0.684
Marsh	0	1.223
Creek	1.048	3.060
Intermittent drainage	0.678	0.190
Ephemeral drainage	0	0.224
Drainage/roadside ditch	0.101	0.103
Pond	3.264	0.499
Developed[b~~c~~]	17.736	81.19
Total	340.888	155.286

[a] Acreages of waters of the United States have been verified by the USACE ~~in most of the CEDHSP, except for those in the 85-acre addendum area and a small portion at the southeastern boundary adjacent to the potential connection to Silva Valley Parkway and recycled water line expansion offsite infrastructure improvement areas, which have not yet been verified~~.

~~[b] Acreages of waters of the United States mapped in the offsite infrastructure improvement areas are preliminary and have not been verified by the USACE~~.

[b~~c~~] The developed areas within the CEDHSP project area and offsite infrastructure improvement areas include irrigated grasses and ornamental, which is included in this community type category.

A preliminary jurisdictional determination for the Serrano Westside planning area and offsite infrastructure improvement areas was issued December 27, 2017 (SPK-2009-00387). A preliminary jurisdictional determination for the Pedregal area was issued on June 7, 2011 (SPK-2006-00102). The text on page 3.3-16, 3.3-17, and 3.3-19 was revised as follows to acknowledge verification of the delineation.

Wetlands

All wetlands in the project area are considered waters of the United States regulated by the USACE under CWA Section 404. Wetland types identified in the project area include seasonal wetland, seasonal wetland swale, and seep. Delineation of ~~most of~~ the Serrano Westside and Pedregal planning areas, and the offsite infrastructure improvement areas have ~~all of the Pedregal planning area has~~ been verified by the USACE. ~~Wetlands in the 85-acre addendum area in the northwest corner of the Serrano Westside planning area (intended for open space uses), in a small area in the southeastern corner of the Serrano Westside planning area adjacent to the offsite infrastructure improvement area, and the proposed offsite improvement areas were preliminarily assessed, but were not delineated according to the USACE delineation manual or verified by the USACE. Therefore, the mapping in these areas is subject to change, but likely with only minor revisions.~~

Open Water

Open water features in the project area are considered waters of the United States regulated by the USACE under CWA Section 404. Open water habitats identified in the project area include creek, intermittent drainage, drainage ditch, roadside ditch, and pond.

Delineation of ~~most of~~ the Serrano Westside and Pedregal planning areas and offsite infrastructure improvement areas have ~~all of the Pedregal planning area has~~ been verified by the USACE. ~~Open water features in the 85-acre addendum area in the northwest corner of the Serrano Westside planning area, a small section of Serrano Westside at the southeastern corner, and the proposed offsite infrastructure improvement areas were preliminarily assessed, but were not delineated according to the USACE standards or verified by the USACE. Therefore, the mapping in these areas is subject to change, but likely with only minor revisions.~~

Waters of the United States

As described above, the project area contains waters of the United States consisting of seasonal wetlands, seasonal swales, seeps, a perennial creek, intermittent drainages, drainage ditches, roadside ditches, and ponds. Preliminary delineations were conducted in each of the two planning areas and submitted to the USACE to determine their jurisdiction in the project area. Both delineations were verified. The delineation of the Serrano Westside planning area was verified on March 27, 2009, and reverified with a preliminary jurisdictional determination on May 8, 2009 (SPK-2009-00387). The delineation of the entire Serrano Westside planning area with the addition of the 85-acre addendum area and the offsite infrastructure improvement areas was verified on December 27, 2017. The delineation of the Pedregal planning area was verified on August 6, 2006, and reverified with a preliminary jurisdictional determination on June 7, 2011 (SPK-2011-00102).

~~Preliminary assessments of waters of the United States were conducted in the 85-acre addendum area in the northwest corner of the Serrano Westside planning area, in a small area in the southeastern corner of the Serrano Westside planning area adjacent to the proposed offsite infrastructure improvement area, and in all of the proposed offsite infrastructure improvement~~

~~areas. These areas were not delineated according to the USACE delineation manual or verified by the USACE. Therefore, the mapping in these areas is subject to change, but likely with only minor revisions.~~

An Oak Resources Technical Report that addresses impacts on oak woodlands and individual oak trees, and mitigation for those impacts, as defined under the ORMP, was prepared in June 2017 and has been added to Appendix F (ECORP 2017). To address the ORMP and incorporate the findings of the June 2017 study, the summary of impacts discussion, the text of Impact BIO-1, and Mitigation Measure BIO-1d beginning on page 3.3-33 were revised as follows.

Impacts and Mitigation Measures

Summary of Impacts within the Central El Dorado Hills Specific Plan Project Area

For the CEDHSP project area, Figure 3.3-3 illustrates the impact areas in relation to biological resources. For ease of reference, Table 3.3-5 summarizes effects on biological resources. Effect findings, including significance and available mitigation, are discussed below.

Table 3.3-5. Permanent Direct Impacts on Biological Resources within the CEDHSP Project Area

Biological Resource	Permanent Impacts (acres)[a]
Oak Canopy	14.15
Oak Woodland	28.8
Individual Native Oak Trees	827 inches
Heritage Oaks Trees[b]	176 inches
Riparian Woodland	2.40
Wetlands	
Seasonal Wetland	0.072
Seasonal Swale	0.130
Seep	0.126
Other Waters	
Creek	0.039
Intermittent Drainage	0.236
Ephemeral Drainage	0
Drainage/Roadside Ditch	0.077
Pond	2.261
Annual grassland (upland wildlife habitat)	93.08

[a] Onsite impact acreages to wetlands and other waters of the United States are based on a verified delineations of waters of the United States for the Pedregal and Serrano Westside planning areas and offsite infrastructure improvement areas ~~except for the 85-acre addendum area and a 0.6-acre area in the southeastern corner of the Serrano Westside planning area, adjacent to the offsite infrastructure improvement area.~~

[b] The draft ORMP revised February 2017 defines a Heritage Tree as a native oak tree measuring at least 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 requirement to 20 inches. Therefore, calculations in the June 2017 Oak Resources Technical Report prepared by ECORP follow a conservative approach and were consistent with the Planning Commission's recommendation at the time. Since that time, the Board has reverted to the 36-inch dbh definition of a Heritage Oak.

Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat (less than significant with mitigation)

Oak woodland dominated by blue oak, occurs in the northeast corner of the Serrano Westside planning area and is the dominant natural community in the Pedregal planning area. Based on calculations using LIDAR to assess oak canopy, the proposed project would retain a total of approximately 77.8 acres (82.5%) of the oak woodland in open space and in avoided parts of Village Residential – Low (VRL) in the Pedregal planning area. Additional areas of oak canopy retention within the low density residential areas would increase the total retained area to 85% (80.15 acres) of the existing oak woodland canopy. However, the vegetation other than oak trees in the low density residential areas would not necessarily be retained. Based on calculations of impacts on oak woodlands, the proposed project would affect 28.8 acres of oak woodland (18.8% of the 152.5 acres total in the project area), 827 inches of individual oaks, and 176 inches of Heritage Oak Trees. Impacts on oaks and oak woodlands are discussed below, as assessed under County General Plan Policy 7.4.4.4, and separately under the Oak Resources Management Plan. Mitigation strategies based on the criteria from General Plan Policy 7.4.4.4, Option A, and the ORMP have been prepared, and the results are summarized below. Implementation of either approach would reduce impacts to less than significant and would be consistent with County requirements, regardless of whether Option A or ORMP criteria for mitigating impacts is used. Impacts on oak woodland in the proposed offsite infrastructure improvement areas are discussed under Impact BIO-13.

General Plan Policy 7.4.4.4 Permanent Impacts

Implementation of the CEDHSP would permanently remove oak woodland for civic–limited commercial development and a local residential road in the Serrano Westside planning area, a local residential road in the Pedregal planning area, and residential development in both planning areas. The project area has 94.3 acres of oak canopy cover, which amounts to 27.7% of the total project area. Therefore, ~~according to~~ under Option A of County General Plan Policy 7.4.4.4, the project would be required to retain 85% (80.15 acres) of the existing canopy and could result in impacts on up to 15% (14.15 acres) of the total oak canopy.

Several CEDHSP policies relate to the protection of and minimization of impacts on oak woodland. CEDHSP Policy 5.16 includes measures for oak woodland conservation, including measures to design and cluster development areas to minimize impacts on oak woodland and reduce habitat fragmentation; place infrastructure elements within previously disturbed locations, where feasible; retain contiguous stands of oak woodland habitat and corridors connecting the stands; and minimize oak impacts on custom lots to the extent feasible by limiting pad grading and obtaining County approval of custom lot site plans. CEDHSP Policy 5.18 would require that site-specific impacts be quantified at the tentative map stage for each phase of project construction. Accordingly, a certified arborist or other qualified professional would conduct a tree survey within each development lot and prepare a site-specific tree conservation plan. CEDHSP Policy 5.19 further specifies that for lots in the Pedregal VRL land use area, a development lot notebook would be prepared to identify the building area where oaks would be removed and would require retention of all other oaks on the lot, unless deemed unhealthy or unsafe. If any reduction is made to the amount of oak tree retention in the Pedregal planning area, additional CEQA review would be necessary to ensure that mitigation is adequate.

~~The~~ If the ORMP is not in effect at the time the development entitlement applications are submitted, the project applicant would comply with Option A of County General Plan Policy 7.4.4.4. A biological resources study and important habitat mitigation plan (IHMP) were developed for the proposed project (Appendix F), and the IHMP is summarized below.

Important Habitat Mitigation Program

~~Based on~~ Under the IHMP, the project applicant would replace the removed tree canopy at a density of 200 trees per acre, or as recommended by a qualified restoration specialist, so that the replacement trees would equal the removed canopy coverage when the trees are mature. Because blue oaks are slow-growing trees, achieving the original canopy density within 15 years, as required under Option A, would be challenging. However, Option A also requires a 90% survival rate for planted trees, which would be attainable by overplanting. The IHMP plans for at least 10% overplanting of oaks to ensure that the 90% survival rate is achieved. Based on the maximum impact of 14.15 acres under Option A, a total of 2,830 replacement blue, live, and valley oak trees would be planted. Each replacement tree is defined as a 1-gallon sapling or three locally collected acorns. A combination of saplings and acorns would be used.

Plantings would be installed in the approximately 14.5 acres of suitable onsite oak planting areas (Figure 3.3-3). These areas were selected based on existing vegetation, slope and aspect, soil composition, and potential for irrigation. In addition, developed parcels would be planted with at least the same number of trees as the original trees removed, for a total of up to 873 trees in the proposed residential development areas.[12] All oak mitigation plantings would be installed in coordination with the phases of project construction. Acorns could be planted prior to grading, but saplings would be installed after grading is completed and utilities are installed in order to protect the replacement trees from excessive disturbance and promote a high success rate. For plantings within residential lots, plantings would be installed after construction is complete.

Maintenance and monitoring of the plantings would continue for 10 years for 1-gallon plantings and for 15 years for acorn plantings. The project applicant would enter into an agreement with the County for the long-term maintenance of the mitigation plantings. Supplemental irrigation would be applied to planted saplings for at least 3 years and would be recommended, but not required, for acorn plantings. Maintenance would include mulch and fertilizer application, weeding around plantings, checks and repair of irrigation systems, and litter removal, as needed.

For plantings installed in residential lots, maintenance, care, and replacement of dead trees would be enforced through the Covenants, Conditions and Restrictions (CC&Rs) of a homeowners association, architectural control committee, and/or El Dorado County. Annual monitoring of each phase of mitigation plantings in the oak replacement areas would include assessment of plant vigor, height, and canopy diameter. Annual monitoring reports would be submitted to El Dorado County.

Success criteria for the plantings would require a 90% survival rate of the plantings over the 15-year monitoring period. To achieve this success rate, an additional 10% of the required number of trees would be planted. If the survival rate drops below 90% during any year or was not met at the end of the monitoring period, additional 1-gallon saplings needed to meet the criterion would be

[12] As mentioned in Section 3.3.1.2 of the Biological Resources Study and Important Habitat Mitigation Plan, the 873 trees will be planted or replaced within the VRL, Village Residential Medium – Low (VRM-L), VRM-H, and VRH development areas. Using a proposed credit of 0.5:1 for these trees, the credit will be applied to the final number of replacement trees required for the project, thus reducing the required amount of trees within the mitigation areas to 2,393 trees.

installed, maintained, and monitored until the required survival rate has been achieved or until alternative mitigation has been secured.

Oak Resources Management Plan, Permanent Impacts

Using the criteria in the ORMP, the overall project area has a total of 152.5 acres of oak woodland, 28.8 acres (18.8%) of which are within the impact area of the project footprint. A total of 827 inches of individual native oak trees and a total of 176 inches of Heritage Trees would be impacted by the project.

As a result, under the ORMP, the project would be required to mitigate all oak woodland impacts at a 1:1 ratio where 50% or less of on-site oak woodlands are impacted. Mitigation for oak woodlands can be accomplished 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 deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of the options 1 through 4, above.

Mitigation for removal of individual native oak trees is based on an inch-for-inch replacement standard. Mitigation for Heritage Trees is based on a replacement standard of 3:1 (inches) ratio. Impact mitigation requirements for individual native oak trees and Heritage Tree include several options:

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 the options 1 through 3 above.

Implementation of Mitigation Measure BIO-1d would reduce impacts to oak woodland, individual and Heritage Trees to less than significant.

Temporary and Indirect Impacts

Temporary impacts on oak woodland could occur during construction activities adjacent to the retained areas of woodland as well as from activities to plant replacement trees as required under the IHMP or the ORMP. Movement of construction equipment could affect trees to be retained by encroaching on the root zones or causing damage to the tree trunks and limbs. CEDHSP Policy 5.16 includes measures to protect oak trees to be retained in the project area.

Potential indirect effects on the retained oaks could occur in the Pedregal planning area open space, which would be downslope of the proposed development area. Altered drainage patterns in the open space area could adversely affect the retained oaks. In particular, runoff from residential landscape irrigation during the dry summer months could promote growth of fungal root diseases in oaks and increase tree mortality. CEDHSP policies would ensure these temporary and indirect impacts would be less than significant.

Summary

Oak woodland is protected by policies in the County General Plan and County Code of Ordinance, if the ORMP remains in effect. CDFW considers oak woodland to be important wildlife habitat. The permanent loss, potential temporary impacts, and potential indirect impacts on oak woodland canopy and oak woodland habitat as a result of the proposed project would be significant impacts.

~~The~~ Under the ORMP, the County General Plan policy would require retention of 80.15 acres of oak woodland canopy and replacement for the loss of up to 14.15 acres of oak woodland canopy at a 1:1 ratio. Implementation of the IHMP developed for the project would retain 80.15 acres of the existing oak woodland canopy and replace 14.15 acres of oak woodland canopy. In the development areas, maintenance and replacement of dead trees would be enforced through the project's Master Owners' Association, El Dorado Hills Community Services District (CSD) Design Review Committee, or the County. Therefore, the project would comply with the County General Plan and permanent impacts would be reduced to a less-than-significant level. CEDHSP policies would reduce potential temporary and indirect impacts on oak trees.

Under the IHMP, the project avoids 123.8 acres of oak woodland within the Open Space/Avoided areas and would incorporate measures to retain additional oak woodland within the development footprint. As previously noted, 28.8 acres (18.8%) of oak woodland is within the development footprint. To comply with the ORMP and PRC 21083.4, the project would be required to mitigate all oak woodland impacts at a 1:1 ratio (because 50% or less of on-site oak woodlands are impacted), and no more than 50% of that mitigation may consist of replacement plantings. Therefore, half of the project's mitigation requirement would consist of replacement plantings on-site. The remaining half of the project's oak woodland impact mitigation would be implemented in the form of an in-lieu fee payment to the County.

The project would also be required to replace individual native oak trees based on an inch-to-inch replacement standard, and Heritage Tree replacement based on a 3:1 ratio standard. Because the adoption of the ORMP was pending at the time the analysis was conducted, calculations of Heritage Trees were based on the more conservative 20 inch DBH standard. Using a 36-inch standard to classify Heritage Trees will reduce the number of trees considered as Heritage Trees. This will reduce the total impacts to Heritage Trees and the resulting mitigation requirements.

Implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d would further reduce temporary construction impacts on oak woodland to a less-than-significant level by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, periodic site visits during construction, and avoidance or minimization of construction disturbance on retained oak woodland. Mitigation Measure BIO-1d would reduce indirect impacts on oak woodland due to drainage alteration to a less-than-significant level by ensuring runoff is not directed from constructed areas into the oak woodland. Because the proposed project would avoid, minimize, and compensate for impacts on oak woodland through implementation of the IHMP or the ORMP, it would not threaten to eliminate a plant community.

For clarification, the text of Mitigation Measure BIO-1c has been revised as follows.

Mitigation Measure BIO-1c: Conduct periodic site visits during construction

The project applicant will employ a qualified biologist to conduct periodic site visits during construction as necessary in and adjacent to all sensitive biological resources in the construction area. The frequency of site visits will range from weekly to monthly, depending on the biological resource, and may be done concurrently with other monitoring that may be occurring onsite (e.g., California red-legged frog, stormwater pollution prevention plan (SWPPP) compliance). The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines. The biological monitor also will be responsible for ensuring that the contractor maintains the staked and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources and will inspect the barriers to ensure that the barriers are intact. The monitor will assess any adverse effects on sensitive biological resources resulting from violations of the barrier mitigation requirements and, if adversely affected, will notify the County and the regulatory agency with jurisdiction over the affected sensitive resource. Work will stop until the barriers are reestablished. The monitor will provide the County with a monitoring log for each site visit, which will be provided to interested agencies upon request.

For clarification, the text of Mitigation Measure BIO-1d has been revised as follows.

Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat

~~The~~ If the ORMP is not in effect at the time the development entitlement applications are submitted, the project applicant will implement the following measures and the tree preservation measures in the IHMP, and will adhere to CEDHSP Policy 5.16, during construction of each project phase to protect and minimize effects on preserved trees that are adjacent to construction activities.

- The potential for long-term loss of woody vegetation will be minimized by trimming vegetation rather than removing entire trees or shrubs in areas where complete removal is not required. Any trees or shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. To protect nesting birds, no pruning or removal of woody vegetation will be performed between February 1 and August 31 without preconstruction bird surveys consistent with Mitigation Measure 9b.
- Operation or parking of vehicles, digging, trenching, slope cuts, soil compaction, grading, paving, or placement of fill will be prohibited within at least 1 foot outside the driplines of preserved trees.
- Runoff from the Pedregal planning area will be directed off site to prevent drainage into the open space area. Retaining walls will be installed at the edge of development areas where fill is placed to avoid ponding of water around adjacent retained oak trees.

If the ORMP is in effect at the time the development entitlement applications are submitted, in-lieu fees will be paid at the time of approval of the CEDHSP and any deed restrictions or conservation easements will occur at the time applications for permits that would result in tree removal are submitted. The project applicant will implement the following measures, and will adhere to CEDHSP Policy 5.16, during construction of each project phase to protect and minimize effects on preserved trees that are adjacent to construction activities.

Mitigation for oak woodlands can be accomplished 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 deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of the options 1 through 4, above.

In accordance with requirements of the California PRC 21083.4, replacement planting shall not account for more than 50% of the oak woodland mitigation requirement. Therefore, up to half of the project's oak woodland impact mitigation requirement may consist of replacement planting on-site. The replacement planting area must be suitable for tree planting, will not conflict with current or planned land uses, and will 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. The remaining portion of the project's oak woodland impact mitigation requirement would be implemented in the form of an in-lieu fee payment to the County. Assuming the project will mitigate 50% of the impacted 28.8 acres with replanting, under the in-lieu fee for the remaining mitigation requirement would equate to $119,304 for 14.4 acres of woodland impact (50% of 28.8 acres) at $8,285 per acre.

Mitigation for removal of individual native oak trees is based on an inch-for-inch replacement standard. Mitigation for Heritage Trees is based on a replacement standard of 3:1 (inches) ratio. This equates to the requirement of replanting 1,355 inches of oak trees. Replacement trees are required to be monitored and maintained for a period of seven years, calculated from the day of planting.

Impact mitigation requirements for individual native oak trees and Heritage Tree include the following options:

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 the options 1 through 3 above.

The total replacement trees must have a combined diameter equal to that of the removed non-Heritage Trees, and a combined diameter equal to 3:1 of the removed Heritage Trees. Replacement tree species must be in the same proportion as those removed. 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.

Since adoption of the ORMP was pending when the analysis was conducted, impacts were calculated using the 20 inch DBH standard. Because the DBH standard of Heritage Tree was changed to 36 inches, impacts and costs would be less. Regardless of which standard is adopted, all oak resource impacts associated with the CEDHSP project will be quantified and mitigated consistent with the requirements of the ORMP.

In response to input from El Dorado County Department of Agriculture, Mitigation Measure BIO-13 on page 3.3-57 has been revised as follows.

Mitigation Measure BIO-13: Avoid the introduction and minimize spread of ~~invasive~~ noxious plants

Noxious weed species are those listed on the California Noxious Weed List by the California Department of Agriculture Section 4500 of the California Code of Regulations.

To avoid the introduction of new ~~invasive~~ noxious plants and minimize the spread of invasive plants previously documented in the study area, the project applicant will implement the following measures during construction.

- Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of noxious weed infestations.
- Small, isolated infestations will be treated with approved eradication methods at an appropriate time to prevent and/or destroy viable plant parts or seed.
- Mulch with certified weed-free mulch. Rice straw may be used to mulch upland areas.
- Use native, ~~noninvasive~~ non-noxious species or nonpersistent hybrids in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing.
- Minimize surface disturbance to the greatest extent feasible.
- Equipment that is regularly kept on-site be initially cleaned of soil and plant debris.
- Perform monitoring of noxious weed infestations for one year post-construction in order to eradicate any new infestations (e.g., from rotating temporary equipment).

For clarification, Mitigation Measure BIO-14 on page 3.3-59 has been revised as follows.

Mitigation Measure BIO-14: Compensate for loss of oak woodland in offsite infrastructure improvement areas

Per the requirements of County General Plan Policy 7.4.4.4 (Option A) and its Interim Interpretive Guideline, replacement of removed oak tree canopy will be mitigated at a density of 200 trees per acre lost. Based on the maximum potential oak impact area of up to 1.275 acres, up to 258 oak trees will be planted as mitigation within the designated oak planting areas for the CEDHSP project. Prior to construction, the actual oak canopy impacts will be quantified, based on the design details and proposed limits of construction, and a final number of oak trees for mitigation will be determined. The planting, maintenance, and monitoring details of this mitigation will follow those set forth in the IHMP for the oak woodland impacts within the project area.

Should the Oak Resources Management Plan be in effect at the time development entitlement applications are submitted, the applicant would be required to implement at least one of the following options for oak woodlands: 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; In-lieu fee payment; Replacement planting on-site within an area subject to deed restriction or conservation easement; or Replacement planting off-site within an area subject to a conservation easement.

To reflect recent guidance from United States Fish and Wildlife that habitat for valley elderberry longhorn beetle no longer occurs in the proposed project area, Impact BIO-18 and Mitigation Measures BIO-18a on page 3.3-64 have been removed.

~~**Impact BIO-18: Loss or disturbance of valley elderberry longhorn beetle and its habitat within offsite infrastructure improvement areas (less than significant with mitigation)**~~

~~Elderberry shrubs, the host plant of the valley elderberry longhorn beetle were not observed during the initial site assessment of the offsite infrastructure improvement areas (ECORP Consulting 2014d). However, the entire area was not surveyed due to limited access, and there is potential for elderberry shrubs to be present in the unsurveyed portions of the proposed infrastructure improvement areas. Construction activities could result in the mortality of individuals or disturbance of habitat for valley elderberry longhorn beetle. Individuals could be directly affected by activities such as grading, paving, and staging of equipment associated with the construction of the pedestrian crossings along El Dorado Hills Boulevard, construction of the potential connection to Silva Valley Parkway, and the recycled water line expansion north of US 50. In addition, valley elderberry longhorn beetles could be indirectly affected by ground-disturbing activities, soil compaction around the roost system of a shrub, or removal of associate woodland species. These activities could result in the death of the shrub and loss of valley elderberry longhorn beetle habitat after the project has been completed. Because valley elderberry longhorn beetle is a federally listed species at the time of this writing, this impact is considered potentially significant. Implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on the species by requiring barriers to protect elderberry shrubs, conduct environmental awareness training for construction employees, and periodic site visits during construction, in addition to Mitigation Measures BIO-18a and BIO-18b, as applicable based on the most recent USFWS guidance, would reduce this impact. With the implementation of these collective measures, the proposed~~

~~project would avoid and minimize impacts on valley elderberry longhorn beetles and their habitat, and would not substantially reduce the number or restrict the range of the species or cause the population to drop below self-sustaining levels. Therefore, the proposed project would have a less-than-significant impact on valley elderberry longhorn beetle.~~

~~Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided~~

~~Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees~~

~~Mitigation Measure BIO-1c: Conduct periodic site visits during construction~~

~~Mitigation Measure BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs~~

~~The In accordance with the most recent USFWS guidance related to the species, the project applicant will retain a qualified biologist who is familiar with the appearance of valley elderberry longhorn beetle exit holes to survey the offsite infrastructure improvement areas, once the limits of disturbance have been identified, to document the presence of elderberry shrubs prior to construction. The biologist will count the number of elderberry stems considered suitable for valley elderberry longhorn beetle on each elderberry shrub and look for the presence of exit holes on the stems, in accordance with the survey protocol established by USFWS (1999).~~

~~Elderberry shrubs will be avoided to the maximum extent practicable. Complete avoidance may be assumed when a buffer of at least a 100 feet is established and maintained around elderberry plants containing stems measuring 1 inch or greater in diameter at ground level. If ground-disturbing activities will occur within 100 feet of an elderberry shrub, the project applicant will implement Mitigation Measure BIO-18b.~~

Section 3.4, Cultural Resources

For clarification, the text of Mitigation Measure CUL-1a on page 3.4-15 has been revised as follows.

Mitigation Measure CUL-1a: Develop and implement a site-specific Historic Properties Treatment Plan for the Pedregal Archaeological District

In order to mitigate for potential impacts on the Pedregal Archaeological District (PAD), the project applicant will retain a qualified archaeologist to develop a site-specific Historic Properties Treatment Plan (HPTP) that meets the requirements of Section 106 of the National Historic Preservation Act (NHPA). The HPTP will stipulate specifications for treatment of adversely affected resources, and at a minimum will include the following.

- An oral history regarding the resource will be conducted.
- Specific protocols will be developed for the management of unanticipated discoveries of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.

- Protocols for fencing, signage, and other avoidance measures, both during construction and after project completion.
- Protocols for the reburial of any artifacts gathered during excavation onsite in accordance with the requests of the Native American community.

This HPTP will be ~~approved~~ reviewed by the County to ensure the standards above are included, and approved prior to issuance of the first grading permit for development in the PAD. The County shall ensure all construction and landscape plans include a requirement to comply with the HPTP. Implementation will vary by task.

In response to comment I-4-11, to correct a typographical error, text in Mitigation Measure CUL-1b on page 3.4-15 has been revised as follows.

Upon completion of the monitoring in sensitive areas, the archaeologist shall prepare a report that describes the results of the monitoring and/or testing, including any measures that may have been implemented for mitigation of impacts on significant archaeological deposits identified during monitoring. The report shall be submitted to the El Dorado County Planning Division and the ~~Northwest Information Center~~ NCIC.

For clarification, the text of Mitigation Measures CUL-1c on page 3.4-16 has been revised as follows.

Mitigation Measure CUL-1c: Protect P-09-1667 from future impacts

The project applicant will place a conservation easement over P-09-1667 to preserve the site from further development. Portions of this area are already in a biological conservation area. The operations and management plan for the conservation easement will allow for capping, fencing, and other avoidance measures, should they be necessary. Proof of recordation of the easement shall be submitted to the County.

In response to comment I-4-11, and to correct a typographical error, text in Mitigation Measure CUL-1d on page 3.4-16 has been revised as follows.

Upon completion of project construction, the archaeologist shall prepare a report that documents discoveries and their disposition. The report shall include any measures that may have been implemented for mitigation of impacts on significant archaeological deposits identified during project construction. The report shall be submitted to the El Dorado County Planning Division and the ~~Northwest Information Center~~ NCIC.

In response to comment I-4-11, and to correct a typographical error, text in Mitigation Measure CUL-4 on page 3.4-18 has been revised as follows.

Upon completion of cultural resources studies, the archaeologist shall prepare a report that describes the methods and results of the studies. The report shall be submitted to the El Dorado County Planning Division and the ~~Northwest Information Center~~ NCIC.

Section 3.6, Greenhouse Gas Emissions (Partial Recirculated Draft EIR)

In response to comment I-R-13-2, the following introductory text on page 3-1 has been revised for clarification.

Section 3.6, Greenhouse Gas Emissions, replaces the previous Section 3.6 of the DEIR in its entirety and contains the analysis and discussion of greenhouse gas (GHG) emissions using a combination of a bright-line threshold and efficiency metric per service population to determine the significance of GHG emissions in 2020 and under cumulative conditions with ~~at~~ full build out in 2035 ~~(2035)~~.

The California legislature has adopted several GHG regulations since publication of the RDEIR. The California Air Resources Board (CARB) has also published the 2017 Climate Change Scoping Plan, which outlines the framework for achieving the state's 2030 GHG reduction target established under Senate Bill 32. The Governor has also issued a new executive order that outlines a 2045 carbon neutrality goal for state agencies. The following revisions have been made to Section 3.6.1.1, Regulatory Setting, to capture these changes. Existing and future state regulations and GHG reduction programs establish the framework for meeting California's climate change goals and will directly reduce community GHG emissions, including those generated by the proposed project.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009, 2012 Rule-Making)

Known as *Pavley I*, Assembly Bill (AB) 1493 (California Health and Safety Code Section 42823.) standards are the state's first GHG standards for automobiles. AB 1493 requires the California Air Resources Board (ARB) to adopt vehicle standards that will lower GHG emissions from new light duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* and now referred to as the *Advanced Clean Cars* measure) has been adopted ~~proposed~~ for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 54.4 ~~43~~ miles per gallon by 2025 ~~2020 and reduce GHG emissions from the transportation sector in California by approximately 14%. In June 2009, the EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year~~.

California Green Building Standards Code and Title 24 ~~(2010)~~

The Green Building Standards Code (CALGreen) applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires the installation of energy- and water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. CALGreen also requires newly constructed buildings develop a waste management plan and divert at least 50% of the construction materials generated during project construction.

On May 9, 2018, the CEC adopted the 2019 Building Energy Efficiency Standards, which will take effect on January 1, 2020. The 2019 standards mandate higher efficiency levels and rooftop solar photovoltaic systems for all new residential buildings constructed in 2020 and beyond. The 2019 standards will result in residential buildings that are, on average, 7% more energy efficient than residential buildings built under the 2016 standards (53% if solar PV is included). Non-residential buildings will be 30% more energy efficient because the standards will update indoor and outdoor lighting to make maximum use of LED technology. Future standards are expected to result in zero net energy for newly constructed commercial buildings.

~~Administrative regulations to CALGreen Part 11 and the California Building Energy Efficiency Standards were adopted in 2013 and took effect on January 1, 2014. The 2013 Building Energy Efficiency Standards are 25% more efficient than previous standards for residential construction. Part 11 also established voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency, water conservation, material conservation, and internal air contaminants. The standards offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.~~

~~The next set of energy efficiency standards will be the 2016 Building Energy Efficiency Standards, which are currently going through the rule-making process. These are expected to be adopted in 2016 and take effect on January 1, 2017. According to the CEC, single-family homes built to the 2016 standards will use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. While the 2016 standards do not require zero net energy (ZNE) buildings, the 2019 standards are expected to take the final step toward achieving ZNE for newly constructed residential buildings throughout California. Later standards are expected to require ZNE for newly constructed commercial buildings.~~

Assembly Bill 939 and Assembly Bill 341

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal.

Senate Bill 32 and Assembly Bill 197

SB 32 requires CARB to ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by 2030. The companion bill, AB 197, creates requirements to form a Joint Legislative Committee on Climate Change Policies, requires CARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, requires CARB to prepare reports on sources of GHGs and other pollutants, establishes 6-year terms for voting members of ARB, and adds two legislators to CARB as non-voting members.

Pursuant to SB 32, CARB updated the prior AB 32 Scoping Plan to address implementation of GHG reduction strategies to meet the 2030 reduction target. The final plan was approved in December 2017. The 2017 plan continues the discussion from the original scoping plan and 2014 update of identifying scientifically backed policies within six of the state's economic sectors to reduce GHGs. The updated Scoping Plan includes various elements, including doubling energy efficiency savings, increasing the low carbon fuel standard from 10 to 18 percent, adding 4.2 million zero-emission vehicles on the road, implementing the Sustainable Freight Strategy, implementing a post-2020 Cap-and-Trade Program, creating walkable communities with expanded mass transit and other alternatives to traveling by car, and developing an Integrated Natural and Working Lands Action

Plan to protect land-based carbon sinks. The plan also identifies reducing short-lived climate pollutants (SLCPs) as a key strategy for achieving the State's 2030 GHG reduction target. However, anthropogenic black carbon is not part of the State's GHG inventory or used to track progress towards the State's 2030 GHG target (CARB 2017). CARB's 2030 reduction target modeling assumes implementation of the SLCP Reduction Strategy (discussed further below) with respect to methane and hydrofluorocarbon gases.

Senate Bill 100

The state's existing renewables portfolio standard requires all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016 (achieved), 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030. SB 100 revises and extends these renewable resource targets to 50 percent by December 31, 2026 and 60 percent December 31, 2030. The bill requires 100% of electricity to be generated by carbon free sources by December 31, 2045.

Executive Order B-55-18

EO B-55-18 acknowledges the environmental, community, and public health risks posed by future climate change. It further recognizes the climate stabilization goal adopted by 194 states and the European Union under the Paris Agreement. While the United States was not party to the agreement, California is committed to meeting the Paris Agreement goals and going beyond them wherever possible. Based on the worldwide scientific agreement that carbon neutrality must be achieved by midcentury, EO B-55-18 establishes a new state goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. The EO charges the ARB with developing a framework for implementing and tracking progress towards these goals. This EO extends EO S-3-05, but is only binding on state agencies.

Senate Bill 743

SB 743 requires revisions to the CEQA Guidelines that establish new impact analysis criteria for the assessment of a project's transportation impacts. The intent behind SB 743 and revising the CEQA Guidelines is to integrate and better balance the needs of congestion management, infill development, active transportation, and GHG emissions reduction. The Office of Planning and Research (OPR) recommends that vehicle miles traveled (VMT) serve as the primary analysis metric, replacing the existing criteria of delay and level of service. In 2018, OPR released a technical advisory outlining potential VMT significance thresholds for different project types. For example, it would be reasonable to conclude that residential and office projects demonstrating a VMT level that is 15 percent less than existing (2015-2018 average) conditions are consistent with statewide GHG reduction targets. With respect to retail land uses, any net increase of VMT may indicate a significant transportation impact.

While no comments were made on the DEIR or RDEIR regarding short-lived climate pollutants (SLCPs), the County has elected to address SLCP in this FEIR to provide a more comprehensive assessment of GHGs. The additional discussion of SLCP in the FEIR does not change any of the impact conclusions or required mitigation outlined in the RDEIR. The following additions have been made to Section 3.6.1.1, Regulatory Setting, to define the statewide regulatory framework for SLCPs.

Senate Bill 605 and Senate Bill 1383

SB 605 directed CARB, in coordination with other State agencies and local air districts, to develop a comprehensive SLCP Reduction Strategy. SB 1383 directed CARB to approve and implement the SLCP Reduction Strategy to achieve the following reductions in SLCPs.

- 40% reduction in methane below 2013 levels by 2030
- 40% reduction in hydrofluorocarbon gases below 2013 levels by 2030
- 50% reduction in anthropogenic black carbon below 2013 levels by 2030

The bill also establishes the following targets for reducing organic waste in landfills and methane emissions from dairy and livestock operations.

- 50% reduction in organic waste disposal from the 2014 level by 2020
- 75% reduction in organic waste disposal from the 2014 level by 2025
- 40% reduction in methane emissions from livestock manure management operations and dairy manure management operations below the dairy sector's and livestock sector's 2013 levels by 2030

CARB and CalRecycle are currently developing regulations to achieve the organic waste reduction goals under SB 1383. In January 2019 and June 2019, CalRecycle proposed new and amended regulations in Titles 14 and 27 of the California Code of Regulations. Among other things, the regulations set forth minimum standards for organic waste collection, hauling, and composting. The final regulations will take effect on or after January 1, 2022.

Short-Lived Climate Pollutant Reduction Strategy

CARB adopted the SLCP Reduction Strategy in March 2017 as a framework for achieving the methane, hydrofluorocarbon, and anthropogenic black carbon reduction targets set by SB1383. The SLCP Reduction Strategy includes 10 measures to SLCPs, which fit within a wide range of ongoing planning efforts throughout the State, including CARB's and CalRecycle's proposed rulemaking on organic waste diversion (discussed above).

The following information has been added after Table 3.6-1 in Section 3.6.1.2, Environmental Setting, to provide background information on SLCPs.

All GWPs used for CARB's GHG inventory and to assess attainment of the State's 2020 and 2030 reduction targets are considered over a 100-year timeframe (as shown in Table 3.6-1). However, CARB recognizes the importance of SLCPs and reducing these emissions to achieve the State's overall climate change goals. SLCPs have atmospheric lifetimes on the order of a few days to a few decades, and their relative climate forcing impacts, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO_2 (CARB 2017). Recognizing their short-term lifespan and warming impact, SLCPs are measured in terms of CO2e using a 20-year time period. The use of GWPs with a time horizon of 20 years better captures the importance of the SLCPs and gives a better perspective on the speed at which SLCP emission controls will impact the atmosphere relative to CO_2 emission controls. The SLCP Reduction Strategy, which is discussed in Section 3.6.1.1, *Regulatory Setting*, addresses the three primary SLCPs—methane, hydrofluorocarbon gases, and anthropogenic black carbon. Methane has lifetime of 12 years and a 20-year GWP of 72. Hydrofluorocarbon gases have lifetimes of 1.4 to 52 years and a 20-

year GWP of 437 to 6,350. Anthropogenic black carbon has a lifetime of a few days to weeks and a 20-year GWP of 3,200 (CARB 2017).

As discussed in Chapter 1.1.1, Reason for Recirculation, of the RDEIR, the CEDHSP DEIR was partially recirculated in April 2016 to reflect the direction of the California Supreme Court in their decision on Center for Biodiversity et al. v. California Department of Fish and Wildlife (62 Cal. 4th 204) (hereafter Newhall Ranch). Specifically, the DEIR GHG analysis was revised to use a combination of analysis thresholds to evaluate the significance of project-generated GHG emissions, including a bright-line threshold of 1,100 metric tons and two efficiency metrics. Consistent with the Newhall Ranch decision, the RDEIR considered both near-term (2020) and long-term (i.e., full build) emissions relative to the State's climate change goals. At the time of the RDEIR, only the 2020 target of 1990 emissions levels had been legislatively adopted under Assembly Bill 32. Full build emissions were evaluated in relation to the state's reduction trajectory informed by Executive Order S-3-05, which sets a goal for state agencies to reduce GHG emissions by 80% below 1990 levels by 2050. As discussed in the RDEIR, GHG impacts under both near-term (2020) and long-term (full build) conditions were found to be significant and unavoidable.

Since publication of the RDEIR, the 5th District Court of Appeals made a decision in Golden Door Properties/Sierra Club vs. County of San Diego (September 28, 2018, 27 Cal.App.5th 892) (hereafter Golden Door). This decision clarified that use of statewide emission reduction goals is a permissible criterion of significance only if substantial evidence and reasoned explanation is provided to close the analytical gap between the level of effort required at one scale (state level) to the level of effort required at another scale (e.g., proposed plan level). Among other things, the Golden Door decision highlights the importance of using local or regional emissions data, which reflects the unique sources and relative reduction commitment for the project area and surrounding planning context, to inform project-level thresholds and impact analyses.

At the time of the RDEIR, efficiency thresholds based on regional emissions data for the project area had not been developed by either El Dorado County Air Quality Management District (EDCAMQD) or other air districts in the Sacramento Valley Air Basin. In November 2018, the Sacramento Metropolitan Air Quality Management District (SMAQMD) proposed draft efficiency thresholds based on regional emissions, population, and employment data from the Sacramento Area Council of Governments, which includes El Dorado County. Additional guidance for evaluating GHG impacts under CEQA has also been published by the California Air Resources Board (CARB) and the Office of Planning and Research (OPR). In light of the evolving and dynamic analytical framework for evaluating project-level GHG impacts, which is informed by new court decisions, State regulations, scientific research, and information from expert agencies, the County has made the following revisions to Section 3.6.2.2, Thresholds of Significance, of the RDEIR beginning on page 3-9. Corresponding revisions have also been made to Section 3.6.2.3, Impacts and Mitigation Measures, as described further below. The edits to the CEDHSP thresholds and GHG impact analysis included in this FEIR supplement the RDEIR narrative by providing additional points of comparison for assessing potential project-level GHG impacts. These edits ensure the FEIR and corresponding GHG analysis for the CEHSP are consistent with current best practices—as informed by recent court decisions and agency guidance—for comprehensively evaluating GHG impacts under CEQA. None of the information presented in this FEIR change the RDEIR impact determinations or required mitigation. GHG impacts remain significant and unavoidable.

AB 32 establishes the requirement for reducing statewide GHGs to 1990 emissions levels by 2020. SB 32 establishes the requirement for reducing statewide GHGs to 40% below 1990 emissions levels by 2030. A number of air quality management agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. Some air districts, including SMAQMD, have also proposed thresholds for addressing post-2020 emissions. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions,[13] (3) numeric “bright-line” thresholds, and (4) efficiency-based thresholds. The California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, 62 Cal. 4th 204) (hereafter Newhall Ranch) recognized these approaches as methods for analyzing GHG impacts under CEQA, as well as CEQA streaming under SB 375 and compliance with regulatory programs. The Newhall Ranch decision confirmed that when an “agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method.”

~~Consistent with the Newhall Ranch decision,~~ The following sections discuss the threshold approaches recommended by the Courts and supported by CEQA and analyzes their applicability to the operational emissions analysis for the proposed project ~~each of the~~ five ~~four existing operational GHG threshold approach options, and their applicability to the proposed project. All options are based on AB 32’s requirement to reduce statewide GHG emissions from both existing and new development to 1990 levels by 2020~~. Each of the following sections note whether the given approach is suitable for the project.

Compliance with a Qualified GHG Reduction Strategy. CEQA authorizes an agency to rely on thresholds established under a ~~reliance on~~ previously approved GHG reduction plans (i.e., a Climate Action Plan [CAP]) prepared as a “Plan for the Reduction of Greenhouse Gas Emissions” per Section 15183.5 of the State CEQA Guidelines. This section of the State CEQA Guidelines provides that quantified plans “may be used in the cumulative impacts analysis of later projects.” More specifically, “[l]ater project-specific environmental documents may tier from and/or incorporate by reference” the “programmatic review” conducted for the GHG reduction plan. “An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project” (State CEQA Guidelines Section 15183.5).

“Tiering” from an approved program-level GHG reduction document is recommended by EDCAQMD staff as the preferred method to address GHG emissions in project-level CEQA documents (Baughman pers. comm.). ~~The Newhall Ranch decision affirmed that the AB 32 Scoping Plan encourages the use of adopted local GHG reduction plans, and consistency with a geographically specific GHG reduction plan, or CAP, can relieve some of the burden taken on by local governments in analyzing the cumulative contribution of project-level GHG emissions. Consequently,~~ If a project is consistent with a local CAP and that CAP is consistent with AB 32 and future GHG targets, then the project would be considered consistent with statewide GHG reduction goals for 2020 and the trajectory of statewide GHG planning in the post-2020 period.

~~SB 375 allows for certain levels of streamlined GHG review and analysis of residential and mixed-use projects that are consistent with SACOG’s SCS. Projects eligible for this streamlining can “tier” light-duty automobile and truck emissions off the MTP/SCS EIR for CEQA purposes. While the~~

[13] Performance-based reductions include the “percent below Business as Usual” threshold approach, which has been used widely in the past. This approach was the subject of the Newhall Ranch case and presently is subject to uncertainty until the issues raised in the Supreme Court ruling are resolved.

~~project would be eligible for streamlined review, the County has conservatively elected to quantitatively analyze all project-generated emissions, including GHGs generated by mobile sources.~~ However, El Dorado County does not have an adopted CAP or similar program-level GHG reduction document. Therefore, compliance with a qualified GHG reduction strategy, such as a CAP ~~or the MTP/SCS~~ is not a viable threshold approach for the CEDHSP EIR.

Performance-Based Reductions. Performance-based thresholds rely on a percentage reduction from a projected future condition. For example, reducing future business as usual (BAU) emissions by 29% through project design features (e.g., renewable energy) or mitigation. While the Newhall Ranch decision upheld the use of performance reductions based on AB 32, the Court stated that applying statewide BAU targets, which consider both existing and new development, to project-level analyses without any adjustments to isolate new development emissions or consider unique geographic conditions could be misleading and therefore requires further justification. SMAQMD previously recommend a performance-based reduction target. However, the air district rescinded the threshold in February 2016 in light of the Newhall Ranch decision. ~~along with EDCAQMD and a committee of other regional air districts, have proposed regional GHG threshold guidance.[14] The proposed regional thresholds include a performance-based threshold, where land use development projects with emissions exceeding 1,100 metric tons CO_2e must mitigate to 1,100 metric tons CO_2e, or demonstrate a 21.7% reduction from a projected no action taken (NAT) scenario[15] to show consistency with AB 32. The 21.7% reduction was derived from ARB's recalculated 2020 BAU GHG forecast of 545 million metric tons CO_2e[16] and the statewide GHG reduction target of 427 million metric tons CO_2e.[17]~~

While using BAU~~/NAT~~ targets~~, including the regional threshold of 21.7%,~~ is generally consistent with CEQA, substantial evidence is required to demonstrate that a project, in its local setting, is consistent with broad goals for the entire state. Neither the regional thresholds nor other performance-based targets adopted by air quality management agencies have disaggregated new development emissions on a percentage basis to satisfy this new requirement imposed by the Court. The primary value of a performance-based target, as indicated in the Newhall Ranch decision, is that it can provide a scenario by which to evaluate the effectiveness of a project's efficiency and conservation measures to reduce GHG emissions. ~~Accordingly~~ Therefore, use of ~~the draft performance threshold (21.7% below NAT)~~ a BAU threshold is not a viable threshold approach for the CEDHSP EIR.

Numeric Bright-Line. The Newhall Ranch decision affirmed the use of numeric bright-line thresholds, but noted that their use does not relieve the lead agency of its duty to determine the significance of an impact independently. For example, the Newhall Ranch decision specifically

~~[14] A portion of the regional GHG threshold guidance has been adopted by SMAQMD. EDCAQMD and other air districts in the region have not yet formally adopted the guidance or specific GHG thresholds.~~

~~[15] The NAT scenario does not include any state regulations designed to reduce GHG emissions, including improvements to the Title 24 standards, RPS, LCFS, or Pavley Rules.~~

~~[16] Forecast does not include emissions benefits (i.e., reductions) from Pavley or the RPS.~~

~~[17] AB 32 required ARB to adopt a Scoping Plan to describe the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED) was prepared on August 19, 2011, and included a revision to the 2020 BAU forecast to adjust in part to account for the challenging economic conditions in California. Note that in February 2014, ARB released another update to the 2020 BAU forecast and revised the 1990 inventory. The update addressed changes in global warming potentials and did not affect underlying analysis assumptions; the revised forecast differs by less than 5%, relative to the FED. The regional thresholds may be revised to reflect ARB's February 2014 analysis, but nothing formal has been released by SMAQMD.~~

mentions the Bay Area Air Quality Management District's (BAAQMD) bright-line 1,100 metric ton CO_2e threshold as an example of a numeric threshold to assist in determining the significance of GHG emissions.

Numerical bright-line thresholds identify the point at which additional analysis and mitigation of project-related GHG emission impacts is necessary. These bright-line thresholds reflect local or regional land use conditions, particularly residential and commercial density and access to transit. For example, SMAQMD's adopted bright-line threshold for 2020 of 1,100 metric tons of CO_2e and their draft post-2020 operational threshold of 3,500 metric tons of CO_2e capture land use conditions present in Sacramento County. ~~The regional threshold guidance adopted (in part) by SMAQMD and recommended by EDCAQMD staff identify the following bright-line levels for operational emissions:~~

- ~~**Stationary Source Projects**: 10,000 metric tons CO_2e~~
- ~~**Land Use Development Projects**: 1,100 metric tons CO_2e~~

~~The bright-line thresholds identified above are based on a capture rate and a gap analysis,[18] which is tied back to AB 32 reduction targets (1990 levels by 2020).[19] The thresholds reflect Sacramento region land use conditions, including density and access to transit.~~ The thresholds are consistent with the BAAQMD's bright-line thresholds referenced in the Newhall Ranch decision.

A numerical bright-line value based solely on El Dorado County emissions sources does not exist. However, development conditions in Sacramento County are similar to El Dorado County. ~~The regional~~ Therefore, SMAQMD's land use development thresholds of 1,100 metric tons CO_2e (2020) and 3,500 metric tons CO_2e (post-2020, draft) will be applied to the CEDHSP EIR GHG analysis to support the determination of GHG impacts. It is worth noting that SMAQMD's adopted and draft thresholds identify projects that would result in sufficiently low GHG emissions to be less than cumulatively considerable without mitigation. These thresholds, while potentially appropriate for a single project-level analysis, were not devised to include emissions from an entire specific plan (such as the proposed project). The post-2020 threshold is also still draft. Accordingly, the bright-line thresholds are used in conjunction with other threshold approaches (as described below) to evaluate the significance of the CEDHSP with respect to GHG emissions ~~and meets the criteria identified in the Newhall Ranch decision needed to appropriately analyze project-level GHG emissions (e.g., land use-sector specific). Because the CEDHSP does not include any stationary sources,[20] the 10,000 metric ton CO_2e threshold does not apply to the proposed project~~.

Efficiency-Based. Efficiency-based thresholds represent the rate of emission reductions needed to achieve a fair share of California's GHG emissions reduction targets ~~established under AB 32~~. While the Newhall Ranch decision did not specifically recommend the efficiency-based approach, the ruling did note that numerical threshold approaches may be appropriate for determining significance of GHG emissions and to emphasize the consideration of GHG efficiency provided that

[18] The gap analysis demonstrates the reductions needed at the land use level to achieve state targets. Capture is the process of estimating the portion of projects that would result in emissions that exceed a significance threshold and would be subject to mitigation. In other words, a gap analysis estimates the growth in GHG emissions between 1990 and 2020 attributed to land use development, estimates GHG reductions associated with adopted state and federal regulations, and determines any short fall or "gap" between the 2020 emissions inventory and the AB 32 reduction target.

[19] The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020.

[20] Stationary sources refer to any fixed emitter of air pollutants, such as power plants and other heavy industrial sources.

the thresholds were based on local or regional, not statewide, data. This has made efficiency-based thresholds infeasible for most development projects unless based on local or regional information. As discussed below, the project's analysis will rely on both statewide and local/regional information, as well as other threshold concepts (e.g., compliance with regulatory programs).

Efficiency-based thresholds are typically calculated by dividing emissions associated with residential and commercial uses (also termed the "land use sector" in the AB 32 Scoping Plan) within a defined area ~~the state~~ by the sum of jobs and residents within the same geography. The sum of jobs and residents is called the "service population," and a project's service population is defined as the people that work and live within the project site.

As discussed in Section 3.6.1, AB 32 establishes a statewide goal of reducing emissions to 1990 levels by 2020. Accordingly, an efficiency-based threshold consistent with the 2020 AB 32 goal (1990 emissions levels by 2020) can be calculated based on the 1990 statewide land use inventory and 2020 forecasted service population, as shown in Equation 3.6-1. The resulting efficiency indicator is 4.73 metric tons CO_2e per service population.

Equation 3.6-1.

$$Threshold = \frac{1990\ Land\ Use\ Inventory}{(2020\ Population + 2020\ Land\ Use\ Sector\ Employment)}$$

Where;

Threshold	=	Average emissions efficiency, 4.73 metric tons CO_2e per service population
1990 Inventory	=	Statewide 1990 land use GHG emissions inventory,[21] 267 million metric tons CO_2e (California Air Resources Board n.d.; California Energy Commission 2009; California Integrated Waste Management Board 1999 refer to Appendix C)
2020 Population	=	Statewide population in 2020, 40.6 million (California Department of Finance 2015)
2020 Employment	=	Statewide land use sector jobs in 2020, 15.8 million (California Economic Forecast 2015)

Similarly, a 2035 GHG efficiency indicator can be developed based on the 1990 inventory and a linear interpolation of the 2030 SB 32 reduction target and 2050 EO S-3-05 reduction goal. The resulting 2035 efficiency indicator is 2.09 metric tons CO_2e per service population and was calculated using Equations 3.6-2 and 3.6-3.

[21] The land use inventory only includes residential and commercial emission sources; industrial, marine vessels, aviation, and other emission sources not applicable to land use developments are not included in the inventory.

Equation 3.6-2.

$$Efficiency\ Indicator = \frac{2035\ Emissions\ Goal}{(2035\ Population + 2035\ Employment)}$$

Where:

Efficiency Indicator	= Average emissions efficiency, 2.09 metric tons CO_2e per service population
2035 Inventory Goal	= 50% below statewide 1990 land use GHG emissions levels, 133.6 million metric tons CO_2e (linear interpolation of SB 32 and EO S-3-05 goals; see Equation 3.6-3)
2025 Population	= Statewide population in 2035, 45.7 million (California Department of Finance 2015)
2020 Employment	= Statewide land use sector jobs in 2035, 18.2 million (California Economic Forecast 2015)

Equation 3.6-3.

$$2035\ Inventory\ Goal = 2030\ Goal + (2050\ Goal - 2030\ Goal) * \frac{(2035 - 2030)}{(2050 - 2030)}$$

Where:

2035 Inventory Goal	= 50% below statewide 1990 land use GHG emissions levels, 133.6 million metric tons CO_2e
2030 Goal	= 40% below statewide 1990 land use GHG emissions levels, 160.3 million metric tons CO_2e (per SB 32)
2050 Goal	= 80% below statewide 1990 land use GHG emissions levels, 53.4 million metric tons CO_2e (per EO S-03-05)

~~Based on the above analysis, the proposed project must achieve an average emissions efficiency of 4.7 metric tons CO2e per service population to achieve a fair share of California's GHG emissions reduction target established under AB 32.~~

~~The Newhall Ranch decision did not comment on use of an efficiency-based threshold for analyzing project-level GHG emissions. However,~~ U.S. Supreme Court rulings[22] establish that the U.S. Constitution limits exactions on new development to those having a "nexus" and "rough proportionality" to the impact actually caused by the new development. While there is a nexus for requiring GHG reductions for new development that results in new GHG emissions, the reductions mandated must be proportional to the impact caused by new development. Requiring new development to meet the average statewide GHG efficiency is a proportional measure, but requiring more than average levels of efficiency would be mitigating the effects of existing development by imposing requirements beyond the fair share of new development's effect.

[22] See *Nollan vs. California Coastal Commission* and *Dolan vs. City of Tigard.*

Recent California court decisions highlight the importance of using local or regional emissions data that reflect the unique sources and relative reduction commitment for the project area and surrounding planning context, to inform project-level efficiency thresholds (see *Golden Door Properties/Sierra Club vs. County of San Diego*, 27 Cal.App.5th 892). SMAQMD has proposed draft efficiency thresholds based on regional emissions, population, and employment data from SACOG, which includes El Dorado County. Both a per capita and per service population threshold are proposed and represent the GHG efficiency development needs to achieve by 2036, consistent with the state's climate goals for 2030 and ultimately 2050. While SMAQMD's thresholds are regionally applicable to the project area, they are in draft form as of the writing of this FEIR. They also do not fully isolate the required emissions reductions from just new development that are needed to meet state goals.

While efficiency thresholds ~~Because it~~ meet the nexus and rough proportionality requirements, metrics quantified using state emissions data (Equations 3.6-1 through 3.6-3) and SMAQMD's draft regional thresholds do not fully address recent court guidance (e.g., regionally focused, tailored to new development). However, those targets are useful benchmarks for assessing the project's consistency with the State's overall reduction trajectory.

The FEIR analysis will use the calculated statewide efficiency indicators and SMAQMD's draft efficiency thresholds in conjunction with other threshold approaches (as described in this section) to evaluate the significance of the CEDHSP project's GHG emissions. ~~the efficiency threshold is an appropriate and fair threshold for evaluation of the significance of new land use development, including the proposed project. The calculated 4.7 metric ton CO_2e per service population efficiency metric is therefore applied to the CEDHSP and meets analysis criteria established by the U.S. and California Supreme Courts (e.g., proportionality, land use sector specific).~~

CEQA Streamlining. SB 375 includes provisions for streamlined CEQA review for certain types of mixed-use and transit priority projects that meet specific criteria established by SB 375. According to State CEQA Guidelines Section 15183.5, quantified plans, such as the RTP/SCS EIR, "may be used in the cumulative impacts analysis of later projects."

Projects eligible for CEQA streamlining under SB 375 must be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in the SCS. While the project would be eligible for streamlined review, the County has conservatively elected to quantitatively analyze all project-generated emissions, including GHGs generated by mobile sources. Accordingly, CEQA streamlining is not considered further.

Compliance with Regulatory Programs. A lead agency could rely on regulatory compliance to show less-than-significant GHG impact if the project complies with or exceeds those programs adopted by CARB or other State agencies. However, such analysis is only applicable within the area governed by the regulations. For example, consistency with regulations addressing building efficiency would not suffice to determine that the project would not have significant GHG emissions from transportation.

The Newhall Ranch decision specifically mentions consistency with both the SCS (per SB 375) and AB 32 as potential mechanisms for evaluating significance. A lead agency could assess project-level consistency with AB 32 in whole or part by evaluating whether the project complies with applicable policies in the AB 32 Scoping Plan. The AB 32 Scoping Plan does not consider deeper reductions needed to meet the state's 2030 target under SB 32. Accordingly, exclusively relying on consistency with the AB 32 Scoping Plan and related programs to evaluate emissions generated by land use development projects constructed after 2020 would not fully consider a project's potential GHG impacts to the state's long-term reduction trajectory.

More recent guidance on GHG reduction strategies and thresholds for operational emissions has been provided at the state level through the 2017 Climate Change Scoping Plan, OPR, and CARB. The 2017 Climate Change Scoping Plan outlines GHG reduction strategies by emission sector (water, transportation, and energy) required to meet the State's 2030 target under SB 32. OPR (2018a) guidance specifies that a "land use development project that produces low VMT, achieves applicable building energy efficiency standards, uses no natural gas or other fossil fuels, and includes Energy Star appliances where available, may be able to demonstrate a less-than-significant greenhouse gas impact associated with project operation." Further, CARB (2019) guidance specifies per capita VMT reduction targets that would be needed statewide to meet long-term (2050) mobile source GHG reduction targets, considering increased vehicle efficiency and reduced carbon content in vehicle fuels.

To the extent the CEDHSP policies comply with or exceed applicable policies outlined in the AB 32 Scoping, Plan 2017 Climate Change Scoping Plan, and other regulations adopted by CARB or other State agencies, the project could appropriately rely on their use as showing compliance with performance-based standards adopted to fulfill the statewide goal for reducing GHG emissions. The project's compliance with regulatory programs adopted by CARB and other State agencies is therefore used, in conjunction with other threshold concepts discussed in this section, to evaluate the significance of the Specific Plan's GHG emissions. While the regulatory framework to achieve long-term (post-2030) emissions reductions is in its infancy, many of the programs outlined in the AB 32 Scoping Plan and 2017 Climate Change Scoping Plan are likely to be carried forward or have already been adopted with post-2030 requirements (e.g., RPS). Accordingly, evaluating consistency with these programs and relevant guidance published by OPR and CARB for the reduction of long-term emissions is therefore also considered in the analysis of the project's emissions.

Threshold Approach

Operational Emissions

The Newhall Ranch decision confirmed that there are multiple potential pathways for evaluating project-level GHG emissions consistent with CEQA, depending on the circumstances of a given project. Accordingly, this analysis uses a multipronged approach that considers all applicable threshold concepts recommended by the air districts and courts. As noted above, El Dorado County does not have a qualified GHG reduction plan and has elected not to pursue use the SB 375 streamlining benefit. The BAU threshold that was previously recommended by SMAQMD and EDCAQMD has been rescinded. GHG emissions generated by the CEDHSP are therefore analyzed using a combination of bright-line thresholds, efficiency metrics, and compliance with regulatory programs.

The buildout year for the proposed project is 2035. The State has reduction goals of 80% below 1990 emissions levels by 2050 and carbon neutrality by 2045. However, these goals have not been codified in law, and neither the State nor the County has adopted a plan or framework to achieve the 2045 or 2050 goals. The State's 2020 and 2030 targets have been codified in law through AB 32 and SB 32, respectively, and the AB 32 Scoping Plan and 2017 Climate Change Scoping Plan adopted to meet these goals. Therefore, 2020 and 2030 mark the statutory statewide milestone targets applicable to the project. The analysis focuses on the 2020 and 2030 targets and the plans, policies, and regulations adopted pursuant to achieving the required reductions. Emissions generated at full buildout in 2036 are used as an indicator for long-term emissions reduction progress and are evaluated as they relate to the project's impacts on the State's long-term goal expressed under B-55-18 and S-3-05. Where applicable, guidance from CARB, OPR, and other agencies related to long-term emissions reduction requirements is incorporated into the analysis.

~~The decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets." As noted above, all current CEQA GHG threshold concepts recommended by expert agencies are based on AB 32's requirement to reduce statewide GHG emissions to 1990 levels by 2020. Neither AB 32 nor the drafted and adopted CEQA GHG thresholds address reduction targets beyond 2020. While not legally binding on local land use agencies, EO B-30-15 has set forth an interim reduction target to reduce GHG emissions by 40% below 1990 levels by 2030 and EO S-03-05 has set forth a long-term reduction target to reduce GHG emissions by 80% below 1990 levels by 2050 (see Section 3.6.1, *Existing Conditions*). There is also proposed state legislation that would adopt a binding interim (2030) GHG target.[23]~~

~~Given the recent legislative attention and judicial action[24] regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through 2050 to stabilize CO_2 concentrations, the Association of Environmental Professionals' (AEP) Climate Change Committee (2015) recommended in its *Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California* (Beyond 2020) white paper that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future[25], but that long-term projects should consider "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." The *Beyond 2020* white paper further recommends that the "significance determination…should be based on consistency with 'substantial progress' along a post-2020 trajectory." Accordingly, project-related impacts in both 2020 and full build (2035) are considered in this analysis using the threshold concepts summarized below.~~

~~**2020 Emissions**: Based on the available threshold concepts recommended by air quality management agencies and recognized by the U.S. and California Supreme Courts (see Overview discussion in *Thresholds of Significance*), the assessment herein analyzes 2020 operational emissions against the Sacramento regional 1,100 metric ton CO_2e bright-line threshold and the average efficiency-metric of 4.7 metric tons CO_2e per service population. The 1,100 metric ton CO_2e threshold is most applicable to individual projects, as opposed to a larger specific plans, and is commonly used as an indicator for further analysis, rather than providing a definitive significance finding. However, the analysis herein conservatively uses the project-level 1,100 metric ton CO_2e threshold to reach a significance conclusion for operational emissions generated by the entire CEDHSP. The analysis also considers project significance under the GHG efficiency metric of 4.7 metric tons CO_2e per service population threshold, which is more appropriate for larger specific plans, like the proposed project An impact determination is made under both thresholds—1,100~~

~~[23] The 2030 target of 40% below 1990 levels may be adopted in legislation per the proposed SB 32 (Pavley), which is expected to be considered during the 2016 legislative term.~~

~~[24] See the California Appellate Court, 4th District ruling in *Sierra Club vs. County of San Diego* (2014) 231 Cal.App.4th 1152.~~

~~[25] With the notable exception of the "percent below Business as Usual" approach with the recent Supreme Court Newhall Ranch ruling as described above.~~

~~metric tons CO_2e and 4.7 metric tons CO_2e per service population—given the lack of state or regional guidance regarding GHG thresholds. This approach fully discloses relevant information and ensures a comprehensive assessment of project emissions relative to all relevant threshold concepts available as of the writing of this document. Accordingly, if emissions exceed 1,100 metric ton CO_2e~~ or ~~4.7 metric tons CO_2e per service population, the project may impede progress toward the reduction targets of AB 32, and the project's cumulative contribution of GHG emissions would be considered significant.~~

~~Full Build (2035) Emissions~~: ~~While there is no current statewide GHG reduction plan that extends beyond 2020,[26] the AEP Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their progress toward achieving long-term reduction targets identified in available plans, legislation, or EOs. Consistent with AEP Climate Change Committee recommendations, full build (2035) GHG impacts are analyzed in terms of whether the project would impede progress toward meeting the reduction targets identified in EO B-30-15 and EO S-03-05. Similar to the approach taken to analyze 2020 emissions impacts (see above), a GHG efficiency indicator was calculated based on the 1990 inventory and a linear interpolation of the EO reduction goals. The resulting 2035 efficiency indicator is 2.1 metric tons CO_2e per service population and was calculated using Equations 3.6-2 and 3.6-3.~~

~~Equation 3.6-2.~~

$$Efficiency\ Indicator = \frac{2035\ Emissions\ Goal}{(2035\ Population + 2035\ Employment)}$$

~~Where:~~

~~Efficiency Indicator~~	=	~~Average emissions efficiency, 2.1 metric tons CO_2e per service population~~
~~2035 Inventory Goal~~	=	~~50% below statewide 1990 land use GHG emissions levels, 133.6 million metric tons CO_2e (linear interpolation of EO goals; see Equation 3.6-3)~~
~~2025 Population~~	=	~~Statewide population in 2035, 45.7 million (California Department of Finance 2015)~~
~~2020 Employment~~	=	~~Statewide land use sector jobs in 2035, 18.2 million (California Economic Forecast 2015)~~

~~Equation 3.6-3.~~

$$2035\ Inventory\ Goal = 2030\ Goal + (2050\ Goal - 2030\ Goal) * \frac{(2035 - 2030)}{(2050 - 2030)}$$

~~Where:~~

~~2035 Inventory Goal~~	=	~~50% below statewide 1990 land use GHG emissions levels, 133.6 million metric tons CO_2e~~
~~2030 Goal~~	=	~~40% below statewide 1990 land use GHG emissions levels, 160.3 million metric tons CO_2e (per EO B-30-15)~~
~~2050 Goal~~	=	~~80% below statewide 1990 land use GHG emissions levels, 53.4 million metric tons CO_2e (per EO S-03-05)~~

[26] ~~EO B-30-15 requires ARB to update the scoping plan to include a plan to achieve the 2030 target, which is expected in late 2016.~~

~~Based on the above analysis, the proposed project must achieve an average emissions efficiency of 2.1 metric tons CO_2e per service population at full build (2035). Emissions in excess of 2.1 metric tons CO_2e per service population may conflict with the trajectory of long-term GHG reduction goals, as identified by EO B-30-15 and EO S-03-05, and the project's cumulative contribution of long-term GHG emissions would be considered significant.~~

Table 3.6-2 summarizes the operational bright line and efficiency GHG thresholds ~~and the efficiency indicator~~ considered in this Partial Recirculated DEIR. Emissions in excess of these thresholds would be considered significant.

Table 3.6-2. Operational GHG Thresholds/Efficiency Indicator

Threshold Type	Unit	Source Data	2020	2035
SMAQMD draft regional	Metric tons CO_2e per person	5.90 (2020) 2.94 (2036)	5.90	3.13[a]
	Metric tons CO_2e per service population	4.16 (2020) 2.05 (2036)	4.16	2.18[a]
	Metric tons CO_2e per year	–[b]	1,100	3,500
Statewide (land use sector)	Metric tons CO_2e per service population	–[c]	4.73	2.09

[a] Values were interpolated between SMAQMD's draft 2020 and 2036 thresholds.

[b] SMAQMD's 2020 bright line threshold is published in their current CEQA guidelines (SMAQMD 2018a). The post-2020 threshold was published in November 2018 as part of a staff report (SMAQMD 2018b). As of the writing for this FEIR, the psot-2020 threshold is still draft and has not been adopted or incorporated into SMAQMD's CEQA guidelines.

[c] Values were calculated using Equations 3.6-1 through 3.6-3 and the methods described above.

~~Analysis Condition~~	~~Threshold/Metric~~	~~Basis~~
~~2020 Development~~	~~1,100 metric tons CO_2e~~	~~EDCAQMD staff recommended based on AB 32~~
	~~4.7 metric tons CO_2e per service population~~	~~Average project-level efficiency based on AB 32~~
~~2035 Development (Full Build)~~	~~2.1 metric tons CO_2e per service population~~	~~50% reduction below 1990 land use sector emissions[27]~~

As discussed in Section 3.6.1.1, *Regulatory Setting*, the State has adopted a number of regulatory programs to reduce GHG emissions from land use development projects. These programs often identify specific requirements or policies for individual emission sectors (e.g., mobile sources). Project compliance with applicable regulatory programs is therefore assessed on a sector-by-sector basis, as described below.

- **Mobile sources**: CARB's 2017 Climate Change Scoping Plan recognizes that while vehicle technologies and low carbon fuels will continue to reduce transportation sector emissions, VMT reductions are necessary to achieve California's long-term GHG reduction target. Recent CARB analysis demonstrate that a 14.3 percent reduction of VMT per capita by 2050 (compared to a 2015-2018 average) would be needed statewide to meet their long-term climate change

~~[27] Based on EO B-30-15 and EO S-03-05 reduction goals; refer to Equations 3.6-2 and 3.6-3. Note that the 1,100 metric ton CO_2e threshold is not relevant to the 2035 analysis because it is based on the gap analysis completed for the AB 32 emission goal for 2020.~~

planning goals through 2050. This reduction target is consistent with recent OPR (2018b) guidance issued on SB 743. The majority of project construction would occur after 2020, with full buildout in 2035 or later. Accordingly, use of CARB's 14.3 percent reduction of VMT per capita threshold for mobile source emissions is applicable to the project. Mobile source emissions would be considered less than significant if the project achieves a per capita VMT reduction of at least 14.3 percent compared to existing conditions. In addition to VMT reductions, compliance with regulatory programs (e.g., AB 1493, LCFS, SB 743, and SB 375) would also be required to reduce the statewide mobile GHG emissions for a less than significant impact.

- **Energy, water, waste, area, and land sources.** CARB's AB 32 Scoping Plan and the 2017 Climate Change Scoping Plan, which rely heavily on state programs (e.g., Title 24 and SB 100), outlines strategies required to reduce statewide GHG emissions in order to achieve California's AB 32 and SB 32 reduction targets. Projects that implement applicable strategies from the AB 32 Scoping Plan and the 2017 Climate Change Scoping Plan would be consistent with the state's GHG reduction framework and requirements for these sectors. Accordingly, a sector-by-sector review of the respective project features and sustainability measures included in the CEDHSP is conducted to evaluate consistency with the AB 32 Scoping Plan and the 2017 Climate Change Scoping Plan. This assessment also considers recent OPR (2018a) guidance related to the long-term reduction of statewide emissions. Accordingly, energy, water, waste, area, and land use source emissions would be considered less than significant if the Project is consistent with all applicable AB 32 Scoping Plan and the 2017 Climate Change Scoping Plan strategies and supporting regulations and guidance.

Construction Emissions

The Sacramento regional thresholds guidance adopted ~~(in part)~~ by SMAQMD and recommended by EDCAQMD staff currently propose evaluating construction emissions against a 1,100 metric ton CO_2e emissions threshold. This threshold is consistent with the operational land use development bright-line threshold (see Numeric Bright-Line discussion under *Thresholds of Significance*). Since construction emissions are short-term, utilizing a threshold based on long-term operational emissions provides a conservative assessment of construction impacts. Accordingly, annual construction emissions would be considered significant if they exceed 1,100 metric tons CO_2e. Consultation with EDCAQMD staff indicates that if construction emissions exceed the regional threshold of 1,100 metric tons CO_2e, the impact determination may consider an evaluation of combined construction and operational emissions where construction emissions are amortized over a 50-year project lifetime (Baughman pers. comm.).

In light of the evolving and dynamic analytical framework for evaluating project-level GHG impacts (discussed above), which is informed by new court decisions, State regulations, scientific research, and information from expert agencies, the County has made the following revisions to Impact GHG-1b, beginning on page 3-9. None of the information included in this FEIR change the RDEIR impact determinations or required mitigation. GHG impacts remain significant and unavoidable.

Operation of the CEDHSP would generate direct and indirect GHG emissions. Sources of direct emissions include mobile vehicle trips, natural gas combustion, and landscaping activities. Indirect emissions would be generated by electricity generation and consumption, waste and wastewater generation, and water use. Estimated operational emissions in 2020 and at full project build-out in 2035 are summarized in Tables 3.6-4 and 3.6-5. The 2020 emissions estimate only includes operational emissions from development constructed between 2016 and 2019, as outlined in the construction schedule in Table 3.2-5 in Section 3.2, *Air Quality*, of the CEDHSP DEIR. All structures are conservatively assumed to be fully occupied immediately following construction. Tables 3.6-4 and 3.6-5 do not include emissions benefits achieved by CEDHSP polices, but do reflect adopted State regulations designed to reduce GHG emissions.[28] See Appendix C for model outputs and detailed assumptions.

Table 3.6-4. Estimated 2020 Operational GHG Emissions (metric tons per year, unless otherwise stated)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	31	<0.1	<0.1	31
Energy use	27	<0.1	<0.1	27
Mobile	96	<0.1	<0.1	96
Waste generation	2	0.1	<0.1	4
Water consumption	2	0.1	<0.1	4
Subtotal	157	0.2	<0.1	162
Serrano Westside Planning Area				
Area sources	254	0.1	<0.1	262
Energy use	230	<0.1	<0.1	231
Mobile	1,151	<0.1	<0.1	1,152
Waste generation	16	0.9	<0.1	42
Water consumption	13	0.2	<0.1	21
Subtotal	1,663	1.4	<0.1	1,707
Total operation[a]	1,820	1.5	<0.1	1,870
SMAQMD regional threshold	-	-	-	1,100
Emissions per Service Population				
Total operation ~~per service population~~[b]	-	-	-	4.35
~~Regional threshold~~	-	-	-	~~1,100~~
~~AB 32~~ Statewide efficiency threshold ~~(metric tons per service population)~~	-	-	-	4.73
Draft SMAQMD regional efficiency threshold	-	-	-	4.16
Emissions per Capita				
Total operation[c]	-	-	-	4.35
Draft SMAQMD regional efficiency threshold	-	-	-	5.90

Source: CalEEMod version 2013.2.2 (based on ICF modeling).
CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
GHG = greenhouse gas.
[a] Values may not add due to rounding. Modeling does not include emissions benefits achieved by CEDHSP polices, but does reflect adopted State regulations designed to reduce GHG emissions (Pavley standards, LCFS, and RPS).
[b] Assumes a 2020 service population of 430 (zero jobs and 430 residents) (see Appendix C).
[c] Assumes a 2020 population of 430 residents (see Appendix C).

[28] Consistent with the current state of practice, modeled State regulations include of the Pavley standards, LCFS, and RPS (refer to the Regulatory Setting in Section 3.6.1, *Existing Conditions*).

Table 3.6-5. Estimated 2035 Operational GHG Emissions (metric tons per year, unless otherwise stated)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	441	0.2	<0.1	454
Energy use	300	<0.1	<0.1	302
Mobile	1,535	<0.1	<0.1	1,536
Waste generation	24	1.4	<0.1	64
Water consumption	13	0.4	<0.1	27
Subtotal	2,314	2.1	<0.1	2,384
Serrano Westside Planning Area				
Area sources	1,248	0.7	0.1	1,288
Energy use	1,224	0.1	<0.1	1,232
Mobile	6,383	0.2	<0.1	6,388
Waste generation	136	8.0	<0.1	360
Water consumption	60	1.6	<0.1	116
Subtotal	9,051	10.6	0.1	9,384
Total operation[a]	11,365	12.7	0.2	11,768
Draft SMAQMD regional threshold	-	-	-	3,500
Emissions per Service Population				
Total operation ~~per service population~~[b]	-	-	-	4.32
Statewide Efficiency indicator ~~(metric tons per service population)~~	-	-	-	2.~~1~~09
Draft SMAQMD regional efficiency threshold	-	-	-	2.18
Emissions per Capita				
Total operation[c]	-	-	-	4. 50
Draft SMAQMD regional efficiency threshold	-	-	-	3.13

Source: CalEEMod version 2013.2.2 (based on ICF modeling).

CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
GHG = greenhouse gas.

[a] Values may not add due to rounding. Modeling does not include emissions benefits achieved by CEDHSP polices, but does reflect adopted State regulations designed to reduce GHG emissions (Pavley standards, LCFS, and SB 350).

[b] Assumes a 2035 service population of 2,724 (106 jobs and 2,618 residents) (see Appendix C).

[c] Assumes a 2035 population of 2,618 residents (see Appendix C).

2020 Quantitative Analysis

Estimated operational emissions in 2020 are 1,870 metric tons CO_2e per year, which exceeds the Sacramento regional threshold of 1,100 metric tons CO_2e per year (see Table 3.6-4). As noted above, the emissions analysis presented in Table 3.6-4 does not include benefits achieved by CEDHSP polices. The CEDHSP includes a comprehensive set of strategies that will improve energy efficiency, reduce water consumption and waste generation, and encourage alternative transportation. While several policies encourage voluntary adoption of actions that will reduce GHG emissions, others identify mandatory targets that will be incorporated into the project design and achieved as a condition of project approval.

Table 3.6-6 summarizes emissions in 2020 with implementation of the following mandatory CEDHSP policies.[29] The table also includes emissions benefits associated with mixed-use design as discussed in the transportation impact analysis study (Appendix L of the CEDHSP DEIR).[30] Emission reductions were estimated using CalEEMod, SMAQMD's (2010) *Recommended Guidelines for Land Use Emissions Reductions* (Reduction Guide),[31] CAPCOA's (2010) *Quantifying Greenhouse Gas Mitigation Measures,* and ICF International's (2014) *California Transportation Electrification Assessment.* Please refer to Appendix C for model outputs and detailed assumptions.

- Policy 8.2, Short- and long-term bicycle parking
- Policy 8.4, Plug-in electric vehicle (PEV) charging stations
- Policy 8.11, Title 24 standards
- Policy 8.14, Energy efficiency glazing
- Policy 8.16, Energy efficient appliances
- Policy, 8.20 High efficiency lighting
- Policy 8.36, Residential indoor water use
- Policy 8.40, Recycled water use
- Policy 8.42, Irrigation controllers,
- Policy 8.45, Turf reduction
- Policy 8.50, Natural gas hearths
- Policy 8.51, Wood-burning fireplaces

Estimated emissions in 2020 with quantifiable mandatory CEDHSP polices are 1,596 metric tons CO_2e per year, which still exceeds the Sacramento regional threshold of 1,100 metric tons CO_2e (see Table 3.6-6). However, the quantified mandatory CEDHSP policies would improve the average GHG efficiency from 4.35 metric tons CO_2e per service population to 3.71 metric tons CO_2e per service population (see Tables 3.6-4 and 3.6-6). The CEDHSP would also achieve additional GHG reductions by voluntary policies that encourage renewable energy, alternative transportation, and passive heating and cooling. However, these strategies were not quantified because the exact number of installed systems and affected structures are currently unknown. Operational emissions in 2020 will therefore likely be lower than those presented in Table 3.6-6.

[29] Additional mandatory policies outlined in the CEDHSP would be implemented, but emissions benefits were not quantified to avoid potential double-counting with the quantified policies identified above.

[30] The primary trip reductions would be achieved by residents that travel from home to services within the project area without using an external roadway (known as "internalization"). Trips made by walking instead of personal vehicle also would contribute to trip reductions.

[31] SMAQMD updated the Reduction Guide in July 2013. However, the 2010 Reduction Guide may be used to evaluate projects where the notice of preparation (NOP) was issued prior to April 1, 2013 (Sacramento Metropolitan Air Quality Management District 2014). Since the NOP for the CEDHSP EIR was issued February 2013, this guidance uses the 2010 Reduction Guide, consistent with SMAQMD guidance (Sacramento Metropolitan Air Quality Management District 2010). SMAQMD's Reduction Guide is available for use by projects throughout the State, and is most applicable to projects within the Sacramento Region, such as the CEDHSP.

~~As discussed above, emissions from projects in excess of 1,100 metric tons CO_2e~~ or ~~4.7 metric tons CO_2e per service population would be cumulatively considerable. Under the 1,100 metric ton CO_2e threshold, the project's cumulative contribution of GHG emissions in 2020 would be significant. Implementation of Mitigation Measure GHG-1, as described below, would reduce emissions, but not to a level below 1,100 metric tons CO_2e. Accordingly, this impact would be significant and unavoidable under the bright-line threshold.~~

~~Emissions would not exceed the average efficiency-metric threshold of 4.7 metric tons CO_2e per service population, which is derived from the AB 32 reduction target for 2020 and is the most applicable threshold (of those available at the writing of this document) to larger planning-level projects. Accordingly, the project's cumulative contribution of GHG emissions in 2020 would be less than significant under the service population threshold.~~

Table 3.6-6. Estimated 2020 Operational GHG Emissions with Implementation of Quantified Mandatory CEDHSP Policies (metric tons per year, unless otherwise stated)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	16	<0.1	<0.1	16
Energy use	24	<0.1	<0.1	25
Mobile	94	<0.1	<0.1	94
Waste generation	2	0.1	<0.1	4
Water consumption	2	<0.1	<0.1	3
Subtotal	138	0.1	<0.1	142
Serrano Westside Planning Area				
Area sources	124	<0.1	<0.1	125
Energy use	209	<0.1	<0.1	210
Mobile	1,059	<0.1	<0.1	1,060
Waste generation	16	0.9	<0.1	42
Water consumption	11	0.2	<0.1	17
Subtotal	1,418	1.2	<0.1	1,454
Total operation[a]	1,556	1.3	<0.1	1,596
SMAQMD Regional threshold	-	-	-	1,100
Emissions per Service Population				
Total operation ~~per service population~~[b]	-	-	-	3.71
~~Sacramento Regional threshold~~	-	-	-	~~1,100~~
~~AB 32~~ Statewide efficiency threshold ~~(metric tons per service population)~~	-	-	-	4.73
Draft SMAQMD regional efficiency threshold	-	-	-	4.16
Emissions per Capita				
Total operation[c]	-	-	-	3.71
Draft SMAQMD regional efficiency threshold	-	-	-	5.90

Source: CalEEMod version 2013.2.2 (based on ICF modeling) SMAQMD (2010), CAPCOA (2010), ICF International (2014)

CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
GHG = greenhouse gas.

[a] Values may not add due to rounding. Modeling includes emissions benefits achieved by the following CEDHSP polices: 8.2, 8.4, 8.11, 8.14, 8.16, 8.20, 8.36, 8.40, 8.42, 8.45, 8.50, and 8.51. State regulations designed to reduce GHG emissions (Pavley standards, LCFS, and RPS) are also included in the emissions modeling.

[b] Assumes a 2020 service population of 430 (zero jobs and 430 residents) (see Appendix C).

[c] Assumes a 2020 population of 430 residents (see Appendix C).

2035 Quantitative Analysis

Estimated operational emissions at full build (2035) are 11,768 metric tons CO_2e per year (see Table 3.6-5). As noted above, the emissions analysis presented in Table 3.6-5 does not include benefits achieved by CEDHSP policies and is therefore conservative. Table 3.6-7 summarizes emissions at full build with implementation of the quantified mandatory CEDHSP policies identified above. The table also includes emissions benefits associated with mixed-use design as discussed in the transportation impact analysis study (Appendix L of the CEDHSP DEIR).

Table 3.6-7. Estimated 2035 Operational GHG Emissions with Implementation of Quantified Mandatory CEDHSP Policies (metric tons per year, unless otherwise stated)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	219	<0.1	<0.1	220
Energy use	268	<0.1	<0.1	270
Mobile	1,500	<0.1	<0.1	1,502
Waste generation	24	1.4	<0.1	64
Water consumption	14	0.3	<0.1	25
Subtotal	2,022	1.8	<0.1	2,077
Serrano Westside Planning Area				
Area sources	610	<0.1	<0.1	614
Energy use	1,087	<0.1	<0.1	1,094
Mobile	5,943	0.2	<0.1	5,948
Waste generation	136	8.0	<0.1	360
Water consumption	48	1.3	<0.1	94
Subtotal	7,824	9.6	0.1	8,110
Total operation[a]	9,846	11.4	0.1	10,187
Draft SMAQMD regional threshold	-	-	-	3,500
Emissions per Service Population				
Total operation ~~per service population~~[b]	-	-	-	3.74
Statewide Efficiency indicator ~~(metric tons per service population)~~	-	-	-	2.~~1~~09
Draft SMAQMD regional efficiency threshold	-	-	-	2.18
Emissions per Capita				
Total operation[c]	-	-	-	3.89
Draft SMAQMD regional efficiency threshold	-	-	-	3.13

Source: CalEEMod version 2013.2.2 (based on ICF modeling), SMAQMD (2010), CAPCOA (2010), ICF International (2014)

CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
GHG = greenhouse gas.

[a] Values may not add due to rounding. Modeling includes emissions benefits achieved by the following CEDHSP polices: 8.2, 8.4, 8.11, 8.14, 8.16, 8.20, 8.36, 8.40, 8.42, 8.45, 8.50, and 8.51. State regulations designed to reduce GHG emissions (Pavley standards, LCFS, and SB 350) are also included in the emissions modeling.

[b] Assumes a 2035 service population of 2,724 (106 jobs and 2,618 residents) (see Appendix C).

[c] Assumes a 2035 population of 2,618 residents (see Appendix C).

Compliance with Regulatory Program Analysis

The following sections present the sector-by-sector analysis of GHG impacts, consistent with OPR and CARB guidance.

Area Source Emissions

Area source GHG emissions from the CEDHSP would be generated by landscaping-related fuel combustion sources, such as lawn mowers, and hearths (e.g., fireplaces).

CARB has not developed any relevant measures in the AB 32 Scoping Plan, 2017 Climate Change Scoping Plan, or other regulations related to area source emissions. CARB adopted emissions standards for small off-road engines (i.e., landscape equipment) in 1990. More recently, CARB stated their intent to consider new standards for small engines in 2020, including regulatory and incentive approaches and a major shift to zero-emission equipment (California Air Resources Board n.d.). However, to date, adopted CARB emission standards are aimed at reducing smog-forming pollutants. No standards have been adopted pursuant to reducing GHG emissions from small off-road engines.

Under SB 563, CARB has developed the Woodsmoke Reduction Program, which offers incentives toward the voluntary replacement of existing uncertified residential wood burning devices used for space heating with cleaner and more efficient alternatives. Replacement options include stoves that are natural gas, propane, electric, ductless mini-split heat pumps, and wood (with emissions controls). The program is maintained through the Greenhouse Gas Reduction Fund (CARB 2019a).

The CEDHSP includes polices that will directly reduce GHG emissions and fossil-fuel consumption from area sources. For example, CEDHSP Policy 8.6 requires electrical outlets be provided along the front and rear exterior walls in all residential land use designations to allow for the use of electric landscaping tools. CEDHSP Policy 8.51 prohibits wood-burning fireplaces and requires all stoves and fireplaces be natural gas fired. While the emissions benefits achieved by CEDHSP Policy 8.6 cannot be quantified as it is unknown how many people will elect to use electric landscaping equipment, CEDHSP Policy 8.51 is estimated to reduce operational area source emissions by 908 metric tons CO_2e (52%) per year at full build (2035) (see Tables 3.6-5 and 3.6-7).

While the AB 32 Scoping Plan and 2017 Climate Change Scoping Plan do not include specific measures or emissions reduction requirements for landscaping equipment or hearths, achieving the state's long-term climate change goals under S-3-05 and B-55-18 (if legislatively adopted) will inevitably require the transition away from fossil-fuel power energy sources, including but not limited to landscaping equipment and hearths. Recognizing this, OPR (2018a) guidance recommends that land use development projects strive to avoid fossil fuels. Because the CEDHSP has a buildout year beyond the 2030 milestone, use of fossil-fueled landscaping equipment and hearts on the project site would generate GHG emissions and may conflict with the state's long-term emission reduction trajectory.

Energy Source Emissions

GHGs are emitted directly from buildings through the combustion of any type of fuel (e.g., natural gas for cooking). GHGs can also be emitted indirectly from the generation of electricity.

The AB 32 Scoping Plan and 2017 Climate Change Scoping Plan outline strategies to reduce energy demand and fossil fuel use, while increasing energy efficiency and renewable energy generation.

These strategies include transitioning to cleaner fuels, greater efficiency in existing buildings, and electrification of end uses. Several of these strategies are reflected in State laws and regulatory programs. For example, SB 100 requires a doubling of energy efficiency by 2030 and an RPS of 60% renewable by 2030. SB 100 also sets a target of 100% carbon-free electricity by 2045. The 2019 title 24 standards mandate higher efficiency levels and rooftop solar photovoltaic systems for all new residential buildings constructed in 2020 and beyond. Future standards are expected to result in zero net energy for newly constructed commercial buildings. The CEC also enforces the Appliance Efficiency Regulations contained in Title 20 of the California Code of Regulations. The regulations establish water and energy efficiency standards for both federally regulated and non-federally regulated appliances.

Objective 8.4 in the CEDHSP requires all development within the Plan Area be energy efficient and encourages the on-site generation of renewable energy. The CEDHSP includes 13 policies to achieve this objective through a mix of voluntary and mandatory strategies. For example, CEDHSP Policy 8.12 encourages all buildings be oriented to reduce heating and cooling needs, whereas CEDHSP policies 8.13 and 8.14 encourage cool roofing and energy-efficient glazing. CEDHSP policies 8.20 and 8.21 target high efficiency lighting throughout the Plan Area, whereas CEDHSP Policy 8.22 encourages onsite renewable energy generation by requiring buildings be prewired for future solar photovoltaic (PV) systems and the removal of any restrictions on future installations. CEDHSP Policy 8.23 requires solar water heating systems in commercial and multi-family buildings and encourages their installation in single-family homes and swimming pools.

The CEDHSP's robust energy efficiency and renewable energy policies are consistent with the AB 32 Scoping Plan's and 2017 Climate Change Scoping Plan's overall goal of reducing building energy emissions to meet the state's 2020 and 2030 GHG reduction targets. In order to meet the state's expressed 2045 climate neutrality goal (EO B-55-18), OPR (2018a) recommends all electric buildings. Because SB 100 obligates utilities to supply 100 percent carbon-free electricity by 2045, all electric buildings that do not consume any natural gas would not generate any emissions. While the CEDHSP encourages energy efficiency and onsite renewable energy, not all buildings will be designed without natural gas appliances. The continued consumption of fossil fuels by CEDHSP buildings beyond 2030 would generate energy emissions and could conflict with the state's long-term emission reduction trajectory.

Mobile Source Emissions

GHG emissions associated with on-road mobile sources are generated from workers, visitors, and delivery vehicles accessing the Plan Area.

Federal, state, and local regulatory efforts target three elements of emissions reduction from mobile sources: vehicle fuel efficiency, the carbon content of fuels, and VMT. Most adopted programs and regulations focus on fuel efficiency (e.g., CAFÉ standards, Pavley standard) and reducing the carbon intensity of transportation fuels (e.g., LCFS). Vehicle electrification is also rapidly becoming part of the State's approach to reducing mobile source emissions (e.g., Title 24). The proposed project does not include any features that would conflict with these programs. Rather, CEDHSP Policy 8.4 requires dedicated parking for plug-in electric vehicles (PEV) and installation of Level 2 PEV charging stations in all Civic-Limited Commercial, Village Park, and Village Residential - High designations. CEDHSP Policy 8.3 also requires dedicated parking for low-emitting and fuel-efficiency vehicles within these designations, as well as within Village Residential - Medium. Finally, CEDHSP

Policy 8.5 encourages PEV prewiring in private garages and other enclosed off-street parking spaces in all Village Residential - Low and Village Residential - Medium designations.

As discussed in Section 3.6.1.1, *Regulatory Setting*, California adopted SB 375 to integrate transportation planning, regional housing allocation, and GHG reduction through reductions in VMT. The GHG reduction targets adopted by CARB and incorporated by MPOs in their RTP/SCS were expected to achieve much of the required VMT reduction needed for the State to meet their long-term GHG reduction targets. Yet a recent CARB assessment makes clear that the state "is not on track to meet greenhouse gas reductions expected under SB 375" (CARB 2018). Accordingly, additional GHG reduction, specifically through further reductions in VMT, is needed to meet the state's climate change objectives (CARB 2019).

SB 743 is intended to help close the VMT and emissions reduction gap. There is a nexus between SB 743 and the state's goals to reduce mobile source GHG emissions; one of the criteria under SB 743 for determining the significance of the transportation impacts of a project is a reduction in GHG emissions. In response to SB 743 and the related changes to the State CEQA Guidelines, OPR released its *Technical Advisory on Evaluating Transportation Impacts in CEQA* in April 2018. The advisory indicates that "achieving 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals" (OPR 2018b). This reduction goal is consistent with recent CARB (2019b) analysis, which demonstrates that a 14.3 percent reduction of VMT per capita by 2050 (compared to a 2015-2018 average) would be needed statewide to meet their GHG planning goals through 2050.

As shown in Table 3.6-7, mobile sources associated with the CEDHSP would result in 7,450 metric tons CO_2e at full build (2035), which represents 73% of the operational emissions inventory. These emissions are generated by an increase in VMT; based on the trip generation rates developed by Fehr & Peers (Appendix L of the DEIR) and CalEEMod default trip distances for the project land use types, the CEDHSP is estimated to result in approximately 65,363 VMT per day at full buildout (Appendix C of the RDEIR). This equates to a daily per capita VMT rate of 25.0, assuming a full build population of 2,618 residents. SACOG's VMT mapping tool indicates that the existing (2012) traffic analysis zone (TAZ) per capita VMT for the Pedregal Planning Area and Serrano-Westside Planning Area is 23.57 and 19.80, respectively. The projected per capita VMT for the CEDHSP therefore exceeds the existing TAZ-level per capita VMT and exceeds the SACOG regional and countywide per capita VMT reduction targets[32] of 15.26 and 22.01, respectively (Sacramento Area Council of Governments n.d.).

Objective 8.3 in the CEDHSP seeks to reduce trips and VMT by promoting enhanced mobility options for residents and employees. CEDHSP Policy 8.10 requires the Master Owners' Association (MOA) create or participate in a transportation management association (TMA) and prepare a multi-strategy Transportation Management Plan (TMP) for the Plan Area. The TMP will provide employees of local retail, office, and other commercial businesses and the residents within the Plan Area with programs and direct assistance in using alternative modes of travel. Section 8.4.2 of the CEDHSP identifies example strategies that may be incorporated into the TMP, including but not limited to carpooling encouragement, ride-matching assistance, telecommuting, flexible schedules, bicycle and end-trip facilities, discounted transit passes, and school ridesharing or enhanced bus programs. Because the exact suite of strategies for the TMP have not been finalized, VMT and

[32] The reduction targets are based on 85% of the average, or a 15% reduction below existing conditions.

emissions benefits from CEDHSP Policy 8.10 cannot be quantified. However, research shows that providing commute trip reduction programs can reduce VMT by about five percent, depending on the program details (Sacramento Metropolitan Air Quality Management District 2017).

CEDHSP Policy 8.10 is consistent with State goals to reduce VMT and promote alternative forms of transportation. Additional VMT reductions may also be achieved by CEDHSP policies 8.1 and 8.2, which encourage minimum off-street parking requirements and require bicycle parking in all Civic-Limited Commercial, Village Park, Village Residential - Medium, and Village Residential - High designations. While the exact benefits of these policies cannot be precisely quantified, it is unlikely they will reduce per capita VMT by more than 39%, which would be required to meet the regional per capita VMT target of 15.26. Accordingly, mobile source emissions associated with the CEDHSP could conflict with the state's long-term emission reduction trajectory.

Waste Emissions

Solid waste emissions result from CH_4 associated with the decomposition of the waste, and CO_2 emissions associated with the combustion or flaring of methane. Solid waste may be disposed in landfills or diverted for recycling, composting, reuse, or other means to avoid landfilling.

The AB 32 Scoping Plan and 2017 Climate Change Scoping Plan aim to reduce waste emissions by diverting waste away from landfills through waste reduction, re-use, composting, and material recovery. They do not set quantitative targets for reducing waste emissions but does aim to reduce the amount of waste that enters landfills. The 2017 Climate Change Scoping Plan has a goal of 14% reduction in solid waste related GHG emissions due to organic diversion (i.e., composting). AB 341 requires mandatory recycling for certain commercial businesses. AB 341 also established a statewide recycling goal of 75% by the year 2020. Implementation measures include source reduction, recycling, or composting. Forthcoming regulations pursuant to SB 1383 with establish minimum standards for organic waste collection, hauling, and composting. The final regulations will take effect on or after January 1, 2022.

Objective 8.6 in the CEDHSP encourages recycling and composting in both private residences and public spaces. CEDHSP policies 8.32 through 8.34 encourage on-site compositing, whereas CEDHSP Policy 8.35 requires recycling and composting services be provided in the Plan Area. The emphasis on composting and provision of composting services is consistent with the AB 32 Scoping Plan and 2017 Climate Change Scoping Plan and would support AB 341's and SB 1383's overall goals of reducing landfilled waste and associated methane emissions.

Water and Wastewater Emissions

Indirect GHG emissions result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of water. Additional wastewater emissions include CH_4 and N_2O, although these are generated by wastewater treatment at individual wastewater treatment plants (WWTP). The project does not include any new WWTPs.

The AB 32 Scoping Plan and 2017 Climate Change Scoping Plan outline objectives and goals to reduce GHGs in the water sector, including using and reusing water more efficiently through greater water conservation, drought tolerant landscaping, stormwater capture, and water recycling. Regulations have further targeted water supply and water conservation through building and landscaping efficiency (e.g., Title 24). The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20% by December 31, 2020.

The CEDHSP does not include any features that would conflict with State measures and programs. The CEDHSP includes twelve policies directly related to water conservation. For example, CEDHSP Policy 8.36 requires indoor residential water use be reduced by 20% from the 2008 Plumbing Code baseline, whereas CEDHSP Policy 8.37 encourages nonresidential indoor water use be reduced by 30%. CEDHSP policies 8.38 and 8.39 require low flow faucets and encourage waterless urinals and toilets. CEDHSP policies 8.40 and 8.41 support recycled water use, whereas policies 8.42 through 8.47 target outdoor water use through hydro-zoning techniques, native plants, reductions in turf, and efficient irrigation controls. These policies are consistent with the 2017 Scoping Plan's water measures and the state's regulatory programs within the water sector.

Land Use Emissions

Conversion of natural lands during construction would result in the one-time loss of carbon sequestration potential.

The 2017 Climate Change Scoping Plan identifies increasing sequestration as crucial to achieving the State's long-term climate change strategy. It outlines objectives to maintain natural lands as a resilient carbon sink and sets a goal to reduce GHG emissions from natural and working lands by at least 15 to 20 million metric tons of CO_2e by 2030. SB 1386 also identifies the protection and management of natural and working lands as a key strategy towards meeting the State's 2030 GHG reduction target.

As discussed in Chapter 3.3, *Biological Resources*, in the DEIR oak woodland is protected by policies in the County General Plan and County Code of Ordinance. Accordingly, the project is required to mitigate all oak woodland impacts at a 1:1 ratio. However, accordingly to CalEEMod, losses to riparian woodland (approximately 2.40 acres), wetlands (less than 1 acre), and grasslands (93.08 acres) would result in 435 metric tons CO_2e, which would conflict with the states land use and sequestration goals.

Summary

As discussed above, the impact analysis consider multiple accepted threshold options for determining significance, including mass emission thresholds, efficiency thresholds, and compliance with regulatory programs. Under the 1,100 metric ton CO_2e threshold, the project's cumulative contribution of GHG emissions in 2020 would be significant (see Table 3.6-6). Likewise, under the 3,500 metric tons CO_2e draft threshold (see Table 3.6-7), the project's cumulative contribution of GHG emissions in 2035 would be significant. Implementation of Mitigation Measure GHG-1, as described below, would reduce emissions, but not to a levels below 1,100 in 2020 and 3,500 in 2035. Accordingly, this impact would be significant under the bright-line threshold.

Estimated emissions in 2020 with quantifiable mandatory CEDHSP polices would not exceed the statewide land use or SMAQMD draft regional efficiency-metric thresholds of 4.73 and 4.16 metric tons CO_2e per service population, respectively (see Table 3.6-6). Likewise, per capita 2020 emissions would not exceed SMAQMD's draft regional threshold of 5.90 metric tons CO_2e per capita. These thresholds were derived from the AB 32 reduction target for 2020. Accordingly, the project's cumulative contribution of GHG emissions in 2020 would be less than significant under the efficiency threshold.

Estimated emissions in 2035 with quantifiable mandatory CEDHSP polices ~~are 10,187 metric tons CO_2e per year or 3.74 metric tons CO_2e per service population, which~~ would exceed the statewide land use and SMAQMD draft regional efficiency-metric thresholds of 2.09 and 2.18 metric tons CO_2e per service population, respectively (see Table 3.6-7) ~~2035 efficiency indicator~~. Likewise, per capita 2035 emissions would exceed SMAQMD's draft regional threshold of 3.13 metric tons CO_2e per capita. These thresholds were derived from the SB 32 reduction target for 2020 and EO S-3-05 reduction goal for 2050. Accordingly, the project's cumulative contribution of GHG emissions in 2035 would be significant under the efficiency threshold.

Operation of the CEDHSP could conflict with the state's emission reduction goals and trajectory, specifically within the area, energy, mobile, and land use sectors. While the CEDHSP has a diverse suite of strategies that target area and energy source emissions, many of the measures are voluntary and there is no guarantee that the action would be incorporated into the project design of all future development. Development under the CEDHSP would also generate additional vehicle trips, which could conflict with the State's goal to reduce regional per capita VMT. Construction would result in annual GHG emissions from equipment and vehicles and permanent losses of riparian woodland and wetlands. Accordingly, the project's cumulative contribution of GHG emissions would be significant with respect to compliance with regulatory programs.

~~As discussed above, while the State has the AB 32 Scoping Plan and multiple adopted regulations to achieve the AB 32 2020 target, there is no currently adopted State plan to meet long-term GHG reduction goals. With the exception of SB 350 of 2015, which establishes new 2030 objectives for increasing the Renewal Portfolio Standard to 50% and doubling energy efficiency, any calculation of post-2020 emissions therefore cannot account for future State or federal actions that may be taken to achieve long-term reductions.~~ Because the long-term climate change policy and regulatory changes to meet the 2050 emissions reduction target are unknown at this time, the extent to which the proposed Plan's emissions and resulting impacts would be mitigated through implementation of statewide (and nationwide) changes is not known, the calculation of post-2030 emissions cannot take into account future State or federal actions that may be taken to achieve long-term reductions, beyond the Pavley vehicle standards and SB 100.

As discussed in the analysis of consistency with the goals of EO B-55-18~~30-15~~ and S-03-05 (Impact GHG-2, below), the achievement of long-term GHG reduction targets will require substantial changes in how energy is produced and consumed, as well as other substantial economy-wide changes, many of which can only be implemented by the State and federal government. Accordingly, placing the entire burden of meeting long-term reduction targets on local government or individual new development projects would be disproportionate and likely ineffective. Nevertheless, given the proposed project's level of emissions compared to the ~~2035~~ bright line and efficiency ~~indicator~~ thresholds, and that the project includes development and emissions sources that may be inconsistent with the state's long-term reduction trajectory ~~the fact that there is no plan for achieving a post-2020 GHG reduction goal~~, this analysis conservatively concludes that the project's cumulative contribution of GHG emissions ~~in 2035~~ would be significant.

As discussed above, the CEDHSP includes a comprehensive set of strategies that will improve energy efficiency, reduce water consumption and waste generation, and encourage alternative transportation. Mitigation Measure GHG-1 identifies CEDHSP polices that will be expanded to further reduce operational GHG emissions. Estimated operational emissions with implementation of Mitigation Measure GHG-1 are summarized in Table 3.6-8. The analysis only includes emissions benefits achieved by strategies 1 and 2. The other strategies would achieve additional GHG savings, although reductions have not been explicitly quantified because they depend either on program participation or the efficiency of other supporting strategies. While reductions associated with these strategies have not been quantified, they are anticipated to be minor compared to savings achieved by strategies 1 and 2.[33]

As shown in Table 3.6-8, with implementation of the identified mitigation strategies, the proposed project's emissions would still exceed the 2035 bright line and efficiency ~~indicator~~ thresholds. The project may likewise still conflict with the state's emission reduction goals and trajectory, specifically within the area, energy, mobile, and land use sectors. Therefore, even with mitigation, the project's cumulative contribution of GHG emissions in ~~2035~~ would be significant and unavoidable.

[33] GHG reductions achieved by Strategy 1 were estimated using the National Renewable Energy Laboratory's System Advisor Model, version 2015.6.30. GHG reductions achieved by Strategy 2 were estimated using CalEEMod.

Table 3.6-8. Estimated 2035 Operational GHG Emissions with Implementation of Mitigation Measure GHG-1 (metric tons per year, unless otherwise stated)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	219	<0.1	<0.1	220
Energy use	248	<0.1	<0.1	249
Mobile	1,500	<0.1	<0.1	1,502
Waste generation	24	1.4	<0.1	64
Water consumption	11	0.3	<0.1	22
Subtotal	2,002	1.8	<0.1	2,056
Serrano Westside Planning Area				
Area sources	610	<0.1	<0.1	614
Energy use	1,020	<0.1	<0.1	1,026
Mobile	5,943	0.2	<0.1	5,948
Waste generation	136	8.0	<0.1	360
Water consumption	47	1.3	<0.1	91
Subtotal	7,756	9.6	0.1	8,040
Total operation[a]	9,758	11.4	0.1	10,096
Draft SMAQMD regional threshold	-	-	-	3,500
Emissions per Service Population				
Total operation ~~per service population~~[b]	-	-	-	3.71
Statewide Efficiency indicator ~~(metric tons per service population)~~	-	-	-	2.~~1~~09
Draft SMAQMD regional efficiency threshold	-	-	-	2.18
Emissions per Capita				
Total operation[c]	-	-	-	3.86
Draft SMAQMD regional efficiency threshold	-	-	-	3.13

Source: CalEEMod version 2013.2.2 (based on ICF modeling), SMAQMD (2010), CAPCOA (2010), ICF International (2014)

CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
GHG = greenhouse gas.

[a] Values may not add due to rounding. Modeling includes emissions benefits achieved by the following CEDHSP polices: 8.2, 8.4, 8.11, 8.14, 8.16, 8.20, 8.36, 8.40, 8.42, 8.45, 8.50, and 8.51. State regulations designed to reduce GHG emissions (Pavley standards, LCFS, and SB 350) are also included in the emissions modeling, as well as strategies 1 and 2 from Mitigation Measure GHG-1.

[b] Assumes a 2035 service population of 2,724 (106 jobs and 2,618 residents) (see Appendix C).

[c] Assumes a 2035 population of 2,618 residents (see Appendix C).

In response to comment I-R-5-3, the following text of Impact GHG-2 on page 3-24 has been revised for clarity.

Assembly Bill 32 Scoping Plan

AB 32 codifies the state's GHG emissions reduction targets for 2020. The ARB adopted the 2008 Scoping Plan and 2014 First Update as a framework for achieving AB 32. The 2008 Scoping Plan and 2014 First Update outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. Some reductions would need to come in the form of changes pertaining to vehicle emissions and mileage standards. Some would come from changes pertaining to sources of electricity and increased energy efficiency at existing facilities. The remainder would need to come from state and local plans, policies, or regulations that will lower carbon emissions, relative to business as usual conditions.

As discussed above, the CEDHSP includes numerous policies to reduce operational and construction-related GHG emissions. These measures are consistent with strategies identified in the 2008 Scoping Plan and 2014 First Update, as well as statewide goals to improve energy efficiency, reduce building energy consumption, and increase renewable energy generation. However, while the statewide land use or SMAQMD draft regional efficiency-metric thresholds of 4.73 and 4.16 metric tons CO_2e per service population, respectively ~~average efficiency-metric threshold of 4.7 metric tons CO_2e per service population~~ would not be exceeded in 2020, total emissions would exceed the 1,100 metric ton CO_2e regional threshold (see Table 3.6-6). Both thresholds are derived from the AB 32 reduction target for 2020. As noted above, the efficiency metric is most applicable to large-scale plans like the proposed project. However, the analysis evaluated project impacts relative to all available thresholds as of the writing of this document. Accordingly, since mass emissions exceed 1,100 metric tons CO_2e, GHG emissions associated with the CEDHSP in 2020 ~~may~~ would conflict with implementation of the AB 32 Scoping Plan.

The California Air Resources Board adopted the California's 2017 Climate Change Scoping Plan in November 2017. The scoping plan outlines the framework for achieving the state's 2030 GHG reduction target established under Senate Bill 32. A consistency analysis with the strategies and policies contained in the 2017 Climate Change Scoping Plan has been added to Impact GHG-2 on page 3-24.

2017 Climate Change Scoping Plan

The 2017 Climate Change Scoping Plan builds on the programs set in place as part of the previous AB 32 Scoping Plan that was drafted to meet the 2020 reduction targets per AB 32. The 2017 Climate Change Scoping Plan proposed meeting the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight, continued investment in renewables, greater use of low-carbon fuels including electricity and hydrogen, stronger efforts to reduce emissions of short-lived climate pollutants (CH_4 and fluorinated gases), further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car, continuing the cap-and-trade program, and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target (California Air Resources Board 2017).

In general, the CEDHSP is built around the concept of sustainability. This is manifested through increased mixed-use and green-building principles, including an emphasis on energy efficiency, water conservation, and waste reduction. Although the measures included in the 2017 Climate Change Scoping Plan are necessarily broad, the CEDHSP is generally consistent with the goals and desired outcomes of the plan (i.e. increasing energy efficiency, water conservation, waste diversion, transportation sustainability.). The consistency of the CEDHSP with the policies in the 2017 Climate Change Scoping Plan is analyzed in Table 3.6-9.

Table 3.6-9. CEDHSP Consistency with 2017 Scoping Plan Policies

Policy	Primary Objective	CEDHSP Consistency Analysis
SB 350	Reduce GHG emissions in the electricity sector through the implementation of the 50% RPS, doubling of energy savings, and other actions as appropriate to achieve GHG emissions reductions planning targets in the Integrated Resource Plan process.	This policy is a State program that requires no action at the local or project level. Nonetheless, development of new land uses under the CEDHSP would be consistent with the energy saving objective of this measure. The CEDHSP includes policies that support natural cooling and passive solar heating through building placement and orientation, using vegetation and light-colored paints to shade buildings to limit direct solar gain and glare, using energy efficient appliances, exceeding energy efficiency standards, and installing solar panels and/or solar hot water systems. These policies would reduce energy demands.
Low Carbon Fuel Standard	Transition to cleaner/less-polluting fuels that have a lower carbon footprint.	This policy is a State program that requires no action at the local or project level. Nonetheless, development of new land uses under the CEDHSP would support reducing the carbon footprint associated with vehicle travel. CEDHSP policies would create a mixed-use and pedestrian-friendly and walkable community. The land use design would minimize off-street parking to help reduce vehicle trips and support alternative transportation. CEDHSP policies would also provide short- and long-term bicycle parking, as well as dedicated parking for PEV and pre-wiring for future PEV charging stations.
Mobile Source Strategy (Cleaner Technology and Fuels [CTF] Scenario)	Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of VMT.	This policy is a State program that requires no action at the local or project level. Nonetheless, development of new land uses under the CEDHSP would support the reduction of VMT. As noted above, the CEDHSP includes a number of policies that will support alternative transportation, electric vehicles, and overall reductions in vehicle trips.
SB 1383	Approve and Implement Short-Lived Climate Pollutant strategy to reduce highly potent GHGs	This policy is a State program that requires no action at the local or project level, and is not directly applicable to the CEDHSP.
California Sustainable Freight Action Plan	Improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system.	This policy is a State program that requires no action at the local or project level, and is not directly applicable to the CEDHSP.
Post-2020 Cap and-Trade Program	Reduce GHGs across largest GHG emissions sources.	This policy is a State program that requires no action at the local or project level, and is not directly applicable to the CEDHSP.

While the CEDHSP is consistent with the broad policy objectives of the 2017 Climate Change Scoping Plan, the permanent losses of riparian woodland and wetlands would not be consistent with the Plan's reduction goal of at least 15 to 20 million metric tons CO_2e by 2030 for agricultural and working lands. Likewise, while the CEDHSP has a diverse suite of strategies that target area and energy source emissions, many of the measures are voluntary and there is no guarantee that the action would be incorporated into the project design of all future development. Development under the CEDHSP would also generate additional vehicle trips, which could conflict with the State's goal to reduce regional per capita VMT. Mitigation Measure GHG-1 would lessen GHG impacts, but not to a level that is less-than-significant.

On July 13, 2017, the California Supreme Court made a limited decision on whether Executive Order (EO) S-3-05 must be used as a CEQA threshold to inform long-term GHG analyses (Cleveland National Forest Foundation v. San Diego Association of Governments [2017] 3 Cal.5th 497). The court held that the environmental analysis for the San Diego Association of Governments (SANDAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS EIR) did not need to include an analysis of the plan's consistency with state's 2050 GHG reduction goal of 80% below 1990 levels, as established by Executive Order (EO) S-3-05. The RTP/SCS EIR, including the responses to comments, analyzed the relationship of the project to the EO and found the impacts of the plan to be significant. The court found that "sufficiently informed the public, based on the information available at the time, about the regional plan's greenhouse gas impacts and its potential inconsistency with state climate change". While the court's decision does not mandate use of the EO as a CEQA threshold or require future projects complete a 2050 GHG analysis, the ruling, by its own description, is narrow and "does not mean that [the SANDAG] analysis can serve as a template for future EIRs." Accordingly, the following text of Impact GHG-2 on page 3-25 has been revised.

Executive Orders EO S-3-05/B-55-18 ~~and EO B-30-15~~ GHG Reduction Goals

~~As discussed in Section 3.6.1, Existing Conditions, EO B-30-15 established an interim GHG reduction target of 40% below 1990 levels by 2030, and EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80% below 1990 levels by 2050. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used.~~

There a number of studies that discuss potential mechanisms for limiting statewide GHG emissions to meet the aggressive goals identified by ~~EO B-30-15 and~~ EO S-3-05 and EO B-55-18. For example, ARB and other State agencies commissioned Energy + Environmental Economics (E3) in 2015 to develop feasible GHG reduction scenarios for 2030 that would set the State on the course toward its 2050 GHG reduction goal (California Energy Commission 2015). Other studies include a report by the California Center for Science and Technology (CCST) (2012), the California Department of Transportation's (2015) *California Transportation Plan 2040,* ARB's 2014 First Update, and a study published in *Science* that analyzes the changes that will be required to reduce GHG emissions to 80% below 1990 levels by 2050 (Williams et al. 2012). In general, these studies reach similar conclusions—deep reductions in GHG emissions can *only* be achieved with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, implementing widespread adoption of low-carbon or no-carbon transportation fuels, electrifying non-transportation direct fuel uses, increasing energy efficiency, avoiding waste emissions, increasing carbon sequestration, and replacing high global warming potential gases ~~utilizing alternative fuels for aviation~~).

The systemic changes that will be required to achieve the State's long-term GHG reduction goals ~~EO~~

~~B-30-15 and EO S-3-05~~, if they are legislatively adopted, will require significant policy, technical, and economic solutions. Decarbonization of the transportation fuel supply will require electric and plug-in hybrid electric vehicles to make up most light-duty vehicles. Some changes, such as the use of alternative fuels (e.g., biofuel) to replace petroleum for aviation, cannot be accomplished without action by the federal government. Similarly, achieving the long-term reduction goals will require California to dramatically increase the amount of electricity that is generated by renewable generation sources and, correspondingly, advance the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system, which can only be accomplished through State action.

~~Accordingly,~~ In evaluating the project's emissions for consistency with EO S-03-05/B-55-18 ~~EO S-3-05 and EO B-30-15~~, it is important to note that many of the broad-scale shifts needed to meet the reduction goals are outside of the control of the County and beyond the scope of the CEDHSP. The changes necessitated by the State's long-term climate change policy will require additional policy and regulatory changes, ~~that will be enacted to meet 2030 and 2050 emissions reduction targets~~ which are unknown at this time. As a consequence, the extent to which the project's emissions and resulting impacts will be mitigated through implementation of ~~statewide (and nationwide)~~ such changes is not known and cannot be known at this time. Furthermore, implementation of such additional policy and regulatory changes is in the jurisdiction of State-level agencies (e.g., CARB), not the County. However, some of these measures ~~anticipated statewide actions~~ (e.g., decarbonization, energy efficiency, and reduced fossil-fuel-based VMT ~~alternative transportation~~) can be facilitated, at least to some extent, through implementation of specific GHG reduction measures in large-scale developments, such as the proposed project. Under this same rationale, if the CEDHSP did not implement measures to maximize energy efficiency or utilize renewable energy, the reductions may not be enough for an individual project to meet the aggressive long-term cumulative reduction goals. ~~The~~ CEDHSP policies and Mitigation Measure GHG-1, for instance, would require the proposed Plan to implement feasible GHG reduction measures within its control to put the project on the path toward the long-term reduction goals of EO B-55-18 and EO S-3-05 ~~includes a comprehensive set of policies that will improve energy efficiency, reduce water consumption and waste generation, and encourage alternative transportation.[34] Mitigation Measure GHG-1 further requires the project to implement feasible GHG reduction measures within its control to facilitate attainment of the 2030 and 2050 GHG reduction goals of the executive orders~~.

While the CEDHSP policies and Mitigation Measure GHG-1 are consistent with anticipated long-term statewide strategies to reduce GHG emissions, they are not adequate on their own to reduce project-level emissions consistent with the levels required to meet the State's long-term climate change goals ~~to a level below the 2035 efficiency indicator (see Table 3.6-8)~~. It is possible that future adopted state and federal actions would reduce project emissions below a level consistent with the ~~2030 and 2050~~ reduction targets in the EOs, but this cannot be known at this time and, thus it is conservatively assumed that the project's emission levels would be inconsistent with the goals in EO S-3-05 and EO B-~~30-15~~55-18.

~~[34] Refer to Chapter 8 of the CEDHSP for a summary of sustainability policies.~~

The following information has been added to Impact GHG-2 on page 3.6-26 to address additional state regulations and programs adopted since publication of the RDEIR, including the SLCP Reduction Strategy.

Other State Regulations

As discussed above in the analysis of consistency with SB 32 and EO S-3-05/B-55-18, systemic changes will be required at the State level to achieve the statewide future GHG reduction goals. Regulations, such as the SB 100-mandated 100% carbon-free RPS by 2045; implementation of the State's SLCP Reduction Strategy, including forthcoming regulations for composting and organics diversion; and future updates to the State's Title 24 standards (including requirements for net zero energy buildings), will be necessary to attain the magnitude of reductions required for the State's goals. The CEDHSP would be required to comply with these regulations in new construction (in the case of updated Title 24 standards), or would be directly affected by the outcomes (e.g., energy consumption would be less carbon intensive due to the increasingly stringent RPSs). Unlike the scoping plans, which explicitly call for additional emissions reductions from local governments and new projects, none of these state regulations identify specific requirements or commitments for new development beyond what is already required by existing regulations, or will be required in forthcoming regulation. Thus, for the foreseeable future, the CEDHSP would not conflict with any other State-level regulations pertaining to GHGs in the post-2020 era, and this impact would be less than significant.

The following information has been added to Impact GHG-2 on page 3.6-26 to reflect the revisions to Impact GHG-2, which are described above and were made to address additional state regulations and programs adopted since publication of the RDEIR.

Conclusion

Based on the above analysis, the CEDHSP is consistent with SACOG's MTP/SCS and state regulations that will reduce GHG emissions (e.g., SB 100, SLCP Reduction Strategy). However, while the CEDHSP policies and Mitigation Measure GHG-1 are consistent with anticipated long-term statewide strategies to reduce GHG emissions, they are not adequate on their own to reduce project-level emissions consistent with the levels required to meet ~~it is conservatively concluded that the project's emission levels would be inconsistent with~~ the goals of AB 32, SB 32, and EO S-3-05/B-55-18~~, and EO B-30-15~~. Therefore, this impact would be significant and unavoidable.

Section 3.7, Hazards and Hazardous Materials

To correct an error, the current and complete CEDHSP policy related to Wildfire Safety Plan requirements has replaced the previous draft policy under Impact HAZ-8 of the Final EIR.

Impact HAZ-8: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (less than significant)

Several factors contribute to the susceptibility of wildfire danger in El Dorado County, including climate, winds, steep terrain, vegetation, subdivision design, and water supply. The entire community of El Dorado Hills is mostly adjacent to dry hills and is therefore at risk to fire. The Pedregal planning area is designated as a Moderate Fire Hazard Severity Zone and the Serrano Westside planning area is a High Fire Hazard Severity Zone (California Department of Forestry and Fire Protection 2007). Out of 341 total acres in the project area, the proposed project would leave 130 acres of undeveloped open space in the Serrano Westside planning area (38% of the total area) and 39 undeveloped acres in the Pedregal planning area. Introducing structures and people to this area would expose them to wildfire risk.

As the proposed project consists of infill in an already residential area, the Pedregal and Serrano Westside planning areas are already served by local and state fire protection services. Policies included in the CEDHSP that relate to fire hazards and fire minimization and that would be enforced after its adoption are listed below.

Open Space Management Plan: Prior to the submittal of the first small lot tentative subdivision map, the County will review and approve an Open Space Management Plan (OSMP) prepared in accordance with CEDHSP Policy 5.31 that describes the ownership, funding, and maintenance of open space areas.

- **CEDHSP Policy 5.32:** Prior to the submittal of the first small lot tentative subdivision map, prepare a Wildfire Safety Plan (WSP) based on standards and mitigation measures appropriate to the moderate and high fire classifications of the Plan Area on the Cal Fire Hazard Severity Zone Map for El Dorado County. The WSP shall include the following:
  - Site and project description;
  - Applicable codes and regulations;
  - Fire department response capabilities;
  - Site fire risk assessment (weather, fuels, topography, fire and ignition history, and potential fire behavior);
  - Fire safety requirements (vegetation management, structural hardening site access, water availability, alternative materials and methods); and
  - Project-specific recommendations.

  The California Department of Forestry and Fire Protection and the responsible fire protection district shall review and approve the WSP prior to the approval of the first small lot tentative subdivision map.

~~Prior to approval of the first small lot tentative subdivision map, CAL FIRE and the El Dorado Hills Fire Department will review and approve a Wildfire Safety Plan. The plan will assess wildfire hazards and risks associated with the development of the plan area and address hazard mitigation measures appropriate to the moderate and high fire hazard severity zones (California Department of Forestry and Fire Protection 2007).~~

- **CEDHSP Policy 6.19:** The local fire protection district shall review and approve all discretionary applications for tentative subdivision maps, parcel maps, and planned development permits prior to County approval to ensure the adequacy of emergency water supply, storage, conveyance facilities, and access for fire protection. Recommendations may be incorporated as conditions of approval.

Proposed project development would introduce new fire hazards or risk to people and structures in the project area. However, existing and new regulations would be in place to minimize fire hazards. Therefore, impacts would be less than significant.

Section 3.10, Noise and Vibration

In early 2017, the CEDHSP the traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR in November 2015, to be consistent with the County's 2016 Capital Improvement Program,[35] *and to recognize the opening of the new Silva Valley Parkway Interchange. To address Voter Initiative Measure E (Initiative to Reinstate Measure Y's Original Intent), a near-term analysis was conducted to assess traffic impacts at the 10-year mark, in 2027. Additionally, the traffic data for some intersections were updated after the time at which the traffic analysis in the DEIR was prepared in 2015. Lastly, the traffic noise levels on US 50 were revised to account for the most recent assumptions on truck traffic for US 50. The noise analysis has been revised based on the 2017 traffic study and to reflect these conditions. No new or worsened impacts were identified.*

Table 3.10-11 on page 3.10-13 has been updated to incorporate these updates to the traffic data.

[35] Since the preparation of the updated Traffic Impact Study, the County has adopted the 2017 CIP, however, no changes that would affect this study were included in the 2017 CIP.

Table 3.10-11. Existing Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	L_{dn} (dBA) at 50 Feet from Roadway Centerline	Distance to 60 L_{dn} Contour (feet)	Significant Noise Increase Increment (dBA)[a]
El Dorado Hills Blvd	Green Valley to Francisco	64.1	94	3
	Francisco to ~~Harvard~~ Governor	~~71.3~~ 71.1	~~283~~ 276	1.5
	~~Harvard~~ Governor to Wilson	72.4	336	1.5
	Wilson to Serrano	72.9	361	1.5
	Serrano to Saratoga	72.1	321	1.5
	~~Serrano~~ Saratoga to US 50	~~72.7~~ 71.8	~~349~~ 308	1.5
Latrobe Road	US 50 to Town Center	~~74.3~~ 73.7	~~448~~ 411	1.5
	Town Center to White Rock Road	~~72.4~~ 72.1	~~334~~ 319	1.5
	White Rock to Golden Foothill Pkwy	71.4	288	1.5
	Golden Foothill Pkwy to Sun Ridge Meadow Road	69.1	203	1.5
	Sun Ridge Meadow Road to S. Shingle Road	64.3	96	~~1.5~~ 3
White Rock Road	Scott Road to Four Seasons Drive	70.1	237	1.5
	Four Seasons Drive to Latrobe Road	70.9	268	1.5
	Latrobe Road to Vine Street	~~68.0~~ 69.5	~~172~~ 214	1.5
	Vine Street to US 50	~~70.5~~ 71.6	~~252~~ 297	1.5
Silva Valley Pkwy	Green Valley to West Glenmore ~~Glenwood~~ Way	65.9	124	1.5
	West Glenmore ~~Glenwood~~ Way to Appian Way	66.2	129	1.5
	Appian Way to Harvard Way	66.5	136	1.5
	Harvard Way to Serrano Pkwy	68.5	185	1.5
	Serrano Pkwy to US 50	~~67.9~~ 69.6	~~169~~ 219	1.5
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	67.8	165	1.5
	Silva Valley to Villagio Drive	69.4	210	1.5
	Villagio Drive to Bass Lake Road	64.4	98	3
Saratoga Way	EDH to Arrowhead	~~59.7~~ 60.2	~~48~~ 52	~~5~~ 3
Wilson Blvd	EDH Blvd to Ridgeview Drive	62.6	74	3
Olson Lane/ Gillette Drive	EDH Blvd to Gillette	56.9	31	5
Harvard Way	EDH Blvd to Silva Valley Pkwy	~~64.8~~ 63.1	~~104~~ 80	3
US 50	~~West of Latrobe/~~Between Empire Ranch and Latrobe/EDH	~~82.3~~ 83.1	~~1,523~~ 1,721	1.5
	Between Latrobe/EDH and ~~Bass Lake~~ Silva Valley	~~81.2~~ 81.9	~~1,291~~ 1,449	1.5
	Between Silva Valley and Bass Lake	82.0	1,464	1.5
	Between Bass Lake and Cambridge	~~80.7~~ 81.5	~~1,202~~ 1,363	1.5
	~~East of~~ Between Cambridge and Cameron Park	~~80.7~~ 81.5	~~1,202~~ 1,364	1.5

Source: ICF International and Federal Highway Administration Traffic Noise Model 2.5 Lookup Tables.
dBA = A-weighted decibel.
L_{dn} = day-night level.
[a] Noise increase increments for the existing conditions that would be considered significant if a project's traffic noise increase meets or exceeds these values, based on County Policy 6.5.1.12.

Impact NOI-1b, beginning on page 3.10-18, has been revised to address revisions to the existing and existing plus project noise levels and add a near-term, 2027 impact analysis. Table 3.10-15 has been revised and Table 3.10-15A has been added to address near-term conditions.

Impact NOI-1b: Expose persons to or generate noise levels from project-generated traffic in excess of standards established in the General Plan (less than significant with mitigation)

During the operational phase of the project, new noise-sensitive land uses within the CEDHSP could be exposed to noise generated by project traffic. Traffic noise levels generated under the existing plus project condition are summarized in Table 3.10-15. Traffic noise levels generated under the near-term (2027) plus project condition are summarized in Table 3.10-15A. Refer to Impact NOI-3 for the analysis of project traffic-generated noise on existing noise-sensitive receptors along existing roadway segments.

Table 3.10-15. Existing Plus Project Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	Existing + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Distance to 60 L_{dn} Contour (feet)
El Dorado Hills Blvd	Green Valley to Francisco	64.5	100
	Francisco to ~~Harvard~~ Governor	~~71.8~~ 71.6	~~307~~ 299
	~~Harvard~~ Governor to Wilson	72.9	~~365~~ 363
	Wilson to Serrano	~~74.2~~ 74.1	~~443~~ 439
	Serrano to Saratoga	72.9	364
	~~Serrano~~ Saratoga to US 50	~~73.6~~ 72.9	~~404~~ 365
Latrobe Road	US 50 to Town Center	~~74.5~~ 74.0	~~465~~ 429
	Town Center to White Rock Road	~~72.6~~ 72.3	~~345~~ 331
	White Rock to Golden Foothill Pkwy	71.6	296
	Golden Foothill Pkwy to Sun Ridge Meadow Road	69.2	~~206~~ 205
	Sun Ridge Meadow Road to S. Shingle Road	64.4	98
White Rock Road	Scott Road to Four Seasons Drive	70.3	~~243~~ 242
	Four Seasons Drive to Latrobe Road	71.1	~~274~~ 273
	Latrobe Road to Vine Street	~~68.1~~ 69.5	~~173~~ 216
	Vine Street to US 50	~~70.5~~ 71.7	~~252~~ 299
Silva Valley Pkwy	Green Valley to West Glenmore ~~Glenwood~~ Way	65.9	124
	West Glenmore ~~Glenwood~~ Way to Appian Way	66.2	130
	Appian Way to Harvard Way	66.5	137
	Harvard Way to Serrano Pkwy	68.6	186
	Serrano Pkwy to US 50	~~68.0~~ 69.7	~~170~~ 221
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	67.9	~~169~~ 168
	Silva Valley to Villagio Drive	69.4	211
	Villagio Drive to Bass Lake Road	64.4	99
Saratoga Way	EDH to Arrowhead	~~59.8~~ 60.3	~~49~~ 53
Wilson Blvd	EDH Blvd to Ridgeview Drive	62.7	76
Olson Lane/Gillette Drive	EDH Blvd to Gillette	57.0	32

Roadway	Segment Location	Existing + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Distance to 60 L_{dn} Contour (feet)
Harvard Way	EDH Blvd to Silva Valley Pkwy	~~64.9~~ 63.4	~~107~~ 84
US 50	~~West of~~ Between Empire Ranch and Latrobe/EDH	~~82.4~~ 83.2	~~1,569~~ 1,772
	Between Latrobe/EDH and ~~Bass Lake~~ Silva Valley	~~81.2~~ 82.0	~~1,302~~ 1,462
	Between Silva Valley and Bass Lake	82.1	1,476
	Between Bass Lake and Cambridge	~~80.8~~ 81.6	~~1,213~~ 1,376
	~~East of~~ Between Cambridge and Cameron Park	~~80.8~~ 81.6	~~1,214~~ 1,377

Source: ICF International and Federal Highway Administration Traffic Noise Model 2.5 Lookup Tables.
L_{dn} = day-night level.
dBA = A-weighted decibel.

Table 3.10-15A. Near-Term Plus Project Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	Existing + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Distance to 60 L_{dn} Contour (feet)
El Dorado Hills Blvd	Green Valley to Francisco	64.9	106
	Francisco to Governor	71.5	293
	Governor to Wilson	73.1	374
	Wilson to Serrano	72.9	362
	Serrano to Saratoga	73.0	370
	Serrano to US 50	73.3	383
Latrobe Road	US 50 to Town Center	74.6	470
	Town Center to White Rock Road	73.4	394
	White Rock to Golden Foothill Pkwy	72.5	341
	Golden Foothill Pkwy to Sun Ridge Meadow Road	69.2	205
	Sun Ridge Meadow Road to S. Shingle Road	64.5	99
White Rock Road	Scott Road to Four Seasons Drive	71.8	305
	Four Seasons Drive to Latrobe Road	72.8	358
	Latrobe Road to Vine Street	69.8	226
	Vine Street to US 50	72.9	365
Silva Valley Pkwy	Green Valley to West Glenmore Way	66.0	126
	West Glenmore Way to Appian Way	66.8	142
	Appian Way to Harvard Way	67.6	160
	Harvard Way to Serrano Pkwy	69.2	205
	Serrano Pkwy to US 50	70.2	241
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	68.0	170
	Silva Valley to Villagio Drive	70.0	232
	Villagio Drive to Bass Lake Road	66.7	140
Saratoga Way	EDH to Arrowhead	65.8	122

Roadway	Segment Location	Existing + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Distance to 60 L_{dn} Contour (feet)
Wilson Blvd	EDH Blvd to Ridgeview Drive	66.5	137
Olson Lane/Gillette Drive	EDH Blvd to Gillette	57.3	33
Harvard Way	EDH Blvd to Silva Valley Pkwy	64.9	107
US 50	Between Empire Ranch to Latrobe/EDH	82.8	1,660
	Between Latrobe/EDH and Silva Valley	81.9	1,445
	Between Silva Valley and Bass Lake	82.3	1,537
	Between Bass Lake and Cambridge	81.9	1,446
	Between Cambridge and Cameron Park	81.5	1,366

Source: ICF International and Federal Highway Administration Traffic Noise Model 2.5 Lookup Tables.
L_{dn} = day-night level.
dBA = A-weighted decibel.

The L_{dn} values in Table 3.10-15 and Table 3.10-15A were determined by using peak hour traffic volumes on County roads and US 50. Traffic volumes from the PM-hour were used, because the volumes were generally higher than the AM-hour volumes. The FHWA Traffic Noise Model 2.5 Lookup Tables were used in conjunction with the traffic volumes to determine L_{eq} values at 50 feet from the centerline of each roadway segment. As discussed above, peak-hour traffic L_{eq} noise levels represent L_{dn} noise levels based on 24-hour traffic patterns in the project area. Table 3.10-15 presents L_{dn} values associated with existing plus project conditions along with distances to the 60 L_{dn} contour. Similarly, Table 3.10-15A presents the L_{dn} values associated with the near-term plus project conditions along with distances to the 60 L_{dn} contour.

~~The~~ For the existing plus project condition, the data in Table 3.10-15 indicate that proposed residences within about 440 feet of El Dorado Hills Boulevard and within about ~~1,500~~ 1,800 feet of US 50 could be exposed to exterior traffic noise that exceeds the County's compatibility standard of 60 L_{dn}. For the near-term plus project condition, those distances are approximately 360 feet (for El Dorado Hills Boulevard) and 1,700 feet (for US 50), as shown in Table 3.10-15A. Assuming nominal building shell attenuation of 15 dB, interior noise at these locations could exceed the 45 L_{dn} interior noise standard as well. The following are proposed residential areas that could be exposed to existing plus project traffic noise exceeding County compatibility standards (Figure 3.10-2).

- West of El Dorado Hills Boulevard between the Copper Hills Apartments and the El Dorado Village Apartments.
- East of El Dorado Hills Boulevard between Wilson Boulevard and Serrano Parkway.
- East of La Borgata between the Village Park (VP) and Serrano Parkway.

The noise impact associated with the exposure of new residences and new open space areas and parks to traffic would, therefore, be significant. Mitigation Measure NOI-1b includes a variety of potential treatments that can be employed to reduce noise. These treatments include the use of solid barriers and setbacks from roadways and enhanced noise insulation in new construction. These treatments would be expected to reduce noise by 5 to 15 dB depending on the specific treatment or combination of treatments. Combinations of treatments would be employed to ensure compliance with applicable noise compatibility standards. This mitigation measure would therefore reduce this impact to a less-than-significant level for residential uses primarily through the use of noise barriers.

The results also indicate that noise from traffic on US 50 could exceed the County's standard for playgrounds and neighborhood parks of 70 L_{dn} within about a maximum of 380 ~~340~~ feet of US 50 (under the existing plus project condition). The Village Park area would consist of active and passive uses available to the public, as defined in Policy 9.1.1.3 in the Parks and Recreation Element. Such facilities are intended to provide a focal point and gathering place for the larger community, are generally 10–44 acres, and may include multi-purpose fields, ball fields, playgrounds, and other amenities. As such, the 70 L_{dn} standard would not apply to the Village Park in its entirety, but it would apply to any playground facilities that could be developed in the park by the El Dorado Hills CSD. This would be a significant impact. Implementation of Mitigation Measure NOI-1b would reduce this impact to a less-than-significant level by ensuring playgrounds would not be located where they could be exposed to noise in excess of 70 L_{dn}.

For clarification, the text of the first paragraph of Mitigation Measure NOI-1b on page 3.10-20 is revised as follows.

Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses

The applicant shall prepare a design-level operational noise control plan that identifies all project features and treatments that will be implemented to be in compliance with County noise standards listed in County General Plan Tables 6-1 and 6-2 (Tables 3.10-8 and 3.10-9 in the Draft EIR). The plan shall be developed by an acoustical design professional. The design features and treatments will ensure that exterior and interior noise levels at new proposed uses are in compliance with the noise standards. The report shall be submitted to the County for review and approval ~~at~~ as part of the tentative map/planned development permit processing stage for the project. Depending on the noise exposure for a particular site, such treatments may include, but are not limited to those listed below, as recommended by the acoustical design professional.

Impact NOI-3, beginning on page 3.10-25, has been revised to address revisions to the existing and existing plus project noise levels and add a near-term, 2027 impact analysis. Table 3.10-17 has been revised and Table 3.10-17A has been added to address near-term conditions.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (less than significant with mitigation)

Traffic-Related Noise

Existing + Project Impacts

Table 3.10-17 compares traffic noise modeling results between existing and existing plus project conditions. Traffic noise L_{dn} values are predicted to increase by ~~0.0~~ less than 0.1 dBA (minimum) to 1.3 dBA (maximum) as a result of implementation of the project. The maximum increase in L_{dn} is less than 1.5 dBA and, per County General Plan policy 6.5.1.12, would not be considered a significant increase even at the roadways where existing traffic noise is greater than 65 dBA, which have the strictest noise increase limits. Because the increase would not be significant for roadways where existing noise is greater than 65 dBA (the conservative scenario), it would not be significant for the quieter roadways. The exposure of existing noise-sensitive uses to increased traffic noise as a result of project implementation would, therefore, be less than significant.

Table 3.10-17. Existing Plus Project Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	Existing L_{dn} (dBA) at 50 Feet from Roadway Centerline	Existing + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Change in Traffic Noise due to CEDHSP Generated Traffic (dB)
El Dorado Hills Blvd	Green Valley to Francisco	64.1	64.5	0.4
	Francisco to ~~Harvard~~ Governor	~~71.3~~ 71.1	~~71.8~~ 71.6	0.5
	~~Harvard~~ Governor to Wilson	72.4	72.9	0.5
	Wilson to Serrano	72.9	74.1	1.3
	Serrano to Saratoga	72.1	72.9	0.8
	~~Serrano~~ Saratoga to US 50	~~72.7~~ 71.8	~~73.6~~ 72.9	~~0.9~~ 1.1
Latrobe Road	US 50 to Town Center	~~74.7~~ 73.7	~~74.5~~ 74.0	~~0.2~~ 0.3
	Town Center to White Rock Road	~~72.4~~ 72.1	~~72.6~~ 72.3	0.2
	White Rock to Golden Foothill Pkwy	71.4	71.6	0.2
	Golden Foothill Pkwy to Sun Ridge Meadow Road	69.1	69.2	0.1
	Sun Ridge Meadow Road to S. Shingle Road	64.3	64.4	0.1
White Rock Road	Scott Road to Four Seasons Drive	70.1	70.3	~~0.2~~ 0.1
	Four Seasons Drive to Latrobe Road	70.9	71.1	~~0.2~~ 0.1
	Latrobe Road to Vine Street	~~68.0~~ 69.5	~~68.1~~ 69.5	0.1
	Vine Street to US 50	~~70.5~~ 71.6	~~70.5~~ 71.7	0.0
Silva Valley Pkwy	Green Valley to West Glenmore ~~Glenwood~~ Way	65.9	65.9	0.0
	West Glenmore ~~Glenwood~~ Way to Appian Way	66.2	66.2	0.0
	Appian Way to Harvard Way	66.5	66.5	0.0
	Harvard Way to Serrano Pkwy	68.5	68.6	0.1
	Serrano Pkwy to US 50	~~67.9~~ 69.6	~~68.0~~ 69.7	0.1
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	67.8	67.9	0.1
	Silva Valley to Villagio Drive	69.4	69.4	0.0
	Villagio Drive to Bass Lake Road	64.4	64.4	0.0
Saratoga Way	EDH to Arrowhead	~~59.7~~ 60.2	~~59.8~~ 60.3	0.1
Wilson Blvd	EDH Blvd to Ridgeview Drive	62.6	62.7	0.1
Olson Lane/Gillette Drive	EDH Blvd to Gillette	56.9	57.0	0.1
Harvard Way	EDH Blvd to Silva Valley Pkwy	~~64.8~~ 63.1	~~64.9~~ 63.4	~~0.1~~ 0.3
US 50	~~West of~~Between Empire Ranch and Latrobe/EDH	~~82.3~~ 83.1	~~82.4~~ 83.2	~~0.1~~ 0.2
	Between EDH and ~~Bass Lake~~ Silva Valley	~~81.2~~ 81.9	~~81.2~~ 82.0	~~0.0~~ 0.1
	Between Silva Valley and Bass Lake	82.0	82.1	0.1
	Between Bass Lake and Cambridge	~~80.7~~ 81.5	~~80.8~~ 81.6	0.1
	~~East of~~ Between Cambridge and Cameron Park	~~80.7~~ 81.5	~~80.8~~ 81.6	0.1

Source: ICF International and Federal Highway Administration Traffic Noise Model 2.5 Lookup Tables.
CEDHSP = Central El Dorado Hills Specific Plan.
dB = decibel.
dBA = A-weighted decibel.
L_{dn} = day-night level.

Near-Term Impacts

Table 3.10-17A compares traffic noise modeling results between the near-term scenario in 2027 and the near-term scenario plus project conditions in 2027. Table 3.10-17A also compares the near-term scenario in 2027 plus project conditions and the existing conditions. For the near-term comparison, traffic noise L_{dn} values are predicted to decrease at some segments and increase by a maximum of 0.3 dBA as a result of implementation of the project. For the comparison of impacts relative to the existing conditions, noise would decrease at some segments and increase by a maximum of 5.6 dBA. However, the increase of 5.6 dBA is not solely attributable to the project, because there would be background growth unrelated to the project that would occur between the existing year and 2027. Thus, the maximum increase solely attributable to the project would be 0.3 dBA. This maximum increase in L_{dn} is less than 1.5 dBA and, per County General Plan policy 6.5.1.12, would not be considered a significant increase even at the roadways where existing traffic noise is greater than 65 dBA, which have the strictest noise increase limits. Because the increase would not be significant for roadways where existing noise is greater than 65 dBA (the conservative scenario), it would not be significant for the quieter roadways. The exposure of existing noise-sensitive uses to increased traffic noise as a result of project implementation in 2027, would, therefore, be less than significant.

Table 3.10-17A. Near-Term (2027) Plus Project Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	Near-Term L_{dn} (dBA) at 50 Feet from Roadway Centerline	Near-Term + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Change in Traffic Noise due to CEDHSP Generated Traffic (dB)	Change in Traffic Noise due to CEDHSP Generated Traffic Relative to Existing (dB)
El Dorado Hills Blvd	Green Valley to Francisco	64.1	64.5	0.4	0.8
	Francisco to Governor	71.1	71.6	0.5	0.4
	Governor to Wilson	65.0	64.9	-0.1	0.7
	Wilson to Serrano	71.5	71.5	0.0	0.0
	Serrano to Saratoga	73.1	73.1	0.1	0.9
	Saratoga to US 50	72.9	72.9	–	1.4
Latrobe Road	US 50 to Town Center	72.8	73.0	0.2	0.9
	Town Center to White Rock Road	72.9	73.3	0.3	1.4
	White Rock to Golden Foothill Pkwy	74.6	74.6	0.0	1.1
	Golden Foothill Pkwy to Sun Ridge Meadow Road	73.4	73.4	–	0.0
	Sun Ridge Meadow Road to S. Shingle Road	72.5	72.5	0.0	0.2
White Rock Road	Scott Road to Four Seasons Drive	69.2	69.2	–	1.6
	Four Seasons Drive to Latrobe Road	64.5	64.5	–	1.9
	Latrobe Road to Vine Street	71.8	71.8	–	0.4
	Vine Street to US 50	72.8	72.8	–	1.3
Silva Valley Pkwy	Green Valley to West Glenmore Way	69.6	69.8	0.2	0.1
	West Glenmore Way to Appian Way	72.9	72.9	0.1	0.6
	Appian Way to Harvard Way	66.2	66.0	-0.1	1.1
	Harvard Way to Serrano Pkwy	66.8	66.8	–	0.7
	Serrano Pkwy to US 50	67.5	67.6	0.1	0.6
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	69.2	69.2	0.0	0.2
	Silva Valley to Villagio Drive	70.2	70.2	0.0	0.6
	Villagio Drive to Bass Lake Road	68.0	68.0	–	2.3

Roadway	Segment Location	Near-Term L_{dn} (dBA) at 50 Feet from Roadway Centerline	Near-Term + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Change in Traffic Noise due to CEDHSP Generated Traffic (dB)	Change in Traffic Noise due to CEDHSP Generated Traffic Relative to Existing (dB)
Saratoga Way	EDH to Arrowhead	70.0	70.0	0.0	5.6
Wilson Blvd	EDH Blvd to Ridgeview Drive	66.7	66.7	–	4.0
Olson Lane/Gillette Drive	EDH Blvd to Gillette	65.9	65.8	-0.1	0.4
Harvard Way	EDH Blvd to Silva Valley Pkwy	66.3	66.5	0.3	1.9
US 50	Between Empire Ranch to Latrobe/EDH	57.2	57.3	0.1	-0.2
	Between EDH and Silva Valley	64.8	64.9	0.1	0.0
	Between Silva Valley and Bass Lake	82.8	82.8	0.0	0.3
	Between Bass Lake and Cambridge	82.0	81.9	-0.1	0.4
	Between Cambridge and Cameron Park	82.5	82.3	-0.1	0.0

Source: ICF International and Federal Highway Administration Traffic Noise Model 2.5 Lookup Tables.
CEDHSP = Central El Dorado Hills Specific Plan.
dB = decibel.
dBA = A-weighted decibel.
L_{dn} = day-night level.

For clarification, the text of Mitigation Measure NOI-5 on page 3.10-27 is revised as follows.

Mitigation Measure NOI-5: Record Mather Airport noise disclosure for each residential lot

~~The~~ As a condition of approval of the subdivision tentative map, the County will require that a notice be included in the deed for each residential lot notifying buyers of the potential for the lots to be affected by aircraft noise from Mather Airport operations. This will inform potential buyers of the noise; they can then make an informed decision as to whether or not to buy a home within the project.

The 'Operation' discussion in Impact NOI-7, on page 3.10-28, has been revised to address revisions to noise levels resulting from the revised traffic study and to make the reference to the potential Park Drive extension consistent with the rest of the document.

Operation

Water pipelines typically do not generate noticeable noise, so there would be no substantial sources of permanent operational noise as a result of the offsite water line improvements. The use of pedestrian crossings would generate minimal noise. The potential extension of Park Drive to Silva Valley Parkway would introduce a new source of noise because there is no roadway at that location. Noise from the new roadway would be approximately ~~62.4~~ 61.2 dB (see Table 5-~~4~~3 in Section 5.2.2, *Analysis of Cumulative Impacts*). This would be above the County's compatibility standard for residences. Because the dominant noise source in the southern area of Serrano Village D2 is from US 50, the noise from the roadway extension would not likely be highly noticeable. Nevertheless, the acoustical analysis per Mitigation Measure NOI-1b would demonstrate what noise-reducing treatments, if any, would be necessary.

Section 3.11, Population and Housing

In response to comment I-11-65, and to correct a typographical error, the text of the first paragraph and Table 3.11-2 in the "Population" discussion of the Environmental Setting on page 3.11-3 has been amended as follows.

California experienced substantial population growth from 1990 to 2010, increasing by nearly 7.5 million people to a total population of 37,253,956 (California Department of Finance 2007, 2012). El Dorado County is, and is expected to remain, one of California's fastest-growing regions. During the 20-year period from 1990 to 2010, the County's population increased by approximately 44%. The population of El Dorado County's unincorporated area grew by 55% during the 1990 to 2010 period. DOF estimated that as of April 1, 2010, the countywide population of El Dorado County was 181,921, and the unincorporated area held 149,266 of these residents (California Department of Finance 2012). For the 25-year period of 2010 to 2035, the county's population is expected to increase by ~~27%~~ 37% from 180,921 to 248,623. Table 3.11-1 shows the population growth experienced by El Dorado County from 1990 to 2010, and Table 3.11-2 presents the anticipated growth for El Dorado County through 2035.

Table 3.11-2. El Dorado County Population Growth Projections 2010–2035

		Percent Change	
Year	Estimated El Dorado County Population	Incremental	Cumulative
2010	180,921	–	–
2015	184,195	2	2
2020	203,095	10	12
2025	220,384	9	22
2030	234,485	6	30
2035	248,623	6	~~27~~ 37

Source: California Department of Finance 2013b; BAE Urban Economics 2013.

To clarify the level of impact, the following changes have been made to the text of Impact POP-1 on page 3.11-7.

As described throughout other sections of Chapter 3, however, development of housing and associated population increases, and construction of infrastructure extensions would contribute to significant physical impacts, including degradation of visual resources; emissions of reactive organic gases (ROG) in excess of the El Dorado County Air Quality Management District's (EDCAQMD's) threshold; loss, disturbance, or interference with biological, archaeological, cultural, or paleontological resources; increased demand on public services; the potential for increased erosion; degradation of water quality; exposure to noise; and decreased effectiveness of the transportation system. These impacts, and associated mitigation measures, are addressed in their respective resource sections throughout this EIR.

~~Implementation~~ In summary, implementation of the mitigation measures identified in Sections 3.1 through 3.5 and Sections 3.8, 3.10, 3.12, and 3.14 of this EIR would reduce environmental impacts associated with the project's population ~~and housing~~ increases to a less-than-significant level, with the exception of the unavoidable project impacts listed in Section 5.4, Significant and Unavoidable

Impacts, of this EIR. Because no feasible mitigation is available to reduce ROG emissions below the EDCAQMD's threshold, these project population- and housing-induced environmental impacts would be significant and unavoidable. In addition to the proposed residential development, the Serrano Westside planning area would accommodate up to 50,000 square feet of civic–limited commercial use, which could include municipal, civic, and public services such as public sector office space, sheriff substation, or public park and recreation activities. The small amount of additional employment associated with this proposed use, combined with the residential growth, is not expected to substantially alter the existing state of the area's jobs/housing balance and is assumed to be within the forecast projections of the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (Sacramento Area Council of Governments 2012b), as described in Appendix H. Because the project includes primarily residential uses, the proposed project's limited commercial development would not induce substantial population growth.

Section 3.12, Public Services and Utilities

To be consistent with the updated Specific Plan and Financing Plan, the following changes have been made to the text in the last paragraph of the discussion of impacts on schools in Impact PSU-1.

Increased enrollment is not a significant environmental effect, but is rather a social effect (*Goleta Union School District v. Regents of U.C.* 1995). Because the school districts collect school impact fees, those fees serve as full and complete mitigation for development under SB 50, as provided for under California Government Code Section 65995 et seq. <u>It is currently anticipated that the CEDHSP would be placed into an existing Community Facilities District (CFD), establish a new CFD, or pay impact fees in effect at the time of the building permit issuance.</u> Therefore, impacts on schools would be less than significant.

Section 3.13, Recreation

In response to comment R-5-17, the text of the first paragraph of Impact REC-1 on page 3.13-7 has been amended for clarity as follows.

Currently, without <u>counting the</u> private parks maintained by homeowners' associations, the El Dorado Hills CSD service area is deficient in <u>public</u> neighborhood parks, village parks, and community parks. Further, as described under Section 3.13.1, *Existing Conditions*, the El Dorado Hills CSD anticipates that the amount of neighborhood parks and special use areas would be deficient regardless of the additional parks and open space of the project.

Section 3.14, Traffic and Circulation

The traffic discussion has been updated to address a number of factors including completed traffic improvements, changes in planning, an updated traffic analysis, and voter initiatives.

In early 2017, the CEDHSP traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR, to be consistent with the County's 2016 Capital Improvement Program,[36] *and to recognize the opening of the new Silva Valley Parkway Interchange. This revised traffic analysis determined that the proposed project would result in impacts under existing plus project conditions at two intersections, the Latrobe Road/Town Center Boulevard and the Latrobe Road/White Rock Road intersections, and identified mitigation to improve operations at those intersections and reduce the impacts to less than significant. The updated traffic study, therefore, did not reveal any new or substantially more severe significance conclusions than those identified in the Draft EIR. The added text below and additions to Appendix L addresses those revisions.*

To address Voter Initiative Measure E, a near-term analysis was conducted to assess traffic impacts at the 10-year mark, in 2027. This study is added to Appendix L. These impacts were previously captured in the cumulative analysis, but are now moved to Chapter 3.14, Traffic and Circulation, under the subheading "Near-Term Impacts" with the discussion of intersection operations because the impacts are now identified in the near-term.

Table 3.14-1 on page 3.14-9 has been revised to reflect the results of the 2017 traffic impact study.

[36] Since the preparation of the updated Traffic Impact Study, the County has adopted the 2017 CIP, however, no changes that would affect this study were included in the 2017 CIP.

Table 3.14-1. Peak Hour Level of Service – Existing Conditions (Intersection)

Intersection		Traffic Control	LOS/Delay (seconds) A.M. Peak Hour	LOS/Delay (seconds) P.M. Peak Hour
1	Green Valley Road/Francisco Drive	Signal	D/40	D/46
2	Green Valley Road/El Dorado Hills Blvd/Salmon Falls Road	Signal	E /67	D/46
3	Green Valley Road/Silva Valley Pkwy	Signal	C/31	B/20
4	Francisco Drive/El Dorado Hills Blvd	AWSC	C/17 ~~**F/88**~~	C/19 ~~**F/69**~~
5	Silva Valley Pkwy/Apian Way	AWSC	C/23	B/15
6	El Dorado Hills Blvd/Harvard Way	Signal	C/30	B/17
7	Silva Valley Pkwy/Harvard Way	Signal	D/39	C/22
8	El Dorado Hills Blvd/Olson Lane	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 Lane	Signal	D/49	C/21
11	Serrano Pkwy/Penela Way	SSSC	D/32	C/23
12	Serrano Pkwy/Silva Valley Pkwy	Signal	D/40	C/30
13	El Dorado Hills Blvd/Park Drive/Saratoga Way	Signal	B/19 ~~D/36~~	C/20 ~~C/25~~
~~14~~	~~El Dorado Hills Blvd/Saratoga Way~~	~~Signal~~	~~E/56~~	~~B/15~~
15	El Dorado Hills Blvd/US 50 westbound ramps	Signal	C/31 ~~D/43~~	C/33 ~~C/29~~
16	Latrobe Road/US 50 eastbound ramps	Signal	C/33 ~~B/15~~	C/20 ~~B/14~~
17	Latrobe Road/Town Center Blvd	Signal	B/16 ~~C/29~~	D/50 ~~E/75~~
18	Latrobe Road/White Rock Road	Signal	C/31 ~~C/35~~	C/27 ~~D/44~~
19	White Rock Road/Post Street	Signal	C/24	C/31
20	White Rock Road/Valley View Drive/Vine Street	Signal	C/21	C/27
25	Silva Valley Parkway/US 50 westbound ramps	Signal	B/11	A/10
26	Silva Valley Parkway/US 50 eastbound ramps	Signal	B/10	B/13

Source: Appendix L.

Notes: **Bold** text indicates LOS worse than established threshold.

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 *Highway Capacity Manual* (Transportation Research Board 2000).

AWSC = all-way stop control.
SSSC = side-street stop-control.

Table 3.14-3 on page 3.14-11 has been revised to reflect the results of the 2017 traffic impact study.

Table 3.14-3. Peak Hour Level of Service – Existing Conditions (Roadway Segments)

Roadway	Segment	Facility Type	Volume/Volume-to-Capacity Ratio/LOS	
			A.M. Peak Hour	P.M. Peak Hour
El Dorado Hills Blvd	Green Valley Road to Francisco Drive	2-lane arterial	430/0.26/C[a]	389/0.24/C[a]
	Francisco Drive to Governor Drive	2-lane arterial	1,259/0.76/D ~~1,324/0.80/D~~	1,435/0.87/D ~~1,319/0.80/D~~
	Governor Drive 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[a] ~~2,807/0.70/D~~	2,470/0.62/D ~~2,976/0.74/D~~
	Saratoga Way to US 50	6-lane divided arterial	2,231/0.47/C[a] ~~2,685/0.57/C[a]~~	2,325/0.49/C[a] ~~2,806/0.60/D~~
Latrobe Road	US 50 to Town Center Blvd	6-lane divided arterial	3,169/0.67/D ~~3,339/0.71/D~~	3,590/0.76/D ~~4,081/0.87/D~~
	Town Center Blvd to White Rock Road	6-lane divided arterial	2,367/0.50/C[a] ~~2,253/0.48/C[a]~~	2,454/0.52/C[a] ~~2,628/0.56/C[a]~~
	White Rock Road to Golden Foothill Pkwy	4-lane divided arterial	2,125/0.65/C[a] ~~1,813/0.55/C[a]~~	2,106/.064/D ~~2,104/0.64/D~~
	Golden Foothill Pkwy to Sun Ridge Meadow Road	2-lane arterial	1,225/0.74/D	1,246/0.76/D
	Sun Ridge Meadow Road to S. Shingle Road	2-lane arterial	256/0.16/C[a]	295/0.18/C[a]
White Rock Road	Scott Road to Four Seasons Drive	2-lane arterial	603/0.37/C[a]	863/0.52/C[a]
	Four Seasons Drive to Latrobe Road	4-lane divided arterial	893/0.27/C[a]	1,040/0.32/C[a]
	Latrobe Road to Vine Street	2-lane arterial	1,082/0.66/D ~~831/0.5/C[a]~~	1,346/0.82/D ~~969/0.59/D~~
	Vine Street to US 50	2-lane arterial	995/0.60/D ~~830/0.5/C[a]~~	1,213/0.74/D ~~945/0.57/D~~
Silva Valley Pkwy	Green Valley Road to West Glenmore Way	2-lane arterial	651/0.39/C[a]	591/0.36/C[a]
	West Glenmore Way to Appian Way	2-lane arterial	555/0.34/C[a]	630/0.38/C[a]
	Appian Way to Harvard Way	2-lane arterial	796/0.48/C[a]	681/0.41/C[a]
	Harvard Way to Serrano Pkwy	4-lane divided arterial	1,402/0.43/C[a]	1,084/0.33/C[a]
	Serrano Pkwy to US 50	2-lane arterial	1,136/0.35/C[a] ~~1,142/0.69/D~~	1,398/0.42/C[a] ~~946/0.57/D~~
Serrano Pkwy	El Dorado Hills Blvd to Silva Valley Pkwy	2-lane arterial	995/0.6/D	910/0.55/D
	Silva Valley Pkwy to Villagio Drive	4-lane divided arterial	1,476/0.45/C[a]	1,311/0.4/C[a]
	Villagio Drive to Bass Lake Road	2-lane arterial	453/0.27/C[a]	417/0.25/C[a]
Saratoga Way	El Dorado Hills Blvd to Arrowhead Drive	2-lane arterial	295/0.18/C[a] ~~222/0.13/C[a]~~	316/0.19/C[a] ~~279/0.17/C[a]~~
Wilson Blvd	El Dorado Hills Blvd to Ridgeview Drive	4-lane undivided arterial	418/0.13/C[a]	384/0.12/C[a]
Olson Lane/ Gillette Drive	El Dorado Hills Blvd to Gillette Drive	2-lane arterial	300/0.18/C[a]	289/0.18/C[a]
Harvard Way	El Dorado Hills Blvd to Silva Valley Pkwy	4-lane undivided arterial	1,139/0.36/C[a]	612/0.20/C[a]

Source: Appendix L.

Note: Volume-to-capacity ratio and LOS are based on the peak hour LOS thresholds contained in Table 5.4-1 of the *El Dorado County General Plan Draft EIR* (El Dorado County 2003).

[a] LOS at this location is C or better.

Table 3.14-5 on page 3.14-13 has been revised to reflect the results of the 2017 traffic impact study.

Table 3.14-5. Freeway Facility Peak Hour Level of Service – Existing Conditions

Freeway	Segment	Facility Type	Existing Density[a]/LOS A.M.	Existing Density[a]/LOS P.M.
US 50 eastbound	Latrobe Road off-ramp	Diverge	22/C	30/D ~~31/D~~
	El Dorado Hills Blvd off-ramp	Diverge	14/B	26/C ~~27/C~~
	Latrobe Road on-ramp to Silva Valley Parkway off-ramp	Weave ~~Merge~~	10/A ~~14/B~~	23/C ~~26/C~~
		Basic	7/A	15/B
	Silva Valley Parkway on-ramp loop	Merge	11/B	21/C
	Silva Valley Parkway on-ramp to Bass Lake Road	Basic	11/A	20/C
	~~El Dorado Hills Blvd on-ramp to Bass Lake Road off-ramp~~	~~Basic~~	~~10/A~~	~~20/C~~
	Bass Lake Road off-ramp	Diverge	15/B ~~14/B~~	25/C
	Bass Lake Road on-ramp	Merge	16/B	27/C ~~28/C~~
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	14/B ~~13/B~~	25/C
	Cambridge Road off-ramp	Diverge	18/B	30/D ~~31/D~~
	Cambridge Road on-ramp	Merge	19/B ~~18/B~~	26/C
US 50 westbound	Cambridge Road off-ramp	Diverge	28/C ~~27/C~~	23/C ~~22/C~~
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Merge	20/B ~~19/B~~	13/B ~~12/B~~
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23/C	17/B ~~16/B~~
	Bass Lake Road off-ramp	Diverge	29/D ~~28/D~~	21/C
	Bass Lake Road on-ramp	Merge	32/D ~~31/D~~	21/C ~~20/C~~
	Bass Lake Road on-ramp to lane add	Basic	29/D	17/B
	Lane add to Silva Valley Parkway off-ramp	Basic	19/C	12/B
	~~Bass Lake Road on-ramp to El Dorado Hills Blvd off-ramp~~	~~Basic~~	~~29/D~~	~~17/B~~
	Silva Valley Parkway off-ramp	Diverge	13/B	5/A
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave	34/D	18/B
		Basic	19/C	11/A
	~~El Dorado Hills Blvd off-ramp~~	~~Diverge~~	~~33/D~~	~~22/C~~
	El Dorado Hills Blvd on-ramp	Merge	34/D	24/C

Source: Appendix L.

[a] Density reported as passenger cars (v. longer vehicles like tractor trailer trucks) per mile per lane.

To address Voter Initiative Measure E, a near-term analysis was conducted to assess traffic impacts at the 10-year mark, in 2027. This study is added to Appendix L. These impacts were previously captured in the cumulative analysis, but are now moved to Chapter 3.14, Traffic and Circulation, under the subheading "Near-Term Impacts" with the discussion of intersection operations because the impacts are now identified in the near-term.

The following text has been added above "Thresholds of Significance" on page 3.14-20 to provide methods and assumptions used in the near-term analysis.

<u>The near-term analysis scenario represents conditions 10 years beyond the existing baseline, or 2027. The near-term forecasting model was developed in consultation with El Dorado County Community Development Department staff and used land-growth forecasts and programmed transportation network improvements to develop peak traffic volume forecasts with and without the proposed project. The following capacity-enhancing roadway projects were assumed to be constructed within the next 10 years, based on the County's 2016:</u>

- <u>Country Club Drive – Silva Valley Parkway to Tong Road (CIP #71362; by 2026)</u>
- <u>Country Club Drive Extension – Tong Road to Bass Lake Road (CIP #71361; by 2026)</u>
- <u>Country Club Drive Realignment – Bass Lake Road to Tierra Del Dios Drive (CIP #71360; by 2018)</u>
- <u>Green Valley Road Widening – County Line to Sophia Parkway (CIP #72376; by 2017)</u>
- <u>Saratoga Way Ext – Phase 1 (CIP #71324; by 2018)</u>
- <u>Silver Springs Parkway to Bass Lake Road (South Segment) (CIP #76108; by 2018)</u>
- <u>US 50 Auxiliary Lane Westbound – Bass Lake Road to Silva Valley Parkway (CIP #53117; by 2026)</u>
- <u>US 50/El Dorado Hills Boulevard Interchange Improvements – Phase 2B (CIP #71323; by 2026)</u>
- <u>White Rock Road Widening – Manchester to Sacramento County Line (Connector Segment) (CIP #GP137; by 2026)</u>

Impact TRA-1 has been revised to: (1) recognize the completion of physical improvements to the intersection of Francisco Drive and El Dorado Hills Boulevard, and the US 50/El Dorado Hills Boulevard and US 50/Silva Valley Parkway interchanges for which fair-share funding was included as mitigation in the Draft EIR (Mitigation Measures TRA-1a and TRA-1b, respectively, in that document), (2) incorporate near-term analysis, and (3) incorporate revisions to the County's CIP. The original text of Measure E resulted in payment of TIM fees to reduce impacts to less than significant no longer being considered full mitigation. This amendment to the policies was struck down as a result of litigation but further litigation is anticipated. In the case of the two intersections, because the improvements have been constructed, which results in acceptable level of service (LOS) conditions, the intersection impacts are deemed less than significant. The improvements were included in the County's CIP, therefore, payment of fair share TIM fees is appropriate mitigation. The project will be conditioned to pay TIM fees at the time of building permit issuance.

The text of Impact TRA-1 beginning on page 3.14-24 has been revised to reflect the results of the revised traffic study. Analysis in the original traffic study indicated that the project would result in unacceptable levels of service at two intersections and on one freeway segment. The updated traffic study indicates that the project would result in unacceptable levels of service at two intersections and no roadways or freeway segments. While the impacted intersections are different, as noted below, there are no new or significantly worsened impacts.

The discussion of intersections on page 3.14-24 and Table 3.14-7 have been revised as follows to reflect results of the 2017 traffic study. Analysis in the original traffic study indicated that the project would result in unacceptable levels of service at two intersections – Francisco Drive/El Dorado Hills Boulevard and Latrobe Road/Town Center Boulevard. Since that time, CIP projects have been completed that address the unacceptable LOS at the Francisco Drive/El Dorado Hills Boulevard intersection, which has been improved and now functions at acceptable LOS.

Intersections

Analysis results for intersections indicate that most study intersections would operate acceptably once the proposed project is constructed, except for the following locations.

- ~~Francisco Drive/El Dorado Hills Boulevard (intersection 4). This location operates at LOS F without the proposed project. The project would add more than 20 seconds of delay to overall intersection operations. Because the proposed project would add more than 10 trips to the intersection during the A.M. and P.M. peak hours, it would "significantly worsen" conditions according to the County's significance criteria.~~
- Latrobe Road/Town Center Boulevard (intersection 17): This location operates acceptably at LOS ~~E~~ D without the project during the P.M. peak hour. The project would result in unacceptable LOS F conditions during the P.M. peak hour.
- Latrobe Road/White Rock Road (intersection 18): This location operates acceptably during the P.M. peak hour without the project. The project would result in unacceptable LOS F conditions during the P.M. peak hour due to the 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

As described in Appendix L, Section 8.3, the two project access intersections were also evaluated for potential impacts related to increased vehicle queuing lengths in the initial traffic study. That analysis indicated that ~~A~~available storage at both intersections (stop-controlled project access intersections on El Dorado Hills Boulevard) would accommodate estimated vehicle queues.

Table 3.14-7. Intersection LOS and Delay – Existing Plus Project Conditions

Intersection		Control	Existing Conditions (LOS/delay) A.M.	Existing Conditions (LOS/delay) P.M.	Existing Plus Project (LOS/delay) A.M.	Existing Plus Project (LOS/delay) P.M.
1	Green Valley Road/Francisco Drive	Signal	D/40	D/46	D/41	D/46
2	Green Valley Road/El Dorado Hills Blvd/Salmon Falls Road	Signal	E/67	D/46	E/73	D/54
3	Green Valley Road/Silva Valley Pkwy	Signal	C/31	B/20	C/32	B/20
4	Francisco Drive/El Dorado Hills Blvd	AWSC	C/17 ~~**F/88**~~	C/19 ~~**F/69**~~	C/22 ~~***F/108***~~	C/25 ~~***F/98***~~
5	Silva Valley Pkwy/Apian Way	AWSC	C/23	B/15	C/23	B/15
6	El Dorado Hills Blvd/Harvard Way	Signal	C/30	B/17	C/33	B/18
7	Silva Valley Pkwy/Harvard Way	Signal	D/39	C/22	D/39	C/22
8	El Dorado Hills Blvd/Olson Lane	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 Lane	Signal	D/49	C/21	E/70	C/35
11	Serrano Pkwy/Penela Way	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 Drive/Saratoga Way	Signal	B/19 ~~D/36~~	C/20 ~~C/24~~	D/49 ~~E/62~~	C/26 ~~D/44~~
~~14~~	~~El Dorado Hills Blvd/Saratoga Way~~	~~Signal~~	~~E/56~~	~~B/15~~	~~E/58~~	~~C/29~~
15	El Dorado Hills Blvd/US 50 WB Ramps	Signal	C/31 ~~D/43~~	C/33 ~~C/29~~	D/40 ~~C/32~~	C/34 ~~D/36~~
16	Latrobe Road/US 50 EB Ramps	Signal	C/33 ~~B/15~~	C/20 ~~B/14~~	D/42 ~~B/15~~	C/31 ~~D/42~~
17	Latrobe Road/Town Center Blvd	Signal	B/16 ~~C/29~~	D/50 ~~E/75~~	B/18 ~~C/30~~	***F/93*** ~~***F/128***~~
18	Latrobe Road/White Rock Road	Signal	C/31 ~~C/35~~	C/27 ~~D/44~~	C/31 ~~C/35~~	***F/<180*** ~~D/44~~
19	White Rock Road/Post Street	Signal	C/24	C/31	C/24	C/31
20	White Rock Road/Valley View Drive/Vine Street	Signal	C/21	C/27	C/21	C/27
21	El Dorado Hills Blvd/Project Dwy North	SSSC	–	–	B/12 ~~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
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

Source: Appendix L.

Notes: **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 *Highway Capacity Manual* (Transportation Research Board 2000). Intersections 1-12, and 18-25 are analyzed in Synchro 7. Intersections 13-17 are analyzed in SimTraffic.

AWSC = all-way stop control.

SSSC = side-street stop-control.

Near-Term (2027)

The near-term analysis scenario represents conditions 10 years beyond the existing baseline and is detailed in the Central El Dorado Hill Specific Plan Measure E Analysis Memorandum (Fehr & Peers 2017b) (added to Appendix L of the Draft EIR). The study indicates that in 2027 with and without the proposed project, one intersection, Silva Valley Parkway/Appian Way, would operate at LOS F during the A.M. peak hour. All other intersections would operate at acceptable levels of service.

Table 3.14-7a. Intersection LOS and Delay – Near Term Plus Project Conditions

			Near Term (LOS/delay)		Near Term Plus Project (LOS/delay)	
Intersection		Control	A.M.	P.M.	A.M.	P.M.
1	Green Valley Road/Francisco Drive	Signal	D/37	D/40	D/37	D/41
2	Green Valley Road/El Dorado Hills Blvd/Salmon Falls Road	Signal	E/67	D/41	E/60	D/38
3	Green Valley Road/Silva Valley Pkwy	Signal	C/23	B/17	C/22	B/18
4	Francisco Drive/El Dorado Hills Blvd	AWSC	C/26	B/13	C/22	B/14
5	Silva Valley Pkwy/Apian Way	AWSC	**F/85**	D/35	**F/89**	E/37
6	El Dorado Hills Blvd/Harvard Way	Signal	C/30	B/15	C/32	B/16
7	Silva Valley Pkwy/Harvard Way	Signal	B/13	B/11	B/13	B/12
8	El Dorado Hills Blvd/Olson Lane	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 Lane	Signal	D/44	C/27	E/62	C/32
11	Serrano Pkwy/Penela Way	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/Park Drive/Saratoga Way	Signal	F/108	D/47	F/175	D/51
15	El Dorado Hills Blvd/Saratoga Way/US 50 WB Ramps	Signal	D/44	D/37	D/41	D/44
16	Latrobe Road/US 50 EB Ramps	Signal	B/20	B/18	B/18	B/18
17	Latrobe Road/Town Center Blvd	Signal	C/20	D/47	C/22	D/44
18	Latrobe Road/White Rock Road	Signal	C/35	C/33	C/35	C/32
19	White Rock Road/Post Street	Signal	B/17	C/31	B/19	C/29
20	White Rock Road/Valley View Drive/Vine Street	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
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

Source: Appendix L.

Notes: **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 *Highway Capacity Manual* (Transportation Research Board 2000). Intersections 1-12, and 18-25 are analyzed in Synchro 7. Intersections 13-17 are analyzed in SimTraffic.

AWSC = all-way stop control.
SSSC = side-street stop-control.

Table 3.14-8 has been revised to reflect results of the 2017 traffic analysis; no change to text is necessary as there are no changes in impact. The Near Term (2027) texts has been added following the text of "Roadway Segments" on page 3.14-24.

Table 3.14-8. Roadway Segment Peak Hour Level of Service – Existing Plus Project Conditions

			Existing Volume/Volume to Capacity Ratio/LOS		Existing + Project Volume/Volume to Capacity Ratio/LOS	
Roadway	Segment	Facility Type	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
El Dorado Hills Blvd	Green Valley Road to Francisco Drive	2-lane arterial	430/0.26/C[a]	389/0.24/C[a]	458/0.28/C[a]	428/0.26/C[a]
	Francisco Drive to Governor Drive	2-lane arterial	1,324/0.80/D	1,319/0.80/D	1,391/0.84/D ~~1,456/0.88/D~~	1,621/0.98/E ~~1,505/0.91/E~~
	Governor Drive 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[a] ~~2,807/0.70/D~~	2,470/0.62/D ~~2,976/0.74/D~~	2,591/0.65/D ~~3,265/0.82/E~~	2,982/0.75/D ~~3,622/0.91/D~~
	Saratoga Way to US 50	6-lane divided arterial	2,231/0.47/C[a] ~~2,685/0.57/C[a]~~	2.325/0.49/C[a] ~~2,806/0.60/D~~	2,709/0.58/C[a] ~~3,143/0.67/E~~	2,999/0.64/D ~~3,452/0.73/D~~
Latrobe Road	US 50 to Town Center Blvd	6-lane divided arterial	3,169/0.67/D ~~3,339/0.71/D~~	3,590/0.76/D ~~4,081/0.87/D~~	3,337/0.71/D ~~3,499/0.74/D~~	3,827/0.81/D ~~4,306/0.91/D~~
	Town Center Blvd to White Rock Road	6-lane divided arterial	2,367/0.50/C[a] ~~2,253/0.48/C[a]~~	2,454/0.52/C[a] ~~2,628/0.56/C[a]~~	2,462/0.52/C[a] ~~2,343/0.50/C[a]~~	2,588/0.55/C[a] ~~2,755/0.58/C[a]~~
	White Rock Road to Golden Foothill Pkwy	4-lane divided arterial	2,125/0.65/C[a] ~~1,813/0.55/C[a]~~	2,106/0.64/D ~~2,104/0.64/D~~	2,188/0.67/D ~~1,869/0.57/D~~	2,186/0.66/D ~~2,182/0.66/D~~
	Golden Foothill Pkwy to Sun Ridge Meadow Road	2-lane arterial	1,225/0.74/D	1,246/0.76/D	1,239/0.75/D	1,266/0.77/D
	Sun Ridge Meadow Road to S. Shingle Road	2-lane arterial	256/0.16/C[a]	295/0.18/C[a]	263/0.16/C[a]	305/0.18/C[a]
White Rock Road	Scott Road to Four Seasons Drive	2-lane arterial	603/0.37/C[a]	863/0.52/D	624/0.38/C[a]	892/0.54/D
	Four Seasons Drive to Latrobe Road	4-lane divided arterial	893/0.27/C[a]	1,040/0.32/C[a]	914/0.28/C[a]	1,069/0.32/C[a]
	Latrobe Rd to Vine Street	2-lane arterial	1,082/0.66/D ~~831/0.5/C[a]~~	1,346/0.82/D ~~969/0.59/D~~	1,093/0.66/D ~~838/0.51/C[a]~~	1,367/0.83/D ~~979/0.59/D~~
	Vine Street to US 50	2-lane arterial	955/0.60/D ~~830/0.50/C[a]~~	1,213/0.74/D ~~945/0.57/D~~	995/0.60/D ~~830/0.5/C[a]~~	1,224/0.74/D ~~945/0.57/D~~

Roadway	Segment	Facility Type	Existing Volume/Volume to Capacity Ratio/LOS A.M. Peak Hour	Existing Volume/Volume to Capacity Ratio/LOS P.M. Peak Hour	Existing + Project Volume/Volume to Capacity Ratio/LOS A.M. Peak Hour	Existing + Project Volume/Volume to Capacity Ratio/LOS P.M. Peak Hour
Silva Valley Pkwy	Green Valley Road to West Glenmore Way	2-lane arterial	651/0.39/C[a]	591/0.36/C[a]	654/0.4/C[a]	596/0.36/C[a]
	West Glenmore Way to Appian Way	2-lane arterial	555/0.34/C[a]	630/0.38/C[a]	558/0.34/C[a]	635/0.38/C[a]
	Appian Way to Harvard Way	2-lane arterial	796/0.48/C[a]	681/0.41/C[a]	799/0.48/C[a]	686/0.42/C[a]
	Harvard Way to Serrano Pkwy	4-lane divided arterial	1,402/0.43/C[a]	1,084/0.33/C[a]	1,409/0.43/C[a]	1,094/0.33/C[a]
	Serrano Pkwy to US 50	4-lane divided ~~2-lane~~ arterial	1,136/0.35/C[a] ~~1,142/0.69/D~~	1,398/0.42/C[a] ~~946/0.57/D~~	1,136/0.35/C[a] ~~1,149/0.7/D~~	1,409/0.43/C[a] ~~956/0.58/D~~
Roadway	Segment	Facility Type	Existing Volume/Volume to Capacity Ratio/LOS A.M. Peak Hour	Existing Volume/Volume to Capacity Ratio/LOS P.M. Peak Hour	Existing + Project Volume/Volume to Capacity Ratio/LOS A.M. Peak Hour	Existing + Project Volume/Volume to Capacity Ratio/LOS P.M. Peak Hour
Serrano Pkwy	El Dorado Hills 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 Drive	4-lane divided arterial	1,476/0.45/C[a]	1,311/0.4/C[a]	1,483/0.45/C[a]	1,321/0.4/C[a]
	Villagio Drive to Bass Lake Road	2-lane arterial	453/0.27/C[a]	417/0.25/C[a]	455/0.28/C[a]	420/0.25/C[a]
Saratoga Way	El Dorado Hills Blvd to Arrowhead Drive	2-lane arterial	295/0.18/C[a] ~~222/0.13/C[a]~~	316/0.19/C[a] ~~279/0.17/C[a]~~	303/0.18/C[a] ~~229/0.14/C[a]~~	325/0.20/C[a] ~~289/0.18/C[a]~~
Wilson Blvd	El Dorado Hills Blvd to Ridgeview Drive	4-lane undivided arterial	418/0.13/C[a]	384/0.12/C[a]	425/0.14/C[a]	394/0.13/C[a]
Olson Lane/ Gillette Drive	El Dorado Hills Blvd to Gillette Drive	2-lane arterial	300/0.18/C[a]	289/0.18/C[a]	307/0.19/C[a]	299/0.18/C[a]
Harvard Way	El Dorado Hills Blvd to Silva Valley Pkwy	4-lane undivided arterial	1,139/0.36/C[a]	612/0.20/C[a]	1,170/0.37/C[a]	656/0.21/C[a]

Source: Appendix L.

Note: 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 Draft EIR* (El Dorado County 2003).

[a] LOS at this location is C or better.

Near-Term (2027)

Results for the near-term scenario for road segments indicates that all road segments operate at acceptable levels of service in 2027 with and without the proposed project.

The following text has been added following the text of "Freeway Facilities" on page 3.14-27 and Table 3.14-9 has been updated to reflect results of the revised traffic study.

Freeway Facilities

Analysis results for freeway facilities, which are presented in Table 3.14-9, indicate that all studied freeway facility would operate acceptably. ~~Traffic generated by the proposed project would result in LOS F conditions at the US 50 westbound on-ramp from El Dorado Hills Boulevard. Because the project would result in an exceedance of acceptable LOS thresholds, this would be a significant impact.~~

Table 3.14-9. Freeway Facility Peak Hour Level of Service – Existing Plus Project Conditions

Freeway	Segment	Facility Type	Existing Density[a]/LOS A.M.	Existing Density[a]/LOS P.M.	Existing + Project Density[a]/LOS A.M.	Existing + Project Density[a]/LOS P.M.
US 50 east-bound	Latrobe Rd off-ramp	Diverge	22/C	30/D ~~31/D~~	23/C	32/D ~~34/D~~
	El Dorado Hills Blvd off-ramp	Diverge	14/B	26/C ~~27/C~~	14/B	28/C
	Latrobe Road on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM) ~~Merge~~	10/A ~~14/B~~	23/C ~~26/C~~	10/A ~~15/B~~	24/C ~~26/C~~
		Basic[b]	7/A	15/B	7/A	15/C
	Silva Valley Pkwy on-ramp	Merge	11/B	21/C	12/B	26/C
	~~El Dorado Hills Blvd on-ramp to Bass Lake Road off-ramp~~	~~Basic~~	~~10/A~~	~~20/C~~	~~11/A~~	~~20/C~~
	Silva Valley Pkwy on-ramp to Bass Lake Road off-ramp	Basic	11/A	20/C	11/B	26/C
	Bass Lake Road off-ramp	Diverge	15/B ~~14/B~~	25/C	15/B	25/C ~~26/C~~
	Bass Lake Road on-ramp	Merge	16/B	27/C ~~28/C~~	17/B ~~16/B~~	28/C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	14/B ~~13/B~~	25/C	14/B	25/C ~~26/C~~
	Cambridge Road off-ramp	Diverge	18/B	30/D ~~31/D~~	19/B ~~18/B~~	31/D
	Cambridge Road on-ramp	Merge	19/B ~~18/B~~	26/C	19/B	26/C ~~27/C~~
US 50 west-bound	Cambridge Road off-ramp	Diverge	28/C ~~27/C~~	23/C ~~22/C~~	28/D ~~27/C~~	24/C ~~23/C~~
	Cambridge Road on-ramp ~~to Bass Lake Road off-ramp~~	Merge	20/B ~~19/B~~	13/B ~~12/B~~	20/B ~~19/B~~	13/B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23/C	17/B ~~16/B~~	23/C	17/B ~~16/B~~
	Bass Lake Road off-ramp	Diverge	29/D ~~28/D~~	21/C	29/D ~~28/D~~	22/C ~~21/C~~
	Bass Lake Road on-ramp	Merge	32/D ~~31/D~~	21/C ~~20/C~~	32/D ~~31/D~~	21/C
	Bass Lake Road on-ramp to lane add ~~El Dorado Hills Blvd off-ramp~~	Basic	29/D	17/B	29/D	18/B ~~17/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[b]	19/C	11/A	19/C	11/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	35/E ~~–/F~~	25/C

Source: Appendix L.

Notes: **Bold** text indicates LOS worse than established threshold.
Italic and underlined text identifies a potential impact.

[a] Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.

[b] Out of realm of weaving; analyzed as a basic segment

Near-Term (2027)

Results for the near-term scenario for freeway facilities indicates that all highway segments operate at acceptable levels of service in 2027 with and without the proposed project (Table 3.14-9a).

Table 3.14-9a. Freeway Facility Peak Hour Level of Service – Near Term Plus Project Conditions

Freeway	Segment	Facility Type	Near Term Density[a]/LOS		Near Term + Project Density[a]/LOS	
			A.M.	P.M.	A.M.	P.M.
US 50 east-bound	Latrobe Rd off-ramp	Diverge	22/C	27/C	22/C	27/C
	El Dorado Hills Blvd off-ramp	Diverge	13/B	23/C	14/B	23/C
	Latrobe Road on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)[b]	11/B	23/C	11/B	23/C
		Basic	7/A	14/B	8/A	14/B
	Silva Valley Pkwy on-ramp	Merge	15/B	20/C	15/B	20/C
	Silva Valley Pkwy 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
	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 west-bound	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 add	Basic	30/D	24/C	30/D	22/C
	Lane add to Silva Valley Pkwy off-ramp	Basic	19/C	16/B	19/C	15/B
	Silva Valley Pkwy off-ramp	Diverge	14/B	11/B	14/B	10/A
	Silva Valley Pkwy on-ramp to El Dorado Hills Blvd off-ramp	Weave	36/E	21/C	37/E	19/B
		Basic	19/C	13/B	20/C	11/B
	El Dorado Hills Blvd on-ramp	Merge	34/D	24/C	34/D	25/C

Source: Appendix L.

Notes: **Bold** text indicates LOS worse than established threshold.
Italic and underlined text identifies a potential impact.

[a] Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations.

Text on pages 3.14-30 and 3.14-31 has been revised as follows.

Summary

As described above, the proposed project would result in impacts on four elements of the circulation system (intersections, freeway facilities, pedestrian circulation, and transit).

~~The Francisco Drive/El Dorado Hills Boulevard intersection (Intersection 4) operates at LOS F without the proposed project. Because the proposed project would add more than 10 trips to the intersection during the A.M. and P.M. peak hours, it would "significantly worsen" conditions according to the County's significance criteria.~~ The Latrobe Road/Town Center Boulevard intersection (Intersection 17) operates acceptably at LOS E without the project. Implementation of the project results in unacceptable LOS F conditions during the P.M. peak hour. The Latrobe Road/White Rock Road intersection (Intersection 18) currently operates acceptably at LOS C without the project. Implementation of the project results in unacceptable LOS F conditions during the P.M. peak hour. ~~The addition of project traffic would also result in LOS F conditions at the US 50 westbound on-ramp from El Dorado Hills Boulevard.~~

Modifications in the Latrobe Road/Town Center Boulevard intersection indicated in Mitigation Measure TRA-1a below would result in acceptable LOS E conditions at that intersection and also acceptable LOS C conditions at the Latrobe Road/White Rock Road intersection, since queueing along the northbound approach of Latrobe Road/Town Center Boulevard would be reduced and not spill back onto White Rock Road.

The intersection of Silva Valley Parkway and Appian Way would operate at LOS F under near term conditions (2027) with and without the proposed project. However, the proposed project would slightly worsen conditions at that intersection. Mitigation Measure TRA-1b below would result in LOS C during the A.M. peak hour. It would also improve already acceptable conditions in the P.M. peak hour. The intersection of El Dorado Hills Boulevard, Park Drive and Saratoga Way would operate at LOS F under near-term conditions (2027) in the A.M. peak hour, with and without the project. The project would slightly worsen conditions at that intersection. Mitigation Measure TRA-1e below would result in LOS E in the A.M. peak hour.

Development of the Pedregal planning area would create a gap in the pedestrian network in conflict with County General Plan Goal TC-4. Additional park-and-ride capacity may not be provided to allow for additional project-induced transit demand to be adequately met. Therefore, the exceedance of acceptable LOS thresholds, the addition of traffic on facilities already operating at an unacceptable LOS, the conflict with a County General Plan goal pertaining to pedestrian facilities, and the exceedance of capacity of park-and-ride facilities would be a significant impact. Implementation of Mitigation Measures TRA-1a, TRA-1b, TRA-1c, TRA-1d, and TRA-1e would reduce this impact to a less-than-significant level. ~~Some of the~~ These mitigation measures could involve physical improvements that could have environmental effects. These potential impacts are described in Section 5.6, *Mitigation Measures with the Potential for Environmental Effects under CEQA*.

Mitigation Measure TRA-1a: Improve the Latrobe Road/Town Center Boulevard Intersection

The following improvements will be made to the Latrobe Road/Town Center Boulevard intersection.

- 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 westbound approach
- Provide split phasing east and westbound
- Optimize signal timings to accommodate the revised intersection lane configurations.

If the improvement is constructed by others prior to residential development levels in the project site that require this mitigation, payment of TIM fees will satisfy the project's fair share obligation towards this improvement. If this improvement is not constructed by others, the applicant will be responsible for implementing this improvement consistent with County General Plan Goal TC-X and supporting Policy TC-Xa and TC-Xf to ensure that transportation improvements are implemented concurrent with approved residential development. If the improvement is constructed by the applicant, the applicant will be subject to fee credit or reimbursement through the County's TIM fee program.

Mitigation Measure TRA-1b: Improve the Silva Valley Parkway/Appian Road Intersection

The following improvements will be constructed by the applicant prior to 2027 at the Silva Valley Parkway/Appian Road Intersection.

- Install a traffic signal with protected left-turn phasing northbound and southbound and split phasing eastbound and westbound.
- Provide one left-turn lane and a shared through/right-turn lane on the northbound and southbound approaches.

Mitigation Measure TRA-1e: Improve the El Dorado Hills Boulevard/Park Drive/Saratoga Way Intersection

The following improvements will be constructed by the applicant prior to 2027 at the El Dorado Hills Boulevard/Park Drive/Saratoga Way Intersection.

- Provide one left-turn lane, two through lanes, and one right-turn lane on the southbound approach.

The applicant may be eligible for reimbursement through the County's TIM fee program.

~~**Mitigation Measure TRA-1a: Pay applicable TIM fees towards improvement of the Francisco Drive/El Dorado Hills Boulevard intersection**~~

~~At commencement of environmental review for the proposed project, this intersection operated at LOS F due to high demand for the northbound-to-westbound and eastbound-to-southbound turn movements through the intersection. The following improvements to the Francisco Drive/El Dorado Hills Boulevard intersection (CIP #71358) were determined to result in acceptable LOS C operation during the A.M. and P.M. peak hours: add a dedicated eastbound right-turn lane to provide a shared through/left-turn lane and a separate right-turn lane on the eastbound approach; add a southbound acceleration lane on El Dorado Hills Boulevard south of~~

~~Francisco Drive beginning at the eastbound right-turn lane; and lengthen the northbound left-turn pocket.~~

~~These improvements were completed in 2015. Because the improvements have been completed, payment of TIM fees would satisfy the project's fair share obligation toward these improvements, and would reduce the impact to a less-than-significant level.~~

~~Mitigation Measure TRA-1b: Pay applicable TIM fees towards improvement of the US 50/El Dorado Hills Boulevard and US 50/Silva Valley Parkway interchanges~~

~~Implementation of the US 50/El Dorado Hills Boulevard interchange improvements (CIP #53124) and construction of the new US 50/Silva Valley Parkway interchange (CIP #71328 and CIP #71345) results in acceptable LOS E or better operations at the Latrobe Road/Town Center Boulevard intersection during the A.M. and P.M. peak hours.~~

~~Unacceptable operations at the Latrobe Road/Town Center Boulevard intersection were due primarily to poor lane utilization on northbound Latrobe Road during construction of the US 50/El Dorado Hills Boulevard interchange improvements, which have now been completed. The US 50/El Dorado Hills Boulevard interchange improvements added ramp metering to the westbound on-ramp at the El Dorado Hills Boulevard interchange, which meters (i.e., limits) peak hour traffic flow onto US 50. The new US 50/Silva Valley Parkway interchange, currently under construction, will reduce traffic volumes at the interchange, including the westbound on-ramp.~~

~~These improvements 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 toward these improvements, which would reduce the impact to less than significant.~~

For clarification, the text of Mitigation Measure TRA-5 on pages 3.14-32 and 3.14-33 has been revised as follows.

Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan

The applicant will obtain an encroachment permit from the County or ensure development of a site-specific construction traffic management plan (TMP) that <u>includes the standards below and</u> addresses the specific steps to be taken before, during, and after construction to minimize traffic impacts to existing County roadways, including the mitigation measures identified in this EIR. This will include all potentially significantly affected roadway segments.

The applicant will be responsible for developing the TMP in consultation with the applicable transportation entities, including El Dorado County, Caltrans (for state and federal roadway facilities), and the El Dorado County Transit Authority.

The applicant will also ensure that the TMP is implemented prior to beginning construction at a site. If necessary to minimize unexpected operational impacts or delays experienced during real-time construction, the applicant will also be responsible for modifying the TMP to reduce these effects.

The TMP will address the following measures~~, as needed~~. Implementation of this measure will ensure operational traffic impacts and delays experienced during construction will be minimized to the greatest extent feasible.

- Signage warning of roadway surface conditions such as loose gravel, steel plates or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic.
- Signage and barricades to be used around the work sites.
- Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic.
- Notifications for the public, emergency providers, cycling organizations, bike shops, and schools, where applicable, describing construction activities that could affect transportation.
- Outreach (via public meetings and/or flyers and other advertisements).
- Procedures for construction area evacuation in the case of an emergency declared by County or other local authorities.
- Alternate access routes via detours to maintain continual circulation for local travelers in and around construction zones, including bicyclists and pedestrians where applicable.
- Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits.
- Designation of areas where nighttime construction will occur.
- Plans to relocate school bus drop-off and pick-up locations if they will be affected during construction.
- Scheduling for oversized material deliveries to the work site and haul routes.
- Provisions that direct haulers are to pull over in the event of an emergency. If an emergency vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers will be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency.
- Control for any temporary road closure, detour, or other disruption to traffic circulation.
- Designated offsite vehicle staging and parking areas.
- Posted information for contact in case of emergency or complaint.
- Coordination with El Dorado County Transit Authority to develop, where feasible, daily construction time windows during which transit operations would not be either detoured or significantly slowed.
- Other actions to be identified and developed as may be needed by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized.

Chapter 4, Alternatives Analysis (RDEIR)

In response to comment I-R-10-4, the following typo was corrected in the first bullet under Traffic and Circulation on page 3-7:

- Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness 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, pedestrians and bicycle paths, and mass transit.

Chapter 5, Other CEQA Considerations

Table 5-2, Other Projects was revised as follows.

Table 5-2. Other Projects

Project	Residential Uses: Dwelling Units	Residential Uses: Acres	Commercial and Industrial/Research and Development Uses (acres)	Parkland and Open Space Uses (acres)
Dixon Ranch	605	196	0	84 combined[a]
El Dorado Hills Town Center Apartments	250	4.6	0	0
Lime Rock Valley Specific Plan	800	360	0	8 – Park 333 – OS
Saratoga Estates [b] (formerly Rancho Dorado)	317 ~~(316)~~	70.98	0	7.4 ~~(5.42)~~ – Park 33.5 ~~(37.04)~~ – OS
Mill Creek (formerly San Stino)[c]	1,041 ~~(633)~~[b]	375 ~~(279)~~	0	0 ~~(9.79)~~ – Park[b] 270 ~~(284)~~ – OS[b]
Tilden Park	14	2.97	8.22	0 – Park 1.64 – OS
Village of Marble Valley Specific Plan (as proposed)	3,236[c][d]	797	57	87 – Park 1,284 – OS
Folsom South of US Highway 50	10,210	1,477.7	362.8	121.7 – Park 1,053.1 – OS
Subtotal[e]	~~6,262~~ 16,605	~~1,806.55~~ 3,238.62	~~65.22~~ 428.02	~~100.42~~ 233.89 – Park ~~1,925.68~~ 2,989.24 – OS
Combined Park/OS Total[e]	–	–	–	~~2,110.10~~[d] 3,307.13[f]

Sources: El Dorado County 2012a, 2012b, 2013a, 2015; G3 Enterprises 2015; Marble Valley Company 2015.

[a] Not included in park or open space subtotal.; the Dixon Ranch land use plan does not identify separate acreages for park and open space land uses.

[b] Saratoga Estates was approved by the Board of Supervisors on September 13, 2016. Saratoga Estates increased the number of residential units to 317 on 121.28 acres. It includes 7.4 acres of parks and 33.5 acres of open space.

[c] The residential units and open space acreage reflects the original proposal as presented in the notice of preparation for the project. The proposal has since been revised. Numbers in parenthesis reflect the current proposal. The number of residential units has been decreased to 633, the open space acreage has increased to 284 acres, and 9.79 acres of park have also been proposed. A revised notice of preparation for the current proposal has not yet been published, and the analysis of cumulative effects in this Draft EIR assumes the original proposal as described in the notice of preparation. ~~San Stino NOP states that "two larger lots would also be set aside for future school, park or residential uses" but does not quantify (El Dorado County 2013a).~~

[c][d] Includes 398 dwelling units already approved. Net new units would be 3,236 – 398 = 2,838.

[e] Calculations reflect actual build out numbers for Saratoga Estates and Mill Creek.

[d][f] Combined Park/OS Total includes Dixon Ranch combined park/open space acreage.

The following sentence was added at the end of the paragraph, Dixon Ranch Residential Project on page 5-6.

A Draft EIR and Final EIR have been prepared for this project. This project was denied on February 28, 2017.

The following text was revised in the heading and first sentence of the paragraph, San Stino on page 5-6:

Mill Creek (formerly San Stino) Residential Project

The original proposal ~~proposed~~ for the Mill Creek (formerly San Stino) residential project ~~would~~ entailed development of 1,041 dwelling units on approximately 645 acres south of US 50 between French Creek Road and Old Frenchtown Road, south of Mother Lode Drive (El Dorado County 2013a).

In early 2017, the CEDHSP traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR and to be consistent with the County's 2016 Capital Improvement Program.[37] *The second to last paragraph of the Air Quality discussion on page 5-10 has been revised as follows to reflect those changes.*

The Mountain Counties Air Basin (MCAB) is in attainment for CO. As discussed in Impact AQ-4c (Table 3.2-11), modeled CO concentrations at study area intersections are not expected to result in any new localized violations of the 1-hour or 8-hour ambient air quality standards under cumulative plus project conditions. Therefore, the proposed project would not result in a cumulatively considerable contribution to CO impacts, and the cumulative impact would be less than significant.

In early 2017, the CEDHSP traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR in November 2015 and to be consistent with the County's 2016 Capital Improvement Program. The Noise discussion beginning on page 5-18, and associated Table 5-3 has been revised as follows to reflect those changes.

Noise and Vibration

Construction noise would be localized and, because of the physical nature of how noise dissipates with distance from its source, would primarily affect the land uses in the immediate vicinity of the construction equipment. Thus, project-related construction noise and vibration would not be a considerable contribution to other construction noise in the larger region.

Table 5-3 summarizes traffic noise modeling results under cumulative conditions with and without the project and shows the incremental increase in traffic noise associated with the project. In almost all cases, without the project, cumulative traffic noise exceeds the County's land use compatibility standards for residential uses (L_{dn} 60 dB for low density and L_{dn} 65 for high density). As such, significant cumulative traffic noise impacts are considered to occur along these roadways where there are adjacent existing residential or other sensitive uses, because the existing noise levels already exceed the compatibility standards.

[37] Since the preparation of the updated Traffic Impact Study, the County has adopted the 2017 CIP, however, no changes that would affect this study were included in the 2017 CIP.

In some locations, the project is predicted to reduce traffic noise levels. In other locations, the project is predicted to increase traffic noise by up to 0.4 decibels (dB). A widely used standard threshold for cumulative noise analyses is a project contribution increase of 1 dB in the cumulative conditions. An increase of 3 dB is generally considered to be the threshold of a perceptible increase in noise. An increase of 0.4 dB therefore would be below the cumulative threshold of 1 dB and would not be perceptible because it is ~~just one tenth of~~ well below the perceptibility threshold. Because the project-related increase is less than 1 dB and not predicted to be perceptible, the project's incremental contribution to significant noise impacts is not cumulatively considerable.

The potential extension of Park Drive to Silva Valley Parkway would introduce a new source of noise that would not exist without the offsite improvements. As noted in Impact TRA-7 in Section 3.14, *Traffic and Circulation*, the extension is designed to improve regional connectivity and provide for an uninterrupted roadway network parallel to US 50, but it is not required to provide acceptable level of service (LOS) operations. The potential extension of Park Drive would result in reduced volumes on most roadway segments relative to the cumulative project conditions without the extension. However, on some roadways, the roadway extension would result in increased traffic volumes relative to the cumulative project conditions without the extension. Table 5-3 includes the cumulative project noise modeling results and also the noise modeling results for those roadways where traffic and noise would increase as a result of the Park Drive extension. Because Table 5-3 represents worst-case scenario noise levels, the roadways for which noise would decrease with extension of Park Drive are not shown. The worst-case conditions for those roadways are represented by the cumulative project conditions (without the Park Drive extension).

As shown in Table 5-3, noise from the new roadway would be approximately ~~62.4~~ 61.2 dB, which is a level of noise that is slightly above the County's compatibility standard for residences. Because the dominant noise source in the southern area of Serrano Village D2 is from US50, the noise from the roadway extension would not likely be noticeable. Nevertheless, the acoustical analysis per Mitigation Measure NOI-1b would demonstrate what noise-reducing treatments would be necessary, if any. With Mitigation Measure NOI-1b, the offsite improvements would not result in cumulatively considerable noise impacts.

Table 5-3. Cumulative Traffic Noise on Roadway Segments in the Project Area Vicinity

Roadway	Segment Location	Cumulative L_{dn} (dBA) at 50 Feet from Roadway Centerline	Cumulative + Project L_{dn} (dBA) at 50 Feet from Roadway Centerline	Change in Traffic Noise due to Specific Plan Generated Traffic
El Dorado Hills Blvd	Green Valley to Francisco	~~64.6~~65.5	~~64.4~~65.4	~~-0.2~~-0.1
	Francisco to ~~Harvard~~Governor	~~72.0~~71.5	~~71.9~~71.5	~~-0.1~~0.0
	~~Harvard~~Governor to Wilson	73.2	~~73.1~~73.3	~~-0.1~~0.0
	Wilson to Serrano	~~74.0~~73.9	~~74.1~~74.2	~~0.1~~0.4
	Serrano to Saratoga	73.6	73.8	0.3
	~~Serrano~~Saratoga to US 50	~~72.8~~73.1	~~73.2~~73.4	0.3
Latrobe Road	US 50 to Town Center	~~75.2~~75.1	~~75.3~~75.1	0.0
	Town Center to White Rock Road	~~73.4~~74.0	74.1	~~0.2~~0.0
	White Rock to Golden Foothill Pkwy	~~72.5~~73.1	~~72.4~~73.0	~~-0.1~~0.0
	Golden Foothill Pkwy to Sun Ridge Meadow Road	~~70.2~~70.1	~~70.2~~70.1	0.0
	Sun Ridge Meadow Road to S. Shingle Road	67.3	~~67.3~~67.2	~~0.0~~-0.1
White Rock Road	Scott Road to Four Seasons Drive	~~73.8~~75.0	~~74.2~~75.0	~~0.4~~0.0
	Four Seasons Drive to Latrobe Road	~~73.8~~74.9	~~74.1~~74.9	~~0.3~~-0.1
	Latrobe Road to Vine Street	~~70.8~~71.8	~~70.8~~71.8	0.0
	Vine Street to US 50	~~74.5~~74.6	74.5	0.0
Silva Valley Pkwy	Green Valley to West Glenmore ~~Glenwood~~ Way	~~67.9~~66.3	~~67.8~~66.2	-0.1
	West Glenmore ~~Glenwood Way~~ to Appian Way	~~67.9~~67.6	~~67.7~~67.6	~~-0.2~~0.0
	Appian Way to Harvard Way	~~68.3~~68.2	~~68.3~~68.2	0.0
	Harvard Way to Serrano Pkwy	~~70.9~~70.1	~~71.0~~70.2	0.1
	Serrano Pkwy to US 50	~~72.2~~71.7	~~72.2~~71.8	~~0.0~~0.1
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	~~67.8~~68.0	~~67.8~~68.3	~~0.0~~0.3
	Silva Valley to Villagio Drive	~~70.2~~71.1	~~70.3~~71.1	~~0.1~~0.0
	Villagio Drive to Bass Lake Road	~~68.0~~69.1	~~68.1~~69.1	~~0.1~~0.0
Saratoga Way	EDH to Arrowhead	~~67.0~~67.1	67.167.2	0.1
Wilson Blvd	EDH Blvd to Ridgeview Drive	63.8	~~63.9~~63.8	~~0.1~~0.0
~~Wilson Blvd~~	~~EDH Blvd to Ridgeview Drive w/ extension of Wilson Blvd~~	~~63.8~~	~~66.7~~	~~2.9~~
~~Wilson Blvd~~	~~Montridge Way to Saratoga Way~~	~~–~~	~~66.5~~	~~N/A~~
Olson Lane/Gillette Drive	EDH Blvd to Gillette	57.1	57.1	0.0
Harvard Way	EDH Blvd to Silva Valley Pkwy	~~64.8~~66.3	~~64.8~~66.3	0.0
US 50	~~West of~~Between Empire Ranch and Latrobe/EDH	~~83.8~~84.4	~~83.8~~84.3	0.0
	Between Latrobe/EDH and Silva Valley	~~83.3~~83.7	~~83.4~~83.6	~~0.1~~-0.1
	Between Silva Valley and Bass Lake	84.3	84.2	0.0
	Between ~~Silva Valley and~~ Bass Lake and Cambridge	~~83.6~~83.5	~~83.5~~83.4	-0.1
	Between ~~Bass Lake and~~ Cambridge and Cameron Park	~~82.9~~84.0	~~82.9~~84.0	~~0.0~~-0.1
Park Drive	Extension – West of Silva Valley Parkway[1]	–	~~62.4~~61.2	N/A

[1] These roadway segments would represent noise levels with cumulative project conditions and with the extension of Park Drive. Most roadway segments would experience decreased traffic and noise with the extension of this roadway, but those included in this table would experience increased volumes and noise. This table is a worst-case scenario; thus, only the roadways that would experience increased noise levels with extension of Park Drive are included here.

In early 2017, the traffic impact study was updated to include improvements that had been completed since the circulation of the Draft EIR and to be consistent with the County's 2016 Capital Improvement Program.[38] *The following revisions were made to text beginning on page 5-26 to reflect the updated traffic study.*

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 updated to include only those roadway improvements consistent with the SACOG's MTP and the County's ~~2015~~ 2016 CIP. Capacity-enhancing improvements to roadway facilities in the study area for which the El Dorado County Community Development Agency (CDA) is the lead agency were included in the cumulative analysis and are listed below, along with their CIP number and estimated year of completion (descriptions of these projects are provided in Appendix L, Updated TIS Table 7~~14~~).

- ~~Bass Lake Road Frontage Improvements (#66109; by 2035)~~
- ~~Bass Lake Road Improvements – Phase 1A (#66109; by 2035)~~
- ~~Bass Lake Road Widening (GP166; by 2035)~~
- Country Club Drive – El Dorado Hills Boulevard to Silva Valley Parkway (#72377; by 2035)
- Country Club Drive – Silva Valley Parkway to Tong Road (#71362, by 2027)
- Country Club Drive – Tong Road to Bass Lake Road (#71361 by 2035)
- ~~Country Club Drive Extension – Bass Lake Road to Silver Dove Road (GP124; by 2035)~~
- ~~Country Club Drive Extension – Silver Dove to west end of Bass Lake Hills (GP125; by 2035)~~
- Country Club Drive Realignment – Bass Lake Road to Tierra De Dios Drive (#71360, by 2019)
- ~~El Dorado Hills Boulevard/Francisco Drive – Realignment (#72332; by 2035)~~
- ~~El Dorado Hills Boulevard Widening – Lassen Lane to Park Drive (GP183; by 2035)~~
- ~~Green Valley Road – Traffic Signal Interconnect (#73151, by 2016)~~
- Green Valley Road Widening – Francisco Drive to Salmon Falls Road (GP178; by 2035)
- ~~Green Valley Road Widening – Salmon Falls Road to Deer Valley Road (GP159; by 2035)~~
- ~~Green Valley Road Widening – County Line to Francisco Drive (#72355; completed)~~
- Green Valley Road Widening – County Line to Sophia Parkway (#72376, by 2018)
- ~~Latrobe Road Widening – Golden Foothill Parkway to Investment Boulevard (#72350; by 2035)~~
- ~~Latrobe Road Widening – White Rock Road to Carson Creek (GP154; by 2035)~~
- Latrobe Road Connection (new road) (#66116; by ~~2035~~ 2027)
- Saratoga Way Extension – Phase 1 (#71324; by 2035)
- Saratoga Way Extension – Phase 2 (#GP147; by 2035)

[38] Since the preparation of the updated Traffic Impact Study, the County has adopted the 2017 CIP, however, no changes that would affect this study were included in the 2017 CIP.

- Silva Valley Parkway/Serrano Parkway Traffic Circulation Improvement (#72141, ~~by 2016~~ completed)
- ~~Silva Valley Parkway/Golden Eagle Lane – Signalization (#GP182; by 2035)~~
- Silver Springs Parkway to Bass Lake Road (South Segment) (#76108; by ~~2019~~ 2020)
- ~~Silver Springs Parkway to Green Valley Road Intersection Signalization (#76107; completed)~~
- ~~US 50/Bass Lake Road Interchange Improvements (Phase 2) (#GP148; by 2035)~~
- ~~US 50/Cambridge Road Interchange Improvements (Phase 2) (#GP149; by 2035)~~
- US 50 Auxiliary Lane westbound – El Dorado Hills Boulevard to ~~Empire Ranch Road~~ Sacramento County Line (#53115; by 2035)
- US 50 Auxiliary Lane westbound – Ponderosa Road to Cameron Park Drive (#53128; by 2035)
- US 50 Auxiliary Lane westbound – Bass Lake Road to Silva Valley Parkway (#53117; by 2027)
- US 50 Auxiliary Lane westbound – Cambridge Road to Bass Lake Road (#GP149; by 2035)
- ~~US 50 Auxiliary Lane Eastbound – Cambridge Road to Ponderosa Road (#GP150; by 2035)~~
- US 50 Auxiliary Lane eastbound – Bass Lake Road to Cambridge Road (By 2035)
- US 50 Auxiliary Lane eastbound – Cambridge Road to Cameron Park Drive (By 2035)
- US 50 Auxiliary Lane eastbound – Cameron Park Drive to Ponderosa Road (By 2035)
- US 50 Auxiliary Lane eastbound – Sacramento County Line to El Dorado Hills Boulevard/Latrobe Road Interchange (By 2035)
- ~~US 50 HOV Lanes – Phase 1 (#53110; completed)~~
- ~~US 50 HOV Lanes – Phase 2A (#53113; completed)~~
- ~~US 50 Mainline Widening at El Dorado Hills (#53120; by 2035)~~
- US 50/Bass Lake Road Interchange – Phase 1 (#71330; by 2035)
- US 50/Cambridge Road Interchange – Phase 1 (#71332; by 2035)
- US 50/Cameron Park Drive Interchange Improvements (#72361; by 2035)
- US 50/El Dorado Hills Boulevard Interchange (Phase 2B) (#71323; by 2035)
- ~~US 50/El Dorado Hills Boulevard Pedestrian Overcrossing (#71340; by 2035)~~
- US 50/Silva Valley Parkway Interchange – Phase 1 (#71328; ~~ongoing~~ completed)
- US 50/Silva Valley Parkway Interchange – Phase 2 On-Ramps and Auxiliary Lanes on US 50 (Connector Segment) (#71345; by 2035)
- White Rock Road Widening – Manchester Drive to Sacramento County Line (Connector Segment) (#GP137; by ~~2035~~ 2027)
- White Rock Road Widening – Monte Verde Drive to US 50/Silva Valley Parkway Interchange (Connector Segment) (#72374; by 2035)
- ~~White Rock Road Widening – Latrobe Road to Monte Verde Drive (Connector Segment) (#72372; completed)~~

- ~~White Rock Road Widening 4 to 6 Lanes– Latrobe Road to US 50/Silva Valley Parkway Interchange (Connector Segment) (#GP152; by 2035)~~
- ~~White Rock Road/Post Street – Signalization (Connector Segment) (completed)~~

The model corresponds to a 2035 horizon that accounts for planned roadway improvements, land use growth consistent with the 2004 County General Plan, and with approved and reasonably foreseeable projects in the study area, as described in Section 5.2.1.[~~3~~39] The model was then used to develop A.M. and P.M. peak hour traffic forecasts for two scenarios: "cumulative no project" and "cumulative plus proposed project." Under the "cumulative no project scenario," development levels in the project area would be consistent with those described for the No Project Alternative (see Chapter 4, Section 4.3.1, *Alternative 1—No Project*). This scenario assumes the allowable development levels based on the County General Plan designation in the Pedregal planning area (144 multifamily dwelling units and 33 single-family dwelling units) and development of Serrano Village D-1, Lots C and D (i.e., 135 single-family dwelling units). Under the "cumulative plus proposed project," development levels in the project area would be consistent with buildout of the proposed project and associated roadway network. See Appendix L, Figures 9 and 10, for A.M. and P.M. peak hour traffic volume forecasts for cumulative conditions with and without the proposed project.

Consistent with state-of-the-practice travel demand forecasting methods, 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.

El Dorado County Capital Improvement Program and Traffic Impact Mitigation Fees

Capital Improvement Program

A Capital Improvement Program (CIP) is a planning document that identifies capital improvement projects (e.g., roads and bridges) a local government or public agency intends to build over a certain time horizon (usually between five and twenty years). The CIP serves as a planning and implementation tool for the development, construction, rehabilitation and maintenance of the County's infrastructure. Capital improvements are projects that provide tangible long-term improvements or additions of a fixed or permanent nature, have value and can be depreciated. CIPs typically provide key information for each project, including delivery schedule, cost and revenue sources.

In order to maintain the integrity of the County's roadway network, the County is required to implement County General Plan Policy TC-Xb and Implementation Measures TC-A and TC-B. These measures require the development of a 10- and 20-year CIP. These policies also require an update of the 20-year growth forecast every 5 years. The forecast is needed to update the CIP and Traffic Impact Mitigation Fee (TIM) Program. Forecasting growth is an iterative and ongoing process –

[~~3~~39] One project (El Dorado Hills Town Center Apartments) was not included in the model because the application for that project was submitted after the traffic study for the proposed project was initiated. The traffic study for the apartment project demonstrated the change in land use from hotel to apartments would result in minimal change in traffic conditions compared to hotel use with no new or more severe impacts. The increase in residential units in the Saratoga Estates project (131 units), also not included in the model, would have minimal effect on cumulative traffic conditions. Neither project would result in any substantial difference in cumulative impacts related to traffic that would trigger a considerable impact.

forecasts are reviewed and adjusted annually as well as every five years. Routinely verifying and updating growth forecasts allows the County to account for new information and adjust its assumptions and plans accordingly. In addition, the CIP must contain identification of funding sources sufficient to develop the improvements identified. The CIP process includes identifying, prioritizing and developing funding for needed projects. The CIP includes ongoing projects started in previous years and new projects starting in the current and future fiscal years. The County Board of Supervisors has adopted CIPs on an annual basis, with the most recent CIP adopted in June ~~2015~~ 2017.

The CIP also includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements such as construction of new traffic signals, turn pockets, and the upgrade of existing traffic signal systems. The County monitors intersections with potential need for improvement through the annual *Intersection Needs Prioritization* process, which is then used to inform the annual update to the CIP. The County Board of Supervisors can add improvements to the CIP as funding becomes available.

Traffic Impact Mitigation Fee Program

The County has a traffic impact mitigation fee program that is used to fund capital improvements to the road system to mitigate traffic impacts resulting from development. The 20-year 2004 County General Plan CIP and TIM Fee Program was adopted in 2006, with the latest update completed in ~~2012~~ December 2016.

TIM fees are collected at the time of issuance of a building permit for new development. In order to ensure that adequate funding is available and sufficient revenue is collected to fund CIP projects identified to be required as a result of development and to maintain a level of service consistent with General Plan policies, the TIM Fee Program and TIM fees are adjusted and updated on an annual and 5-year basis along with the CIP.

The County considers payment of the TIM fees to satisfy the project's proportionate fair share obligations for the required improvements. A project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable (and therefore, less than significant) because the project would "implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact" (CEQA Guidelines, Section 15130[a][3]).

Through careful monitoring and implementation of the CIP and TIM Fee Program, the County has a high level of certainty that projects in the CIP will be constructed when improvements are needed and can be implemented in their entirety over time, making reliance on the implementation of CIP projects as mitigation for forecasted impacts sufficient to reduce a project's impact to less than significant.

General Plan Policy TC-Xf Mitigation Requirements[40]

If a proposed project would "worsen" conditions, as defined in the County General Plan Policy TC-Xe, mitigation measures are required. The mitigation measures must be in compliance with all County General Plan policies including Policy TC-Xa (Measure Y) and its concurrency policies (TC-Xb

[40] Voter Initiative Measure E would have replaced policy TC-Xf among others, resulting in payment of TIM fees not constituting full mitigation. However, Measure E is currently under litigation. Policies TC-Xa3, TC-Xa4, TC-Xa4, TC-Xa6, TC-Xf, and Implementation Statement 8 have been overturned. Additional litigation is anticipated, and may result in these policies being reinstated, and therefore Measure E revisions are presented in this document.

through TC-Xi). As determined by the County and in accordance with County General Plan Policies, the project is required to either construct the identified improvements, or if the identified improvement is included in the County's 10-year CIP to begin construction. Payment of TIM fees will be appropriate for mitigation. If constructed by the applicant, the applicant would be subject to fee credit or reimbursement through the County's TIM Fee Program.

If the project's mitigation improvement is constructed by others prior to construction of the project, payment of TIM fees would satisfy the project's fair share obligation toward this improvement.

As allowed under state law, the County and project may establish an Area of Benefit for improvements excluded from the County's TIM Fee Program, to equitably distribute costs of such improvements on a proportionate fair share basis. All public improvements are subject to review and approval by the County, and are implemented through an encroachment permit or Road Improvement Agreement, as determined by the County.

Development of Mitigation Measures

If the proposed project would result in a cumulatively considerable impact requiring mitigation, the project applicant would be responsible for its proportional share, as approved by the County, of the proposed mitigation under cumulative conditions. The project applicant is required to work with the County during the development agreement phase, or development of the public financing plan or like process, to determine its proportional share. Appropriate mitigation may include construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share, payment of traffic impact mitigation fees if the project is added to the County's 10-year CIP, or proportional share payment.

Applicability and Timing of Mitigation Measures Relative to Future Cumulative Impacts

The traffic impact study prepared for this Draft EIR used the best information available to estimate the project's traffic in combination with existing and cumulative (2035) conditions. Buildout of the proposed project and the associated impacts on traffic operations will be dictated by market demands and could take several years. It is possible that by the time construction of the project occurs in the future, certain mitigation measures set forth in this Draft EIR may not be appropriate or necessary in light of completed construction, alternative funding program(s), obligations of another project to construct the identified improvements, or failure of other development projects to move forward to construction, resulting in less traffic than anticipated in the traffic impact study. Under such conditions, the project applicant may request an updated traffic analysis in conjunction with the review of a final map, tentative map, site plan review, or building permit application. The applicant would be responsible for funding all costs associated with the preparation of the updated traffic analysis. Based on the supplemental traffic analysis provided, and at the discretion of the County, the timing of the improvements may be modified.

The 2017 updated traffic analysis evaluated near-term conditions (10 years beyond baseline or 2027) for traffic impacts in compliance with the spirit of Voter Initiative Measure E. These impacts and associated mitigation measures are presented in Section 3.14, *Traffic and Transportation*.

The Final Environmental Impact Report (FEIR) and traffic study conducted for the CEDHSP reveals that the following intersection which the subdivision will contribute additional traffic and which is forecast to operate at LOS F under cumulative conditions (year 2035)is Silva Valley Parkway and Appian Way. The traffic impact and mitigation discussion beginning on page 5-30 has been revised to reflect the results of the updated traffic study. Tables 5-5 and 5-6 within that discussion have been replaced to reflect the most recent traffic information.

Voter Initiative Measure E (Initiative to Reinstate Measure Y's Original Intent – No More Paper Roads), which became effective on July 29, 2016, modified General Plan policies TC-Xa, TC-Xf, and TC-Xg related to maintaining level of service (LOS) standards for County roads and highways. Specifically, Measure E required that roadway improvements be constructed by development projects when LOS is expected to be below LOS standards of the Circulation Element of the General Plan.[41] *This amendment was overturned, but further litigation is expected, and therefore it is addressed in this document. The proposed mitigation measure CUM-A in the Final EIR has been modified to require the construction of the improvement by the project and a subsequent traffic study for each development application under the CEDHSP and which demonstrates the continued need for improvements to be constructed by the CEDHSP consistent with Policy TC-Xf.*

Traffic and Circulation Impacts

Intersections

Analysis results for intersections, presented in Table 5-5, indicate that all but one~~most~~ study intersection~~s~~, Silva Valley Parkway/Appian Way (Intersection 5), would operate acceptably under cumulative conditions~~, except for the following, which are discussed in greater detail below~~.

- ~~Silva Valley Parkway/Appian Way (Intersection 5)~~
- ~~Silva Valley Parkway/Harvard Way (Intersection 7)~~
- ~~Serrano Parkway/Silva Valley Parkway (Intersection 12)~~
- ~~El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 13)~~
- ~~Latrobe Road/Town Center Boulevard (Intersection 17)~~

[41] Measure E is currently under litigation. A court decision overturned policies TC-Xa3, TC-Xa4, TC-Xa6, and TC-Xf. An appeal is anticipated. As such, Measure E revisions are presented in this document.

Table 5-5. Intersection LOS and Delay – Cumulative Plus Project Conditions

	Intersection	Control	Cumulative Conditions (LOS/delay) A.M. Peak Hour	Cumulative Conditions (LOS/delay) P.M. Peak Hour	Cumulative Plus Project (LOS/delay) A.M. Peak Hour	Cumulative Plus Project (LOS/delay) P.M. Peak Hour
1	Green Valley Road/Francisco Drive	Signal	D/41	D/41 ~~D/47~~	D/41	D/42 ~~D/46~~
2	Green Valley Road/El Dorado Hills Blvd/Salmon Falls Road	Signal	D/40 ~~D/50~~	C/33 ~~E/56~~	D/47 ~~D/52~~	C/34 ~~D/53~~
3	Green Valley Road/Silva Valley Pkwy	Signal	C/20 ~~D/40~~	B/17 ~~C/26~~	C/20 ~~D/39~~	B/17 ~~C/26~~
4	Francisco Drive/El Dorado Hills Blvd	Signal	E/56 ~~C/27~~	D/47 ~~B/19~~	E/62 ~~C/27~~	D/48 ~~B/19~~
5	Silva Valley Pkwy/Appian Way	AWSC	**F/>180**	**F/86** ~~**F/105**~~	**F/>180**	**F/86** ~~**F/113**~~
6	El Dorado Hills Blvd/Harvard Way	Signal	D/42 ~~C/31~~	C/32 ~~C/22~~	D/49 ~~C/32~~	C/33 ~~C/23~~
7	Silva Valley Pkwy/Harvard Way	Signal	E/64 ~~**F/93**~~	C/27 ~~C/33~~	E/70 ~~**F/97**~~	C/27 ~~C/35~~
8	El Dorado Hills Blvd/Olson Lane	Signal	A/6 ~~B/13~~	A/6 ~~A/10~~	A/6 ~~B/13~~	A/6 ~~A/10~~
9	El Dorado Hills Blvd/Wilson Blvd	Signal	C/25 ~~D/52~~	B/18 ~~D/39~~	E/63	D/48 ~~E/62~~
10	El Dorado Hills Blvd/Serrano Pkwy/Lassen Lane	Signal	D/52 ~~E/58~~	C/21 ~~C/24~~	E/62 ~~E/64~~	C/28 ~~C/31~~
11	Serrano Pkwy/Penela Way	SSSC	E/64 ~~E/38~~	D/26 ~~C/21~~	E/49 ~~E/37~~	D/26 ~~C/22~~
12	Serrano Pkwy/Silva Valley Pkwy	Signal	E/70 ~~**F/99**~~	D/36 ~~**F/82**~~	E/71 ~~**F/98**~~	D/36 ~~**F/88**~~
13	El Dorado Hills Blvd/Park Drive/Saratoga Way	Signal	C/31 ~~C/34~~	D/45 ~~**F/112**~~	D/37 ~~D/45~~	D/50 ~~**F/115**~~
14	El Dorado Hills Blvd/Saratoga Way	Signal	Does not exist		Does not exist	
15	El Dorado Hills Blvd/US 50 westbound ramps/ Saratoga Way	Signal	D/45 ~~D/46~~	D/51 ~~D/43~~	D/47	D49 ~~D/43~~
16	Latrobe Road/US 50 eastbound ramps	Signal	D/46 ~~C/24~~	C/29 ~~D/34~~	D/54 ~~C/22~~	B/18 ~~C/33~~
17	Latrobe Road/Town Center Blvd	Signal	D/38 ~~E/76~~	E/68 ~~**F/173**~~	D/42 ~~**F/86**~~	E/76 ~~**F/166**~~
18	Latrobe Road/White Rock Road	Signal	E/75 ~~D/42~~	D/52 ~~E/69~~	E/67 ~~D/42~~	E/80 ~~E/78~~
19	White Rock Road/Post Street	Signal	B/15 ~~C/29~~	B/18 ~~C/34~~	B/15 ~~C/30~~	B/18 ~~C/34~~
20	White Rock Road/Valley View Drive/Vine Street	Signal	B/19	C/31 ~~D/37~~	B/19	C/31 ~~D/37~~
21	El Dorado Hills Blvd/Project Driveway North	SSSC	Does not exist		C/21 ~~B/11~~	B/12 ~~A/9~~
22	El Dorado Hills Blvd/Project Driveway South	SSSC	Does not exist		B/12 ~~A/9~~	C/23 ~~B/13~~
23	Serrano Pkwy/Project Driveway	SSSC	Does not exist		C/18 ~~C/17~~	B/15 ~~B/14~~

Intersection		Control	Cumulative Conditions (LOS/delay) A.M. Peak Hour	P.M. Peak Hour	Cumulative Plus Project (LOS/delay) A.M. Peak Hour	P.M. Peak Hour
24	Wilson Blvd/Pedregal Driveway	SSSC	Does not exist		B/11	A/9 ~~B/11~~
25	Silva Valley Pkwy/US 50 westbound ramps	Signal	A/10 ~~C/20~~	B/20 ~~B/14~~	A/10 ~~C/25~~	C/20 ~~C/21~~
26	Silva Valley Pkwy/US 50 eastbound ramps	Signal	A/3 ~~A/5~~	A/7 ~~A/9~~	A/3 ~~A/5~~	B/11 ~~A/10~~

Source: Appendix L.

Notes: **Bold** text indicates LOS worse than established threshold.

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 *Highway Capacity Manual* (Transportation Research Board 2000).

Intersections 1–12 and 18–24 are analyzed in Synchro 7. Intersections 13–17 and 25–26 are analyzed in SimTraffic.

SSSC = side-street stop-control.
AWSC = all-way stop control.

Mitigation Measure CUM-A on page 5-32 of the DEIR under the Traffic and Circulation discussion has been revised to reflect Voter Initiative Measure E; portions of this mitigation measure have been moved to revised Mitigation Measure TRA-1b for near-term impacts in Section 3.14.

Mitigation Measure CUM-A: Improve the Silva Valley Parkway/Appian Way intersection

Implementation of the following improvement~~s~~ to the Silva Valley Parkway/Appian Way intersection would result in acceptable LOS D and C operations during the A.M. and P.M. peak hours, respectively (Appendix L: 2-17 TIS, Table ~~20~~12).

- ~~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.

In order to determine the timing of implementing the mitigation measure, a supplemental traffic analysis will be prepared for each development application (at the tentative map application and at the final map application, if deemed necessary by CDS, Long Range Planning). The supplemental traffic analysis will determine LOS for existing traffic at the time of the application plus traffic generated by the proposed development. The scope of the supplemental traffic analysis will be determined by CDS, Long Range Planning. If the supplemental traffic analysis indicates that the County's LOS policies will be exceeded by the existing traffic plus traffic generated by that development application, the applicant shall construct the improvements identified above prior to issuance of any building permit for that development.

~~If the i~~Improvements shall be~~are~~ constructed by the project in coordination with~~, they shall be subject to review by~~ the CDs, Transportation Division~~., and~~ Projects within the TIM Fee Program will be eligible for reimbursement ~~or fee credit~~ for costs that exceed the project's proportional fair share~~ if the improvement is needed but not included in future updates to the CIP~~.

If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.

The following changes were made to the Traffic and Circulation Impacts and associated mitigation discussions beginning on page 5-32 to reflect the results of the 2017 updated traffic study, which demonstrated that there would not be cumulatively considerable impacts at 4 intersections and the US 50 Eastbound off-ramp to Bass Lake Road, and therefore mitigation measures CUM-B through CUM-F identified in the Draft EIR would not be required.

~~Silva Valley Parkway/Harvard Way (Intersection 7)~~

~~Under cumulative conditions, this intersection is projected to operate unacceptably at LOS F without the project during the A.M. peak hour. Unacceptable operations at this intersection would be due to a combination of increased traffic from cumulative development and changes in travel patterns associated with the US 50/Silva Valley Parkway interchange. According to established significance criteria, the project is projected to "significantly worsen" conditions because it would add more than 10 trips to the intersection during the A.M. peak hour. This would be a significant impact.~~

~~The cumulative analysis includes planned roadway improvements and growth consistent with the 2004 County 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, which includes other foreseeable but unapproved projects. Therefore, the project applicant would be responsible for its proportional share of the proposed mitigation under cumulative conditions. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's TIM Fee Program provides a mechanism for collecting fair share contributions for improvements in the 2015 CIP.~~

~~The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County monitors intersections with potential need for improvement through the annual *Intersection Needs Prioritization* process. The *Intersection Needs Prioritization* process is then used to inform the annual update to the CIP, and the County Board of Supervisors can add potential intersection improvements to the CIP as funding becomes available.~~

~~Therefore, appropriate mitigation, as determined by the CDA, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation toward this improvement or construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others. Implementation of Mitigation Measure CUM-B would reduce the cumulative impact to less than significant.~~

~~Mitigation Measure CUM-B: Improve the Silva Valley Parkway/Harvard Way intersection~~

- ~~Implementation of the following improvements to the Silva Valley Parkway/Harvard Way intersection would result in acceptable LOS D and C operations during the A.M. and P.M. peak hours respectively (Appendix L: Table 20):~~
  - ~~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.~~
- ~~If the improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is needed but not included in future updates to the CIP.~~
- ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

~~Serrano Parkway/Silva Valley Parkway (Intersection 12)~~

~~Under cumulative conditions, which includes reasonably foreseeable but not approved projects, this intersection is projected to operate unacceptably at LOS F without the project during the A.M. and P.M. peak hours. Unacceptable operations at this intersection would be due to a combination of increased traffic from cumulative development and changes in travel patterns associated with the US 50/Silva Valley Parkway interchange. According to established significance criteria, the project is projected to "significantly worsen" conditions because it would add more than 10 trips to the intersection during both the A.M. and P.M. peak hours. This would be a significant impact.~~

~~The cumulative analysis includes planned roadway improvements and growth consistent with the 2004 County 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, which includes other foreseeable but unapproved projects. Therefore, the project applicant would be responsible for its proportional share of the proposed mitigation under cumulative conditions. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth.~~

~~Option 1 – The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County monitors intersections with potential need for improvement through the annual *Intersection Needs Prioritization* process. The *Intersection Needs Prioritization* process is then used to inform the annual update to the CIP, and the County Board of Supervisors can add potential intersection improvements can be added to the CIP as funding becomes available.~~

~~Therefore, appropriate mitigation, as determined by the CDA, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation toward this improvement or construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others.~~

~~Options 2 and 3 – These improvement options are not in 2015 CIP. Therefore, the project applicant shall work with the County during the development agreement phase or development of the public financing plan or like process, to determine its proportional share. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. Appropriate mitigation, as determined by the CDA, may include construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share, payment of TIM fees if the project is added to the County's 10-year CIP, or proportional share payment.~~

~~Implementation of Mitigation Measure CUM-C would reduce the cumulative impact to less than significant.~~

~~Mitigation Measure CUM-C: Improve the Serrano Parkway/Silva Valley Parkway intersection.~~

- ~~Implementation of any one of the following options would result in acceptable LOS E or better operations during the A.M. and P.M. peak hours (Appendix L: Table 20):~~
    - ~~Option 1 – Implement CIP #72141 with a separate right-turn lane on the westbound approach. CIP #72141, which is scheduled for construction in 2015, will install split-phase signal operation on the eastbound and westbound approach and restripe the westbound approach to provide one left-turn lane, a shared left-turn/through lane, and a shared through/right-turn lane on the westbound approach.~~

      ~~If the Option 1 improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is needed but not included in future updates to the CIP or constructed by others.~~

      ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~
    - ~~Option 2 – Construct two-lane extension of Country Club Drive from Silva Valley Parkway to connect with CIP #GP125, which will construct Country Club Drive from the west Bass Lake Hills Specific Plan boundary to Silver Dove Road.~~
    - ~~Option 3 – Construct two-lane extension of Russi Ranch Drive from Village Green Drive to Silva Valley Parkway.~~

      ~~If the Option 2 or Option 3 improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is added to the County's 10-year CIP. The applicant shall work with the County during the development agreement phase, or development of the public financing plan, or like process to determine its proportional share.~~

      ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

~~*El Dorado Hills Boulevard/Park Drive/Saratoga Way (Intersection 13)*~~

~~Under cumulative conditions, which includes reasonably foreseeable but not approved projects, this intersection is projected to operate unacceptably at LOS F without the project during the P.M. peak hour. Unacceptable operations at this intersection would be due to a combination of increased traffic from cumulative development and due to changes in travel patterns associated with the Silva Valley Parkway interchange and the Saratoga Way Extension project. According to established significance criteria, the project is projected to "significantly worsen" conditions because it would add more than 10 trips to the intersection during the P.M. peak hour. This would be a significant impact.~~

~~The cumulative analysis includes planned roadway improvements and growth consistent with the 2004 County 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, which includes other foreseeable but unapproved projects. Therefore, the project applicant would be responsible for its proportional share of the proposed mitigation under cumulative conditions. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's TIM Fee Program provides a mechanism for collecting fair share contributions for improvements in the 2015 CIP.~~

~~The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County monitors intersections with potential need for improvement through the annual *Intersection Needs Prioritization* process. The *Intersection Needs Prioritization* process is then used to inform the annual update to the CIP, and the County Board of Supervisors can add potential intersection improvements to the CIP as funding becomes available.~~

~~Therefore, appropriate mitigation, as determined by the CDA, would include payment of TIM fees to satisfy the project's fair share obligation toward this improvement or construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others.~~

~~Implementation of Mitigation Measure CUM-D would reduce the cumulative impact to less than significant.~~

~~**Mitigation Measure CUM-D: Improve the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection.**~~

- ~~Implementation of the following improvements would result in acceptable LOS D operations during the P.M. peak hours (Appendix L: Table 20):~~
  - ~~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 eastbound 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~~

- ~~If the improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is needed but not included in future updates to the CIP.~~
- ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

~~Latrobe Road/Town Center Boulevard (Intersection 17)~~

~~Under cumulative conditions, which includes reasonably foreseeable but not approved projects, this intersection would operate unacceptably at LOS F during the A.M. and P.M. peak hours without the project. Unacceptable operations would be due to a combination of increased traffic from cumulative development and changes in travel patterns associated with the US 50/Silva Valley Parkway interchange. According to established significance criteria, the project is projected to "significantly worsen" conditions because it would add more than 10 trips to the intersection during the A.M. and P.M. peak hours. This would be a significant impact.~~

~~The cumulative analysis includes planned roadway improvements, and growth consistent with the 2004 County 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, which includes other foreseeable but unapproved projects. Therefore, the project applicant would be responsible for its proportional share of the proposed mitigation under cumulative conditions. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's TIM Fee Program provides a mechanism for collecting fair share contributions for improvements in the 2015 CIP.~~

~~The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County monitors intersections with potential need for improvement through the annual *Intersection Needs Prioritization* process. The *Intersection Needs Prioritization* process is then used to inform the annual update to the CIP, and the County Board of Supervisors can add potential intersection improvements to the CIP as funding becomes available.~~

~~Therefore, appropriate mitigation, as determined by the CDA, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation toward this improvement or construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others.~~

~~Implementation of Mitigation Measure CUM-E would reduce the cumulative impact to less than significant.~~

~~**Mitigation Measure CUM-E: Improve the Latrobe Road/Town Center Boulevard intersection.**~~

- ~~Implementation of the following improvements would result in acceptable LOS D and E operations during the A.M. and P.M. peak hours(Appendix L: Table 20):~~
  - ~~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~~
- ~~If the improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is needed but not included in future updates to the CIP.~~
- ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

Roadway Segments

Analysis results for roadway segments, presented in Table 5-6, indicate that all study roadway segments would operate acceptably under cumulative conditions.

Table 5-6. Roadway Segment Peak Hour Level of Service – Cumulative Plus Project Conditions

			Cumulative Volume/Volume to Capacity Ratio/LOS		Cumulative + Project Volume/ Volume to Capacity Ratio/LOS	
Roadway	Segment	Facility Type	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
El Dorado Hills Blvd	Green Valley Road to Francisco Drive	2-lane arterial	510/0.31/C[a]	540/0.33/C[a] ~~460/0.28/C[a]~~	530/0.32/C[a] ~~440/0.28/C[a]~~	530/0.32/C[a] ~~420/0.27/C[a]~~
	Francisco Drive to Governor Drive	2-lane arterial	1,540/0.93/D ~~1,515/0.92/D~~	1,570/0.95/E ~~1,564/0.95/E~~	1,560/0.94/E ~~1,535/0.93/D~~	1,570/0.95/E ~~1,554/0.94/E~~
	Governor Drive to Wilson Blvd	4-lane divided arterial	2,250/0.68/D ~~2,260/0.69/D~~	2,340/0.71/D ~~2,290/0.70/D~~	2,300/0.70/D	2,350/0.71/D ~~2,290/0.70/D~~
	Wilson Blvd to Serrano Pkwy	4-lane divided arterial	2,470/0.75/D ~~2,640/0.80/D~~	2,700/0.82/D ~~2,790/0.85/D~~	2,730/0.83/D ~~2,740/0.83/D~~	2,940/0.89/D ~~2,840/0.86/D~~
	Serrano Pkwy to Saratoga Way	5-lane divided arterial	2,830/0.69/D ~~3,170/0.77/D~~	3,310/0.81/D ~~3,400/0.83/D~~	3,110/0.76/D ~~3,310/0.81/D~~	3,620/0.88/D ~~3,520/0.86/D~~
	Saratoga Way to US 50	7-lane divided arterial	2,320/0.43/C[a] ~~2,700/0.50/C[a]~~	3,030/0.56/C[a] ~~2,900/0.54/C[a]~~	2,560/0.47/C[a] ~~2,700/0.50/C[a]~~	3,240/0.60/D ~~3,050/0.56/C[a]~~

Roadway	Segment	Facility Type	Cumulative Volume/Volume to Capacity Ratio/LOS		Cumulative + Project Volume/ Volume to Capacity Ratio/LOS	
			A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Latrobe Road	US 50 to Town Center Blvd	7-lane arterial	4,100/0.76/D ~~4,360/0.80/D~~	4,610/0.85/D ~~5,080/0.94/D~~	4,130/0.76/D ~~4,380/0.81/D~~	4,670/0.86/D ~~5,110/0.94/D~~
	Town Center Blvd to White Rock Road	6-lane divided arterial	3,500/0.74/D ~~3,090/0.66/D~~	3,490/0.74/D ~~3,340/0.71/D~~	3,530/0.75/D ~~3,110/0.66/D~~	3,500/0.74/D ~~3,440/0.71/D~~
	White Rock Road to Golden Foothill Pkwy	6-lane divided arterial	2,990/0/63/D 2,270/0.48/C[a]	2,950/0.63/D 2,660/0.56/C[a]	2,980/0.63/D 2,300/0.49/C[a]	2,950/0/63/D 2,670/0.57/C[a]
	Golden Foothill Pkwy to Sun Ridge Meadow Road	4-lane arterial undivided	1,580/0.50/C[a] ~~1,600/0.51/C[a]~~	1,570/0.50/C[a] ~~1,590/0.51/C[a]~~	1,580/0.50/C[a] ~~1,600/0.51/C[a]~~	1,560/0.50/D ~~1,590/0.51/C[a]~~
	Sun Ridge Meadow Road to S. Shingle Road	2-lane arterial	570/0.35/C[a] ~~590/0.36/C[a]~~	590/0.36/C[a] ~~610/0.37/C[a]~~	570/0.35/C[a] ~~590/0.36/C[a]~~	580/0.35/C[a] ~~600/0.36/C[a]~~
White Rock Road	Scott Road to Four Seasons Drive	4-lane divided arterial	1,990/0.60/D ~~1,570/0.48/C[a]~~	2,660/0.81/D ~~2,010/0.61/D~~	1,980/0.60/D ~~1,560/0.47/C[a]~~	2,640/0.80/D ~~2,040/0.62/D~~
	Four Seasons Drive to Latrobe Road	4-lane divided arterial	2,100/0.64/D ~~1,650/0.50/C[a]~~	2,700/0.82/D ~~1,980/0.60/D~~	2,110/0.64/D ~~1,640/0.50/C[a]~~	2,700/0.82/D ~~2,000/0.61/D~~
	Latrobe Rd to Vine Street	6-lane divided arterial	1,480/0.31/C[a]	1,890/0.40/C[a] ~~1,730/0.37/C[a]~~	1,500/0.32/C[a] ~~1,490/0.32/C[a]~~	1,880/0.40/C[a] ~~1,780/0.38/C[a]~~
	Vine Street to US 50	6-lane divided arterial	1,810/0.38/C[a] ~~1,740/0.37/C[a]~~	2,390/0.51/C[a] ~~2,240/0.48/C[a]~~	1,840/0.39/C[a] ~~1,730/0.37/C[a]~~	2,370/0.50/C[a] ~~2,260/0.48/C[a]~~
Silva Valley Pkwy	Green Valley Road to West Glenmore ~~Glenwood~~ Way	2-lane arterial	760/0.46/C[a] ~~930/0.56/D~~	650/0.39/C[a] ~~900/0.55/D~~	730/0.44/C[a] ~~920/0.56/D~~	640/0.39/C[a] ~~910/0.55/D~~
	West Glenmore ~~Glenwood~~ Way to Appian Way	2-lane arterial	760/0.46/C[a] ~~780/0.47/C[a]~~	870/0.53/C[a] ~~900/0.55/D~~	760/0.46/C[a] ~~770/0.47/C[a]~~	870/0.53/C[a] ~~900/0.55/D~~
	Appian Way to Harvard Way	2-lane arterial	1,100/0.67/D ~~1,090/0.66/D~~	1,010/0.61/D ~~1,030/0.62/D~~	1,100/0.67/D ~~1,110/0.67/D~~	1,010/0.61/D
	Harvard Way to Serrano Pkwy	4-lane divided arterial	2,000/0.61/D ~~2,130/0.65/D~~	1,540/0.47C[a] ~~1,880/0.57/D~~	2,040/0.62/D ~~2,160/0.66/D~~	1,580/0.48/C[a] ~~1,900/0.58/D~~
	Serrano Pkwy to US 50	4-lane arterial	1,890/0.57/D ~~2,650/0.81/D~~	2,260/0.69/D ~~2,590/0.79/D~~	1,920/0.58/D ~~2,660/0.81/D~~	2,290/0.70/D ~~2,610/0.79/D~~
Serrano Pkwy	El Dorado Hills Blvd to Silva Valley Pkwy	2-lane arterial	1,080/0.65/D ~~1,010/0.61/D~~	950/0.58/D ~~920/0.56/D~~	1,070/0.71/D ~~1,000/0.61/D~~	1,020/0.62/D ~~920/0.56/D~~
	Silva Valley Pkwy to Villagio Drive	4-lane divided arterial	1,860/0.57/D ~~1,830/0.56/C[a]~~	1,940/0.59/D ~~1,720/0.52/C[a]~~	1,870/0.57/D ~~1,800/0.55/C[a]~~	1,960/0.60/D ~~1,750/0.53/C[a]~~
	Villagio Drive to Bass Lake Road	2-lane arterial	1,030/0.62/D ~~1,010/0.61/D~~	1,230/0.75/D ~~1,100/0.67/D~~	1,040/0.63/D ~~1,100/0.61/D~~	1,240/0.75/D ~~1,100/0.67/D~~
Saratoga Way	El Dorado Hills Blvd to Arrowhead Drive	2-lane arterial	1,240/0.75/D 1,050/0.64/D	1,550/0.94/E 1,540/0.94/E	1,300/0.79/D 1,110/0.67/D	1,580/0.96/E 1,560/0.95/E
Wilson Blvd	El Dorado Hills Blvd to Ridgeview Drive	4-lane undivided arterial	560/0.18/C[a] ~~550/0.18/C[a]~~	510/0.16/C[a]	550/0.18/C[a]	510/0.16/C[a]
Olson Lane/ Gillette Drive	El Dorado Hills Blvd to Gillette Drive	2-lane arterial	310/0.19/C[a]	300/0.18/C[a]	310/0.19/C[a]	300/0.18/C[a]
Harvard Way	El Dorado Hills Blvd to Silva Valley Pkwy	4-lane undivided arterial	1,720/0.55/C[a] ~~1,370/0.44/C[a]~~	1,290/0.41/C[a] ~~830/0.27/C[a]~~	1,700/0.54/Ca ~~1,380/0.44/C[a]~~	1,280/0.41/C[a] ~~840/0.27/C[a]~~

Source: Appendix L.

Note: 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 Draft EIR (El Dorado County 2003).

[a] LOS at this location is C or better.

Freeway Facilities

The *Highway Capacity Manual* (Transportation Research Board 2010) includes three different tiers of analysis for freeway facilities—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 versus 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. 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 cumulative analysis 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 County General Plan Policy TC-Xd and Caltrans traffic impact study guidelines.

Analysis results for freeway facilities, presented in Table 5-7, indicate that all study freeway facilities will operate acceptably under cumulative conditions~~, except for the eastbound off-ramp diverge influence area at the US 50/Bass Lake Road interchange, which would operate unacceptably at LOS E during the P.M. peak hour~~ without or with the proposed project. ~~According to established significance criteria, the project is projected to "significantly worsen" conditions at this location, since the project would result in an increase of more than 10 trips to the off-ramp during the PM peak hour. The capacity-increasing projects in the County's CIP, which are listed above and described in Appendix L, Table 14, include many projects that will add to the 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.~~

Table 5-7. Freeway Facility Peak Hour Level of Service – Cumulative Plus Project Conditions

Freeway	Segment	Facility Type	Cumulative Density[a]/LOS A.M.	Cumulative Density[a]/LOS P.M.	Cumulative + Project Density[a]/LOS A.M.	Cumulative + Project Density[a]/LOS P.M.
US 50 eastbound	Latrobe Rd off-ramp	Diverge	28/D ~~28/C~~	33/D ~~35/D~~	28/D ~~28/C~~	34/D ~~35/D~~
	El Dorado Hills Blvd off-ramp	Diverge	21/C ~~20/C~~	30/D ~~31/D~~	21/C ~~20/C~~	30/D ~~31/D~~
	El Dorado Hills Blvd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)[b]	20/B ~~22/C~~	29/D ~~37/E~~	20/B ~~23/C~~	29/D ~~21/C~~
		~~Weave (Leisch)~~	~~–/B~~	~~–/D~~	~~–/B~~	~~–/D~~
		Basic[c]	13/B	18/B	13/B	19/B
	Silva Valley Pkwy loop on-ramp	Merge	18/B ~~19/B~~	24/C ~~27/C~~	18/B ~~19/B~~	24/C ~~27/C~~
	Silva Valley Pkwy slip on-ramp	Merge	23/C ~~19/B~~	30/D ~~32/D~~	23/C ~~20/B~~	30/D ~~32/D~~
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	21/C	27/C ~~32/D~~	21/C	27/D ~~34/D~~
	Bass Lake Road off-ramp	Diverge	25/C ~~26/C~~	33/D ~~**36/E**~~	26/C	33/D ~~***37/E***~~
	Bass Lake Road on-ramp to Cambridge Road off-ramp	~~Weave (HCM)~~ ~~Weave (Leisch)[c]~~	~~30/D~~		~~31/D~~	
		Basic[c]	17/B ~~16/B~~	21/C ~~22/C~~	17/B	21/C ~~23/C~~
	Cambridge Road on-ramp to Cameron Park Drive off-ramp	Basic[c]	21/C	23/C ~~26/C~~	21/C	23/C ~~26/D~~
US 50 westbound	Cameron Park Drive on-ramp to Cambridge Road off-ramp	Weave (HCM)	47/E ~~42/E~~		48/E ~~43/E~~	
		Basic[c]	21/C	25/C ~~23/C~~	21/C	24/C ~~25/C~~
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic[c]	20/C ~~19/C~~	20/C	20/C ~~19/C~~	20/C
	Bass Lake Road on-ramp to Silva Valley Pkwy off-ramp	Basic[c]	27/D ~~29/D~~	24/C	27/D ~~29/D~~	24/C
	Silva Valley Pkwy loop on-ramp	Merge	15/B ~~16/B~~	13/B ~~14/B~~	15/B ~~16/B~~	13/B ~~14/B~~
	Silva Valley Pkwy slip on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	32/D ~~37/E~~	23/C ~~26/C~~	33/D ~~37/E~~	22/C ~~27/C~~
		Weave (Leisch)	~~–/C~~		–/C	
		Basic[c]	18/B	14/B ~~15/B~~		14/B ~~16/B~~
	El Dorado Hills Blvd on-ramp to Empire Ranch Road off-ramp	Weave (HCM)	41/E ~~43/E~~	34/D	41/E ~~44/E~~	33/D ~~34/D~~
		Weave (Leisch)	–/D	–/C	–/D	–/C

Source: Appendix L.

Notes: **Bold** text indicates LOS worse than established threshold.

Italic and underlined text identifies a potential impact.

[a] Density reported as passenger cars per mile per lane. Density is not reported for LOS F operations or weave segments. Weave segment operations are based on the Highway Capacity Manual (HCM) 2010 and Leisch Method. If the weave segment is outside the realm of weaving, it is analyzed as a basic segment.

[b] For Cumulative Plus Project P.M. peak hour conditions the facility is 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.

[c] Outside the realm of weaving section analysis due to combination of weaving volume and segment length.

~~Under cumulative conditions, the US 50 eastbound off-ramp to Bass Lake Road is projected to operate unacceptably as LOS E during the PM peak hour without the project. According to established significance criteria, the project is projected to "significantly worsen" conditions on the diverge influence area at the US 50 eastbound off-ramp to Bass Lake Road. This would be a significant impact.~~

~~The cumulative analysis includes planned roadway improvements and growth consistent with the 2004 County 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, which includes other foreseeable but unapproved projects. Therefore, the project applicant would be responsible for its proportional share, as approved by County, of the proposed mitigation under cumulative conditions. The project applicant shall work with the County during the development agreement phase, or development of the public financing plan or like process, to determine its proportional share. Because the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth.~~

~~Appropriate mitigation, as determined by CDA, may include construction of the improvement with reimbursement or fee credit for costs that exceed the project's proportional share, payment of TIM fees if the project is added to the County's 10-year CIP, or proportional share payment if constructed by others~~

~~Implementation of the Mitigation Measure CUM-F would reduce the cumulative impact to less than significant.~~

~~Mitigation Measure CUM-F: Improve US 50 Eastbound Off-Ramp to Bass Lake Road.~~

~~Implementation of any one of the following options would result in acceptable LOS D or better operations during the P.M. peak hours (Appendix L: Table 21):~~

- ~~Option 1 – Implement the US 50/Bass Lake Road Interchange Improvements Phase 1 (CIP #7133). Phase 1 is in the County's 10-year CIP with construction scheduled for fiscal year 2025-26. Specific design characteristics are not known at this time but will include ramp widening, roadway widening, and the addition of a westbound auxiliary lane between Bass Lake Road and Silva Valley Parkway. Implementation of a standard deceleration lane with the interchange improvements will provide acceptable LOS D or better operations during the P.M. peak hour.~~

  ~~If the Option 1 improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is needed but not included in future updates to the CIP or constructed by others.~~

  ~~If the improvements at this intersection are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

- ~~Option 2 – Construct two-lane extension of Country Club Drive from Silva Valley Parkway to connect with CIP #GP 125, which will construct Country Club Drive from the west Bass Lake Hills Specific Plan boundary to Silver Dove Road.~~
- ~~Option 3 – Construct a standard deceleration lane on the eastbound off-ramp to Bass Lake Road.~~

~~If the Option 2 or Option 3 improvements are constructed by the project, they shall be subject to review by the CDA, Transportation Division, and will be eligible for reimbursement or fee credit for costs that exceed the project's proportional fair share if the improvement is added to the County's 10-year CIP. The applicant shall work with the County during the development agreement phase, or development of the public financing plan, or like process to determine its proportional share.~~

~~If the improvements are constructed by the County or others, payment of TIM fees will satisfy the project's fair share obligation toward this improvement.~~

Chapter 6, Report Preparers

Richard Walter reviewed the Greenhouse Gas Emissions text for the Recirculated DEIR and was added to the Report Preparers chapter.

In response to comment I-4-8, education and years of experience were added for each ICF International preparer.

6.2 ICF International

- Maggie Townsley—Project Director, M.S. Community and Regional Planning, University of Texas, Austin; 26 years environmental planning experience
- Shahira Ashkar—Project Manager, EIR preparation, technical oversight, *Cultural Resources, Alternatives Overview, Other CEQA Considerations*, M.A., Anthropology (Archaeology emphasis), University of Arizona, Tucson; 21 years environmental planning experience
- Tina Sorvari—Project Coordinator, *Alternatives Overview, Other CEQA Considerations*, B.S., Anthropology, California State University, Sacramento; 15 years environmental planning experience
- Terry Rivasplata—CEQA Review, B.S. Environmental Planning and Management, University of California, Davis; 38 years environmental planning experience
- Sally Zeff—CEQA Review, M.U.P., Urban Planning, University of Michigan; 30 years environmental planning experience
- Richard Walter—Greenhouse Gas Emissions Review, MA, International Relations/ Energy, Environment, Science, and Technology, The Johns Hopkins University School for Advanced International Relations; 24 years environmental planning experience
- Jennifer Stock—*Aesthetics*, B.L.A., Landscape Architecture, Pennsylvania State University, University Park; 17 years environmental planning experience
- Laura Yoon—*Air Quality and Greenhouse Gas Emissions*, M.S., Environmental Management, University of San Francisco; 11 years environmental planning experience
- Shannon Hatcher—*Air Quality and Greenhouse Gas Emissions*, B.S. Environmental Science and Environmental Health and Safety, Oregon State University; 16 years environmental planning experience

- Lisa Webber—*Biological Resources*, M.S., Botany, University of Massachusetts, Amherst; 26 years environmental planning experience
- Rachel Gardiner—*Biological Resources*, M.S., Wildlife Ecology, Simon Fraser University; 15 years environmental planning experience
- Christiaan Havelaar—*Cultural Resources*, B.A., Anthropology, California State University, Sacramento; 17 years environmental planning experience
- Monte Kim—*Cultural Resources*, Ph.D., History, University of California, Santa Barbara; 10 years environmental planning experience
- Jeff Peters—*Geology and Soils, Hydrology, Water Quality and Water Resources*, M.A., Geography, University of Oregon; 14 years environmental planning experience
- Tom Stewart—*Mineral Resources*, Ph.D., Geography, University of Alberta; 26 years environmental planning experience
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Appendices

Added text to Appendix C 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 insert 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.

For clarification, the text of EDCAQMD Rule 223-2 has been added to the end of Draft EIR Appendix D, and appended to the end of this Final EIR.

An ORMP study prepared by ECORP has been added to Appendix F, and appended to this Final EIR, to address revisions to the County's policy regarding oak trees and oak woodland.

In response to comment I-11-77, the traffic calculation tables have been added to the end of Draft EIR Appendix L and appended to the end of this Final EIR.

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 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, **o**r
      . 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; <u>and</u> H2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed <u>25</u> feet or beyond property line in any direction; <u>and</u> 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; <u>and</u> I2 Maintain at least six inches of freeboard on haul vehicles traveling off-site; <u>and</u> I3 Stabilize or adequately wet material while transporting to reduce fugitive dust emissions; <u>and</u> 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; <u>and</u> 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; <u>and</u> 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; <u>and</u> O2 Stabilize or maintain adequate moisture on all haul routes; <u>and</u> 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; <u>and</u> 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; <u>and</u> 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); <u>and</u> 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. must 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; or 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; or 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; or 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
<u>CONTINGENCY</u> 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; <u>and</u> 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; <u>or</u> B2 Apply chemical stabilizers prior to wind event; <u>or</u> 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; <u>or</u> B4 Take the actions specified in Table 5, control action F3; <u>or</u> 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; <u>or</u> C2 Apply water twice per hour during active operation; <u>or</u> C3 Stop all vehicular traffic, except for dust mitigation equipment.
Open storage piles	D1 Apply water twice per hour; <u>or</u> D2 Install temporary coverings.
Bulk Material Transport	E1 Cover all haul vehicles; <u>or</u> 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 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

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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*).

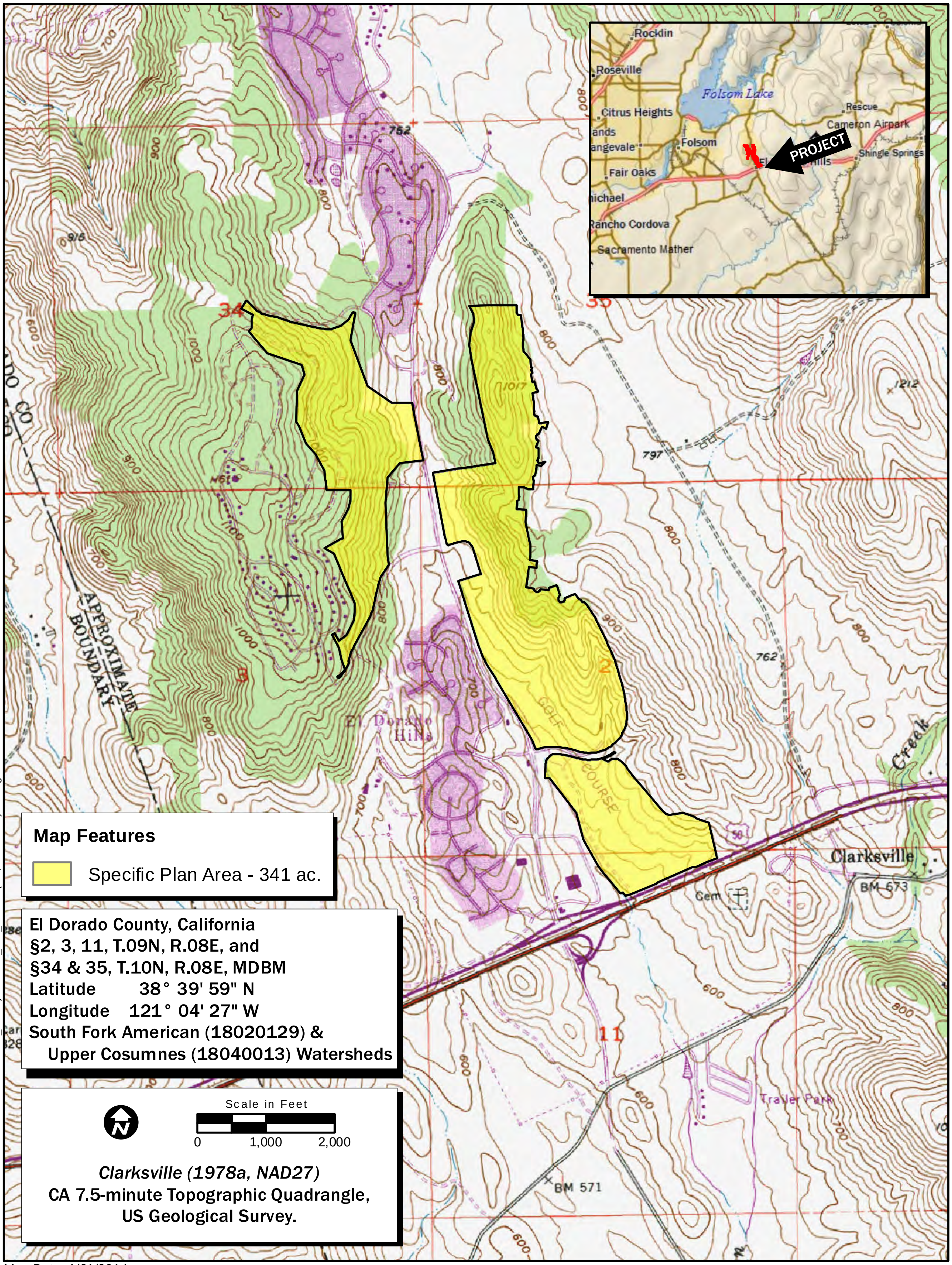
The Project is located within portions of Sections 2, 3, 11, of Township 9 North, Range 8 East and portions of Sections 34 and 35 of Township 10 North, Range 8 East of the “Clarksville, California” 7.5-minute topographic quadrangle (U.S. Geological Survey [USGS] 1978a). The Project is located at approximately 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).*



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Map Date: 1/31/2014
Service Layer Credits: Copyright:© 2012 DeLorme

Figure 1. Project Location and Vicinity

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2012-019 Central El Dorado Hills Specific Plan

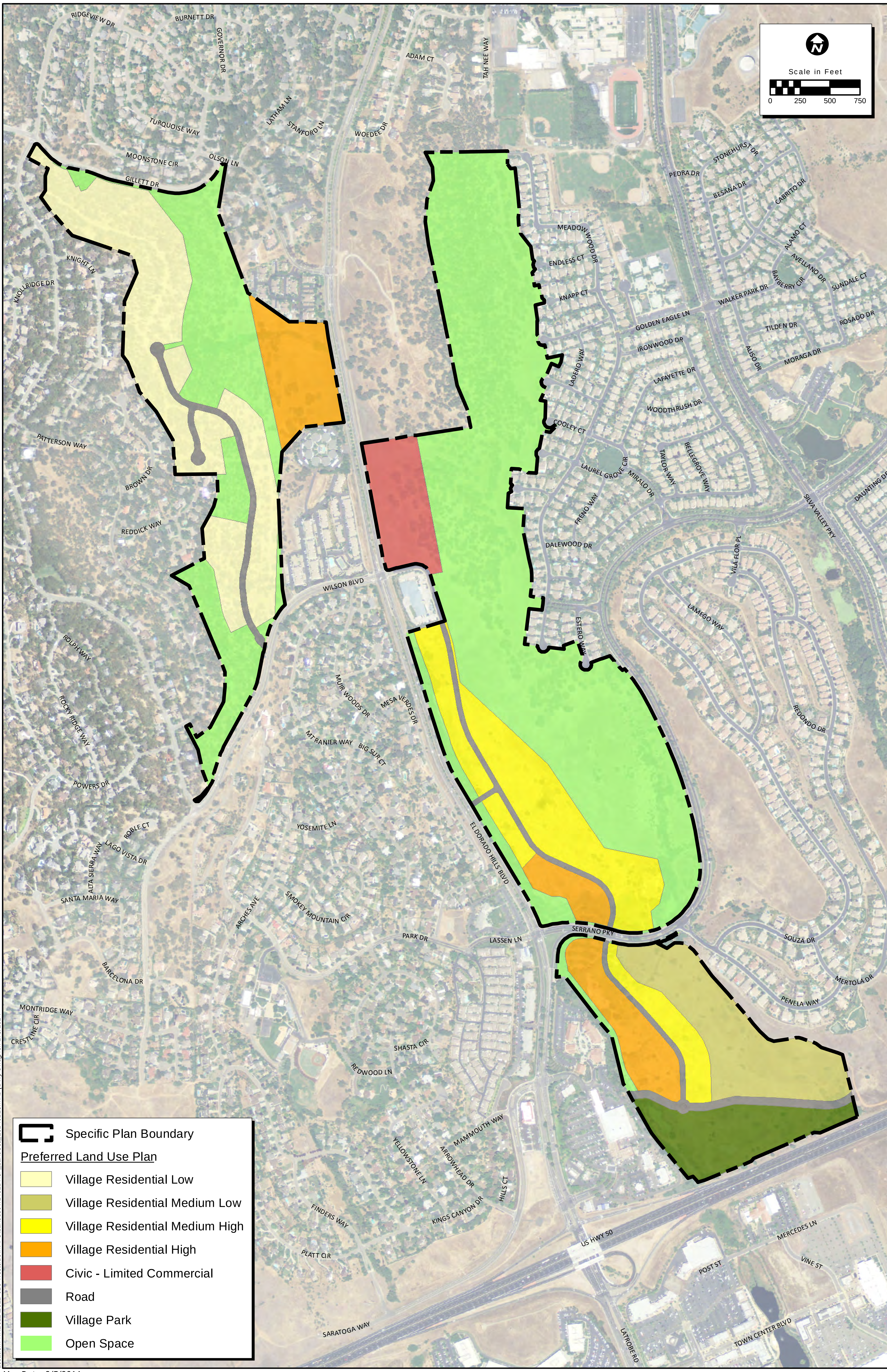

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Photo Source: NAIP (2012)

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.

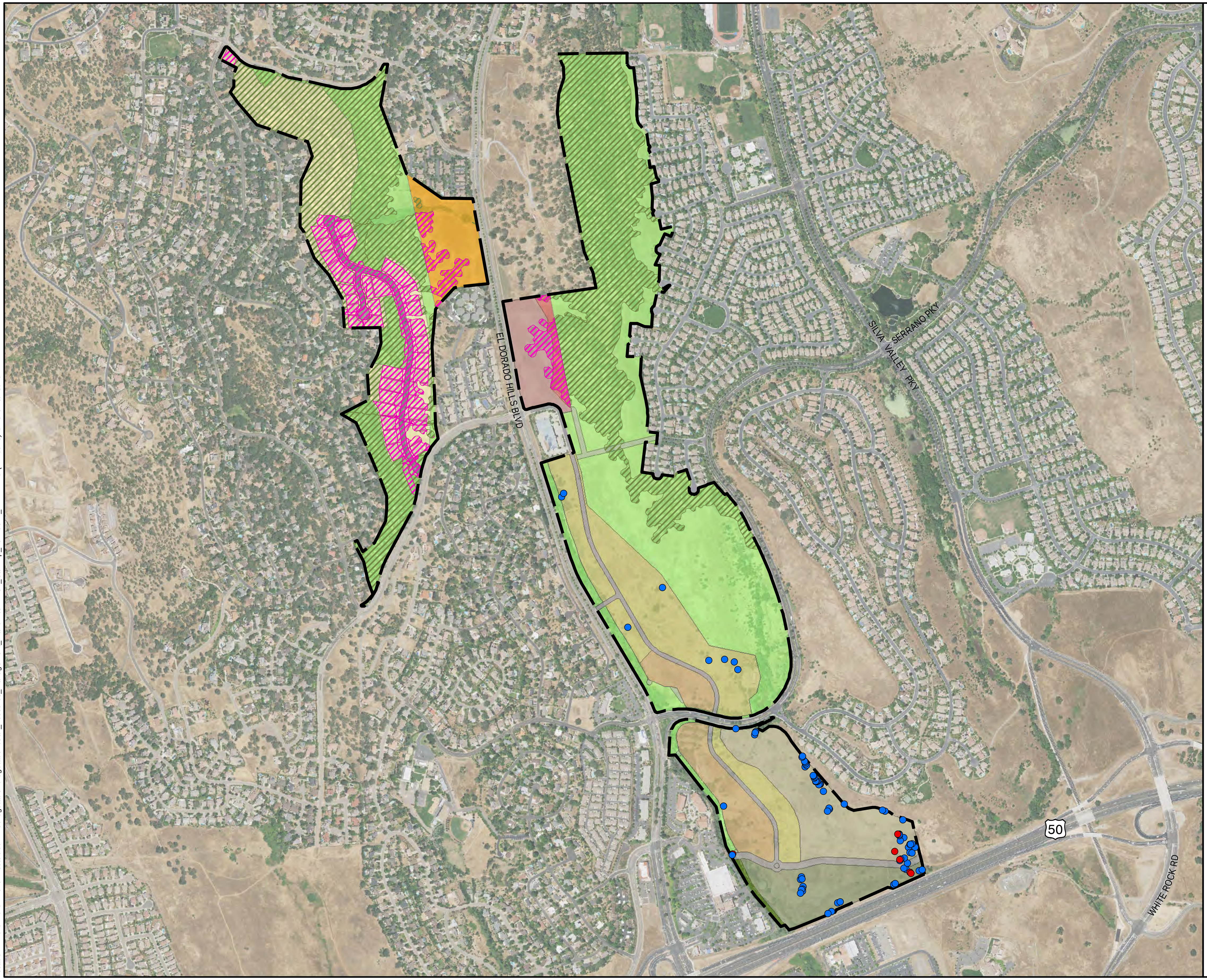


Figure 3.
On-Site Oak Resources

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

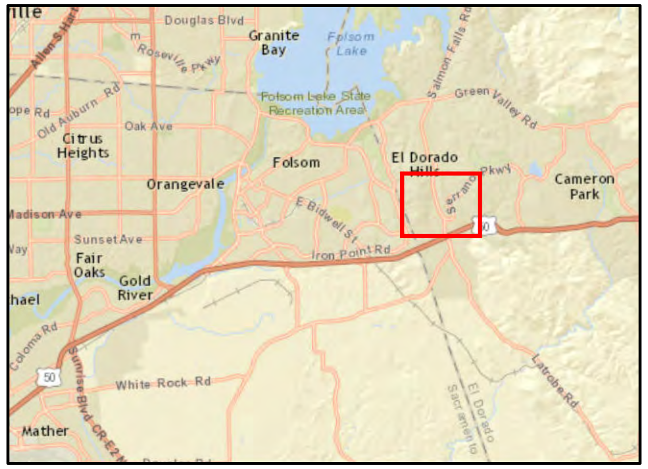
Road

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



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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: 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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Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands in the Central El Dorado Hills Specific Plan

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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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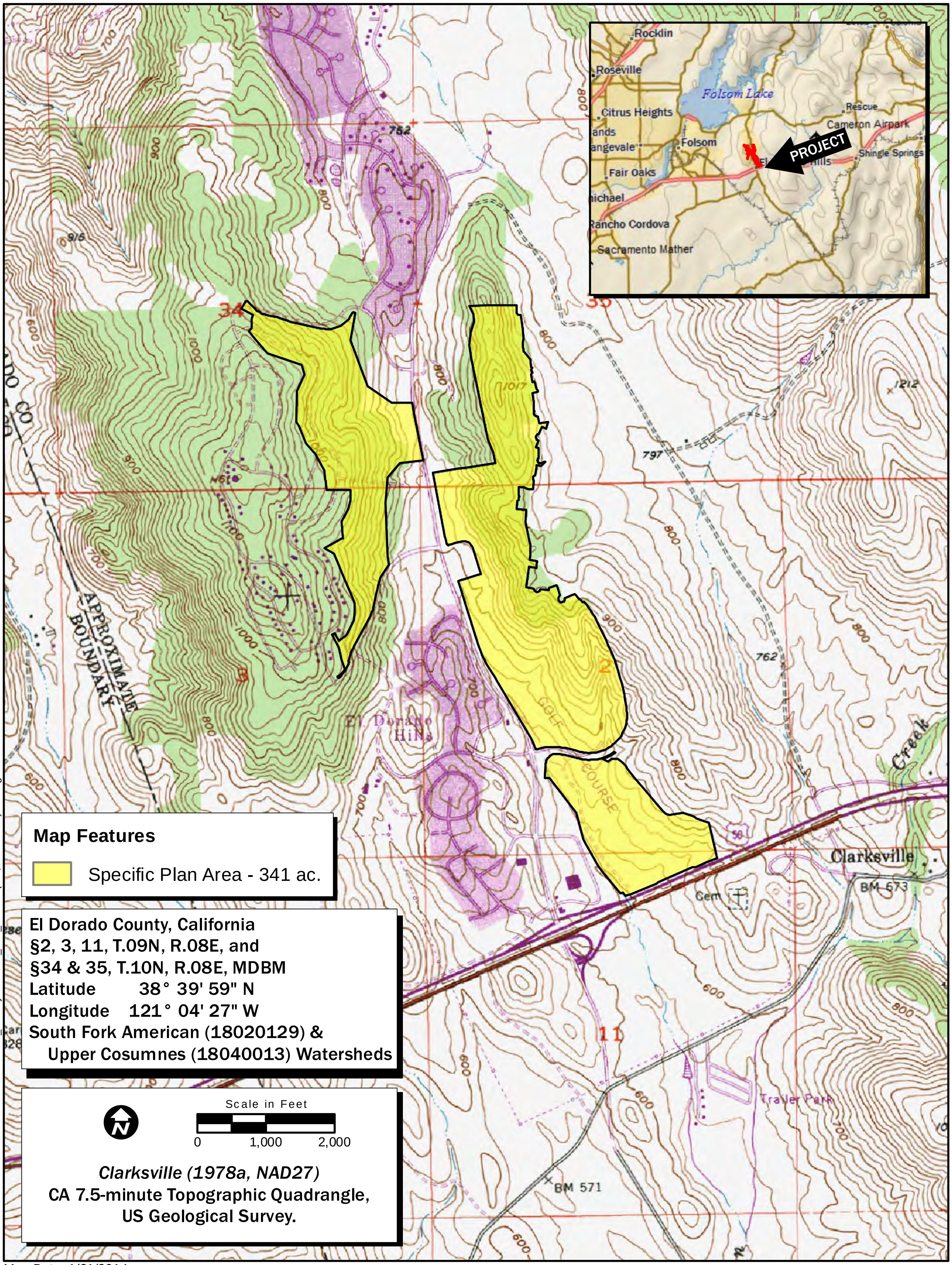

Map Date: 1/31/2014
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Figure 1. Project Location and Vicinity

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2012-019 Central El Dorado Hills Specific Plan

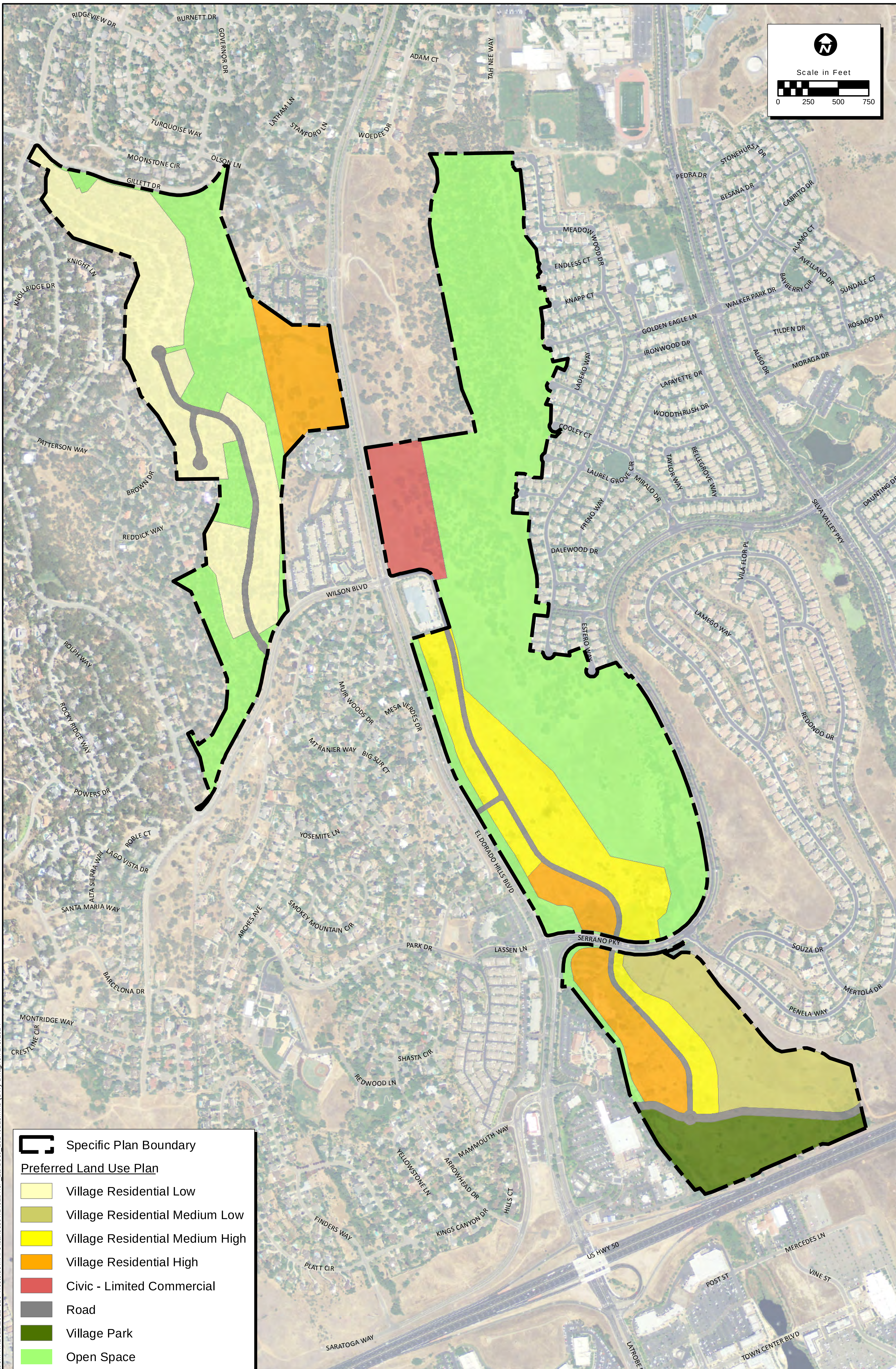

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Photo Source: NAIP (2012)

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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

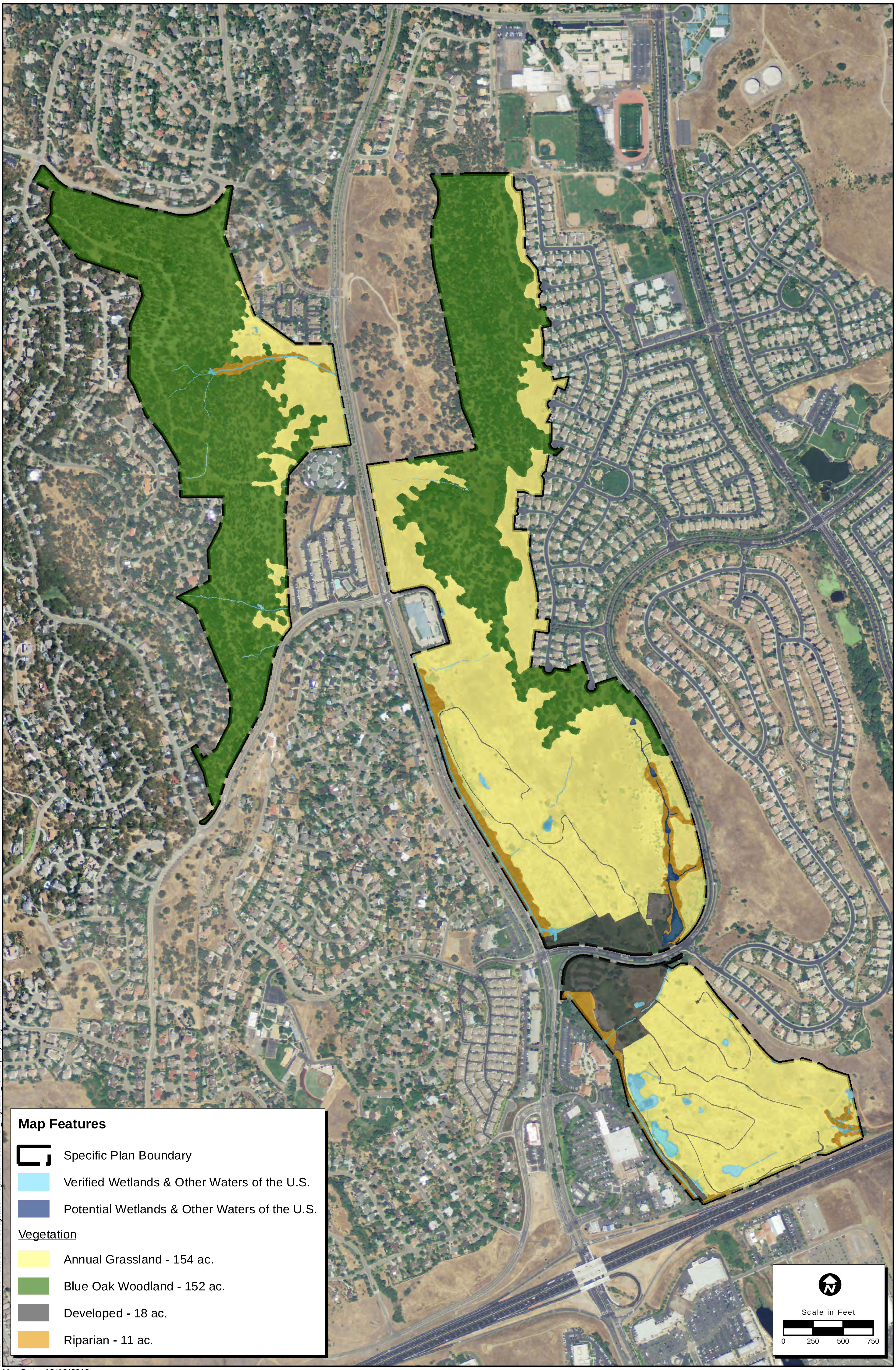
Vegetation communities were digitized using a WACOM Cintiq 21UX DTZ-2100D LCD Pen Tablet and ArcView 10.1 onto a high-resolution 0.5-foot pixel, 1"=100' aerial photograph flown in April 2008 (Merrick and Company 2008). Lidar data were used to distinguish height classes of vegetation. Additionally, lidar 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.



Location: N:\2012\2012-019 Westside\MAPS\Vegetation\Vegetation\v3\CEDHSP_Vegetation_v3.mxd (DW)-dwagnon 12/12/2013

Map Date: 12/12/2013
Photo Source: NAIP (2012)

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Figure 3. Vegetation Communities

2012-019 Central El Dorado Hills Specific Plan

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

2012-019 Central El Dorado Hills Specific Plan

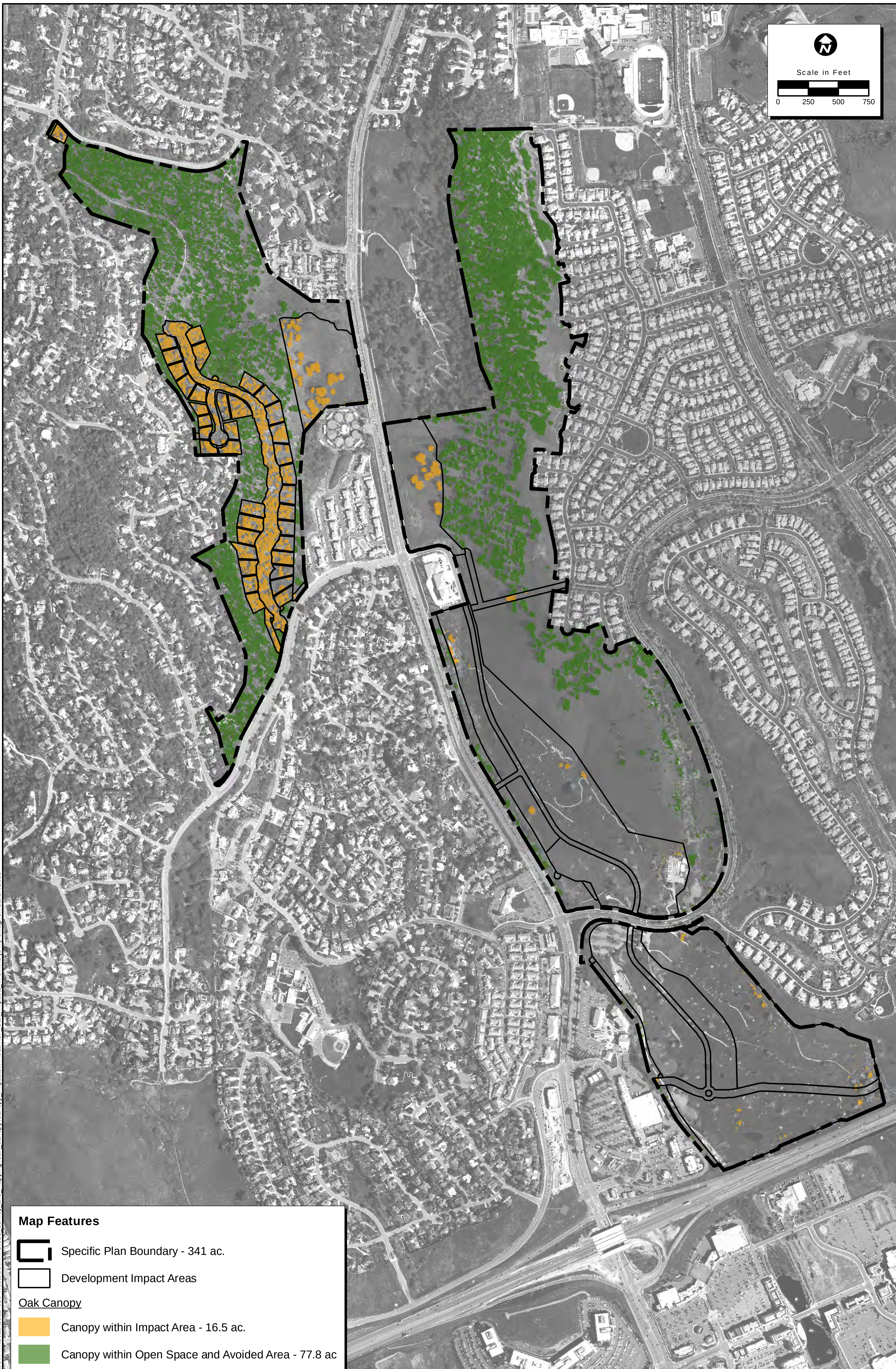
2.2 Impact Analysis

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

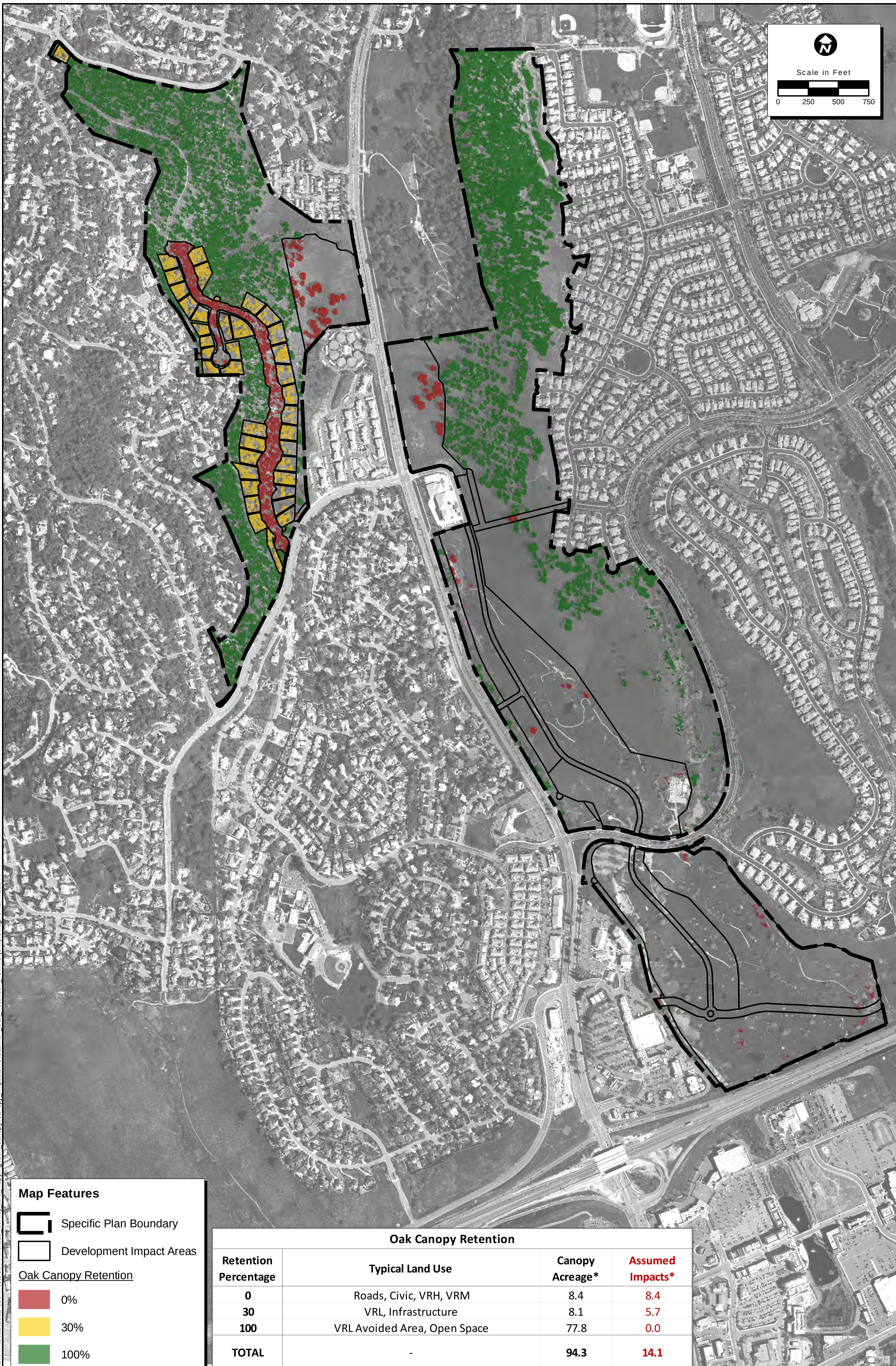
**Area calculated in square feet and converted to acreage. Some rounding errors may occur.*

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.

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.

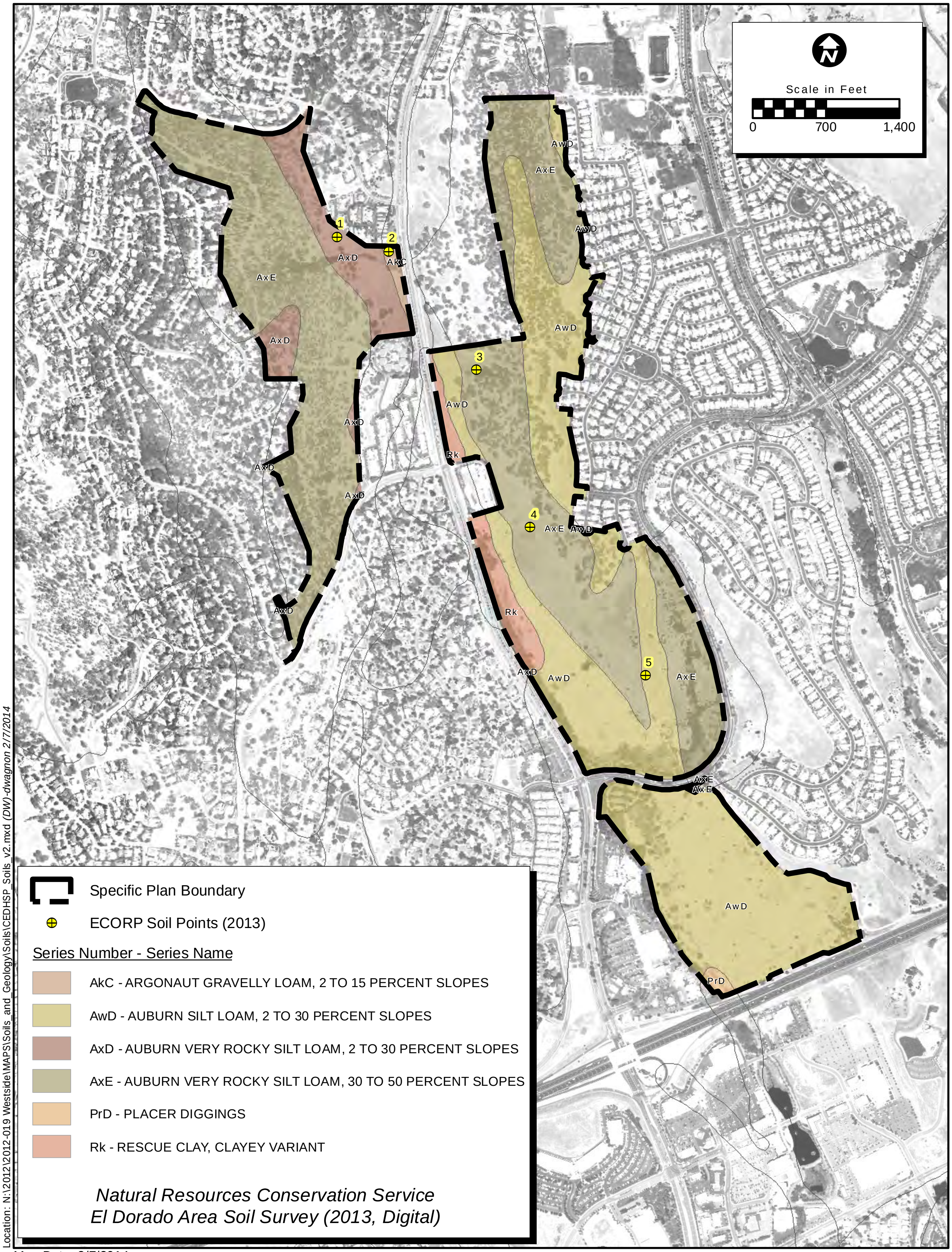
3.0 IMPORTANT HABITAT MITIGATION PLAN

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).

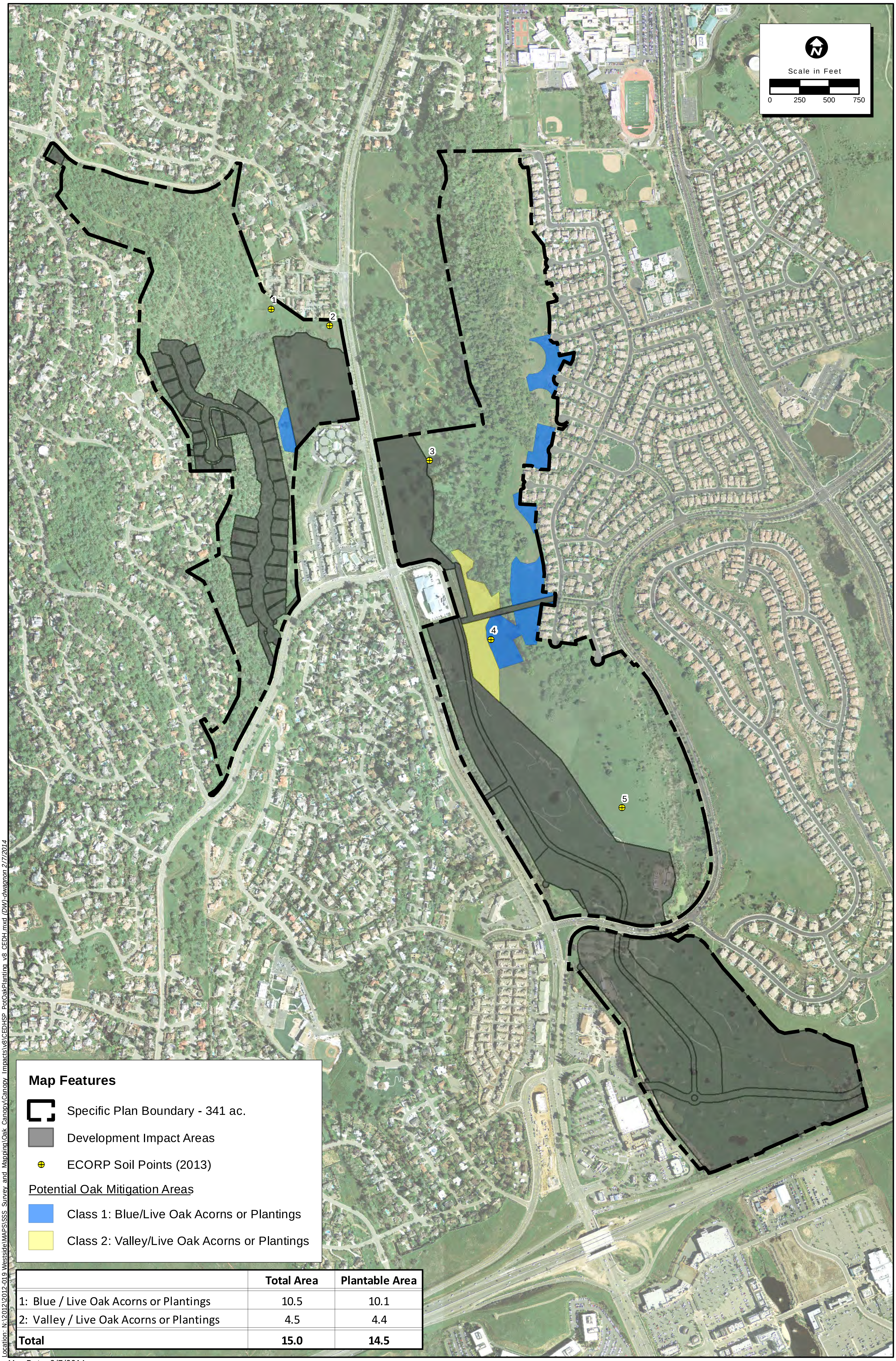
In addition to the mitigation required under Option A, the applicant proposes to do additional oak tree replacement and plantings within certain land use types (e.g., VRL and VRM – Low). These plantings will be a requirement of the proposed Design Guidelines to be developed and adopted for each use and 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**

Map Date: 2/7/2014
Photo Source: USGS 2011

ECORP Consulting, Inc.
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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.

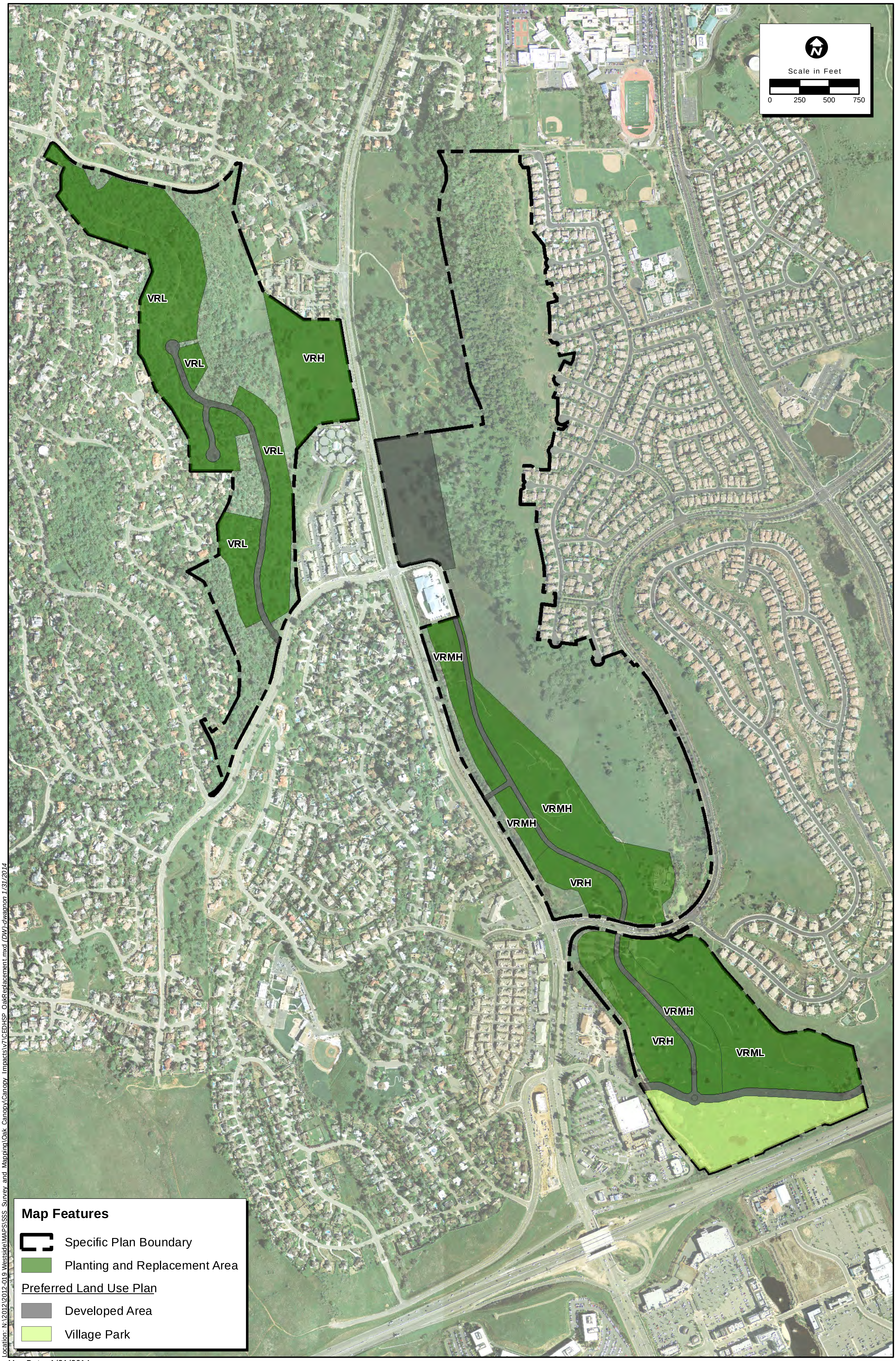
3.3.1.2 Development Area Replacement and Additional Plantings

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

<u>Agricultural Conversion</u>: As defined by General Plan Policy 7.1.2.7.

<u>Agricultural Cultivation/Operations</u>: As defined by General Plan Policy 8.2.2.1.

<u>Agricultural Lands</u>: As defined by General Plan Policies 2.2.1.2 and 8.1.1.8, and further, Policy 8.2.2.1.

<u>Arborist</u>: 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.

<u>Biological Resources Study and Important Habitat Mitigation Program</u>: 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.

<u>CDF</u>: 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

H:\D-drive\MyDocuments\Oak Woodlands\Final Interim Oak Guidelines 110906.doc

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.

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

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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

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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.

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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

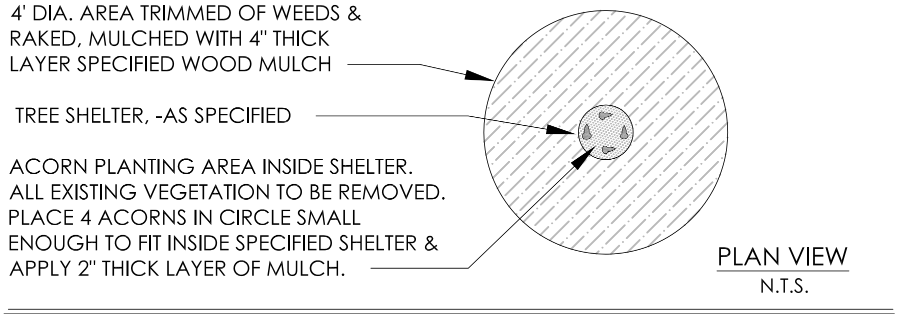
- Over the backfilled planting hole, place four evenly spaced acorns of the species specified on their sides and within a six inch diameter circle. The acorns should be spaced in an area smaller than the diameter of the specified tree shelter.
- Cover the acorns with one to two inches of the specified 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.

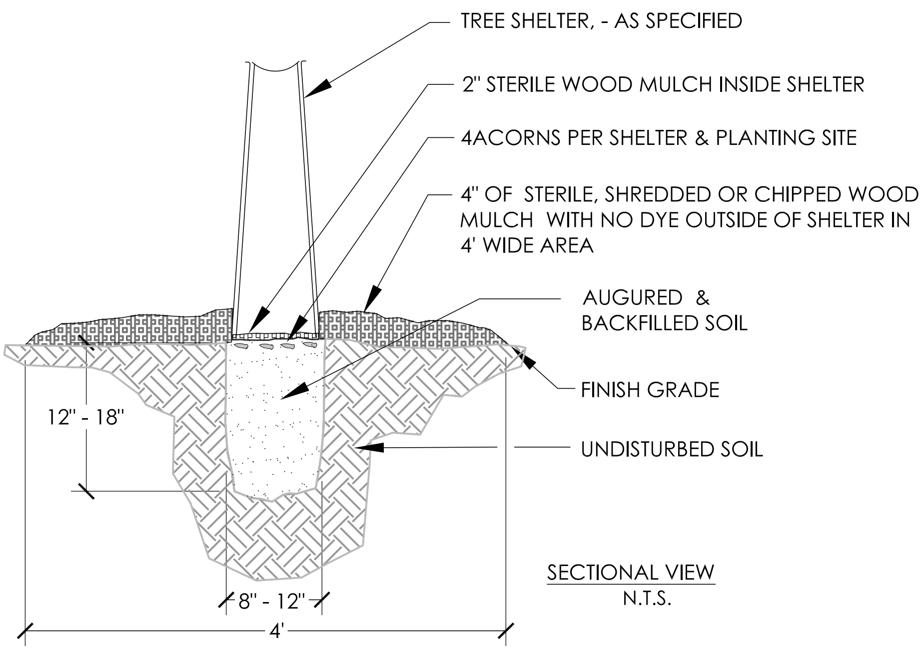
Maintenance

- 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.

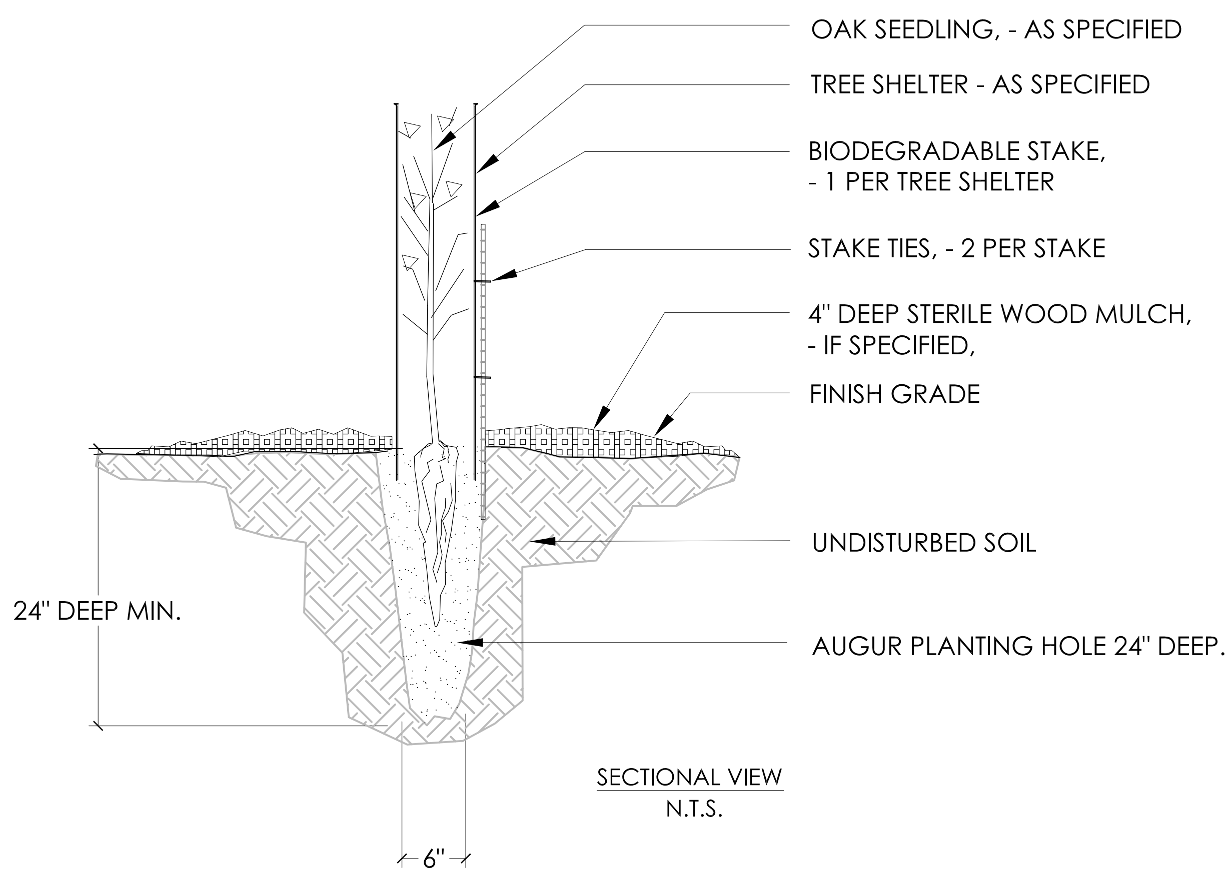
2 ACORN PLANTING AND PROTECTION

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.

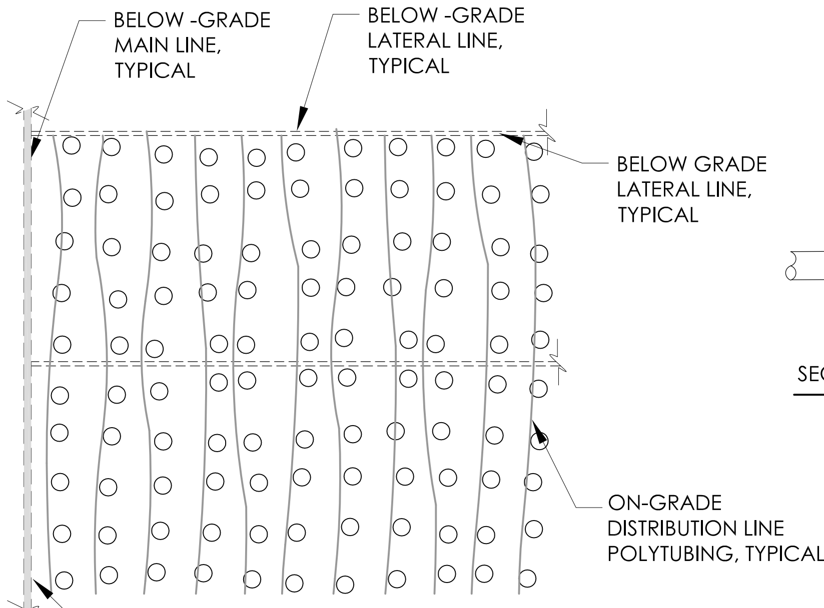
1 PLANTING OAK SEEDLING WITH SHELTER

Detail for Oak Seedling Planting

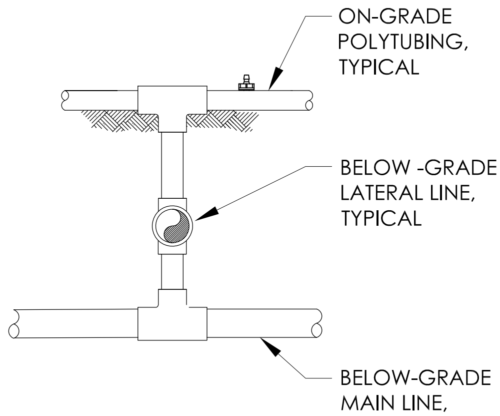
ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ATTACHMENT F

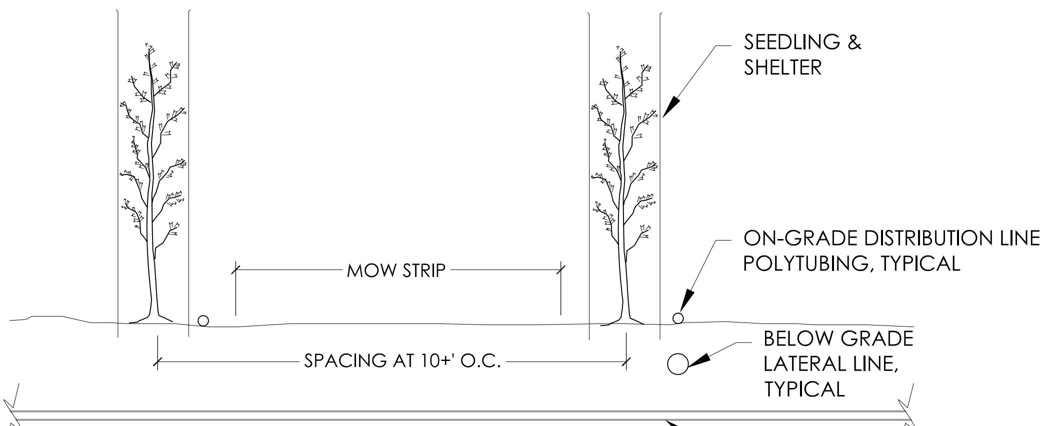
Conceptual Irrigation Layout and Guidelines for Irrigating Oak Seedlings and Acorns



PLAN VIEW
NOT TO SCALE



SECTIONAL VIEW - ENLARGED
NOT TO SCALE



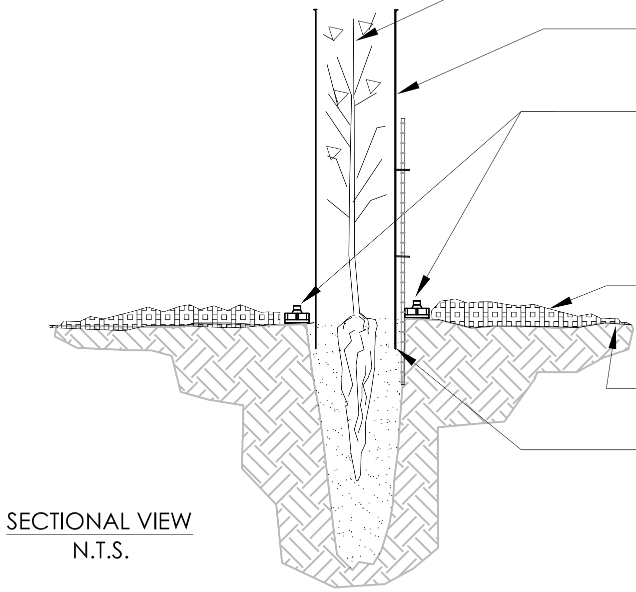
SECTIONAL VIEW
NOT TO SCALE

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

Detail for Oak Irrigation System Layout

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



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 L Errata

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

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

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-001 Francisco-Green Valley
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Page No : 2

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

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-001 Francisco-Green Valley
Site Code : 00000000
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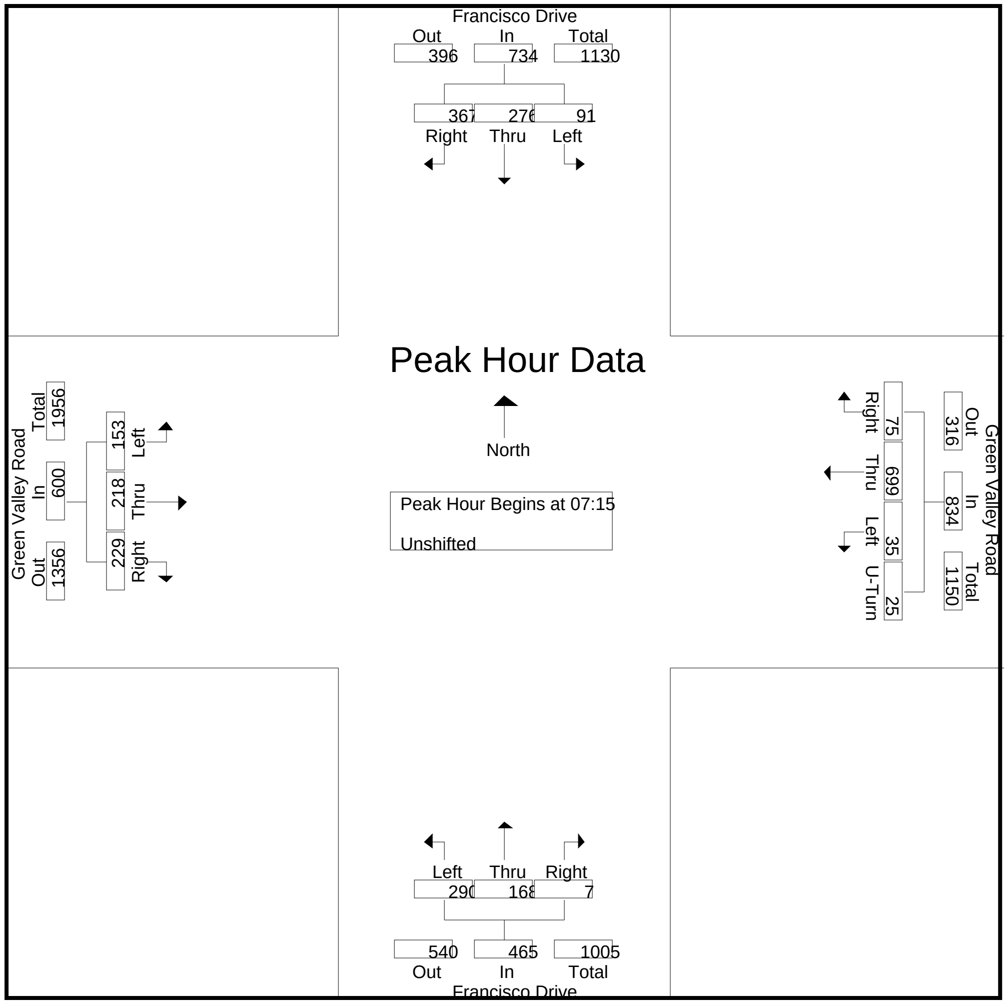


All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-001 Francisco-Green Valley
Site Code : 00000000
Start Date : 1/29/2013
Page No : 4

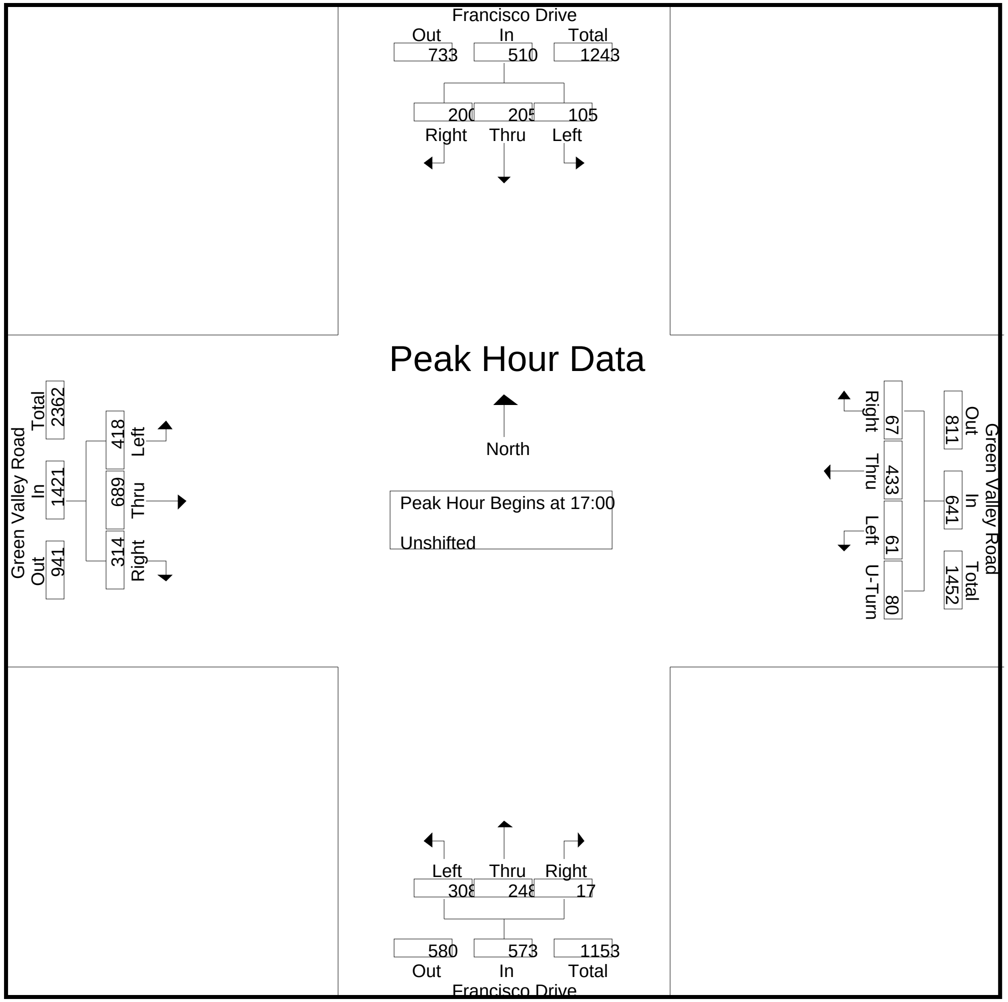
	Francisco Drive Southbound				Green Valley Road Westbound					Francisco Drive Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - 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

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 : 5



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
Page No : 1

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

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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
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

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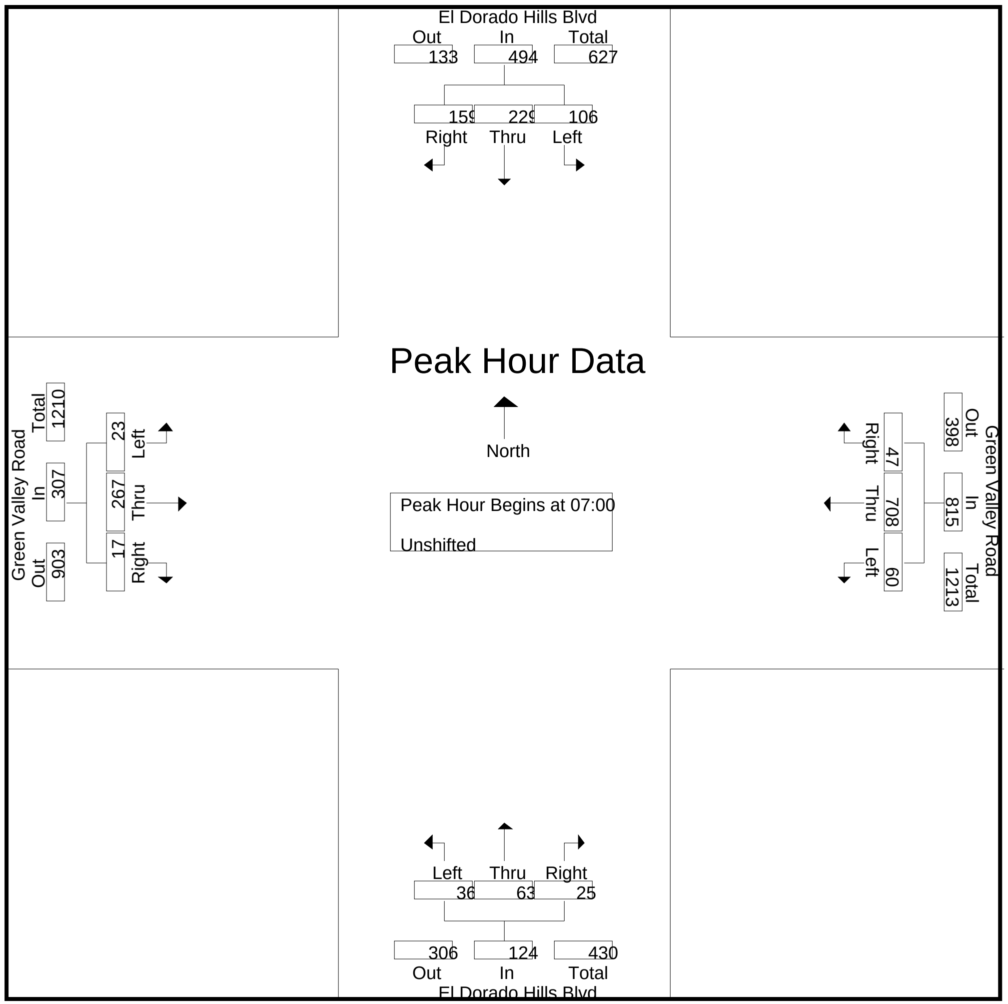

	El Dorado Hills Blvd Southbound				Green Valley Road Westbound				El Dorado Hills Blvd Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - 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

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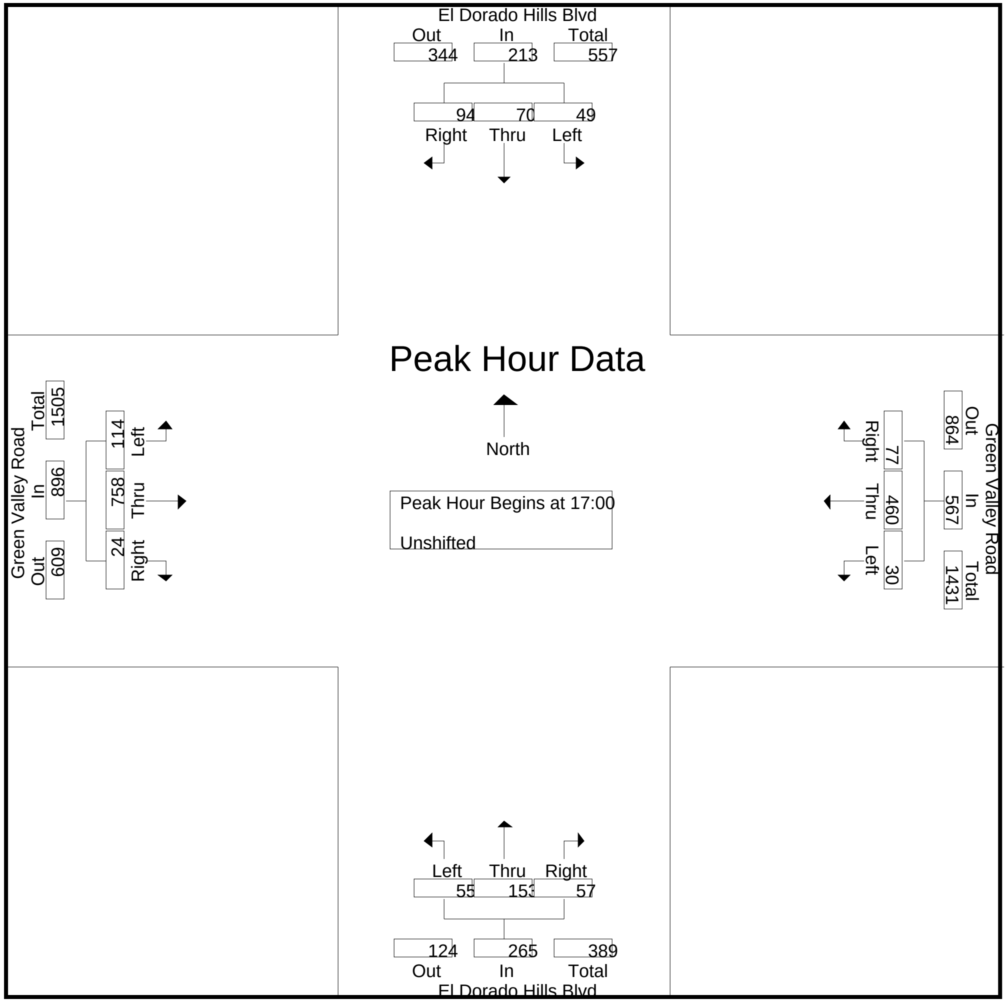

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	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
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

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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
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

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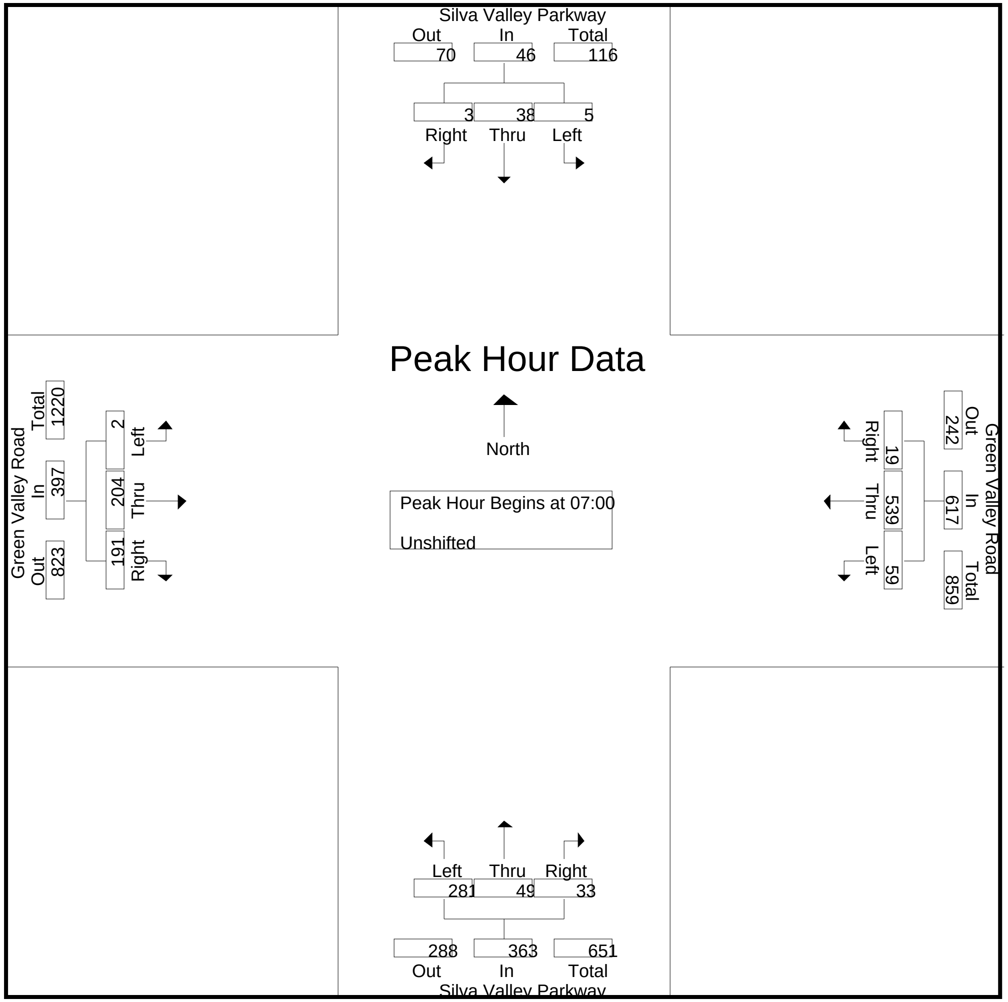

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	Silva Valley Parkway Southbound				Green Valley Road Westbound				Silva Valley Parkway Northbound				Green Valley Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	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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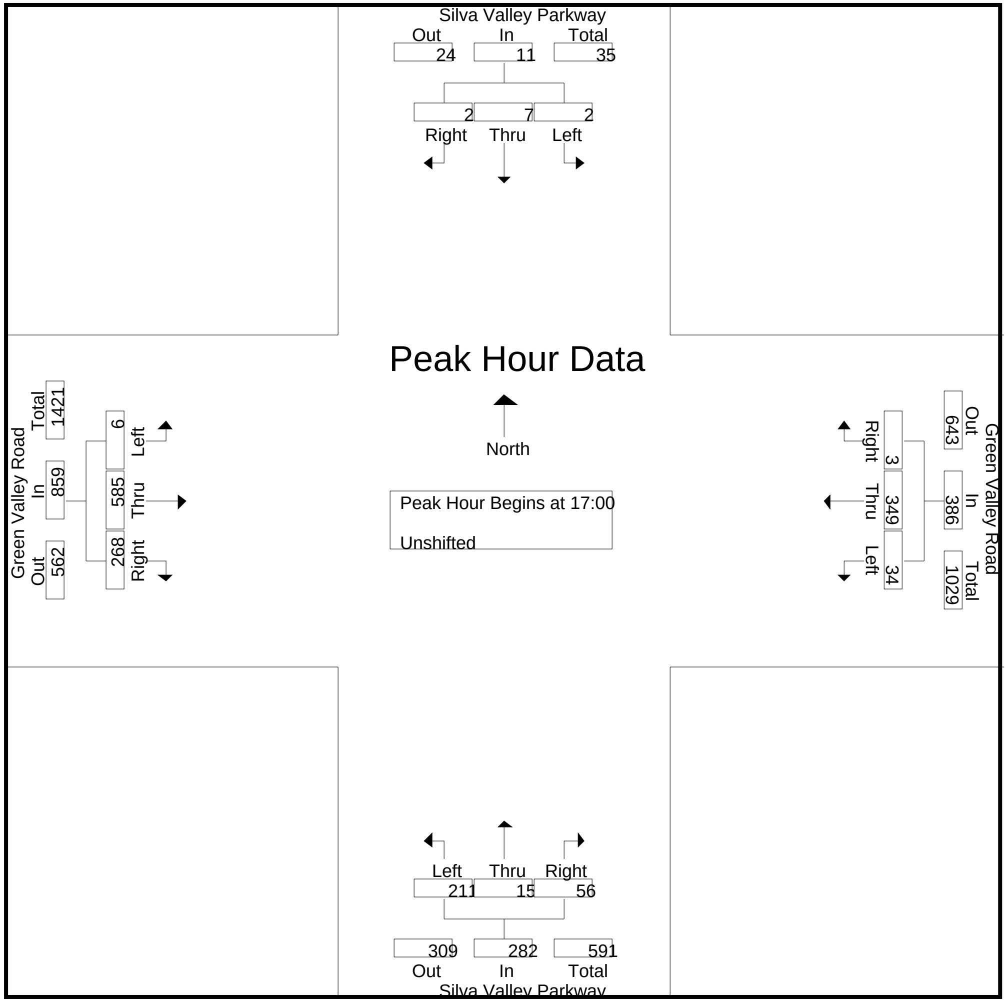

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El Dorado County

File Name : 13-7063-010 El Dorado Hills-Francisco
Site Code : 00000000
Start Date : 1/29/2013
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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 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

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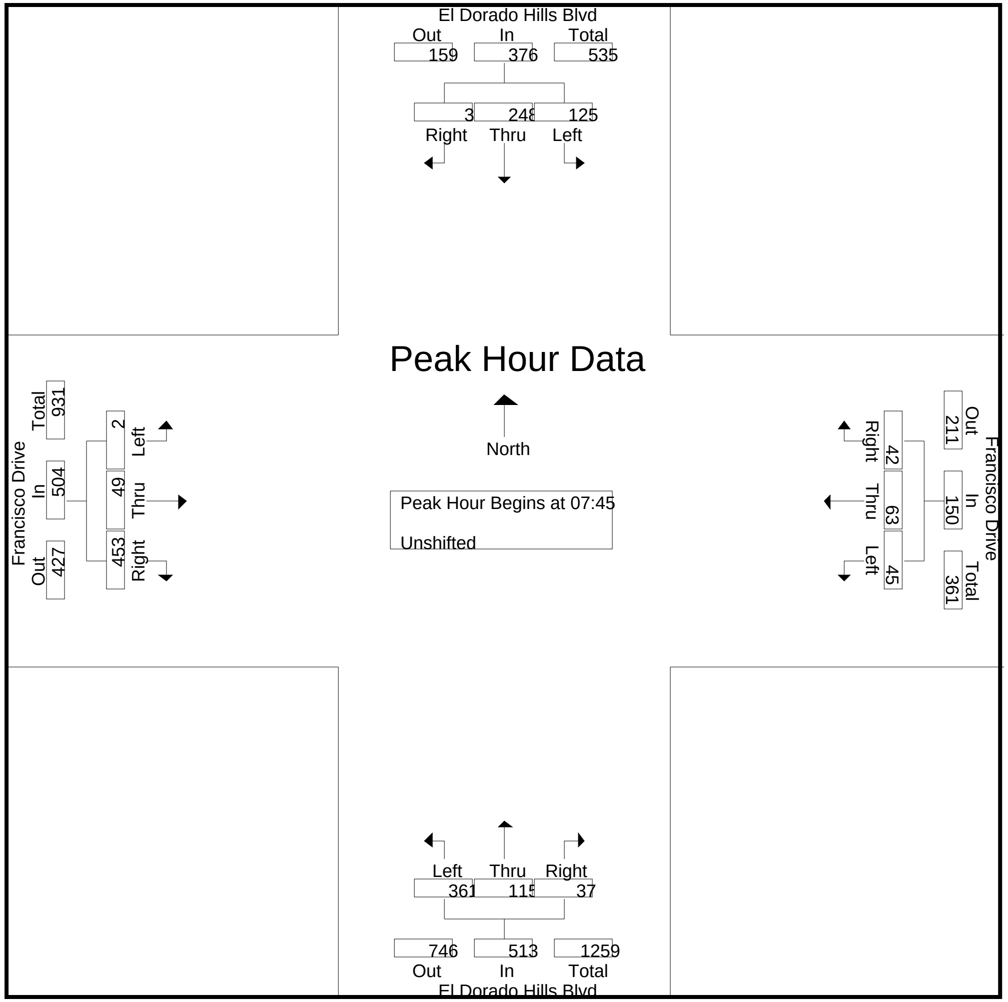


All Traffic Data

(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

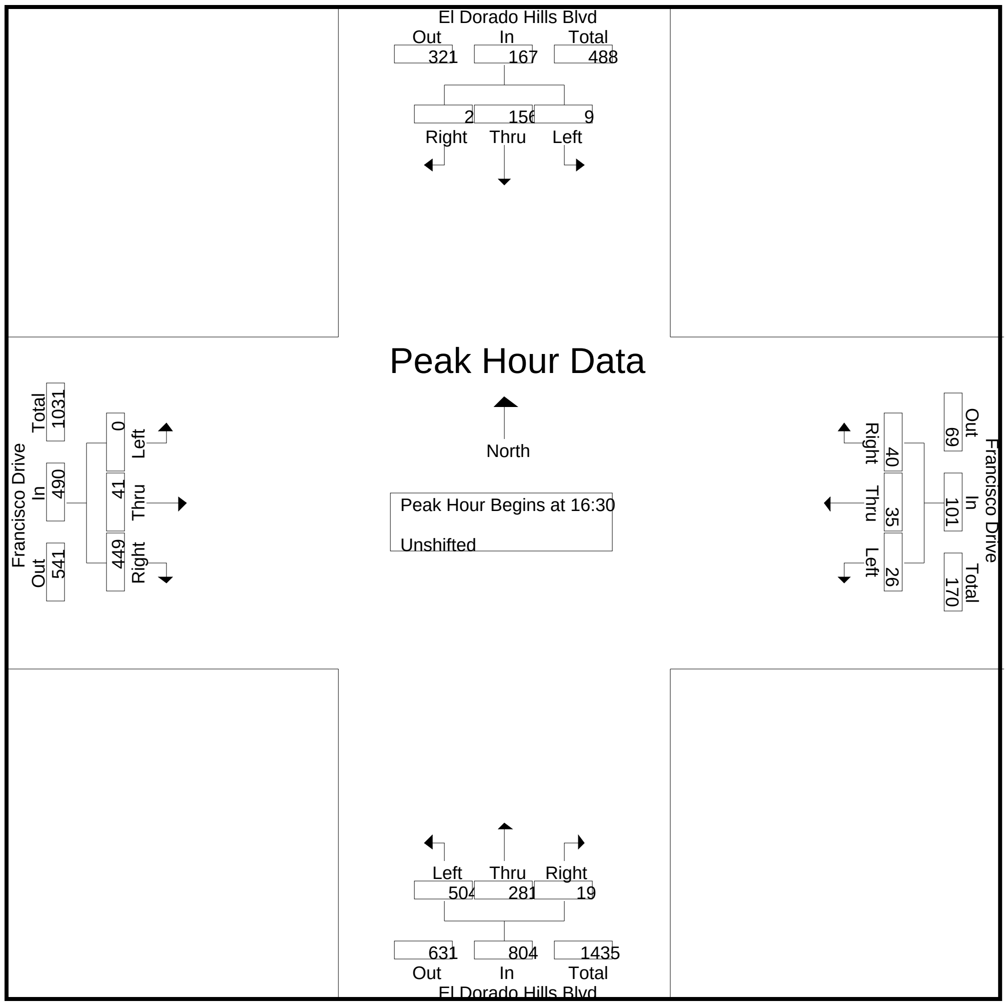
	El Dorado Hills Blvd Southbound				Francisco Drive Westbound				El Dorado Hills Blvd Northbound				Francisco Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 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
Page No : 5



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

(916) 771-8700

El Dorado County

File Name : 13-7063-019 Silva Valley-Apian
Site Code : 00000000
Start Date : 1/30/2013

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

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-019 Silva Valley-Apian
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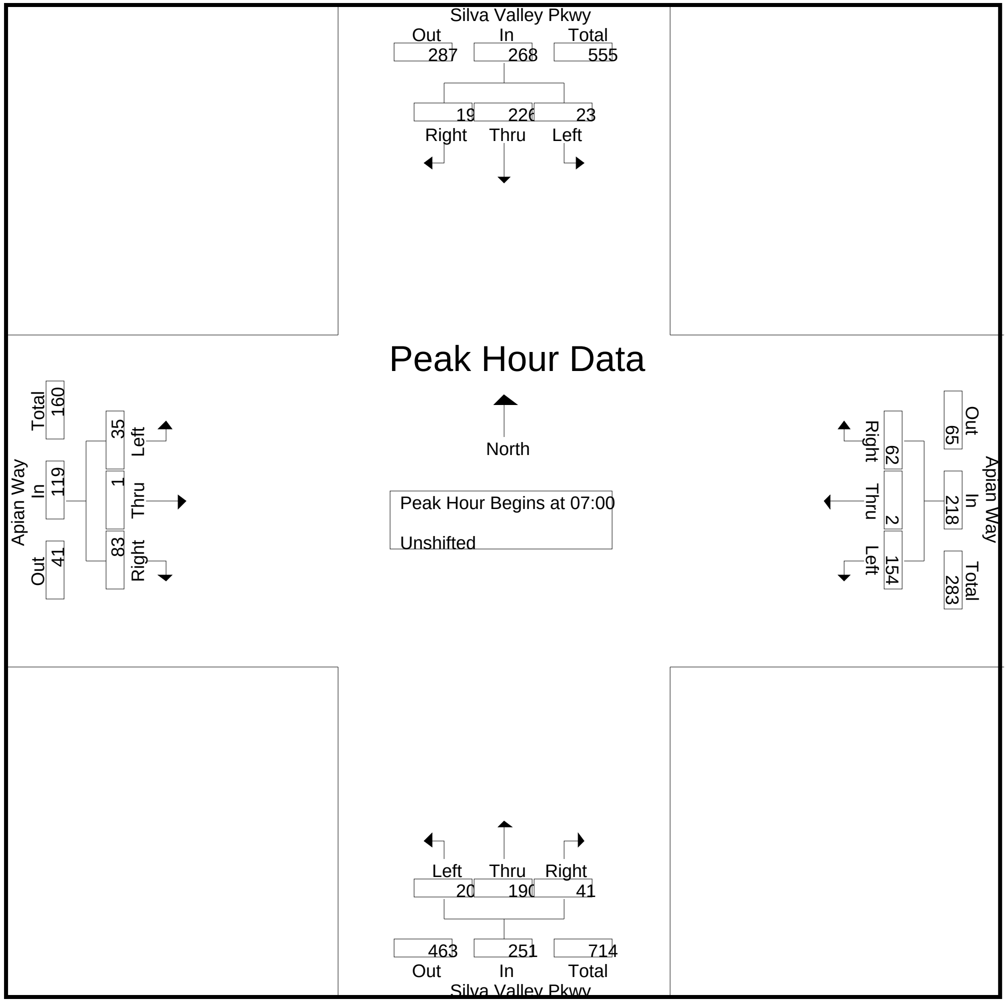


All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-019 Silva Valley-Apian
Site Code : 00000000
Start Date : 1/30/2013
Page No : 4

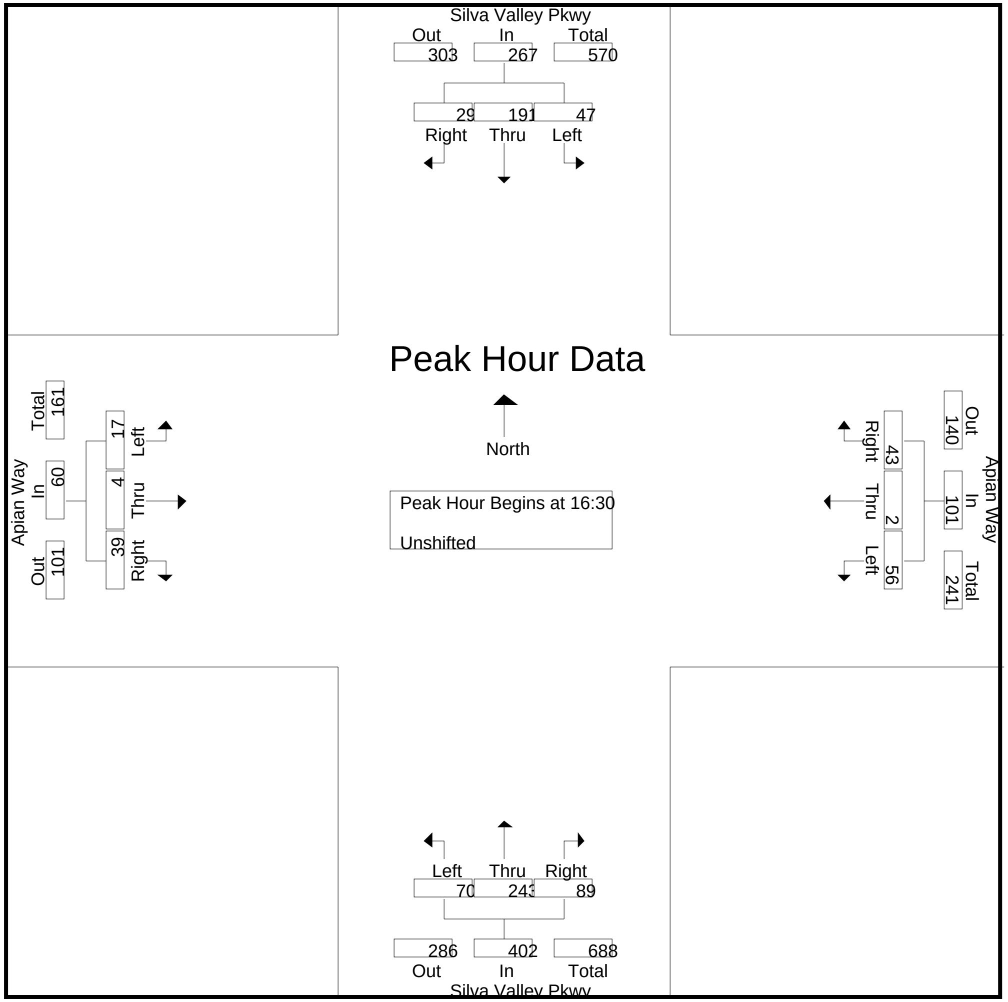
	Silva Valley Pkwy Southbound				Apian Way Westbound				Silva Valley Pkwy Northbound				Apian Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
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

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 : 5



All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

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

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
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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
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

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
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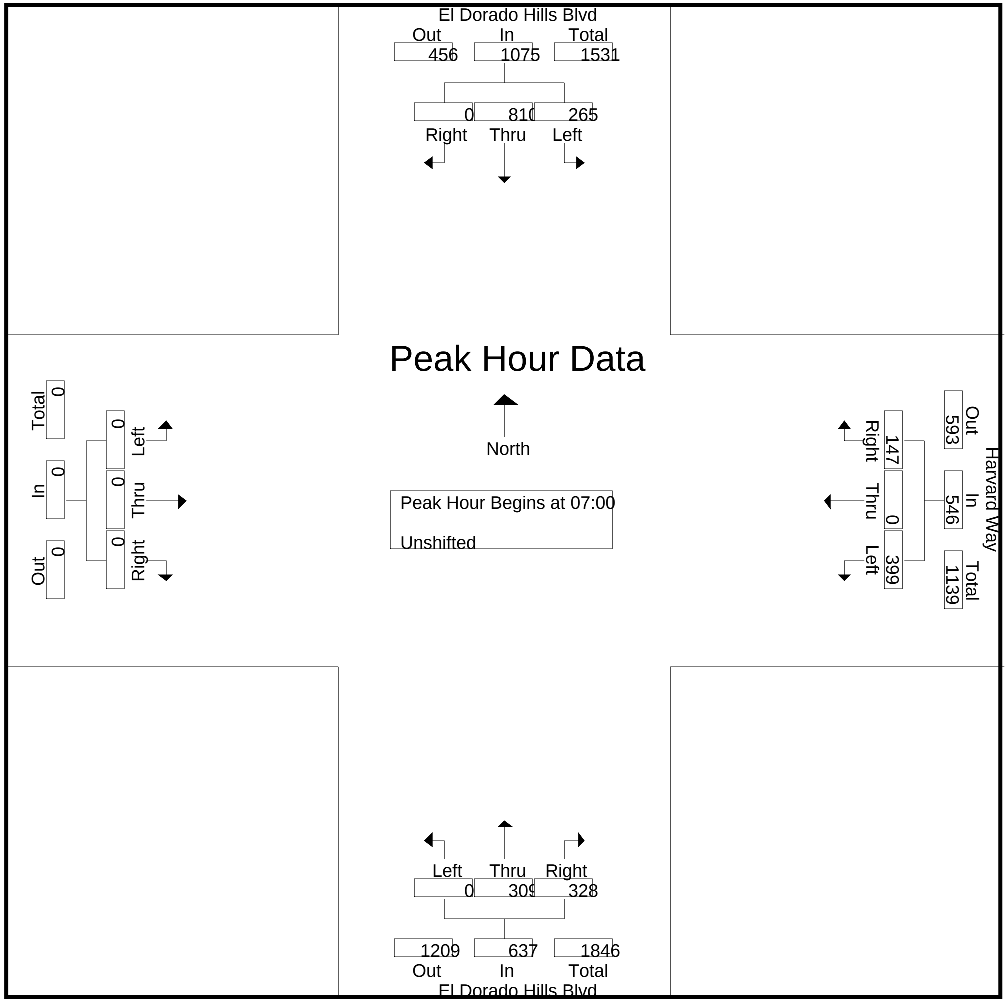

All Traffic Data
(916) 771-8700

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 4

	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

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
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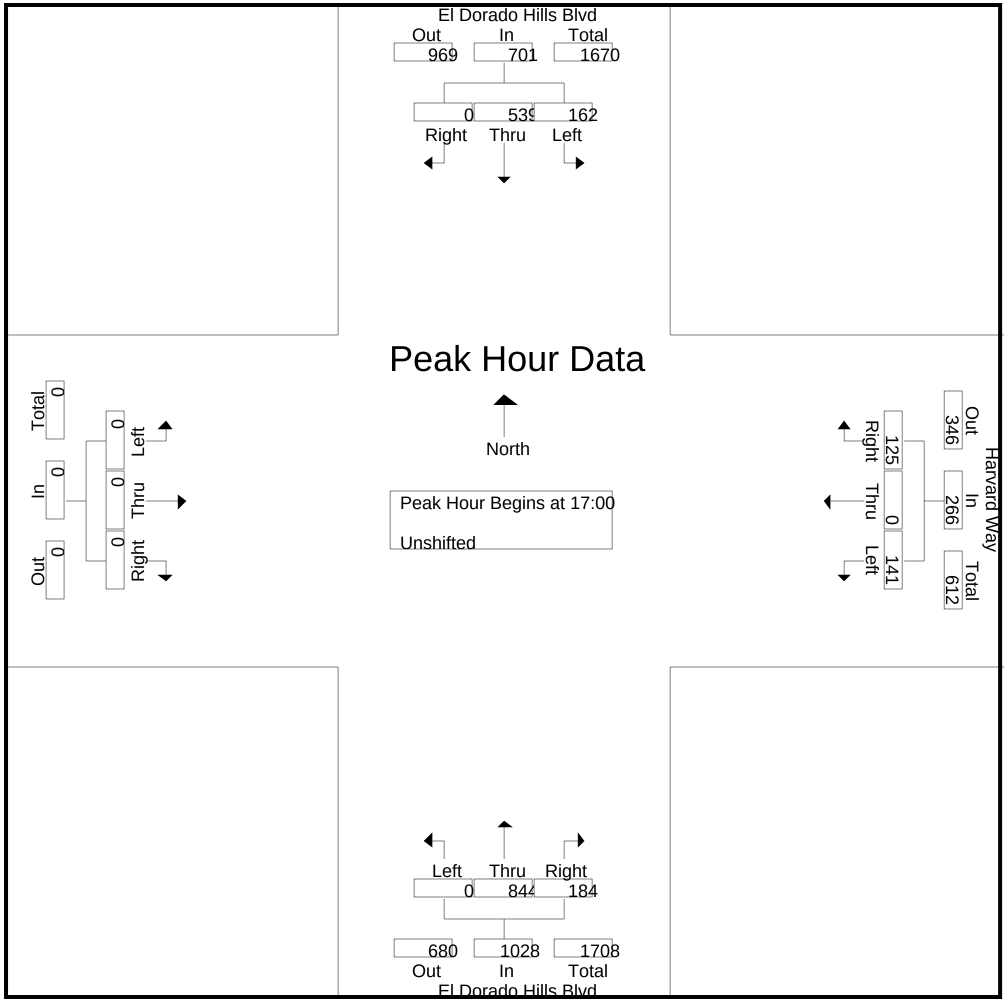

All Traffic Data

(916) 771-8700

El Dorado County

File Name : 13-7063-018 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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El Dorado County

File Name : 13-7063-018 Silva Valley-Harvard
Site Code : 00000000
Start Date : 1/30/2013
Page No : 2

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	

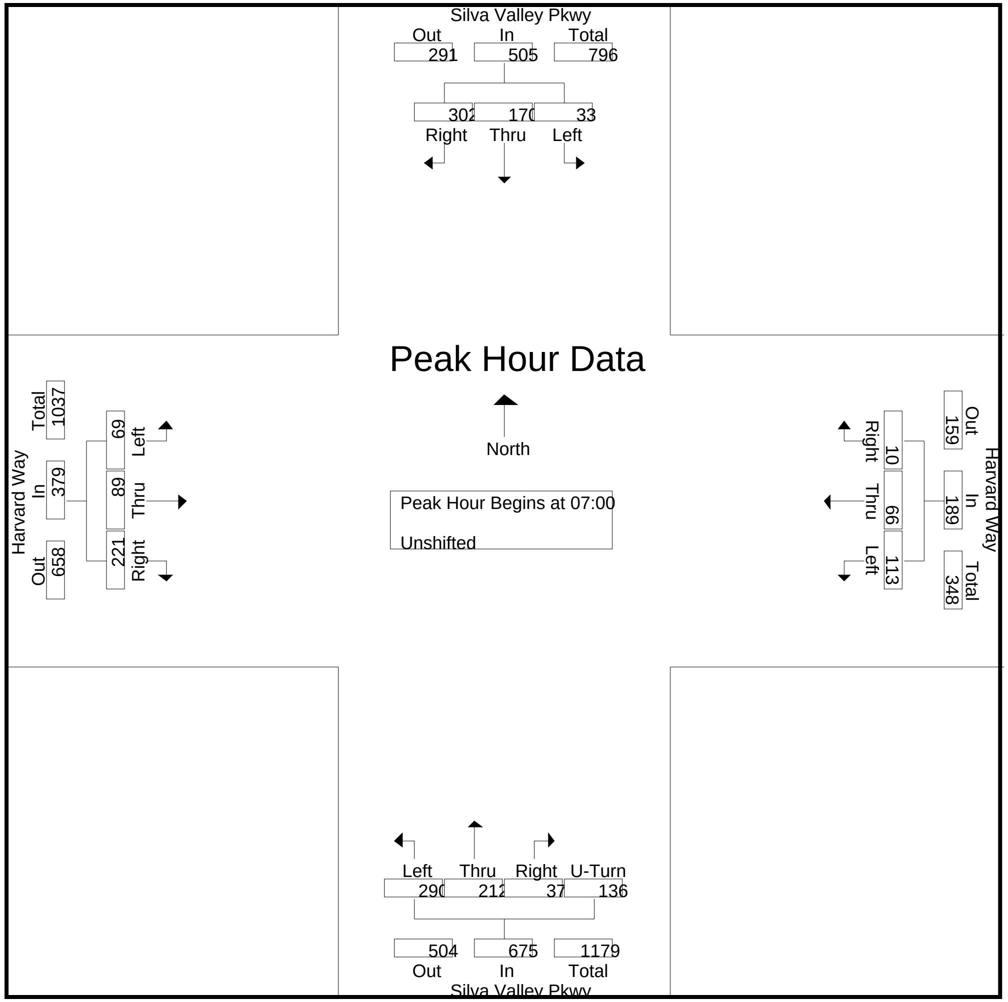
	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 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

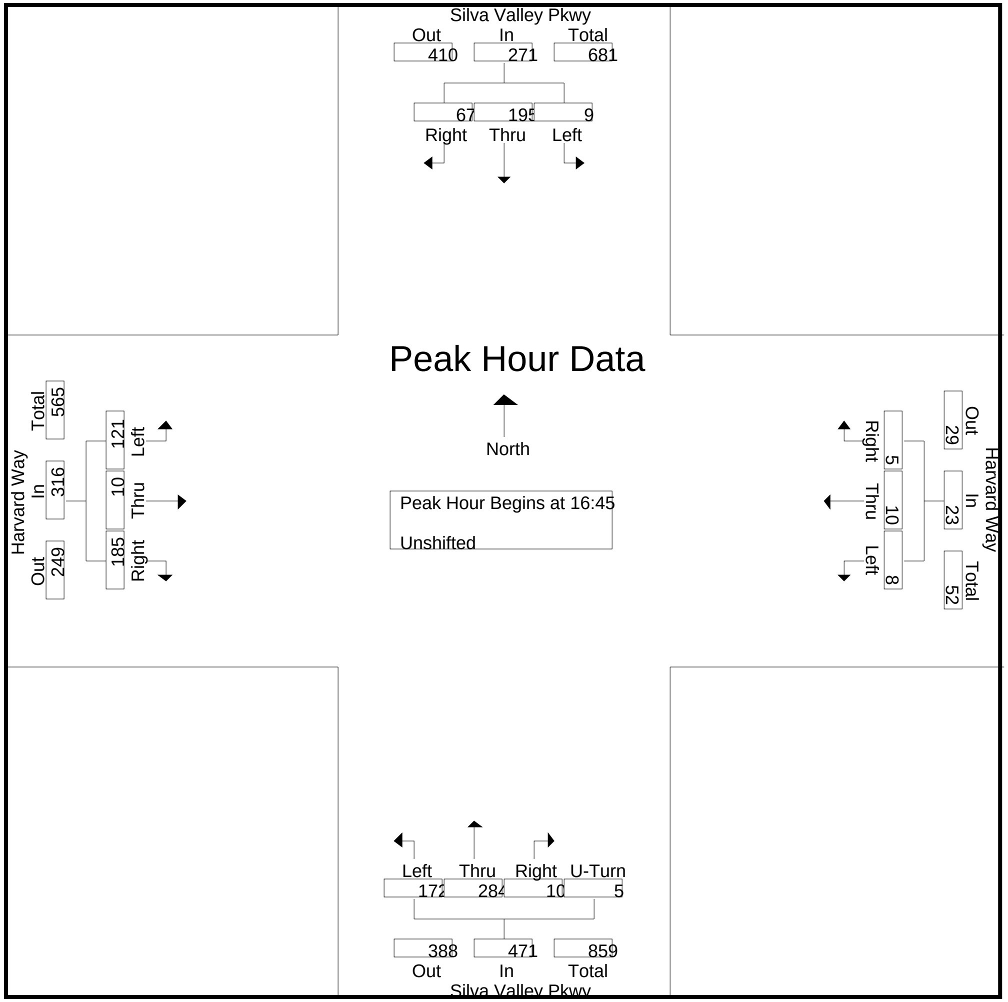
	Silva Valley Pkwy Southbound				Harvard Way Westbound				Silva Valley Pkwy Northbound					Harvard Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 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

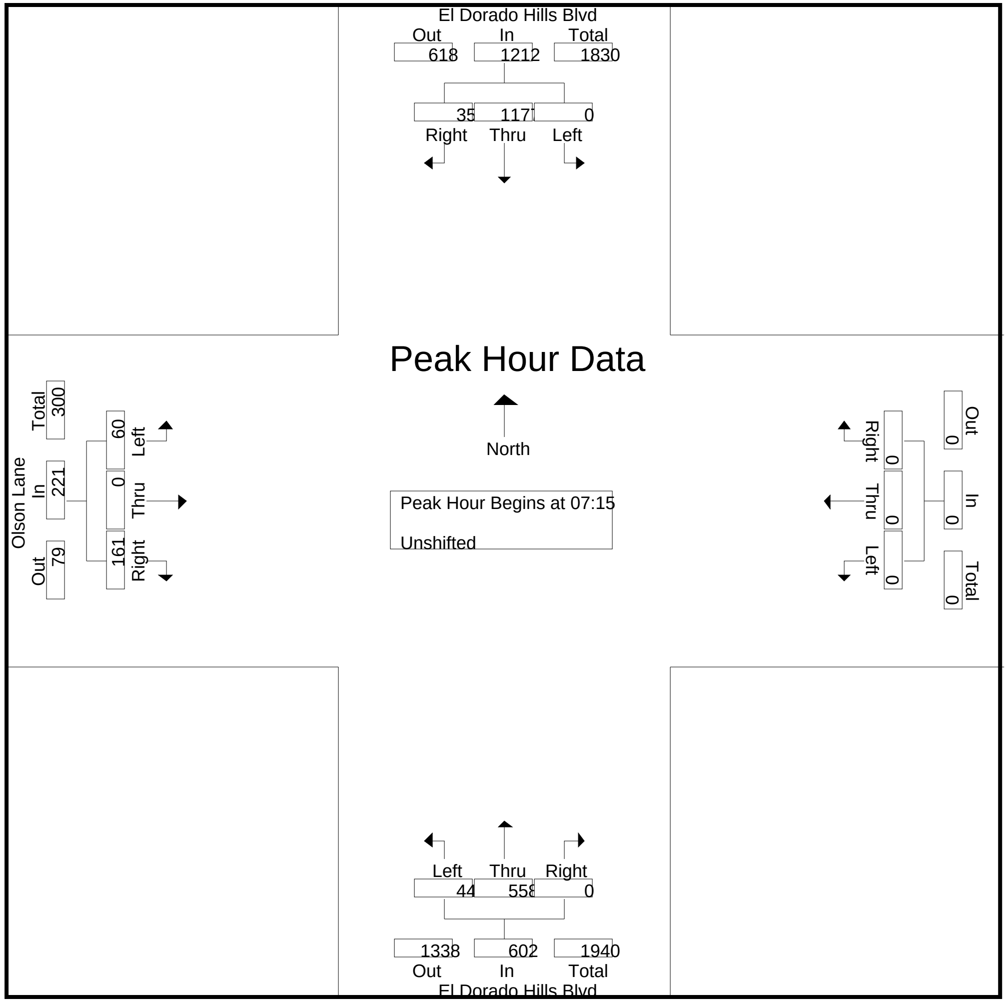
File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012

	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

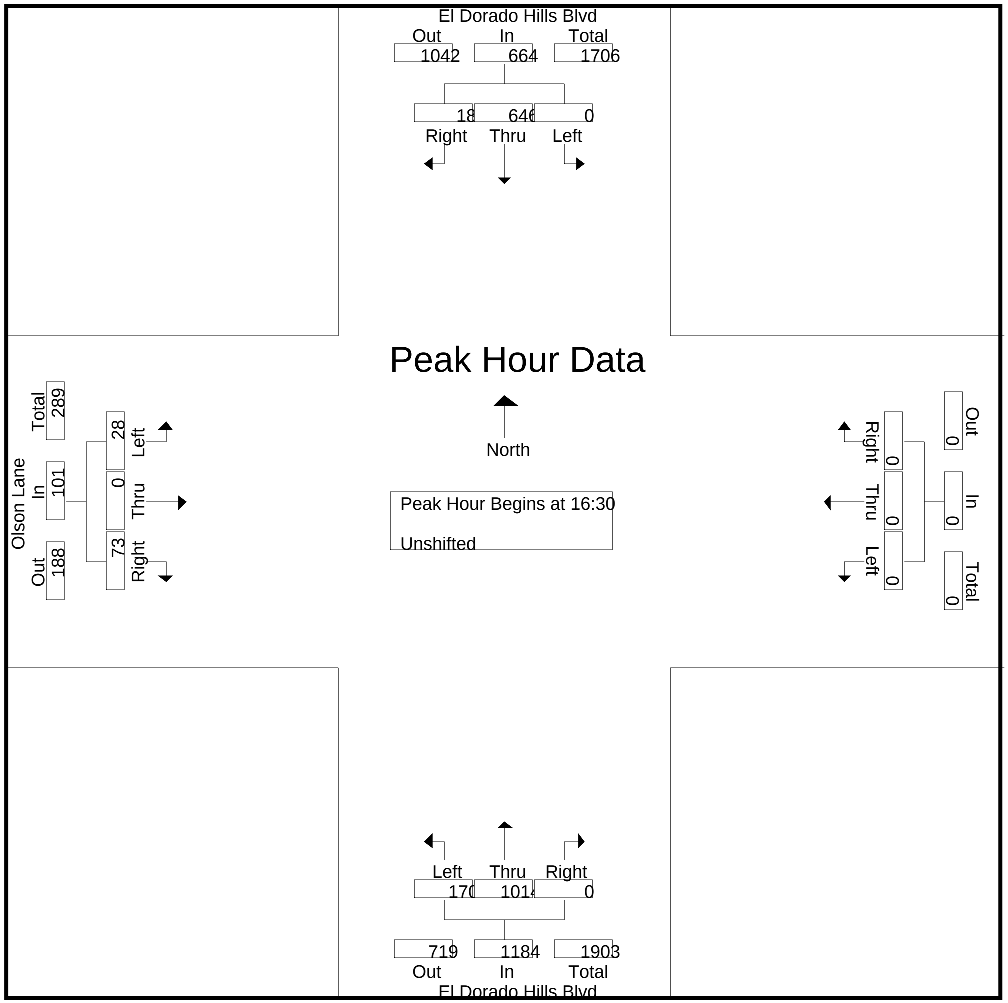
	El Dorado Hills Blvd Southbound				Westbound				El Dorado Hills Blvd Northbound				Olson Lane Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
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

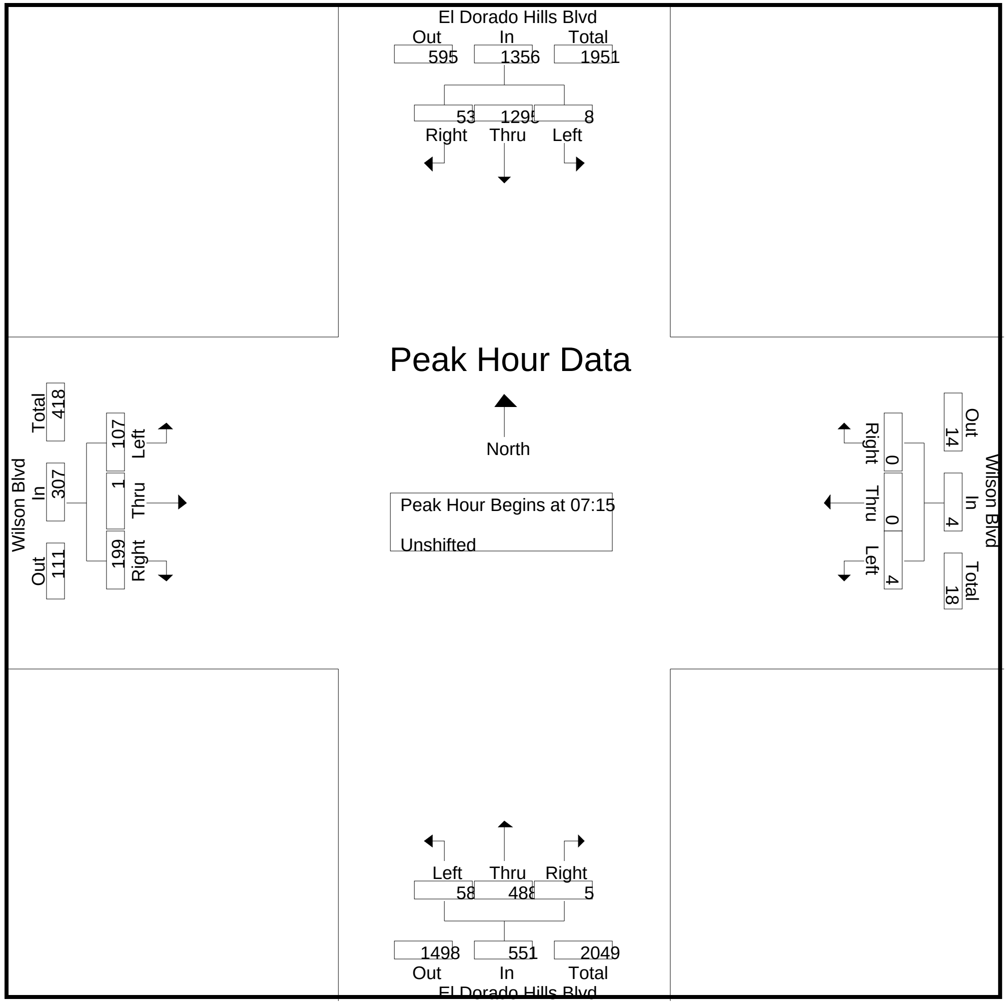
File Name : 12-7225-002 El Dorado Hills-Wilson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

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

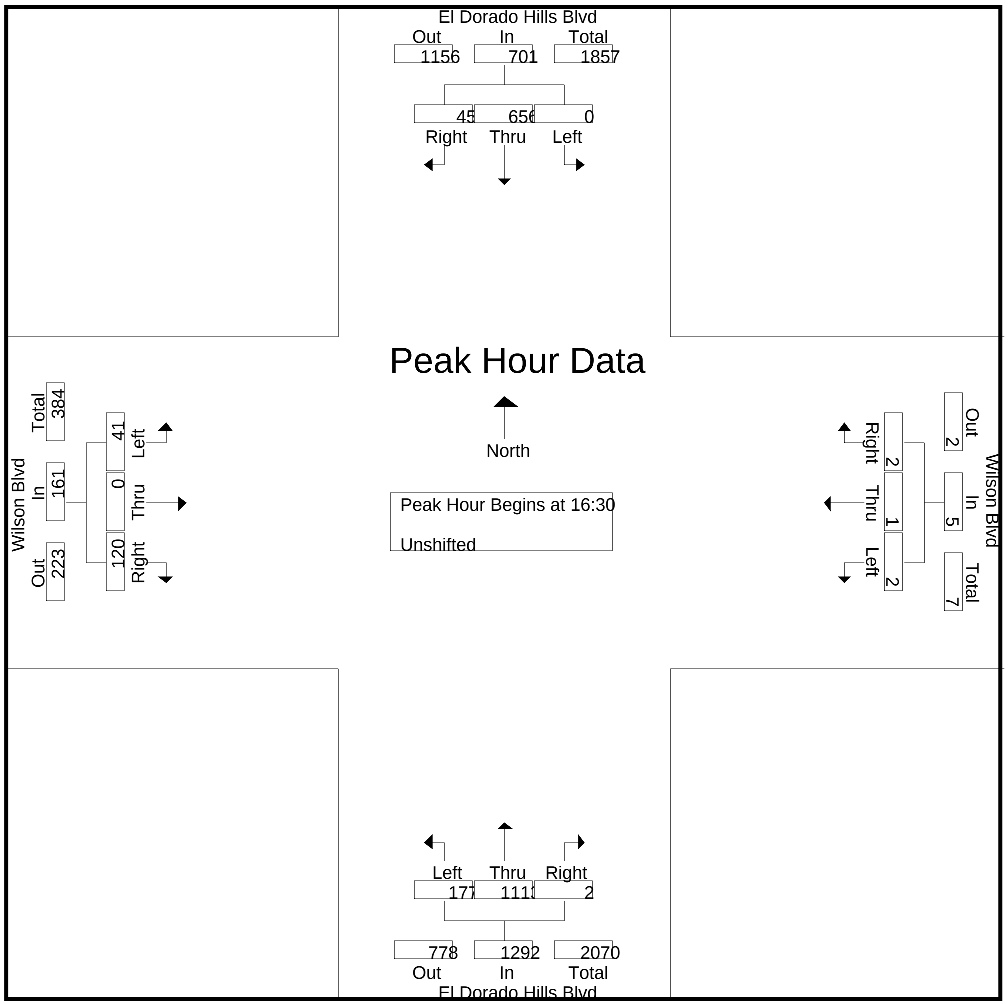
16:30	0	**173**	**14**	**187**	0	**1**	0	1	28	258	**1**	287	**13**	0	28	41	516
16:45	0	159	10	169	**1**	0	0	1	44	287	0	331	8	0	**35**	**43**	544
17:00	0	155	12	167	1	0	**2**	**3**	43	263	0	306	7	0	27	34	510
17:15	0	169	9	178	0	0	0	0	**62**	**305**	1	**368**	13	0	30	43	**589**
Total Volume	0	656	45	701	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

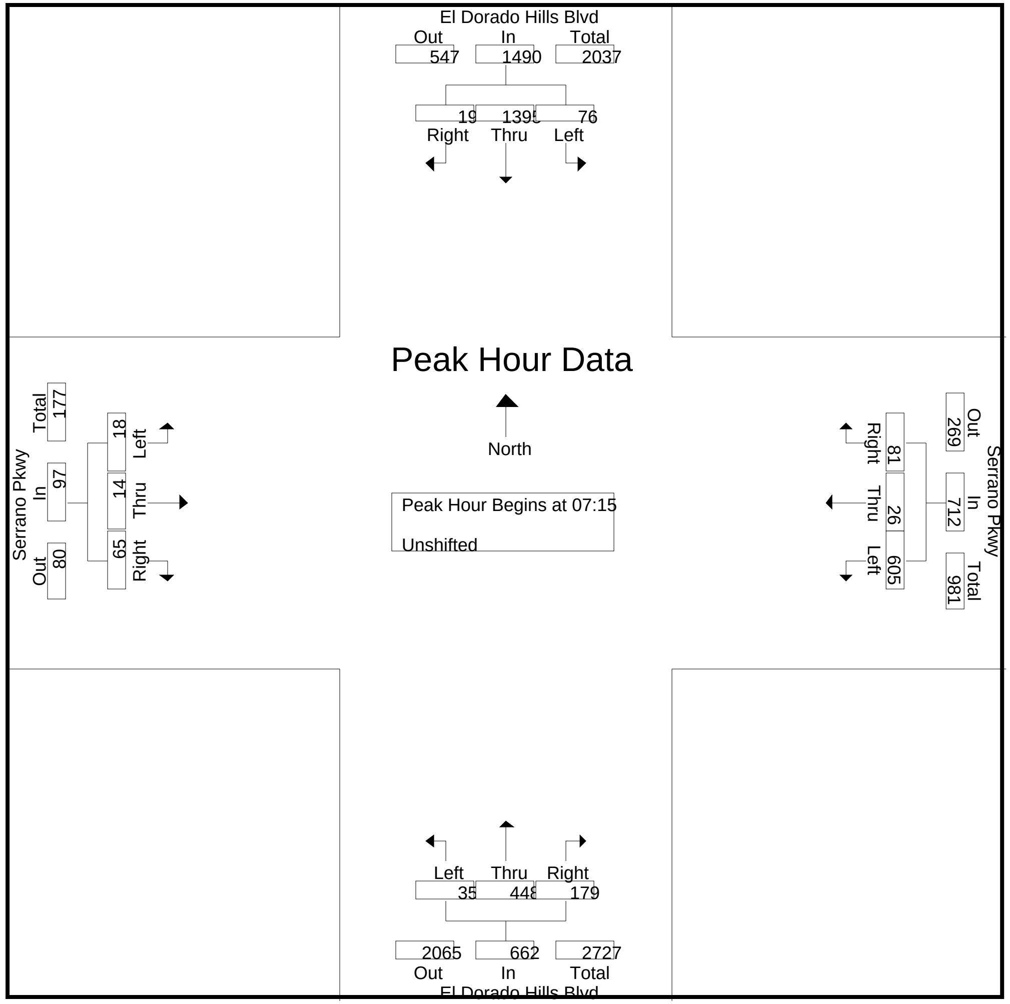
File Name : 12-7225-003 El Dorado Hills-Serrano
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

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

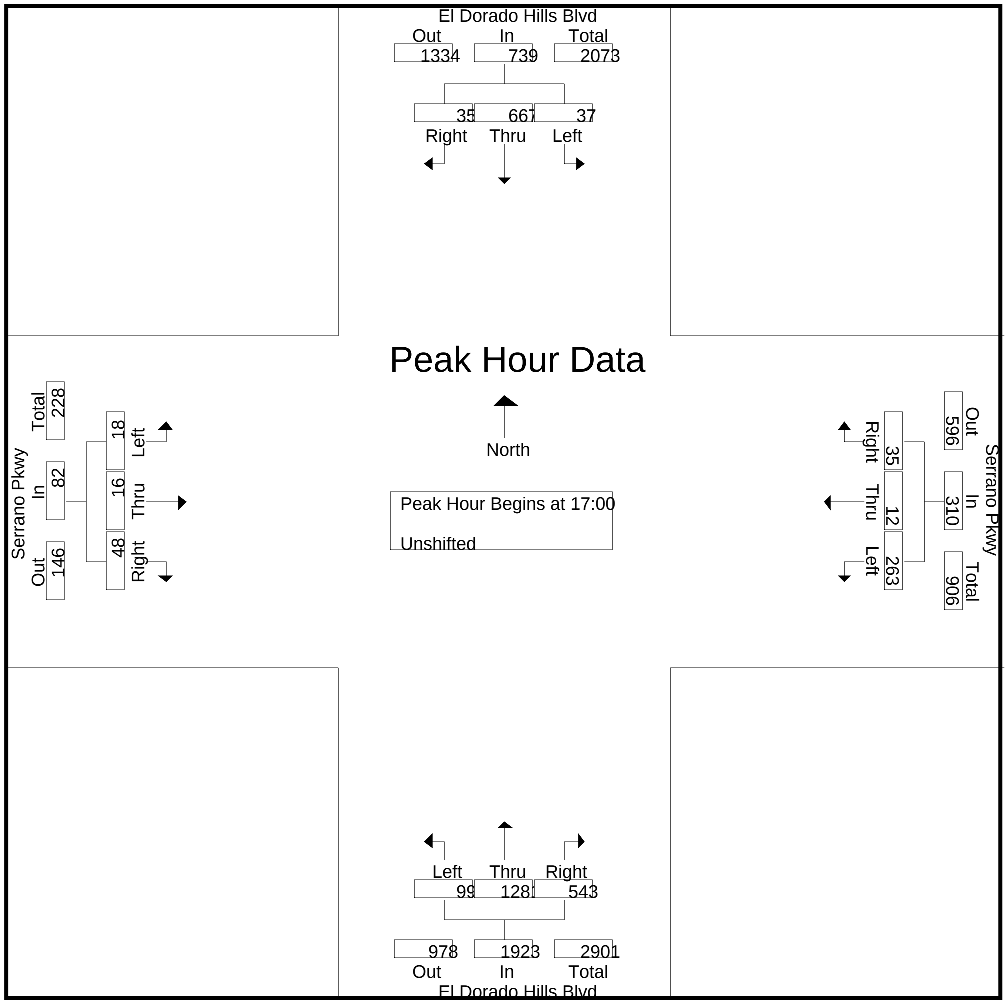
17:00	6	177	1	184	53	2	7	62	26	319	125	470	5	**8**	10	23	739
17:15	**13**	171	9	193	**76**	4	10	**90**	25	**338**	135	**498**	3	7	**17**	**27**	**808**
17:30	11	137	**14**	162	68	**5**	3	76	**28**	314	**156**	498	4	0	12	16	752
17:45	7	**182**	11	**200**	66	1	**15**	82	20	310	127	457	**6**	1	9	16	755
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

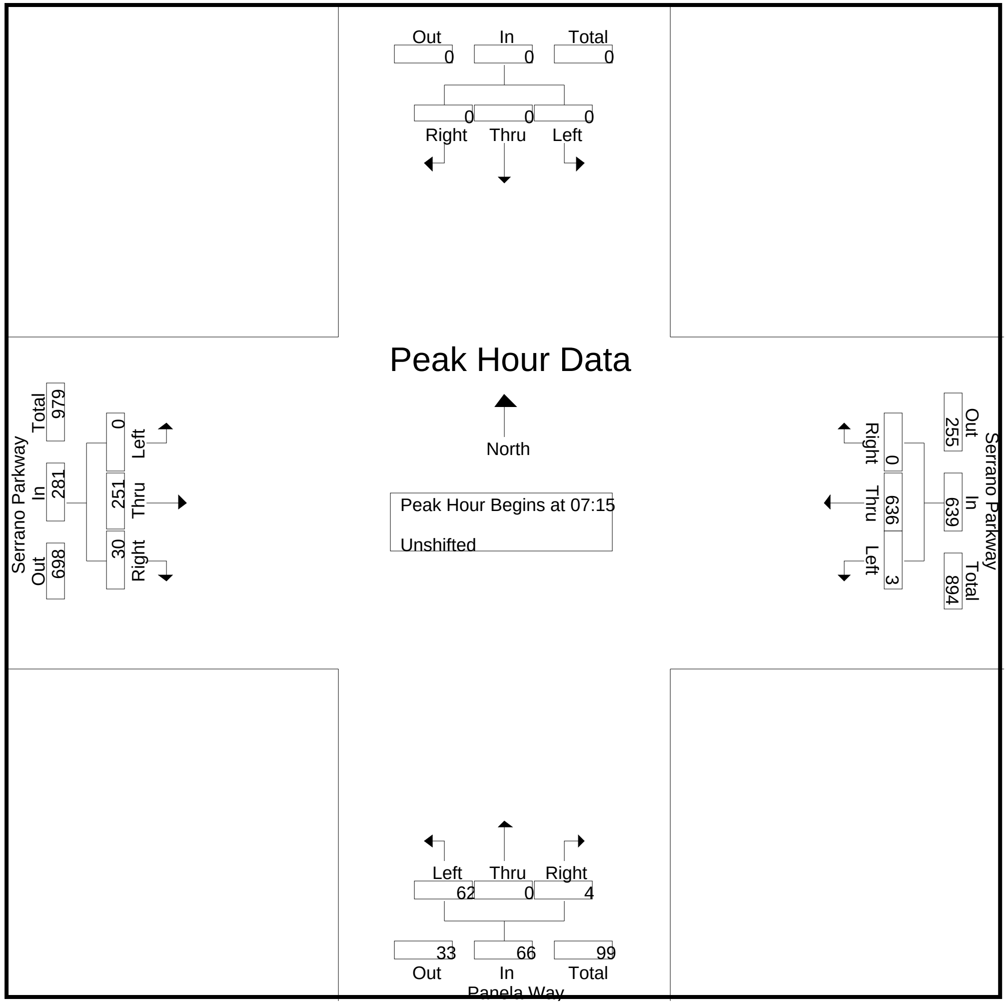
File Name : 12-7225-012 Panela-Serrano
Site Code : 00000000
Start Date : 5/22/2012

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

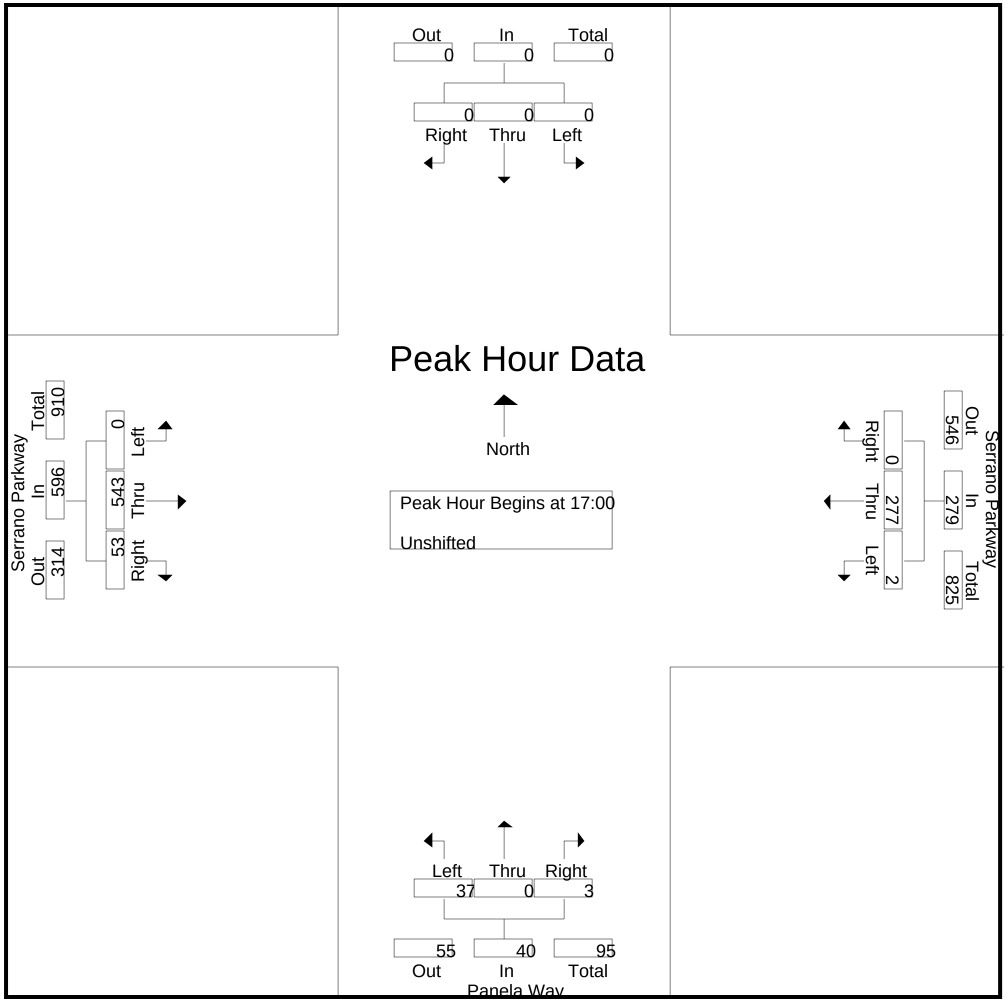
17:00	0	0	0	0	0	59	0	59	8	0	**1**	9	0	132	12	144	212
17:15	0	0	0	0	0	78	0	78	8	0	1	9	0	**143**	11	**154**	**241**
17:30	0	0	0	0	**1**	61	0	62	**13**	0	1	**14**	0	137	**16**	153	229
17:45	0	0	0	0	1	**79**	0	**80**	8	0	0	8	0	131	14	145	233
Total Volume	0	0	0	0	2	277	0	279	37	0	3	40	0	543	53	596	915
% App. 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

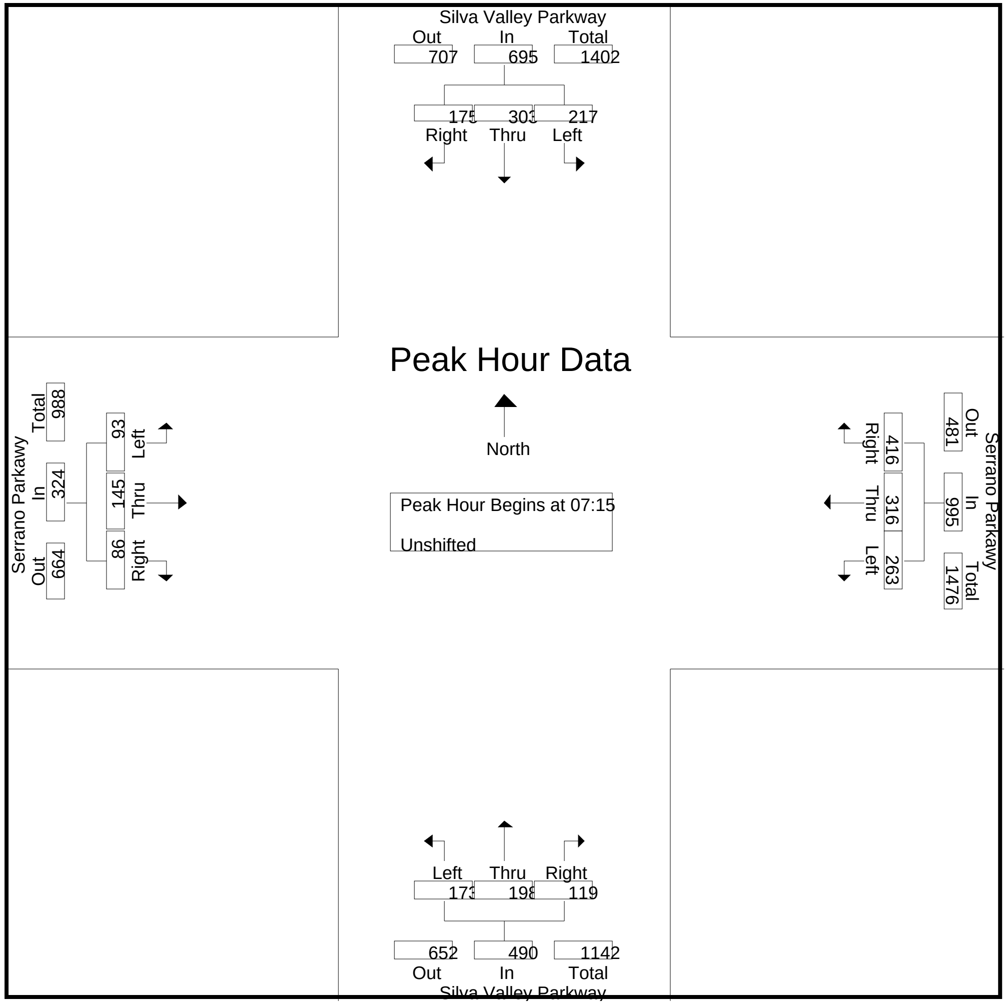
File Name : 12-7225-013 Silva Valley-Serrano
Site Code : 00000000
Start Date : 5/22/2012

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

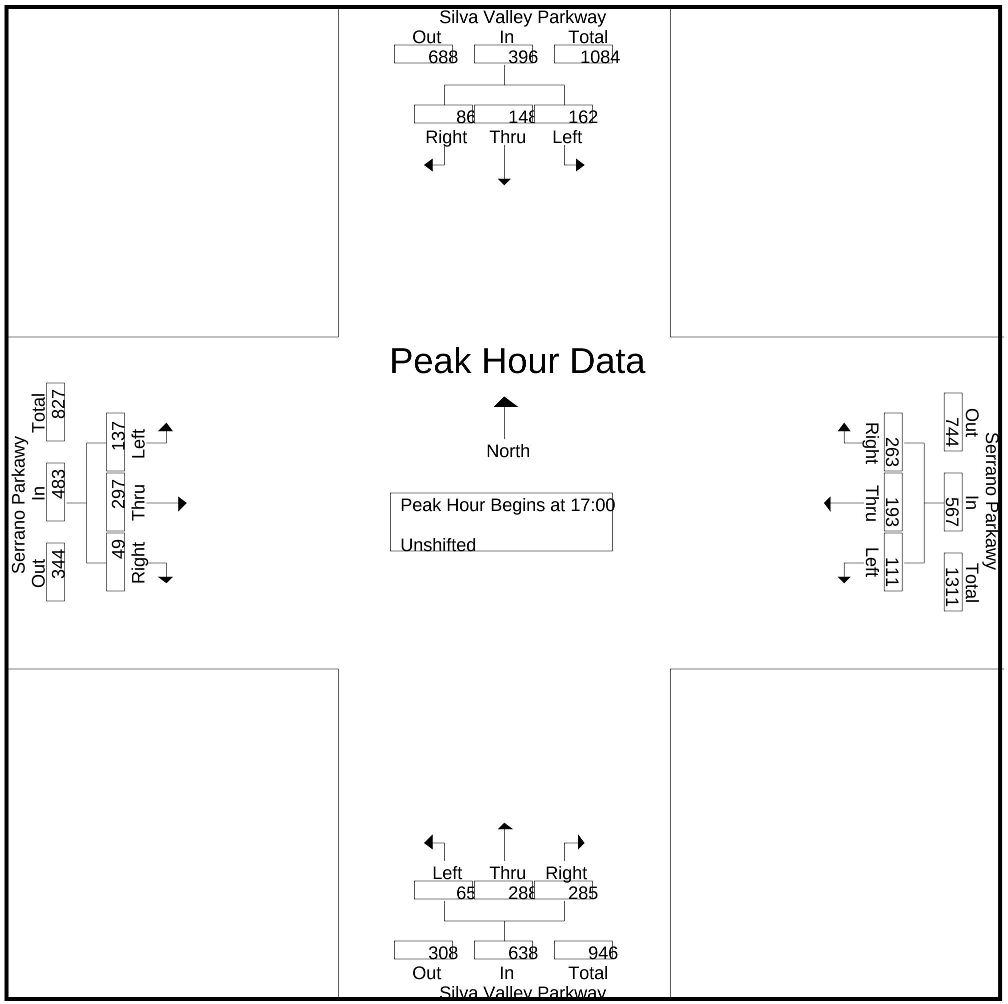
17:00	38	30	15	83	20	48	44	112	19	73	74	166	33	**87**	**13**	**133**	494
17:15	41	41	**24**	106	**36**	**56**	**79**	**171**	18	**90**	**76**	**184**	**38**	69	10	117	**578**
17:30	29	27	23	79	23	44	75	142	**20**	65	72	157	35	68	13	116	494
17:45	**54**	**50**	24	**128**	32	45	65	142	8	60	63	131	31	73	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

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

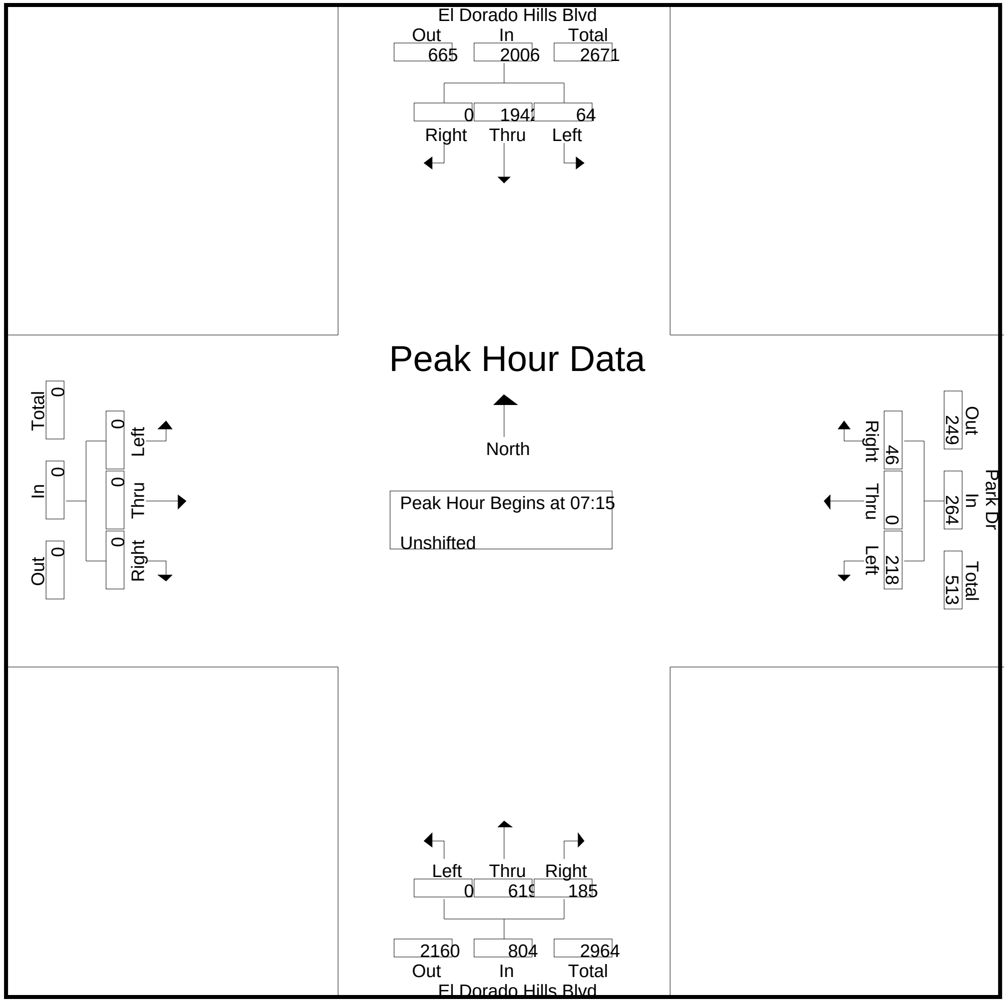
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
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

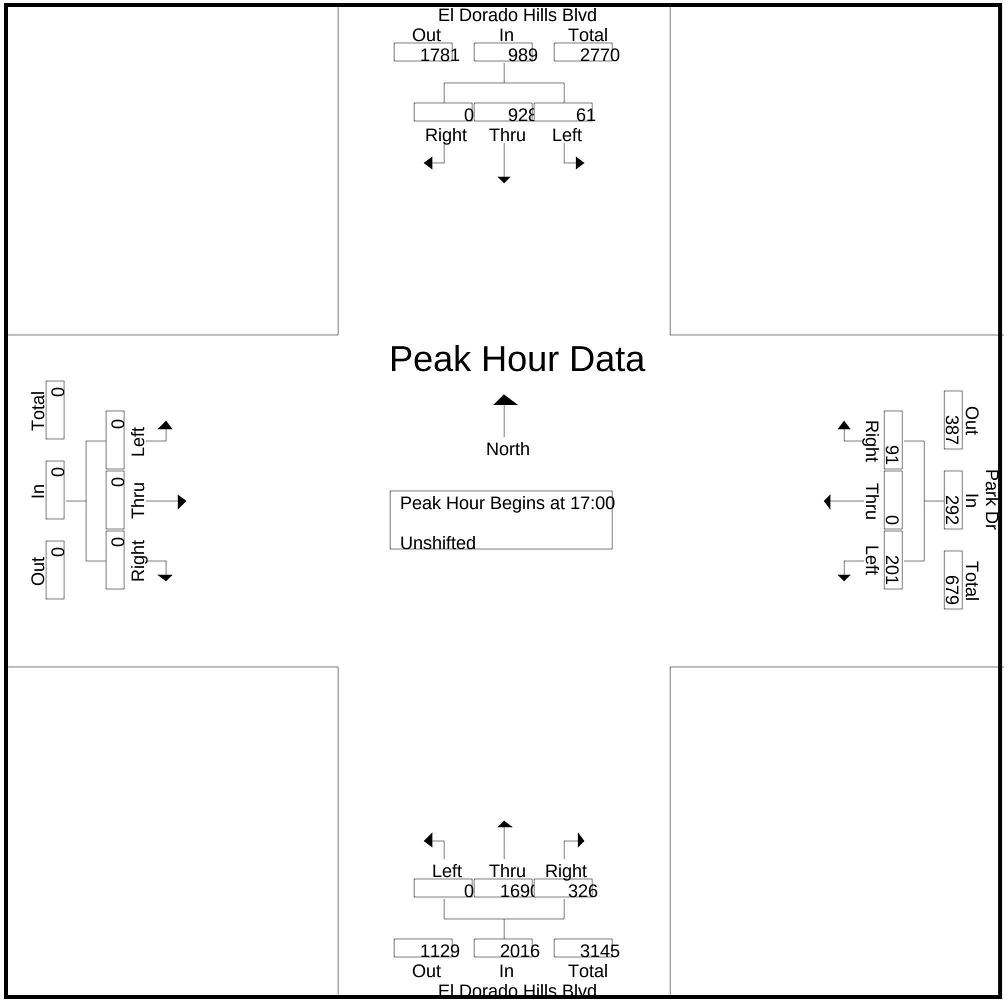
	El Dorado Hills Blvd Southbound				Park Dr Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
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

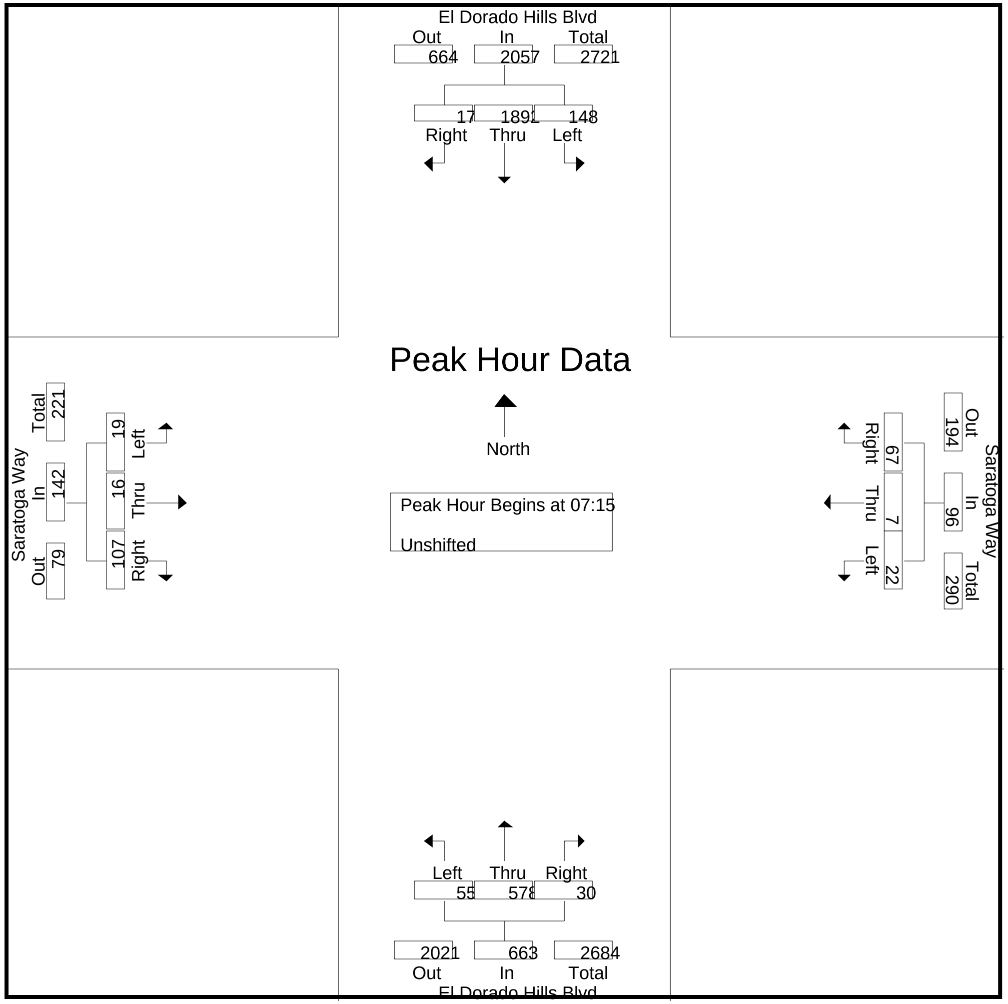
File Name : 12-7225-004 El Dorado Hills-Saratoga
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

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

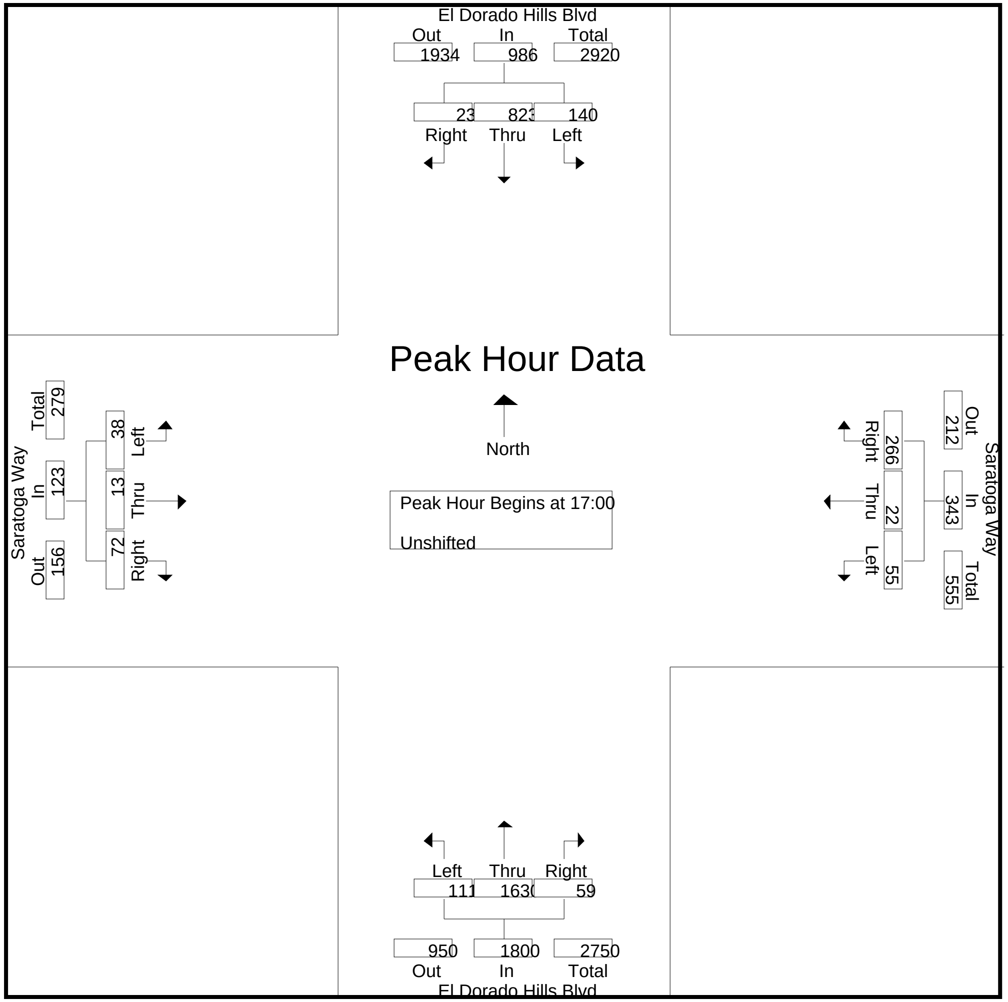
17:00	33	211	6	250	**20**	6	67	**93**	24	**433**	**17**	**474**	**11**	3	17	31	**848**
17:15	**41**	**212**	**7**	**260**	14	4	60	78	**37**	409	11	457	8	**5**	19	32	827
17:30	41	199	6	246	11	**7**	**71**	89	27	410	15	452	8	3	**25**	**36**	823
17:45	25	201	4	230	10	5	68	83	23	378	16	417	11	2	11	24	754
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

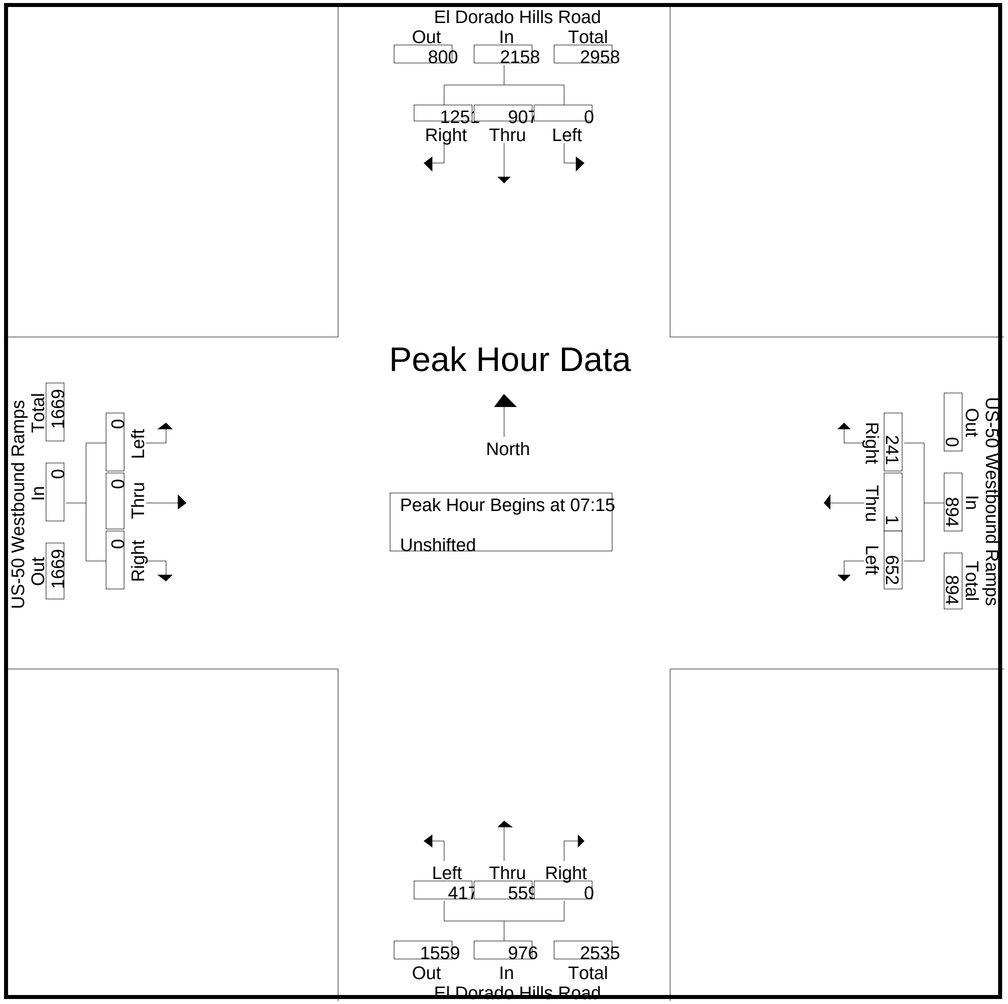
File Name : 12-7225-006 El Dorado Hills-US50 WB Ramps
Site Code : 00000000
Start Date : 5/22/2012

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

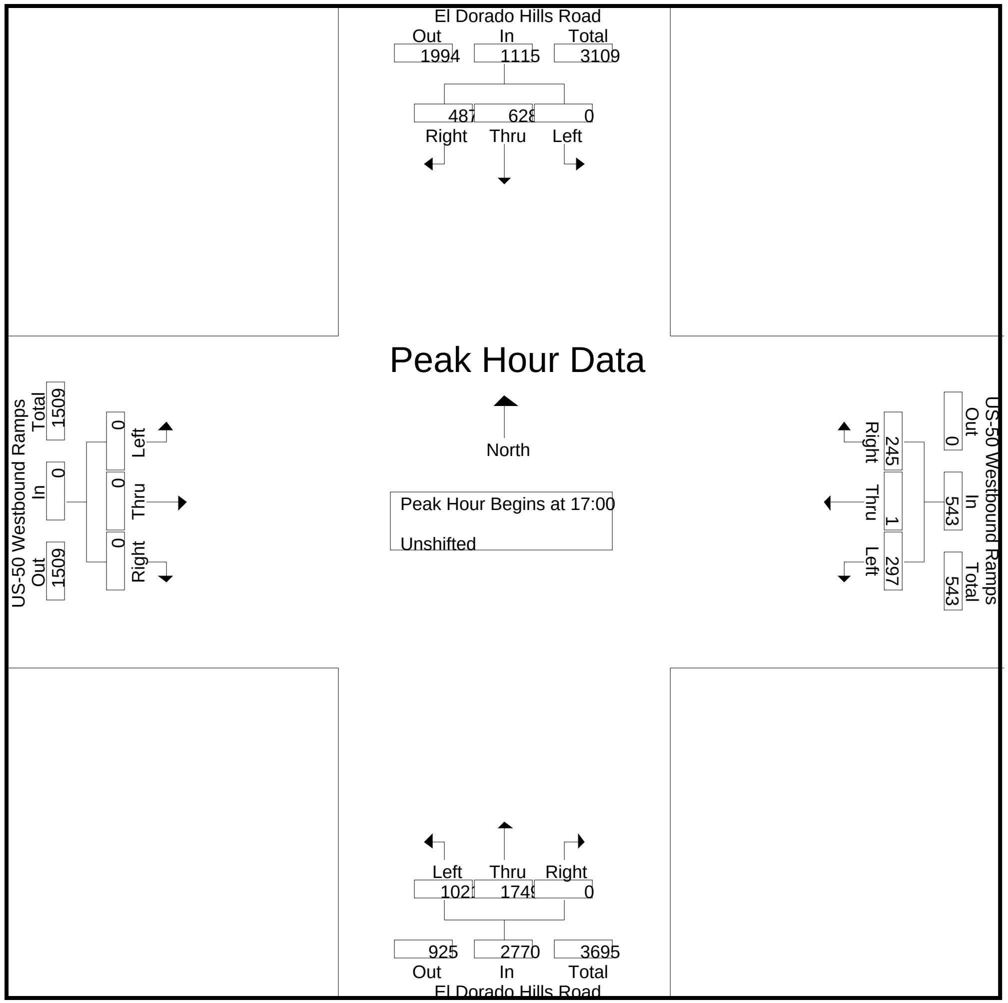
17:00	0	**182**	**127**	**309**	61	0	65	126	**322**	**457**	0	**779**	0	0	0	0	**1214**
17:15	0	153	124	277	**92**	**1**	**69**	**162**	262	443	0	705	0	0	0	0	1144
17:30	0	141	112	253	62	0	51	113	251	456	0	707	0	0	0	0	1073
17:45	0	152	124	276	82	0	60	142	186	393	0	579	0	0	0	0	997
Total Volume	0	628	487	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

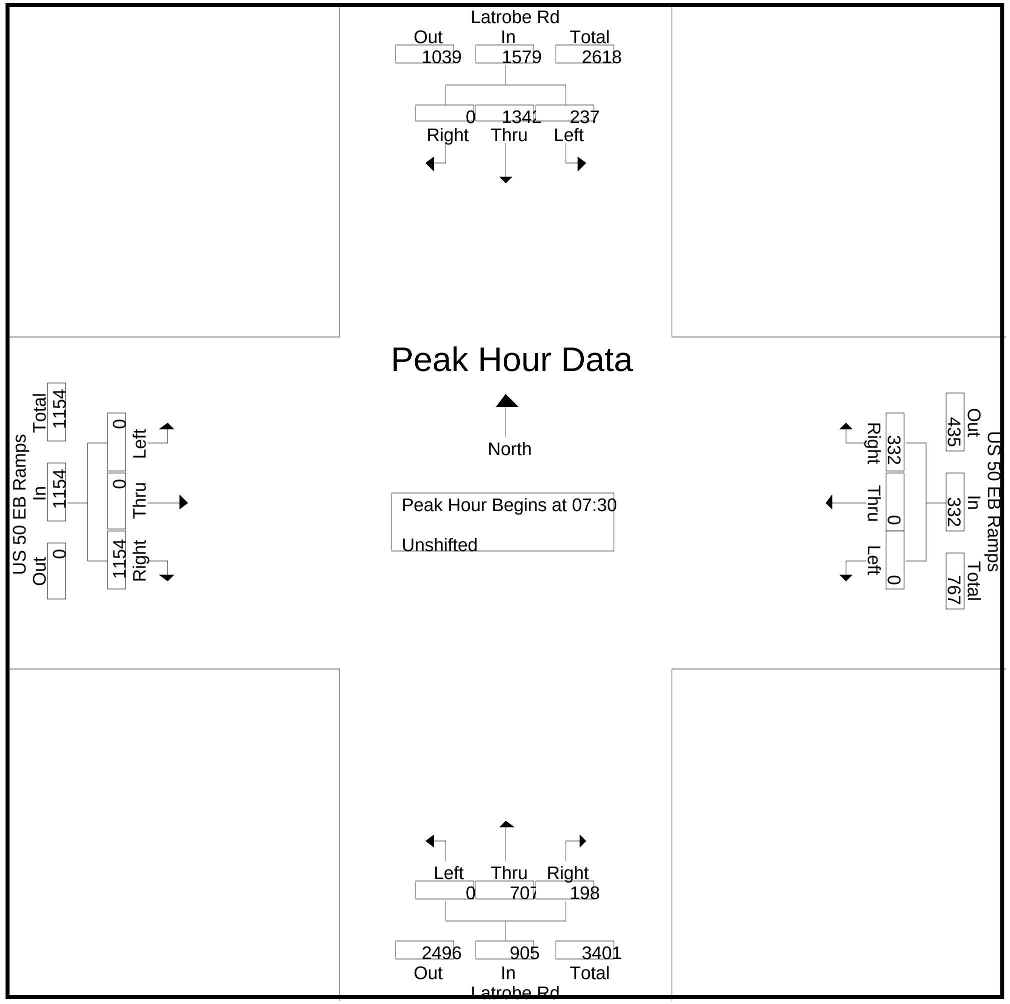
File Name : 12-7225-007 Latrobe-US50 EB Ramps
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

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

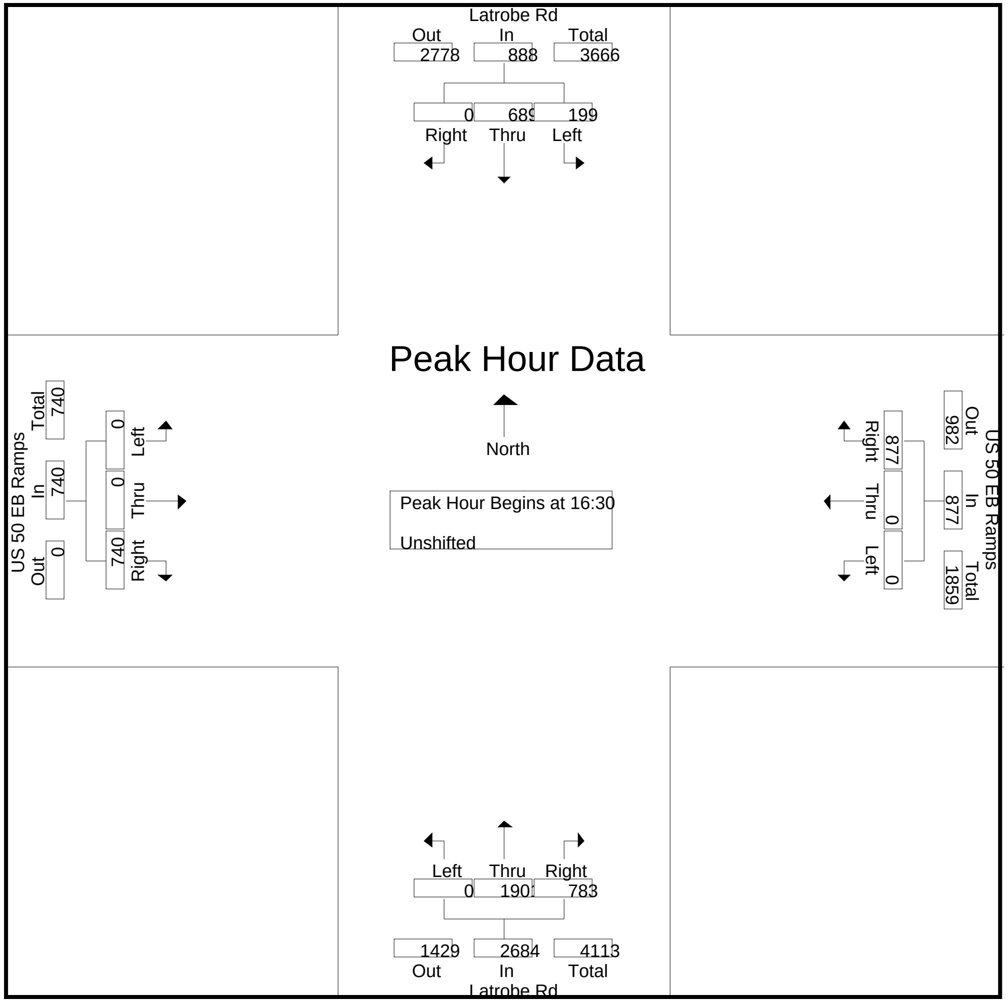
16:30	38	145	0	183	0	0	235	235	0	432	182	614	0	0	181	181	1213
16:45	44	175	0	219	0	0	221	221	0	405	179	584	0	0	197	197	1221
17:00	**77**	168	0	**245**	0	0	**251**	**251**	0	**542**	196	738	0	0	160	160	**1394**
17:15	40	**201**	0	241	0	0	170	170	0	522	**226**	**748**	0	0	**202**	**202**	1361
Total Volume	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

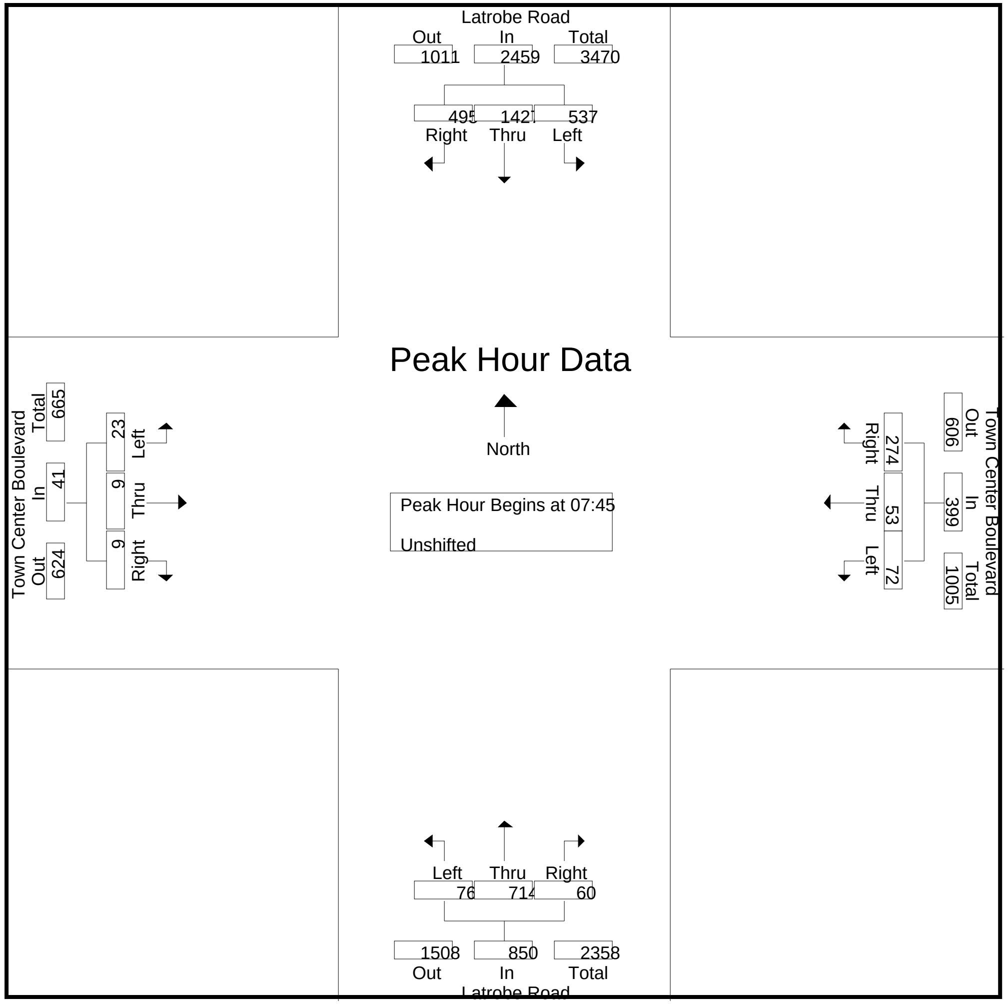
File Name : 12-7225-008 Latrobe-Town Center
Site Code : 00000000
Start Date : 5/22/2012

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

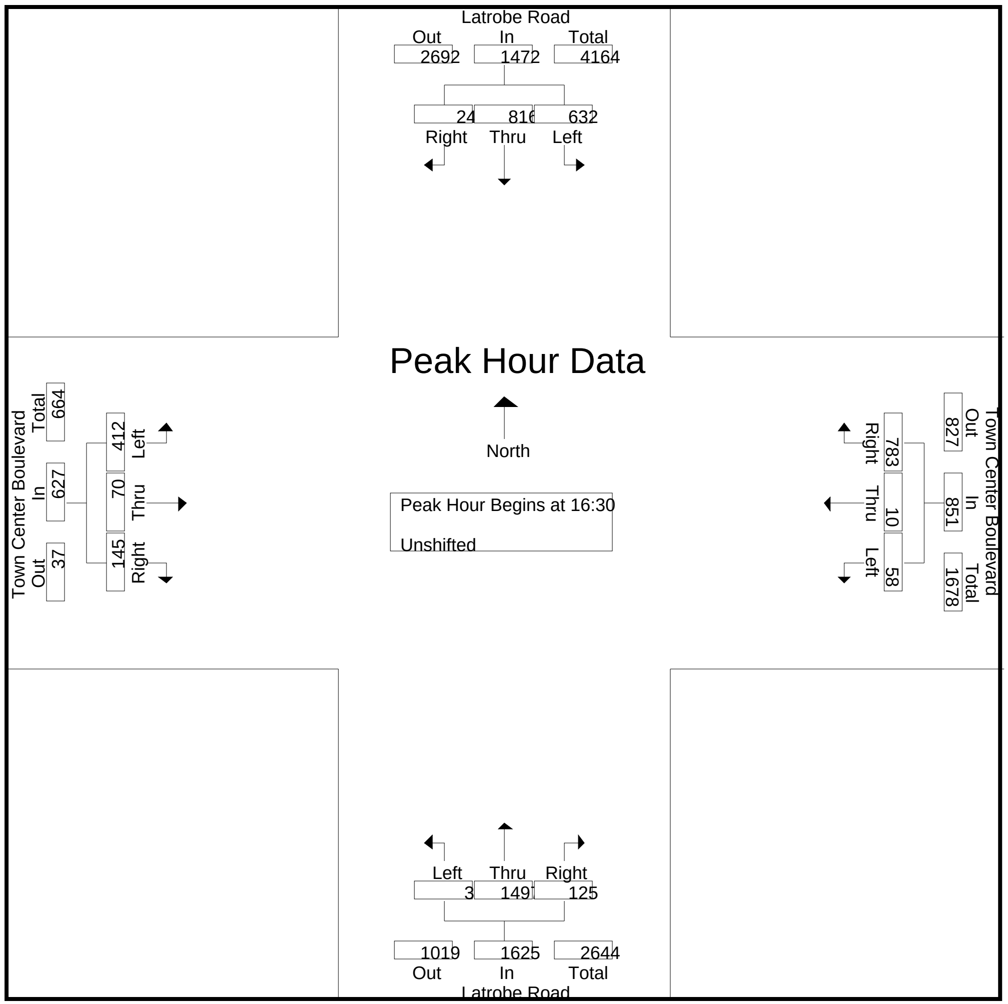
16:30	122	188	5	315	12	**3**	176	191	**1**	316	12	329	112	17	26	155	990
16:45	159	192	**9**	360	11	2	191	204	0	356	**39**	395	84	11	28	123	1082
17:00	147	183	6	336	16	3	191	210	1	**428**	37	**466**	**113**	**32**	**51**	**196**	1208
17:15	**204**	**253**	4	**461**	**19**	2	**225**	**246**	1	397	37	435	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

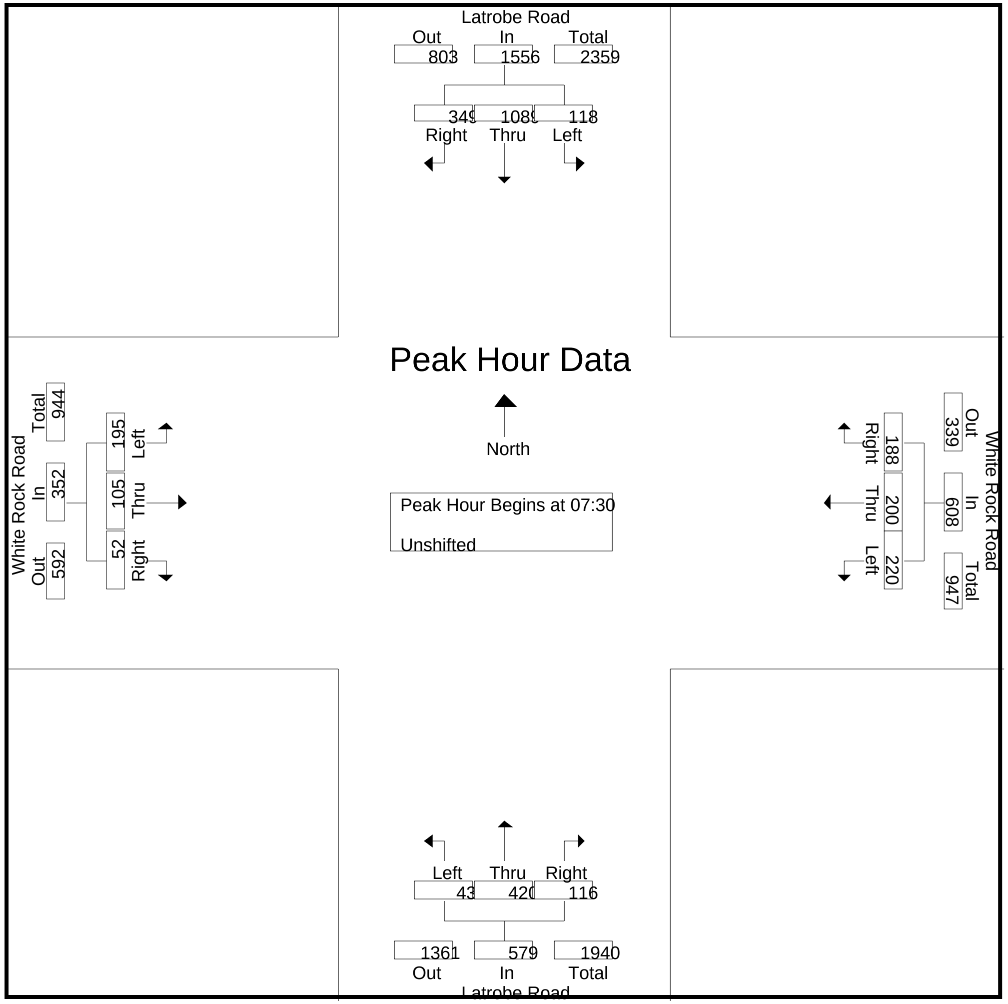
File Name : 12-7225-009 Latrobe-White Rock
Site Code : 00000000
Start Date : 5/22/2012

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	42	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

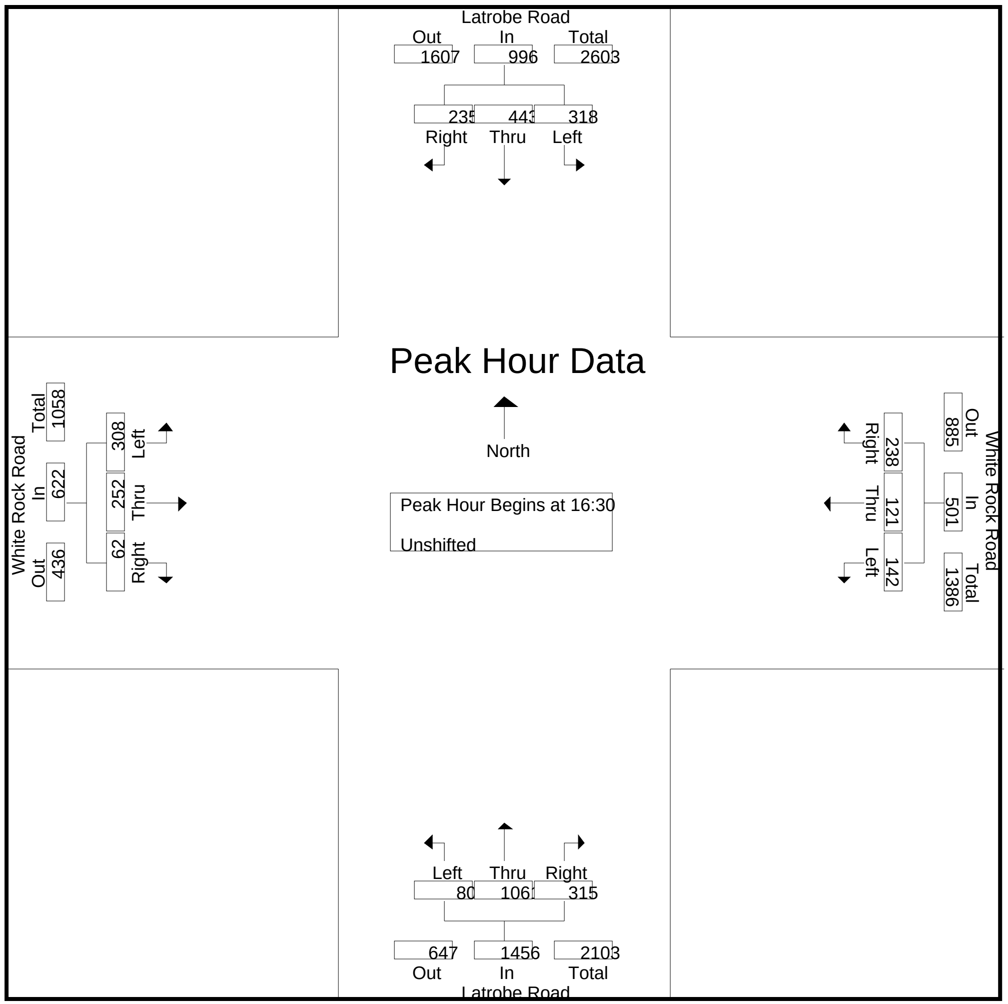
16:30	77	105	48	230	34	32	59	125	20	289	79	388	53	54	11	118	861
16:45	77	114	57	248	30	29	41	100	17	233	82	332	77	58	14	149	829
17:00	81	87	64	232	28	**37**	**76**	**141**	**32**	**323**	**89**	**444**	**110**	**79**	12	**201**	**1018**
17:15	**83**	**137**	**66**	**286**	**50**	23	62	135	11	216	65	292	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

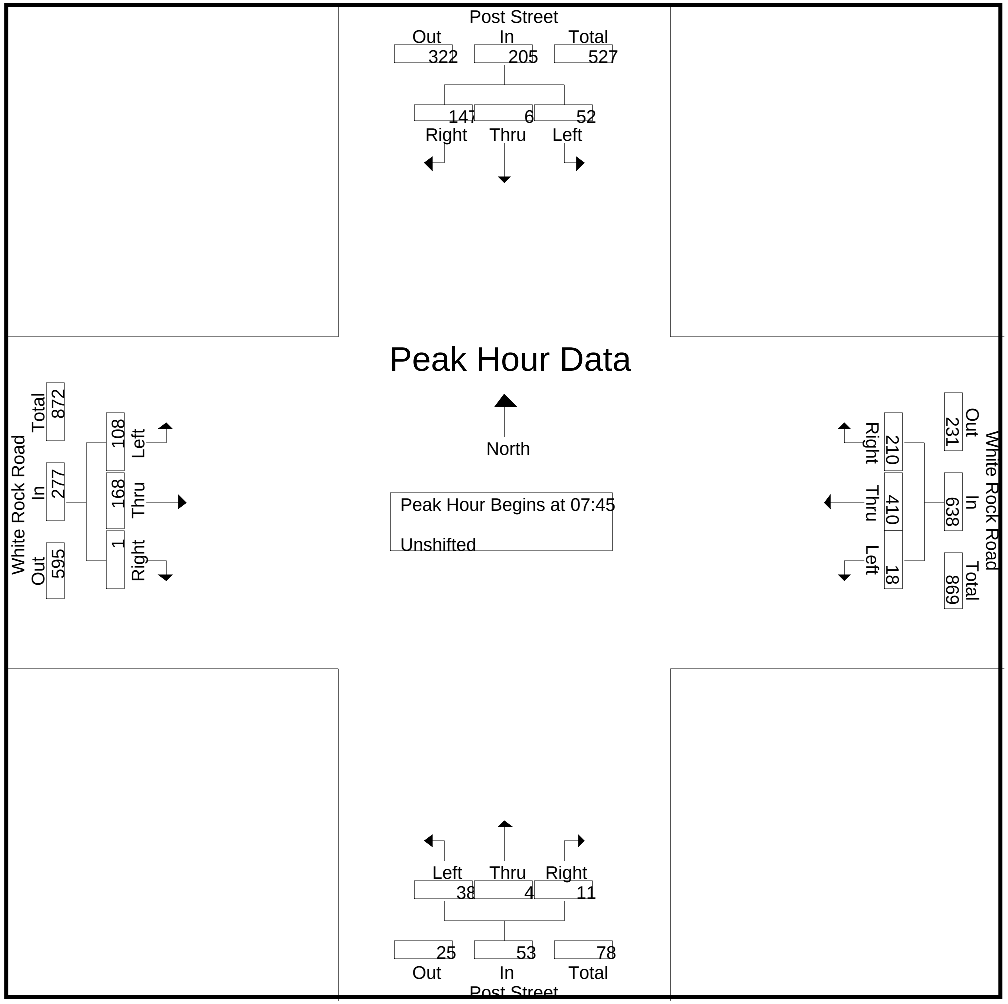
File Name : 12-7225-010 Post-White Rock
Site Code : 00000000
Start Date : 5/22/2012

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

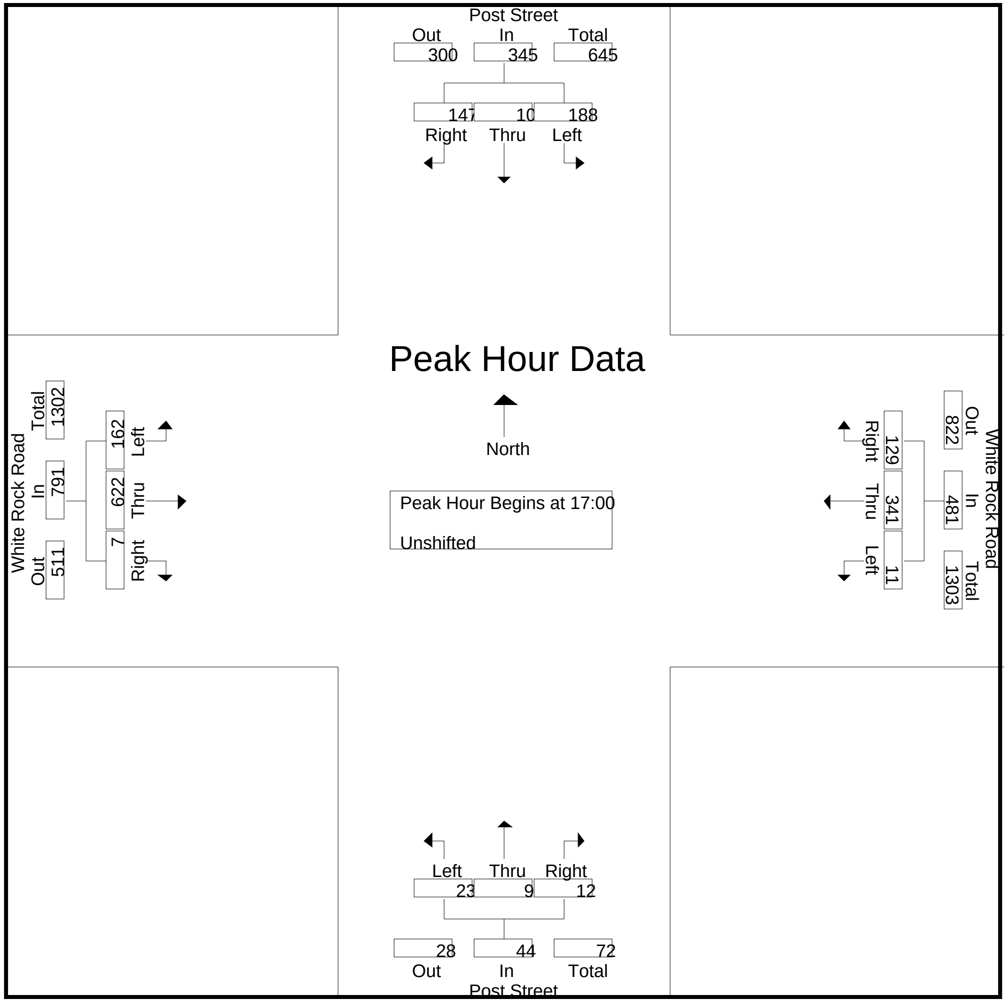
17:00	35	**4**	44	83	1	89	27	117	**11**	2	3	**16**	**58**	**171**	**4**	**233**	**449**
17:15	**59**	3	**48**	**110**	3	83	29	115	4	**5**	**4**	13	31	155	1	187	425
17:30	48	1	27	76	2	78	32	112	1	1	2	4	36	164	0	200	392
17:45	46	2	28	76	**5**	**91**	**41**	**137**	7	1	3	11	37	132	2	171	395
Total Volume	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

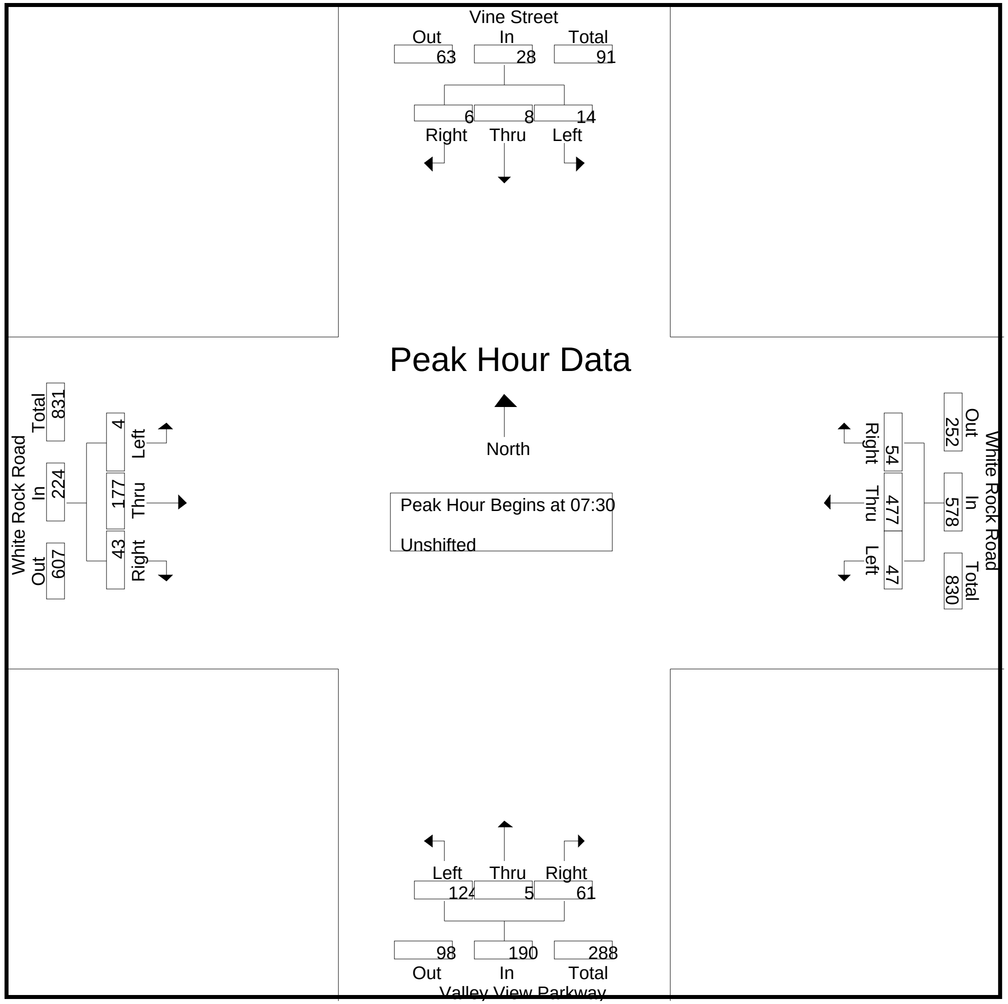
File Name : 12-7225-011 Valley View-White Rock
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

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
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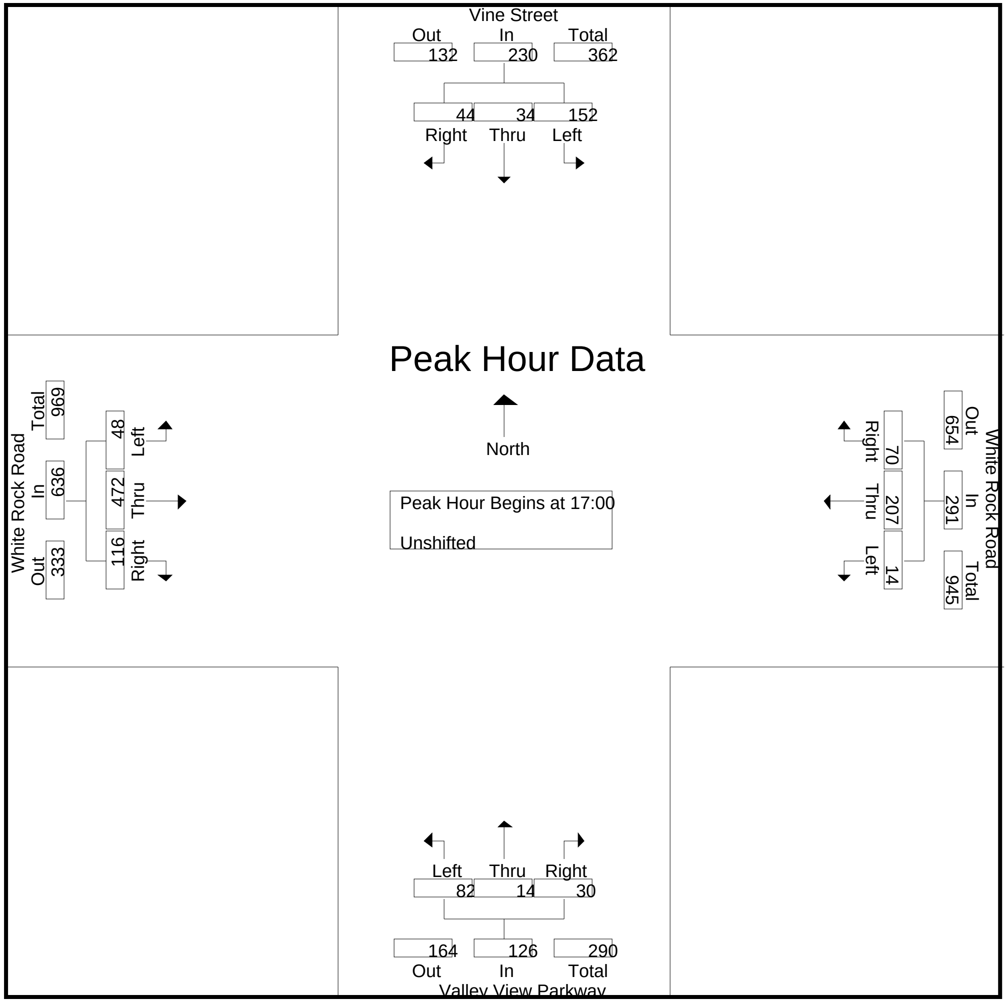
Page No : 3



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 Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
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 Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
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

	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

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	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

	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

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	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

	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

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	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**

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**

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**

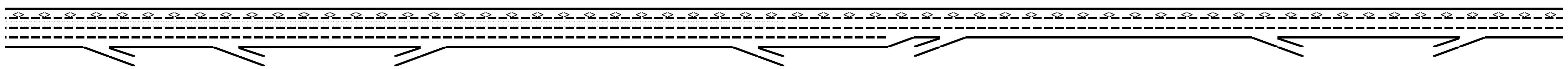
Existing Roadway Segments Analysis		Peak Hour Volume		LOS Thresholds			V/ C Ratio		LOS	
Central El Dorado	Number of Lanes	AM	PM	LOS C	LOS D	LOS E	AM	PM	AM	PM
El Dorado Hills Blvd - Green Valley to US 50 (5 segments)										
Green Valley to Francisco	2A	430	389	850	1540	1650	0.26	0.24	C or better	C 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

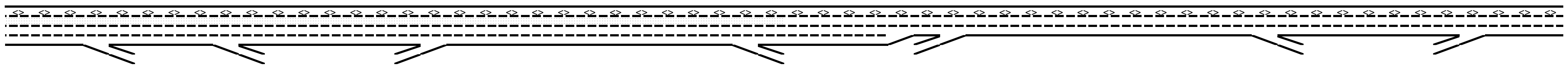


Key

<> 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		



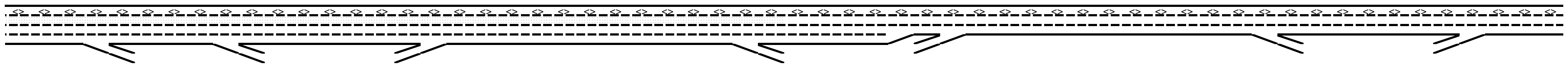
Key

<> 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

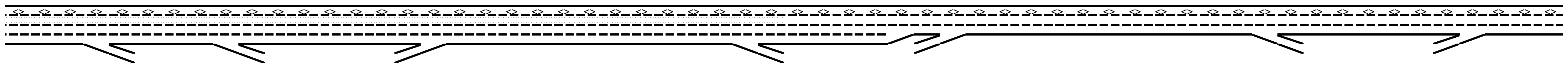
Location	1	2	3	4	5	6	7	8	9	10	11	12



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)	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												

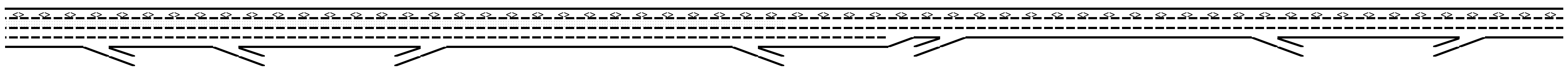
Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing Conditions

Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value

Calculated Value

Location	1	2	3	4	5	6	7	8	9	10	11	12



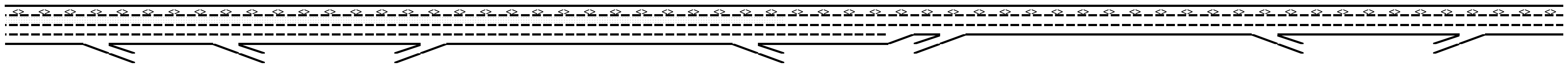
Key

<> 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
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		

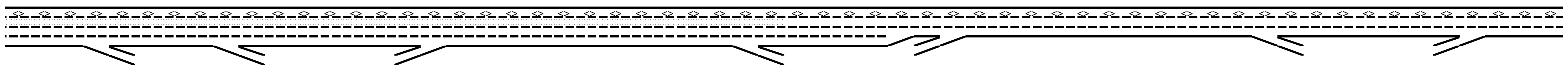
Location	1	2	3	4	5	6	7	8	9	10	11	12



Key
<> Express Lane (HOV)
No Trucks

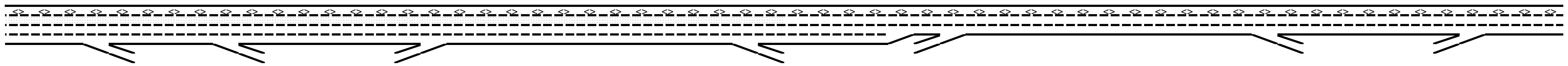
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	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

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	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



Key

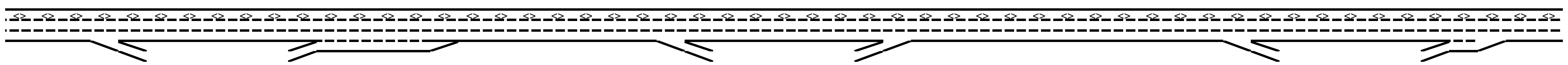
<> Express Lane (HOV)

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 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**	*Data Entry Value*
Freeway Corridor:	**Westbound US 50**	**Time Period:**	**AM Peak Hour**	*Calculated Value*

Location	1	2	3	4	5	6	7	8	9	10	11

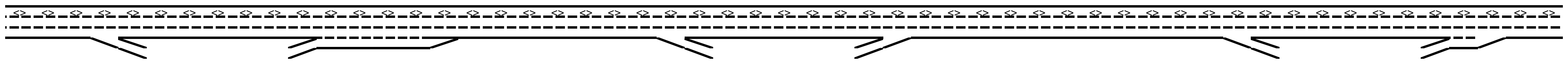


Key

<> 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	2,935	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		

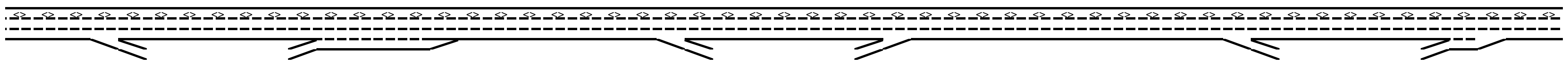


Key

<> 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
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



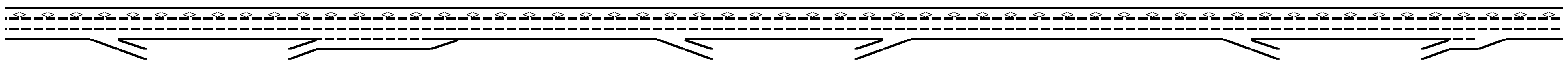
Key

<> 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
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_F (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

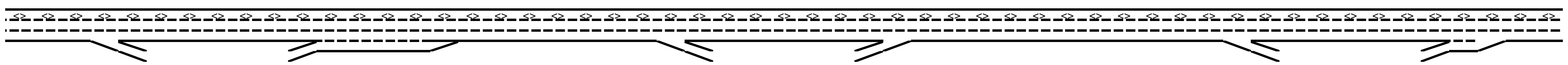
<> Express Lane (HOV)

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)	2,793				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

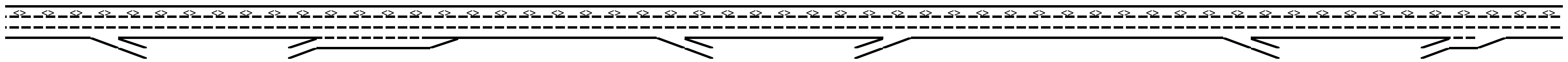
Data Entry Value
Calculated Value



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



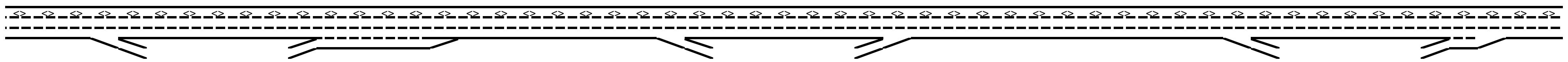
Key

<> 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

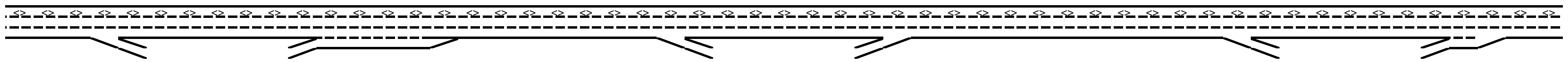


Key

<> 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



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
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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside
Existing Plus Project
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**

SimTraffic Post-Processor | **Serrano Westside**
Average Results from 10 Runs | **Existing Plus Project**
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	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		

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**

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

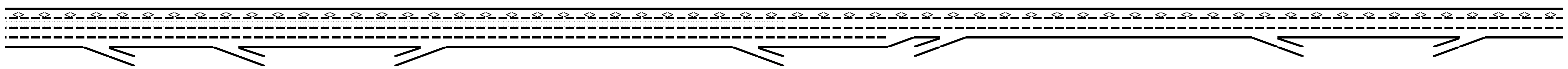
Project: Marble Valley/Lime Rock/Pedregal **Alternative:** Existing + Project Conditions

Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

Data Entry Value

Calculated Value

Location	1	2	3	4	5	6	7	8	9	10	11	12



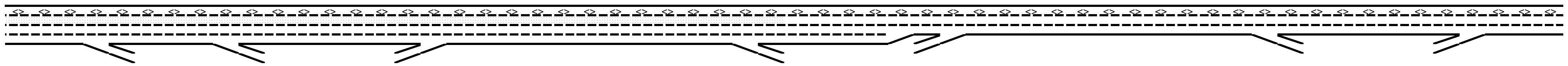
Key

<> 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
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		

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

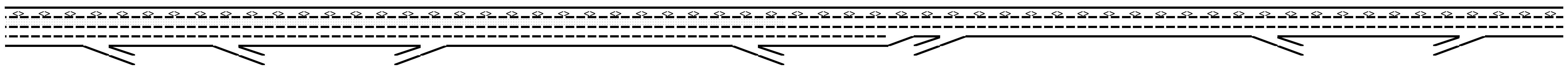
<> Express Lane (HOV)

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)	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

Project: Serrano Westside

Alternative: Existing Plus Project
Time Period: AM Peak Hour



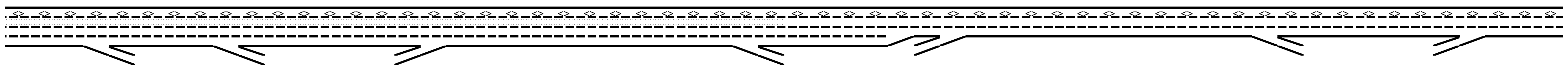
Key

<> 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_F (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)

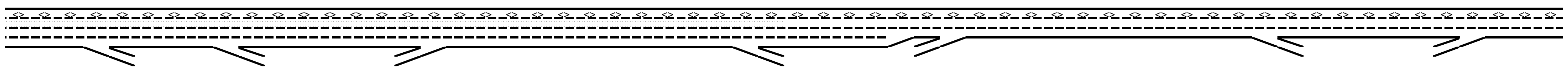
No Trucks

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

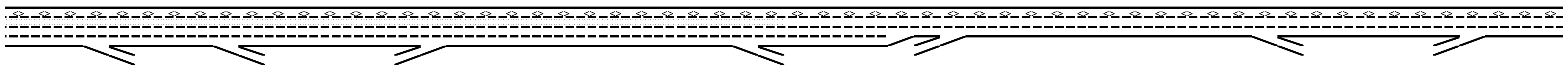
Location	1	2	3	4	5	6	7	8	9	10	11	12



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
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		

Location	1	2	3	4	5	6	7	8	9	10	11	12

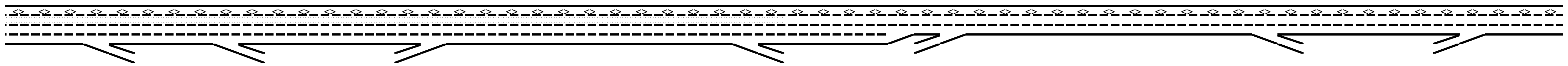


Key

<> 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)	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



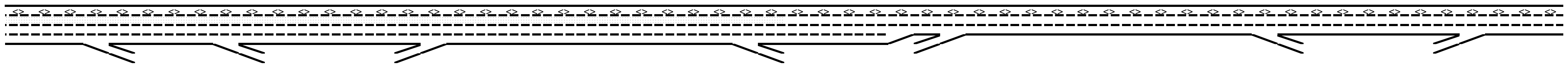
Key
<> Express Lane (HOV)
No Trucks

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	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_F (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

Project: Serrano Westside

Alternative: Existing Plus Project
Time Period: PM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12



Key

<> Express Lane (HOV)

No Trucks

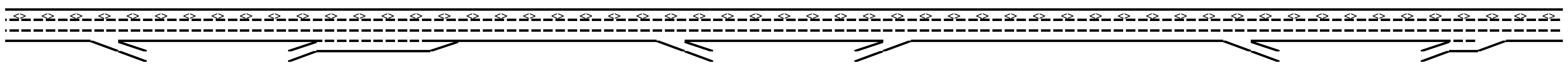
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd on-ramp	El Dorado Hills Blvd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	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



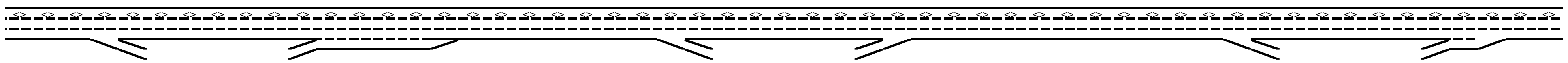
Key

<> 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	2,954	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

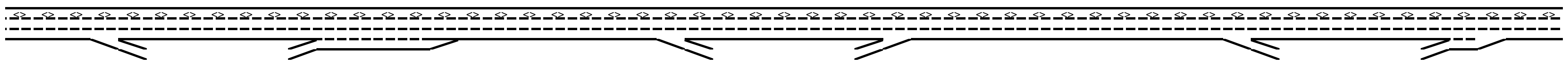


Key

<> 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



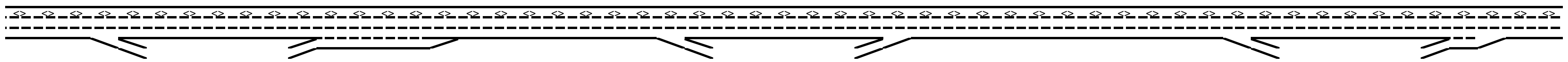
Key

<> 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
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

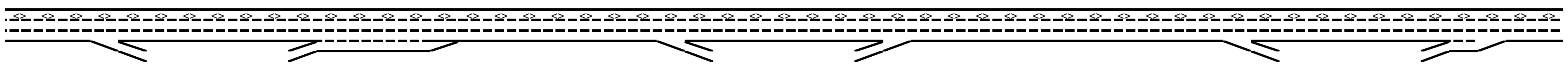
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to El Dorado Hills Blvd	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
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)

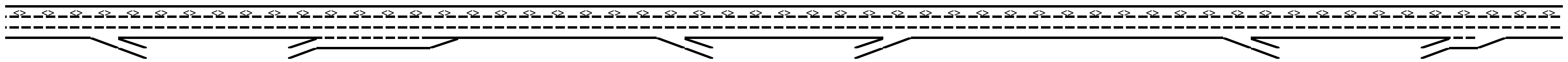
No Trucks

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		

Project: Serrano Westside

Alternative: Existing Plus Project
Time Period: PM Peak Hour

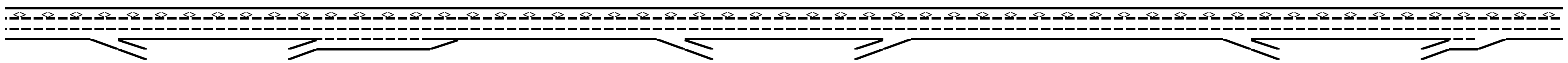
Location	1	2	3	4	5	6	7	8	9	10	11



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

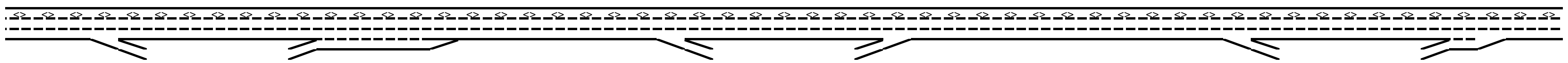


Key

<> 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_F (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



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
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

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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside/Pedregal
Cumulative No Project
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**

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

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

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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside/Pedregal
Cumulative No Project
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

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

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**

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		

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

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

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

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**

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		

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**

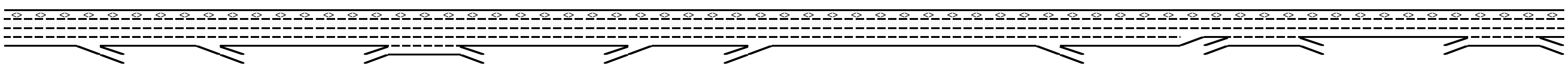
		Volume (veh/hr)			Total Delay (sec/veh)		
Direction	Movement	Demand	Served	% Served	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	700	905	129.3%	9.2	0.5	A
	Right Turn	730	588	80.5%	4.3	0.2	A
	Subtotal	**1430**	**1492**	**104.4%**	**7.3**	**0.3**	**A**
SB	Left Turn						
	Through	960	962	100.2%	8.4	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

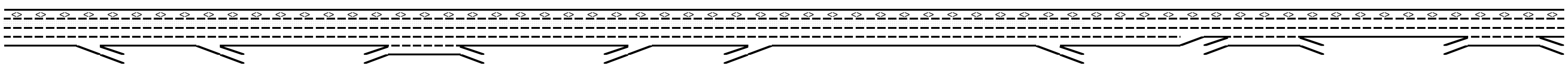
Location	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake 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)

Project: Serrano Westside/Pedregal

Alternative: Cumulative No Projet
Time Period: AM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key

<> Express Lane (HOV)

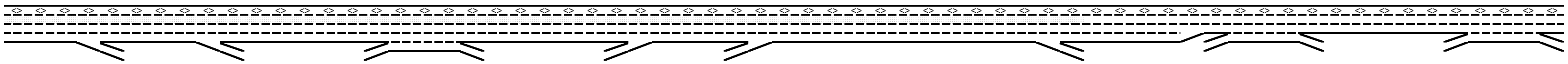
No Trucks

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
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%

Project: Serrano Westside/Pedregal

Alternative: Cumulative No Projet
Time Period: AM Peak Hour

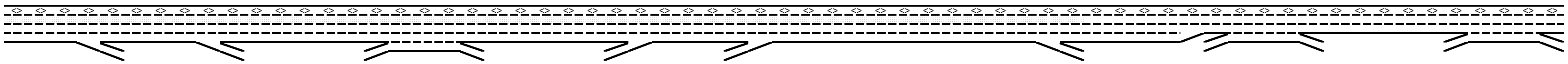
Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
<> Express Lane (HOV)
No Trucks

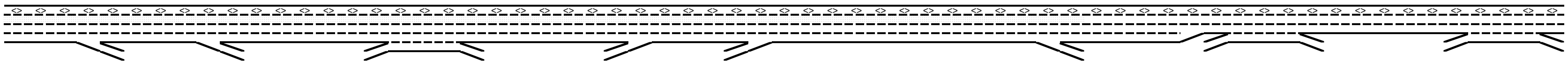
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
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				

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)	2,875	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



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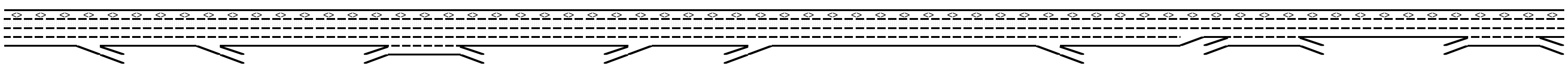
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
GP to 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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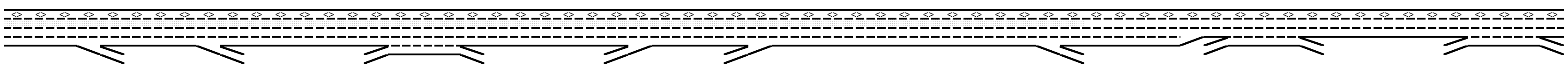
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	6,510	5,750	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)													

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



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No Trucks

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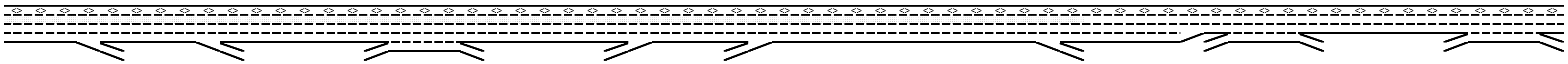
EL Volume (vph)	977	863	783	679	679	679	725	953	953	698	698	630	588
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	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%

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



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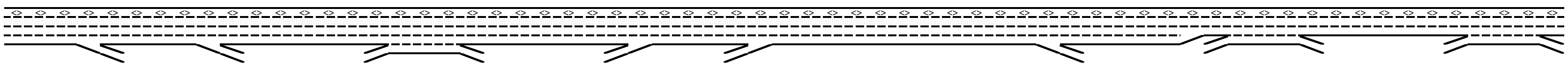
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	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

Project: Serrano Westside/Pedregal

Alternative: Cumulative No Project
Time Period: PM Peak Hour



Key

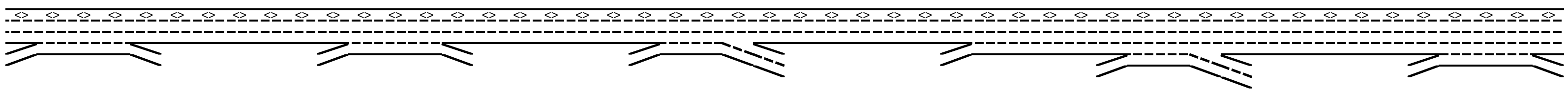
<> Express Lane (HOV)

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

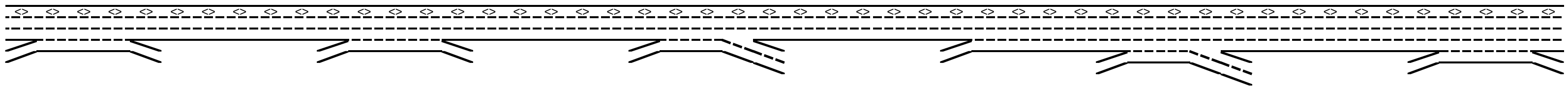
Data Entry Value
Calculated Value



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	3,300	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



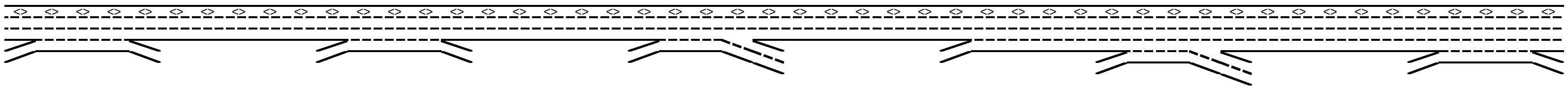
Key

<> 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



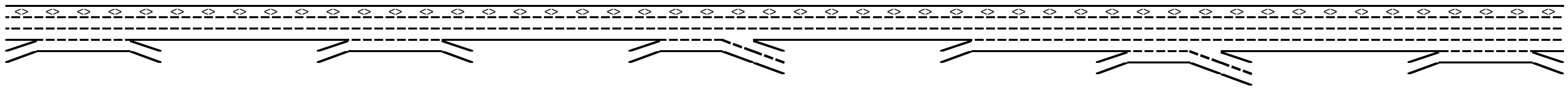
Key

<> 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



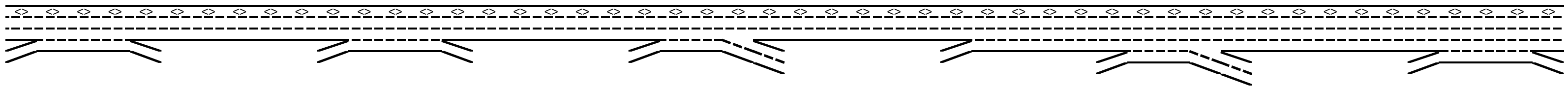
Key

<> 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



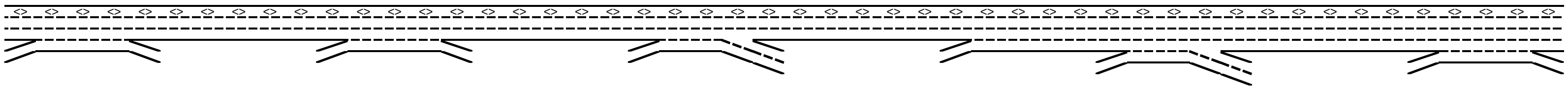
Key

<> 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

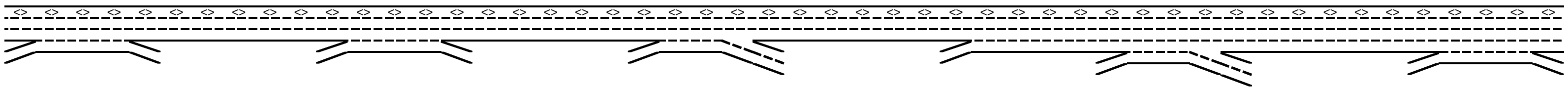
<> Express Lane (HOV)

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
Freeway Corridor: Westbound US 50
Alternative: Cumulative No Project
Time Period: PM Peak Hour

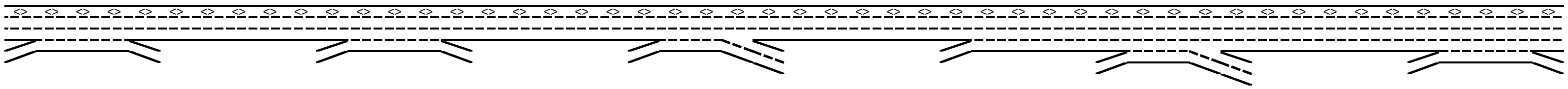
Data Entry Value
Calculated Value



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



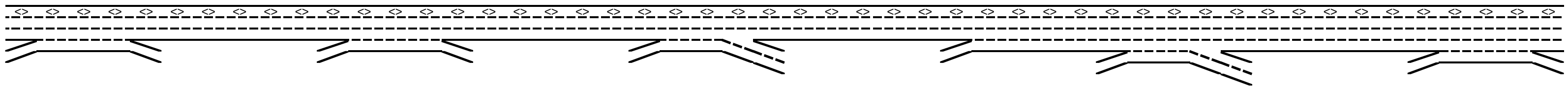
Key

<> 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)	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

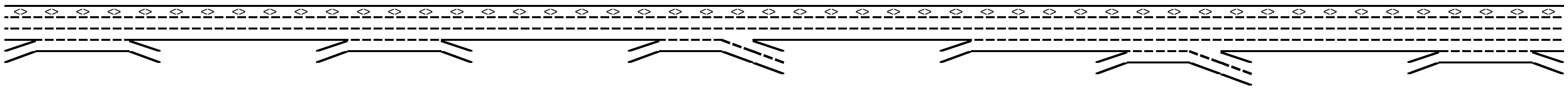
Location	1	2	3	4	5	6	7	8	9	10



Key
<> 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)	1,146		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

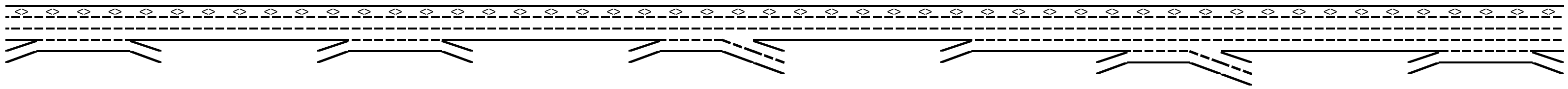


Key

<> 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



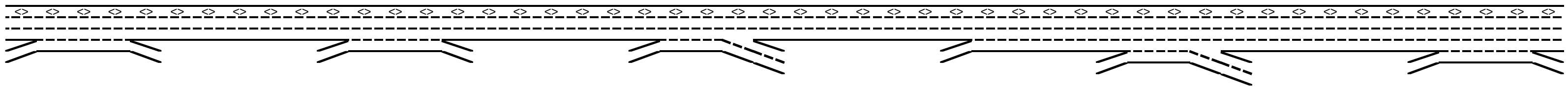
Key

<> 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
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

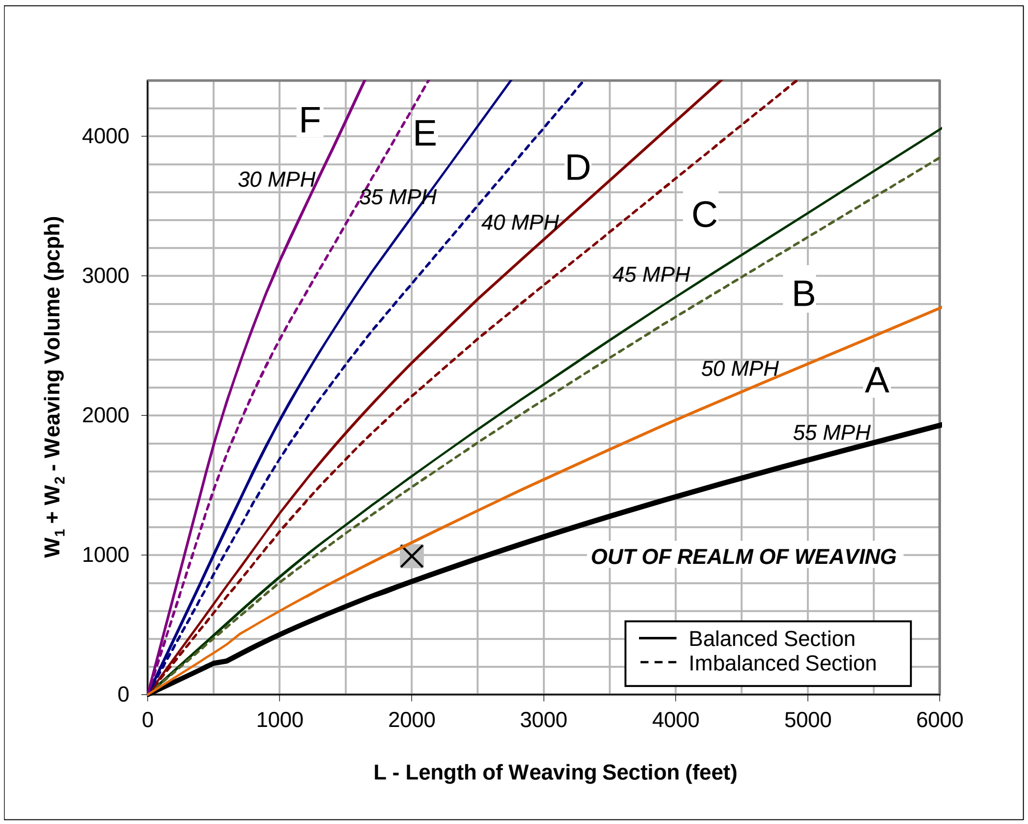
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

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



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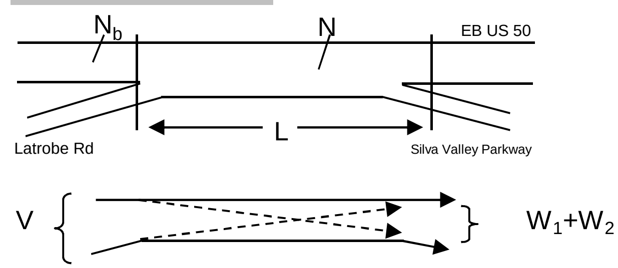


Capacity Analysis

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): 51.8
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

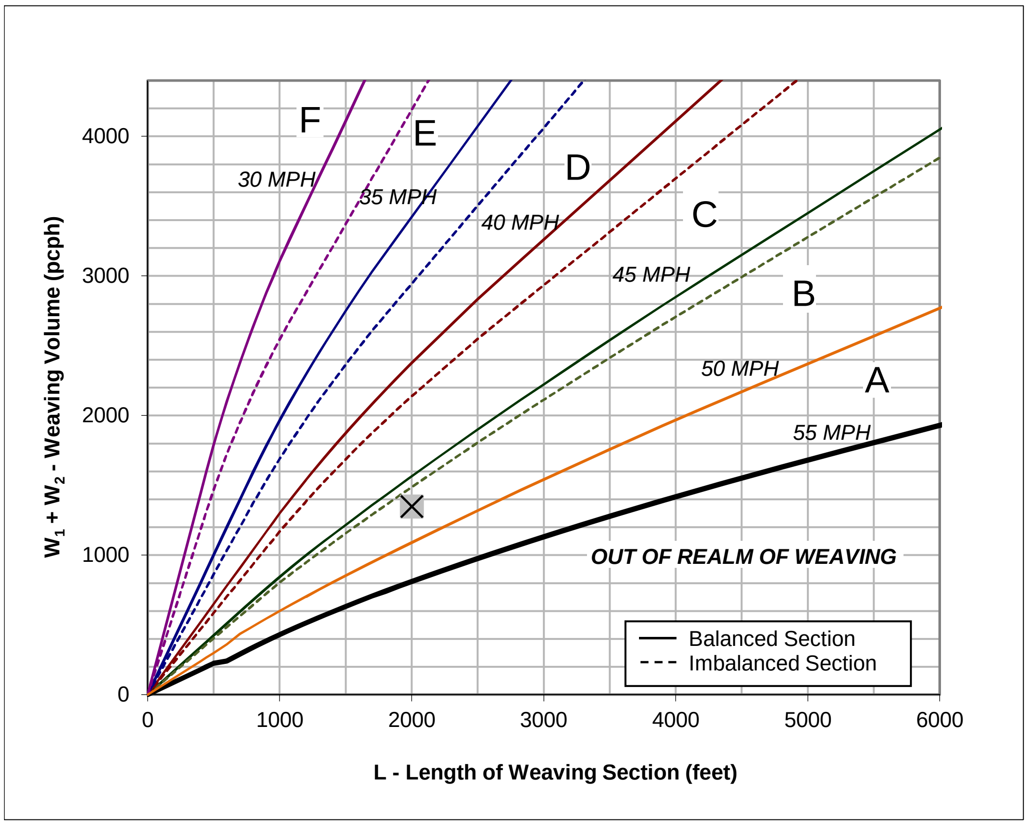
Leisch Method for Weaving Analysis

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

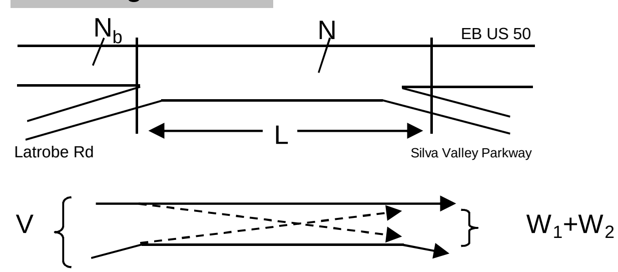
Project Information	
Project	Serrano Westside Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

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

*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): 47.3
4. Weaving Intensity Factor (k): 1.63
5. Service Volume (SV, pcph): 1,416
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$
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

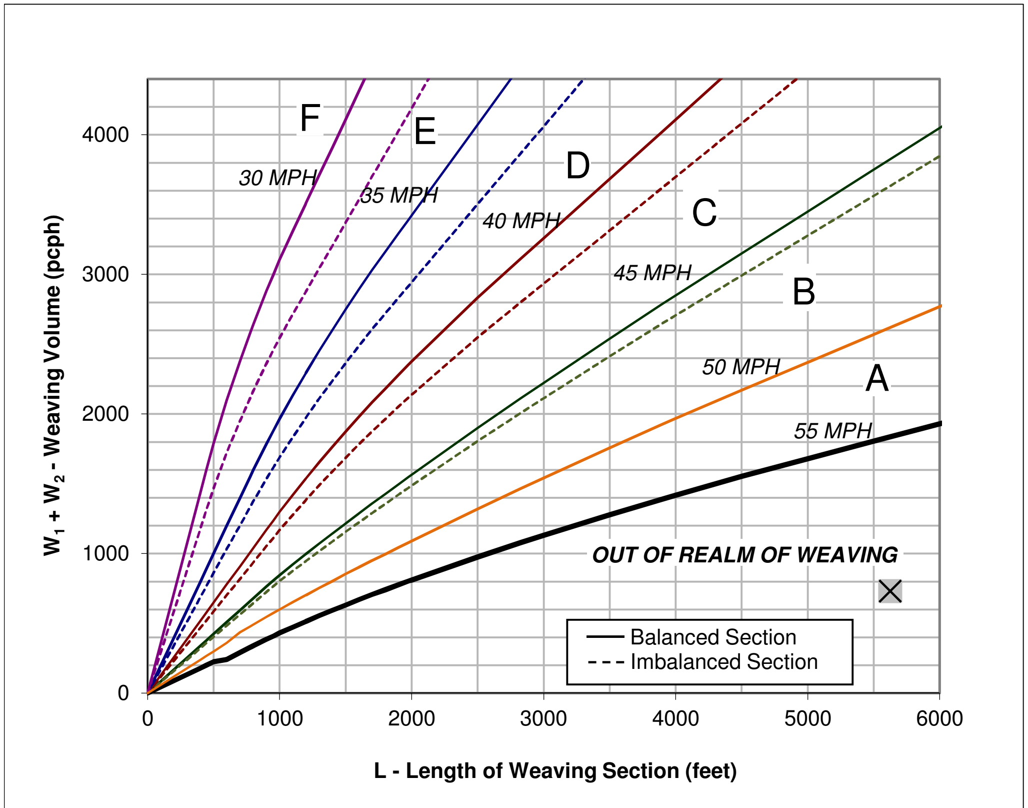
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,625

Project Information

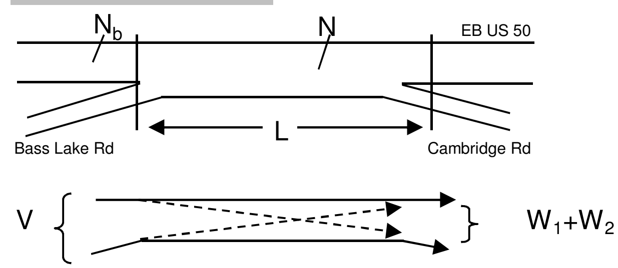
Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

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

*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)? **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

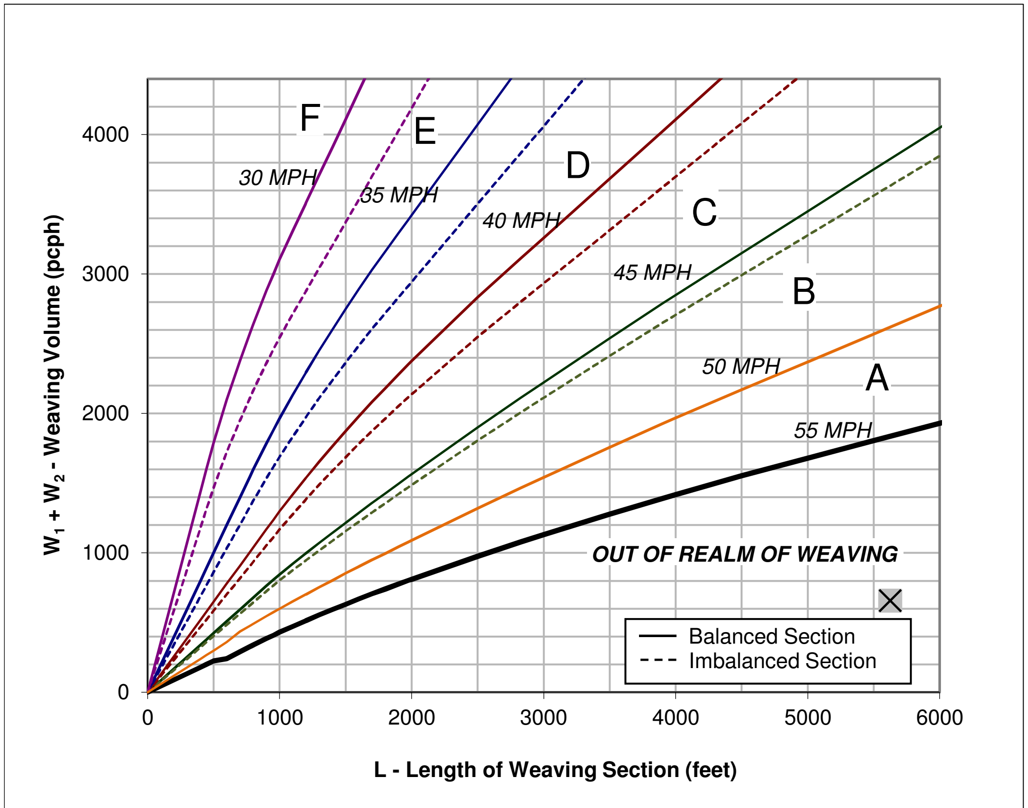
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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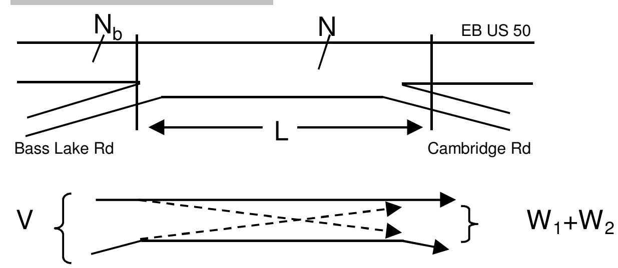


Capacity Analysis

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

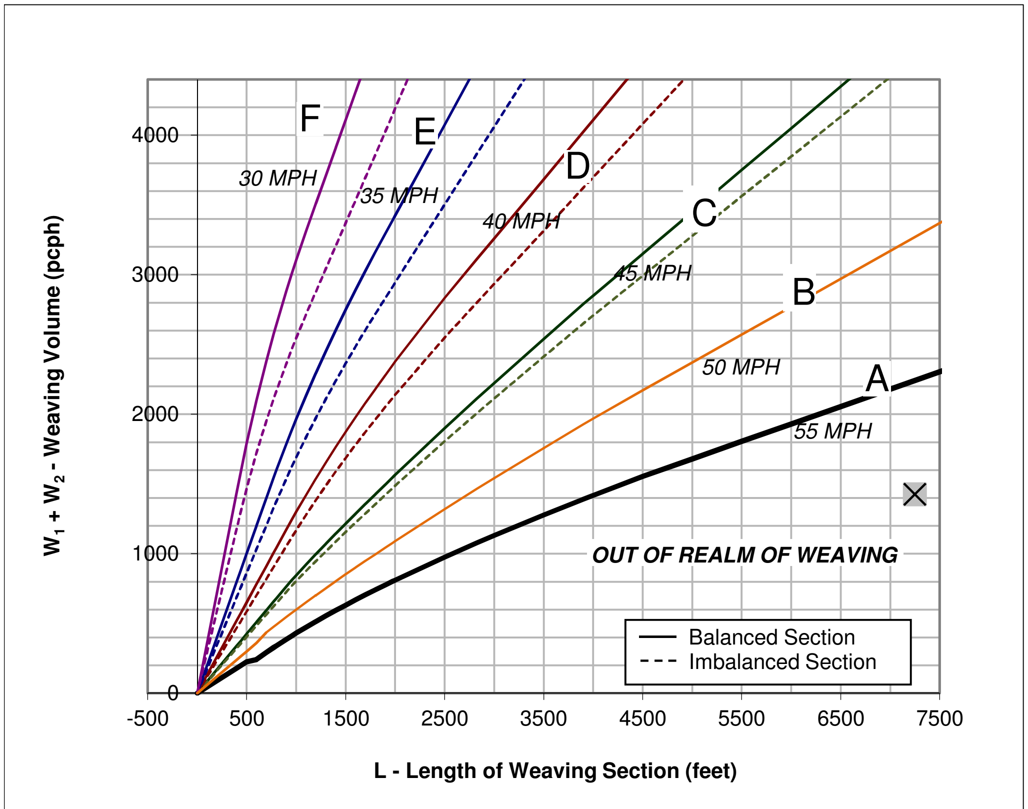
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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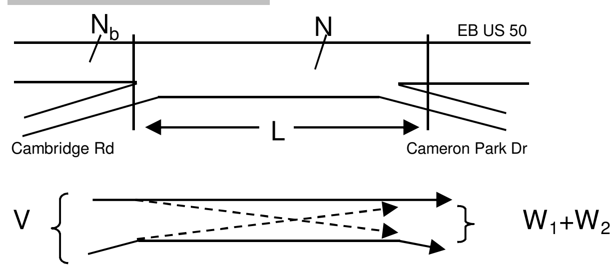


Capacity Analysis

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

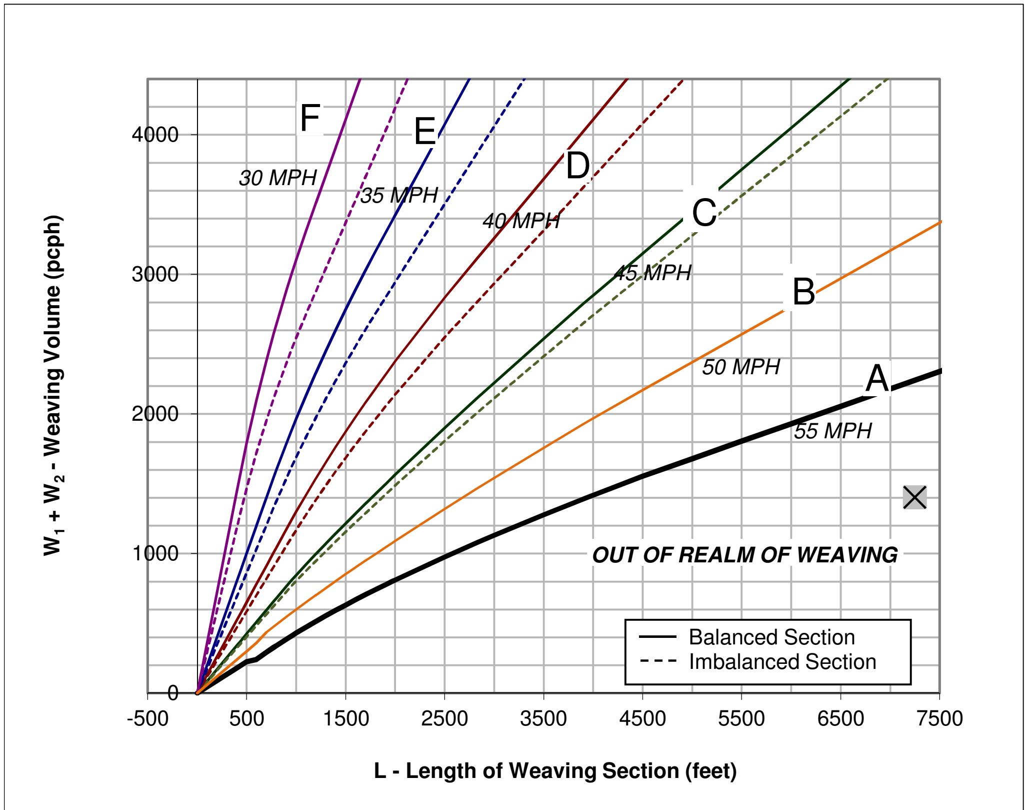
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	7,250

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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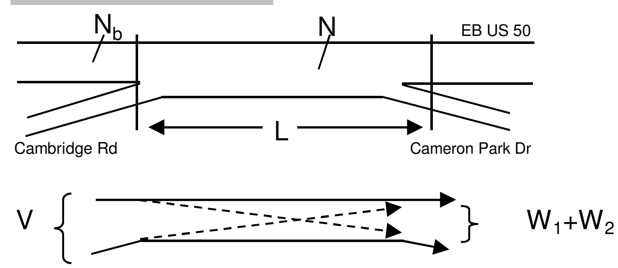


Capacity Analysis

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

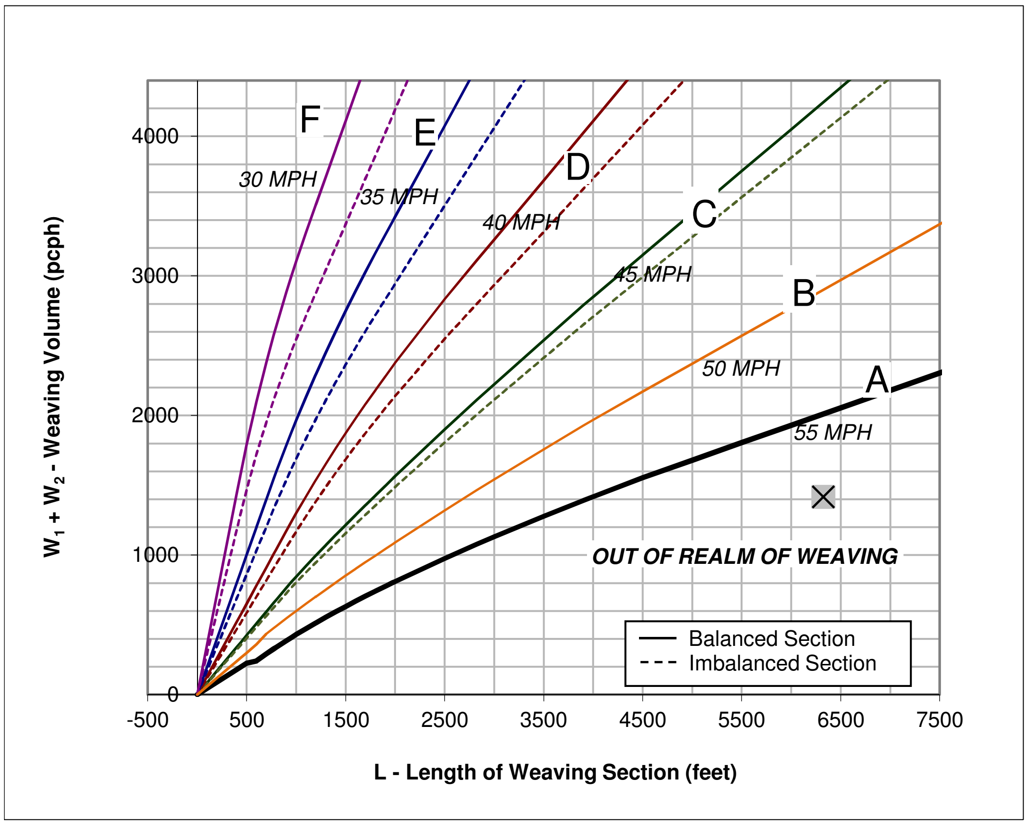
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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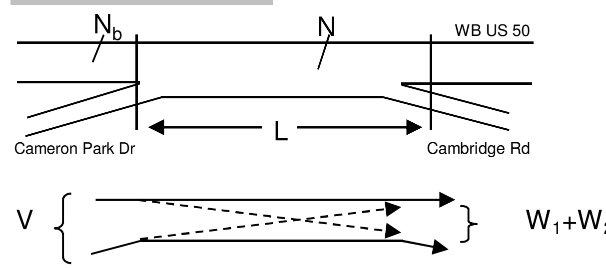


Capacity Analysis

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

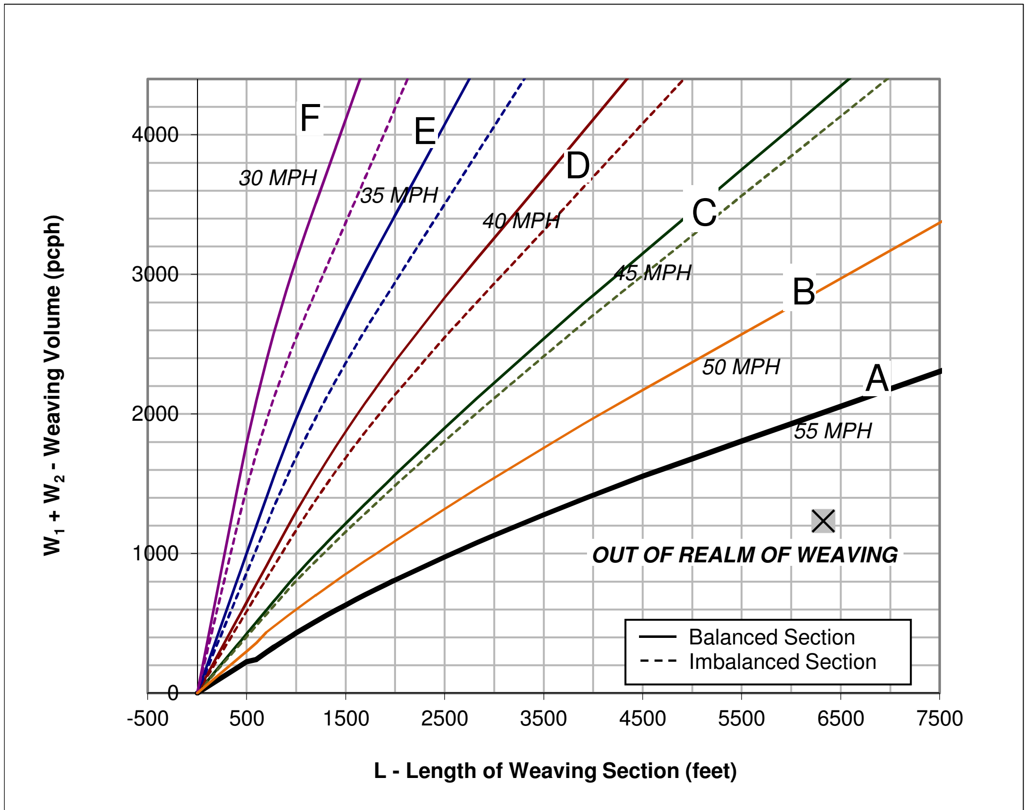
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

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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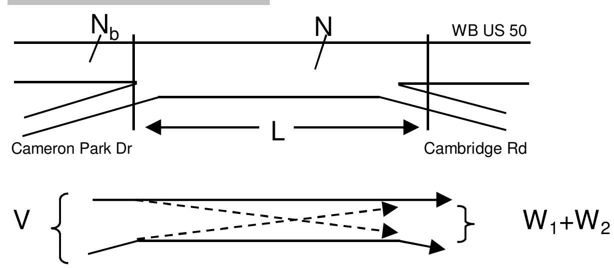


Capacity Analysis

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

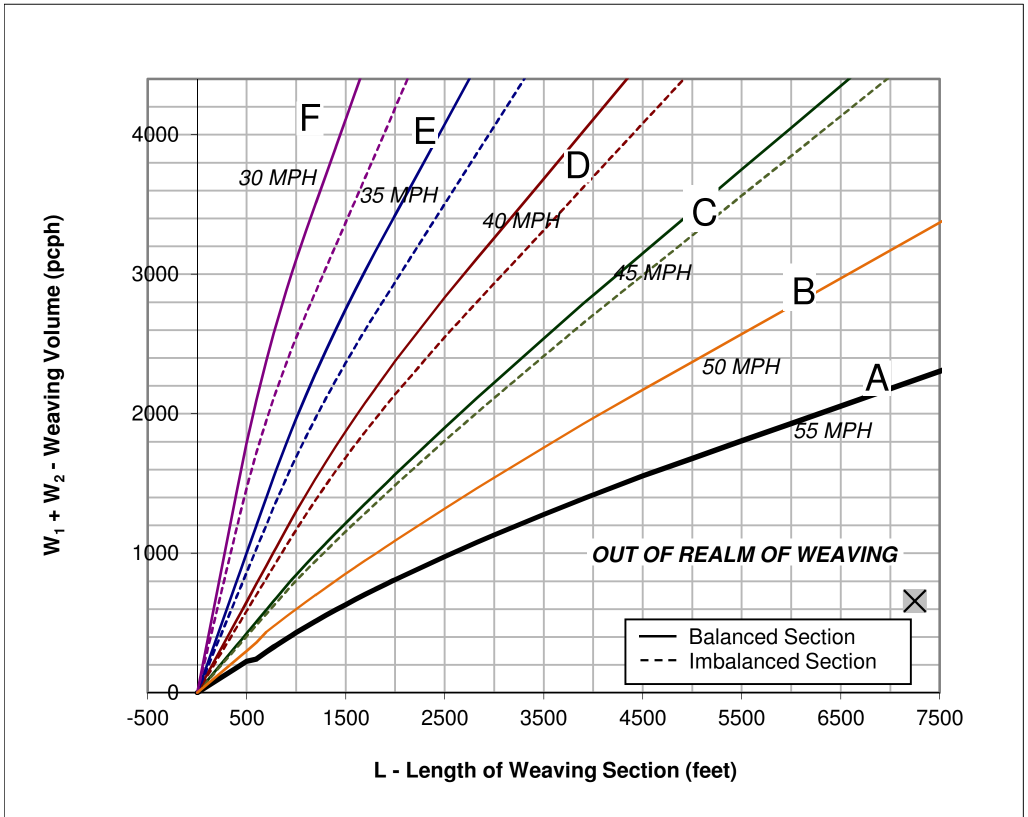
Leisch Method for Weaving Analysis

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

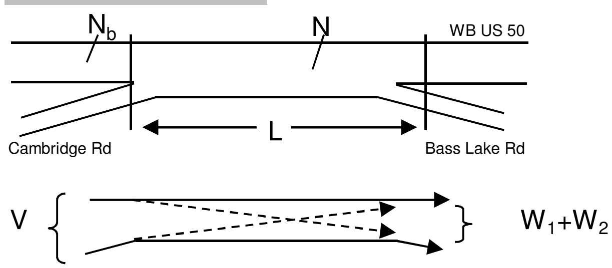
Project Information	
Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Cambridge Rd
Off-ramp	Bass Lake Rd

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

*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)? **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

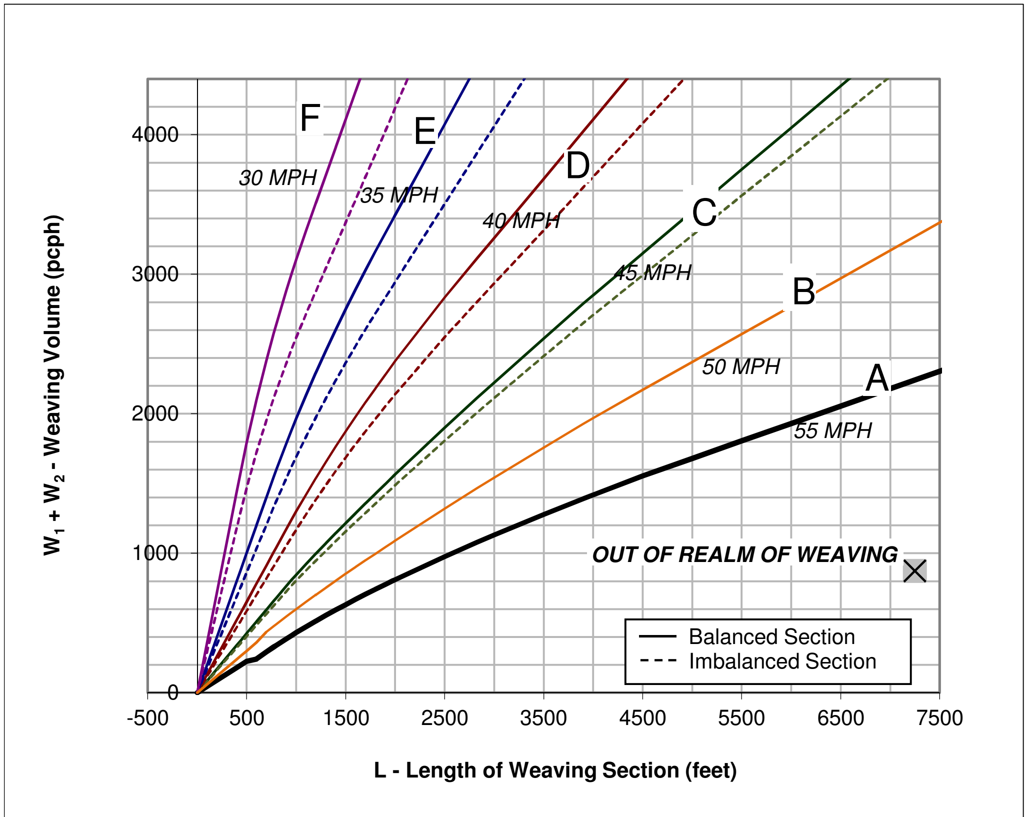
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

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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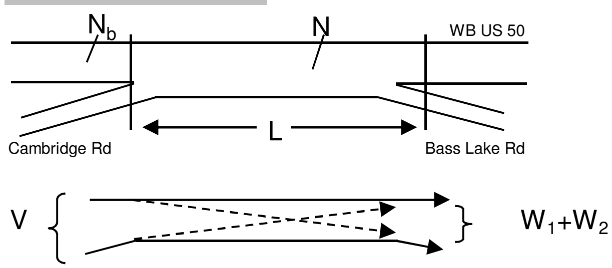


Capacity Analysis

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

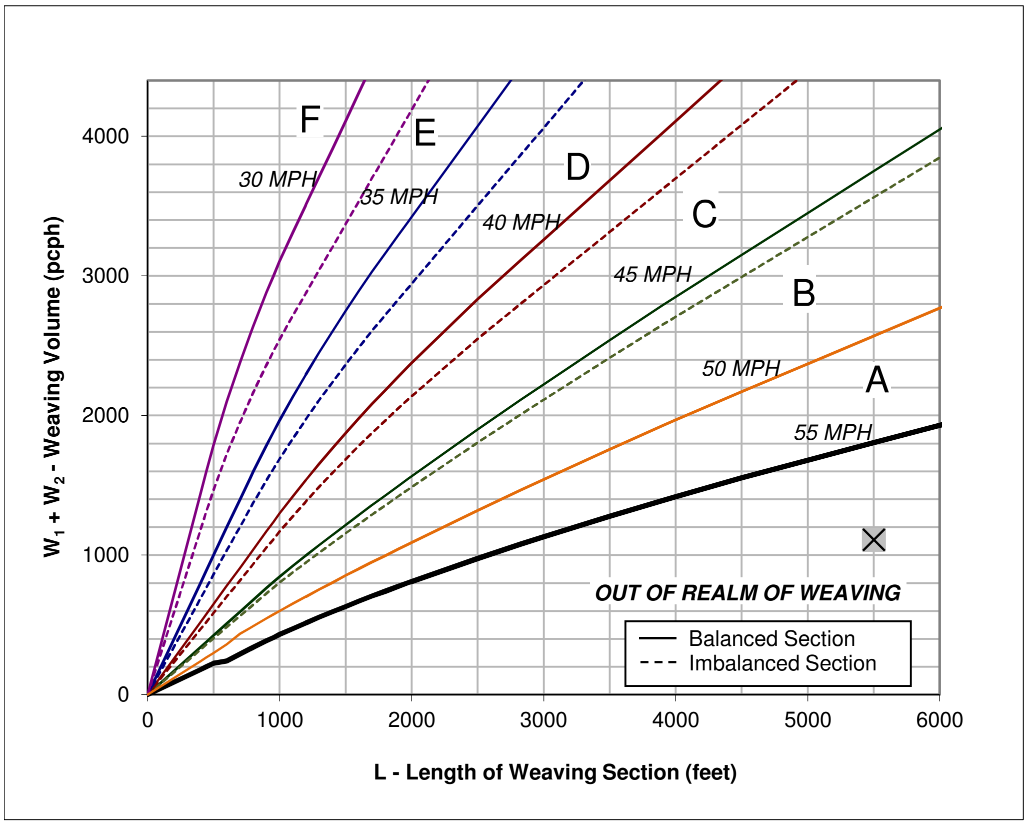
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

Project Information

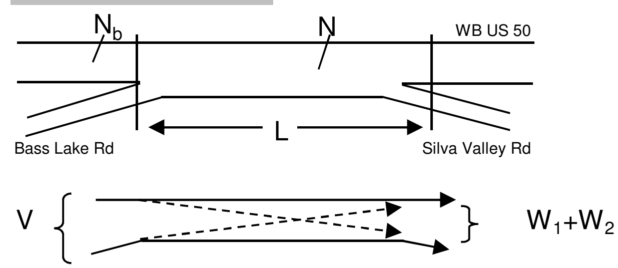
Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - AM Pk Hr
Freeway	WB US 50
On-ramp	Bass Lake Rd
Off-ramp	Silva Valley Rd

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

*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) **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

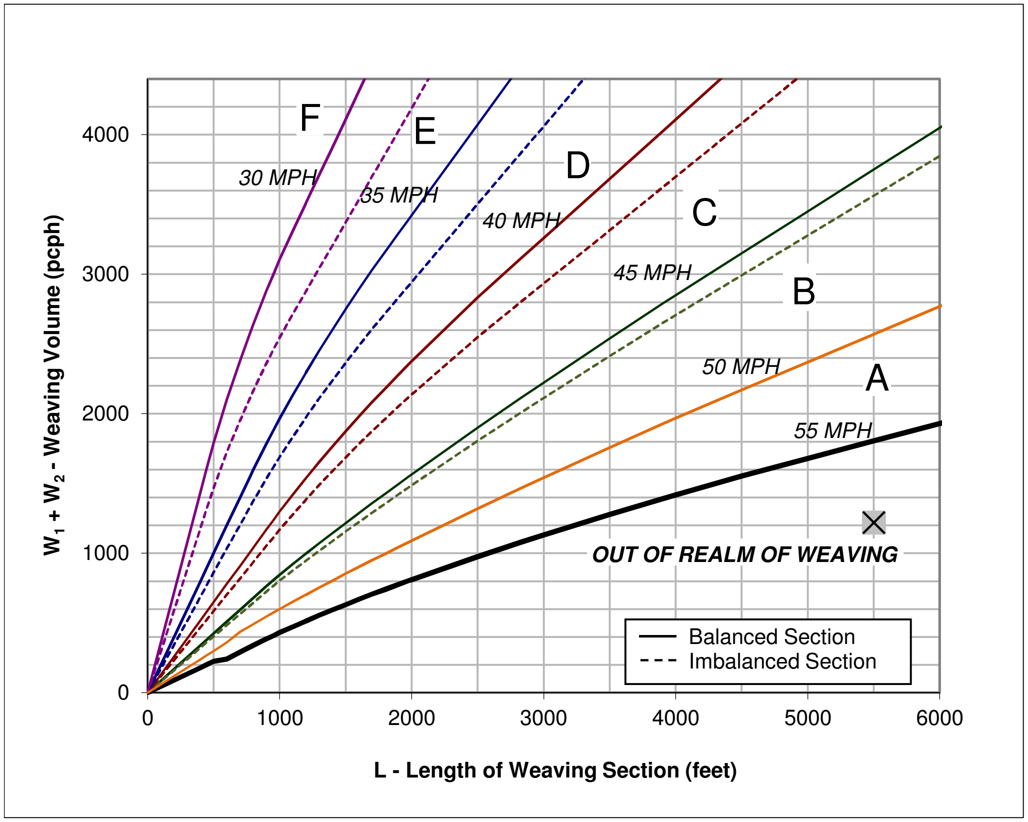
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

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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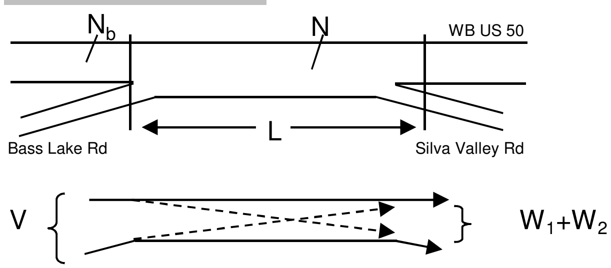


Capacity Analysis

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

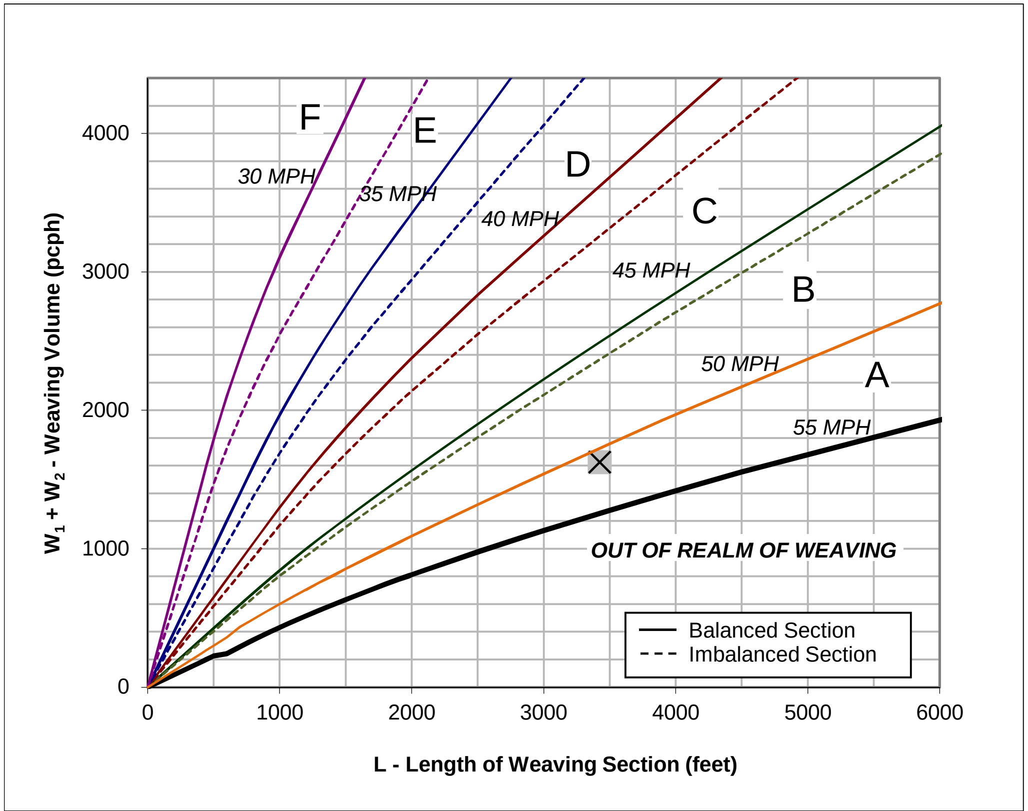
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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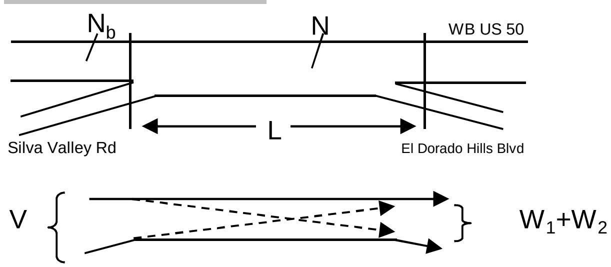


Capacity Analysis

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

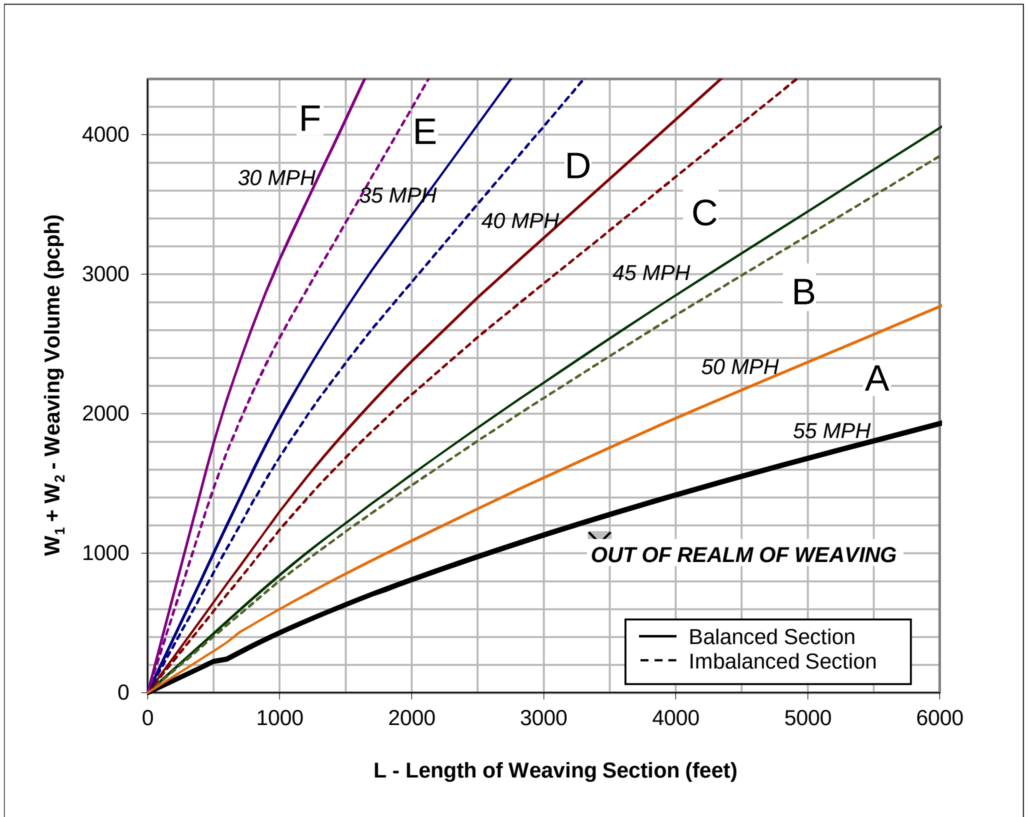
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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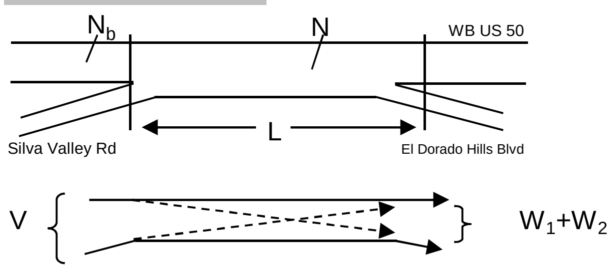


Capacity Analysis

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

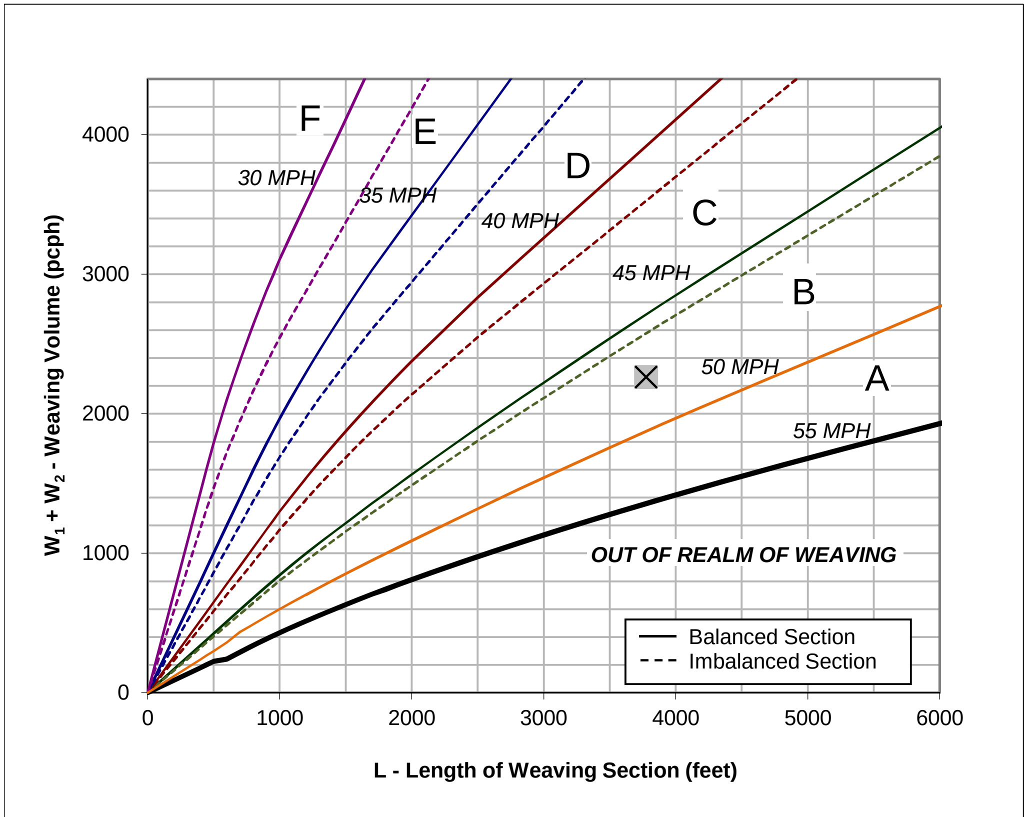
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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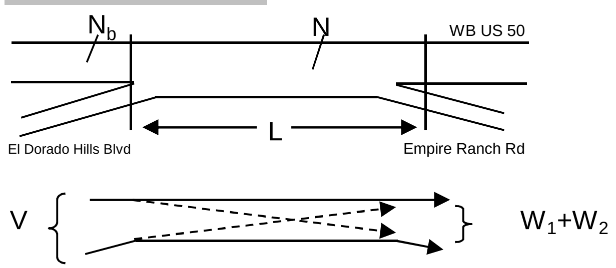


Capacity Analysis

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

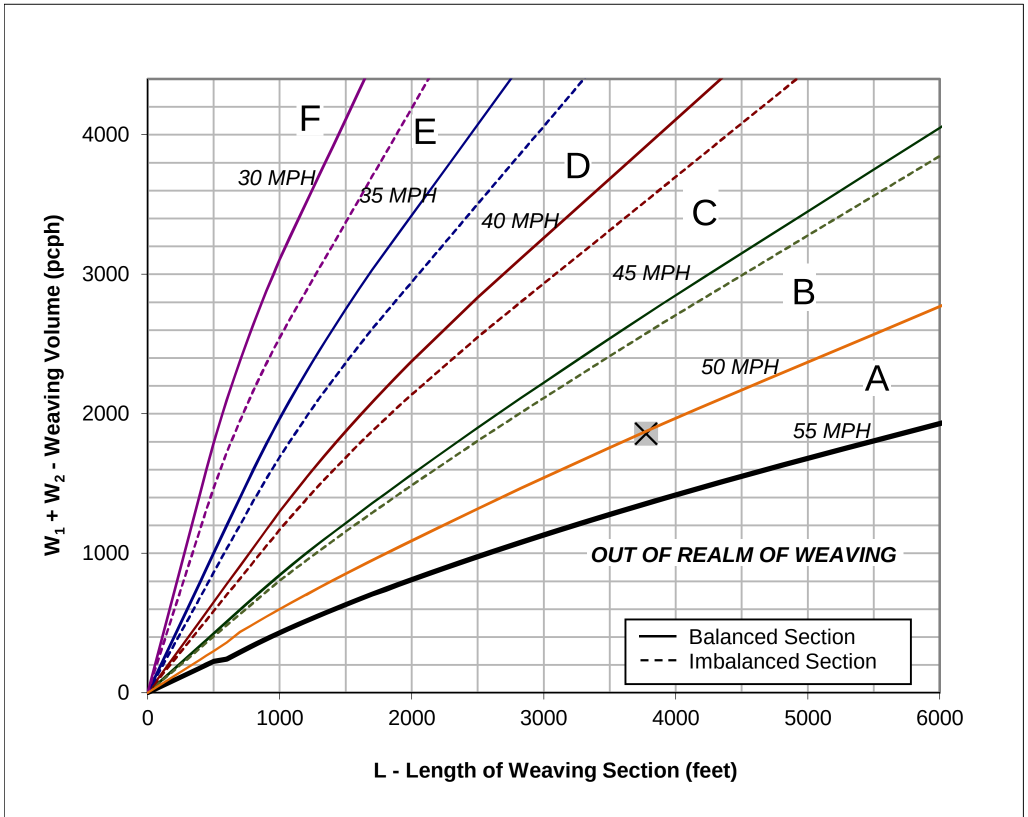
Leisch Method for Weaving Analysis

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

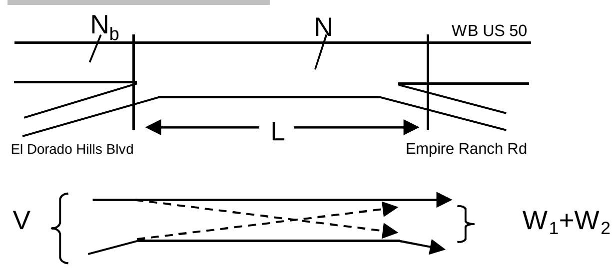
Project Information	
Project	Serrano Westside/Pedregal
Scenario	Cumulative No Project - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

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

*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

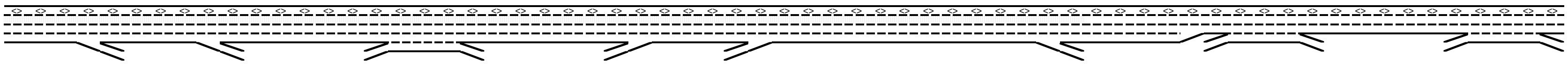
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* 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

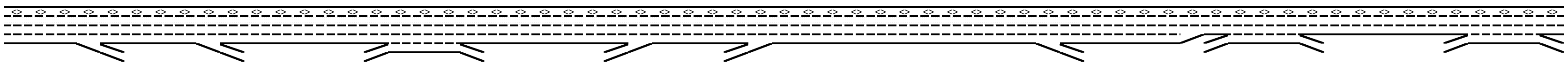
Data Entry Value
Calculated Value



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)													

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



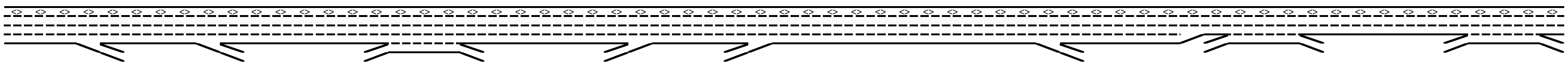
Key

<> 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
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%

Location	1	2	3	4	5	6	7	8	9	10	11	12	13

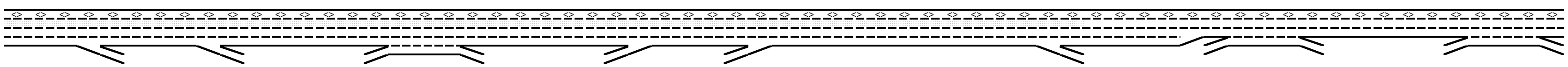


Key
<> Express Lane (HOV)
No Trucks

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
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				

Project: Serrano Westside/Pedregal

Alternative: Cumulative Plus Projet
Time Period: AM Peak Hour



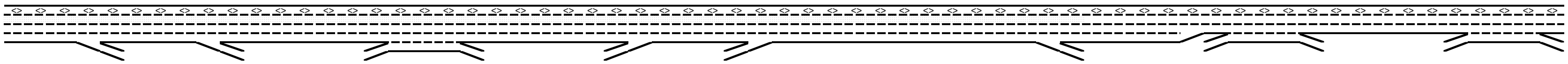
Key

<> 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)	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

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



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No Trucks

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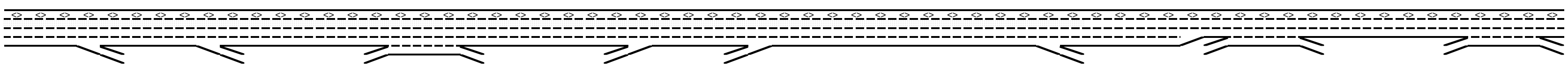
Terrain				Level							Level		Level
Grade %				0.0%							0.0%		0.0%
Grade Length (mi)				0.00							0.00		0.00
Truck & Bus %				6.0%							4.0%		4.0%
RV %				0.0%							0.0%		0.0%
E_T				1.5							1.5		1.5
E_R				1.2							1.2		1.2
f_{HV}				0.971							0.980		0.980
f_P				1.00							1.00		1.00
GP to GP Flow (pcph)				2,384							2,322		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



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No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13
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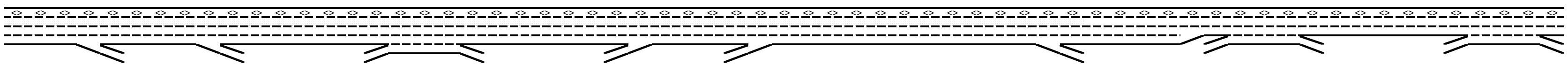
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Merge	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550	500						
Decel Length	150	150							150				
Mainline Volume	6,570	5,800	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)													



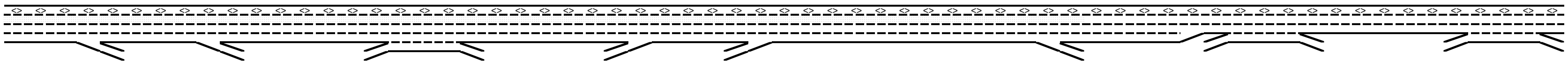
Key

<> 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)	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%

Location	1	2	3	4	5	6	7	8	9	10	11	12	13

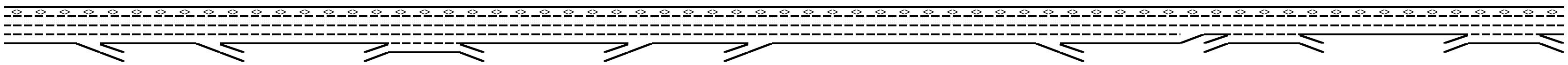


Key

<> Express Lane (HOV)

No Trucks

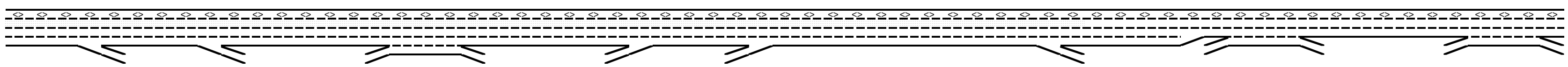
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
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

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
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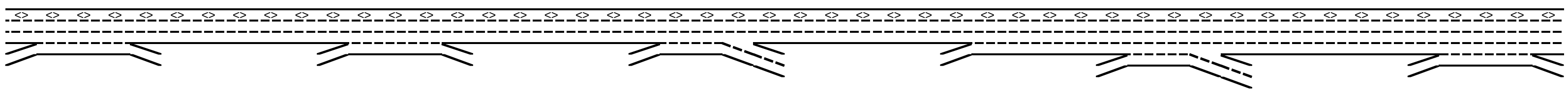
No Trucks

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
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 **Alternative:** Cumulative Plus Project
Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour

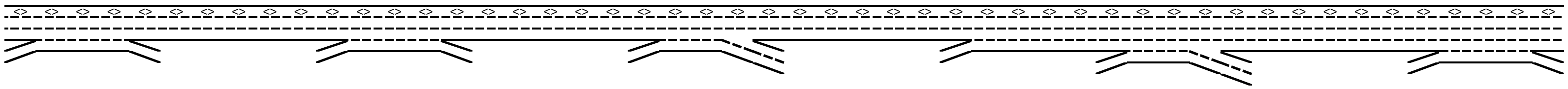
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10
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

Location	1	2	3	4	5	6	7	8	9	10

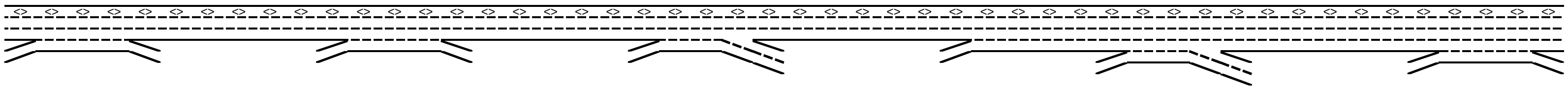


Key

<> 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)	20.8	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



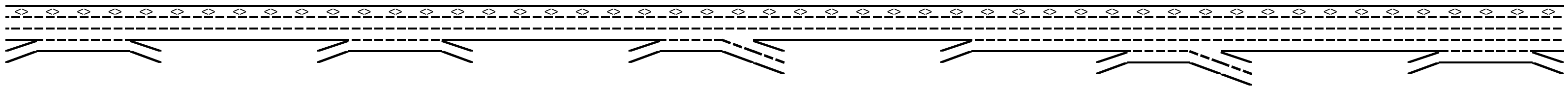
Key

<> 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
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

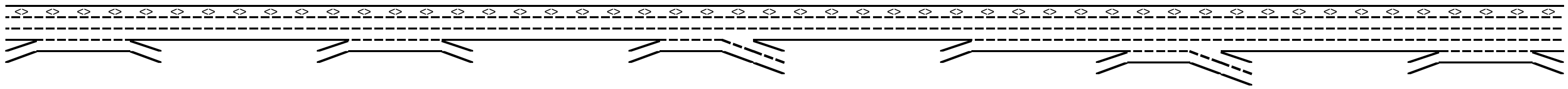


Key

<> 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



Key

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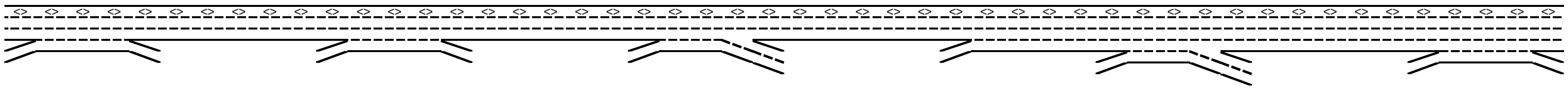
No Trucks

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
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



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No Trucks

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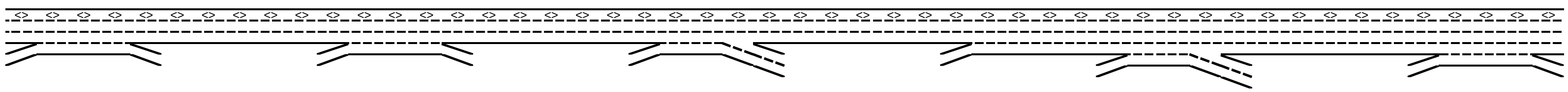
Weave Intensity Factor	0.222		0.189		0.252			0.318		0.321
Weave Speed	55.9		57.1		54.9			52.9		52.9
Non-Weave Speed	44.0		51.0		39.1			44.4		40.8
Segment Speed	47.9		52.0		43.1			46.9		44.3
Weave Density	42.6		-		-			37.0		44.4
Weave LOS	E		Basic		Basic			E		E
Summarize Segment Operations										
Segment 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



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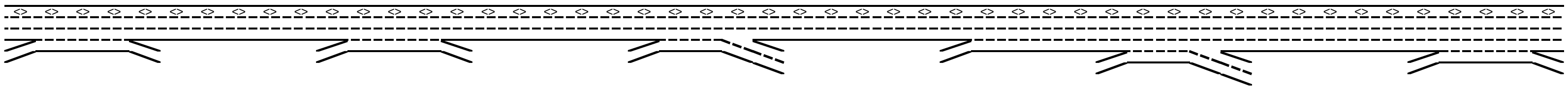
Define Freeway Segment										
Type	Weave	Basic	Weave	Basic	Weave	Basic	Basic	Weave	Basic	Weave
Length (ft)	7,325	1,250	8,250	2,350	6,500	2,350	800	4,425	2,300	4,775
Accel Length										
Decel Length										
Mainline Volume	4,200	3,780	3,780	3,770	3,770	4,020	4,020	4,060	3,570	3,570
On Ramp Volume	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

Project: Serrano Westside

Alternative: Cumulative Plus Project
Time Period: PM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10

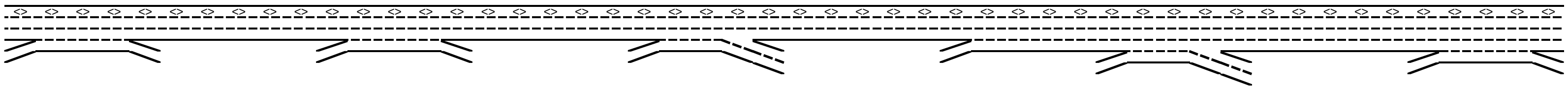


Key

<> 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

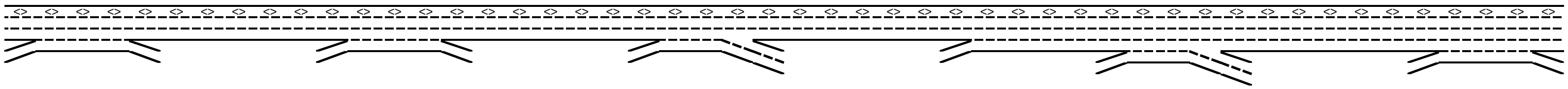


Key

<> 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
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

<> Express Lane (HOV)

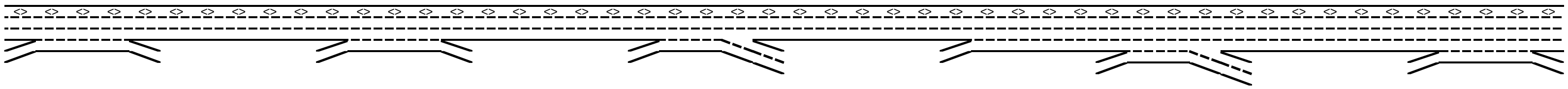
No Trucks

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
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

Project: Serrano Westside

Alternative: Cumulative Plus Project
Time Period: PM Peak Hour

Location	1	2	3	4	5	6	7	8	9	10



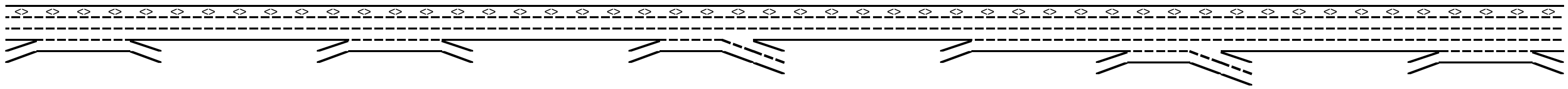
Key

<> 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

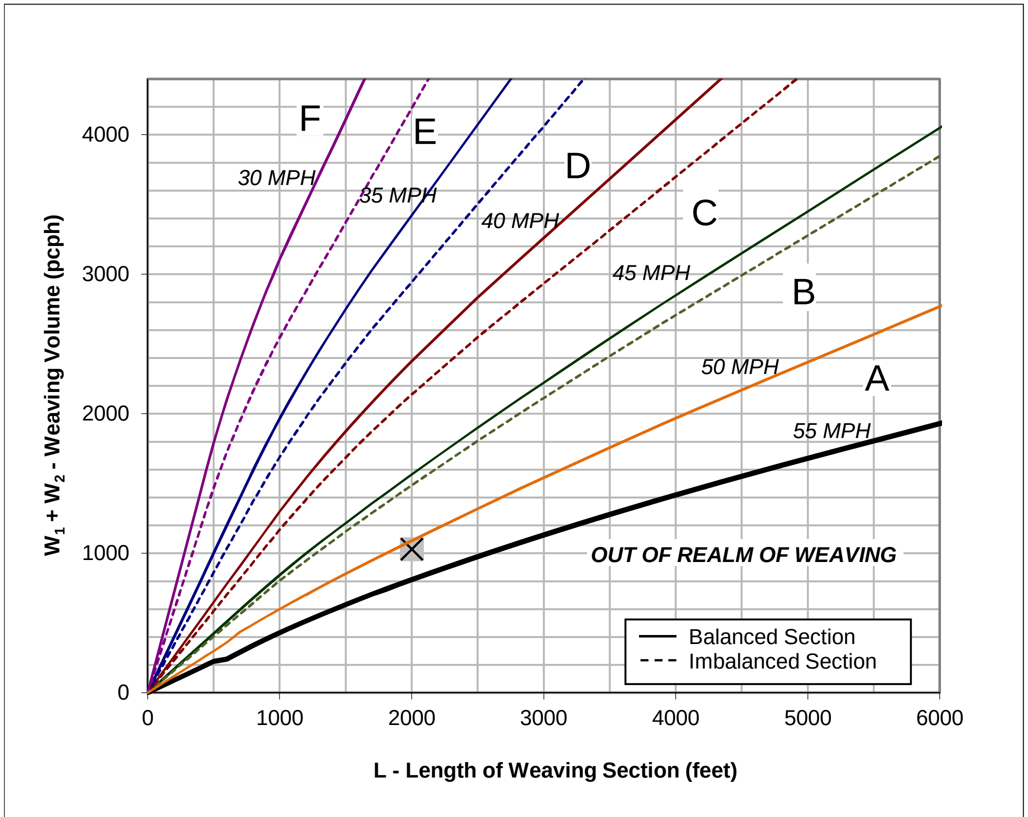
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

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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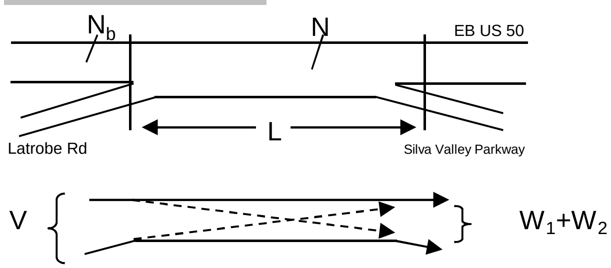


Capacity Analysis

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

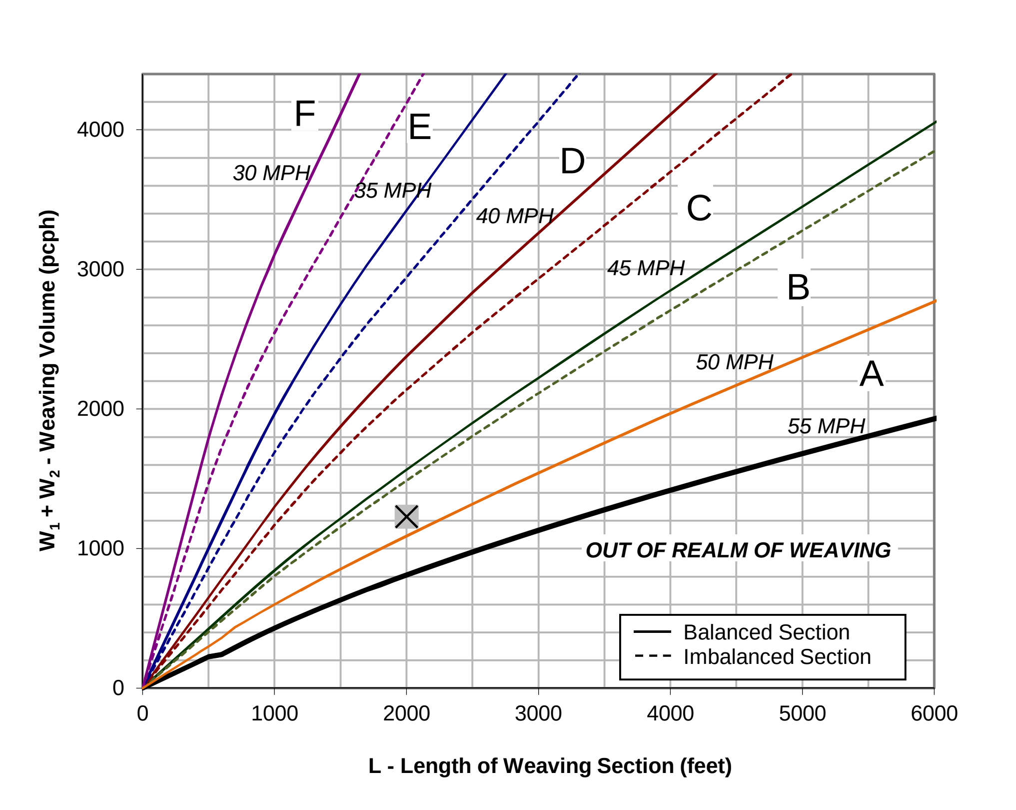
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2,000

Project Information

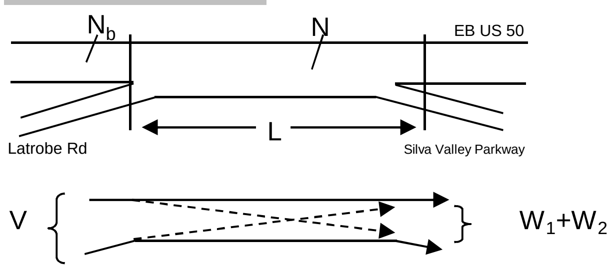
Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Latrobe Rd
Off-ramp	Silva Valley Parkway

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

*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) — 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

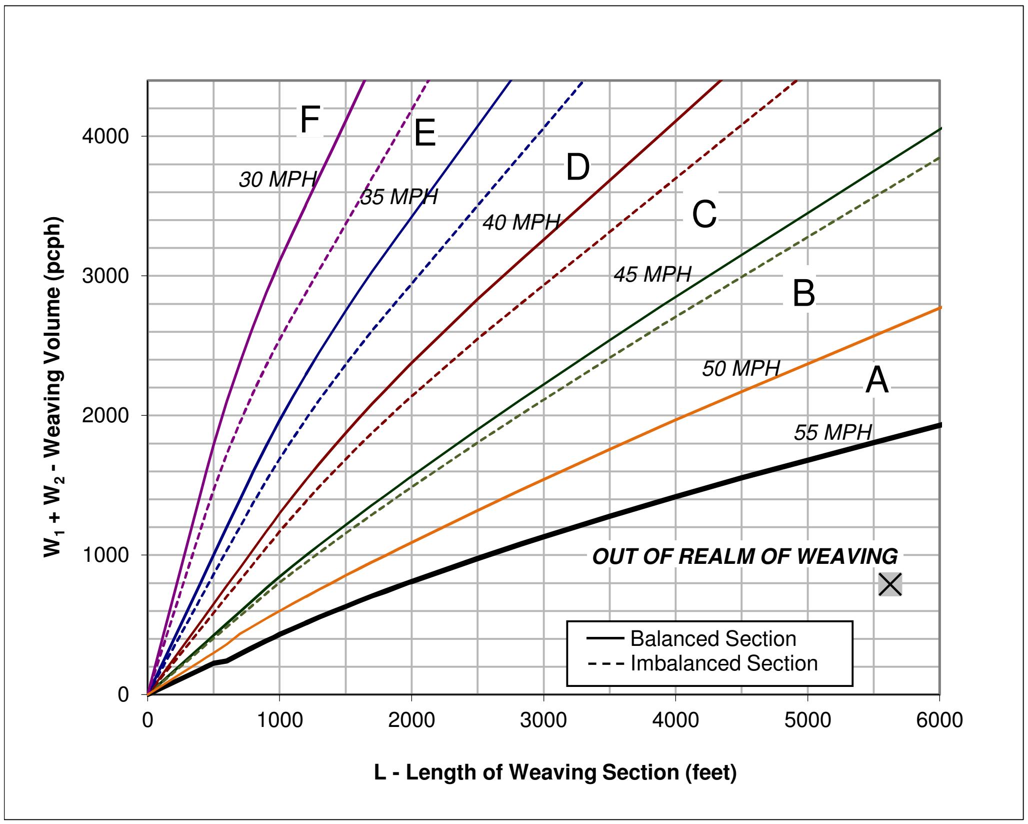
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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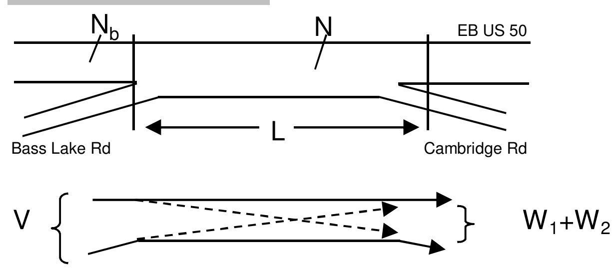


Capacity Analysis

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

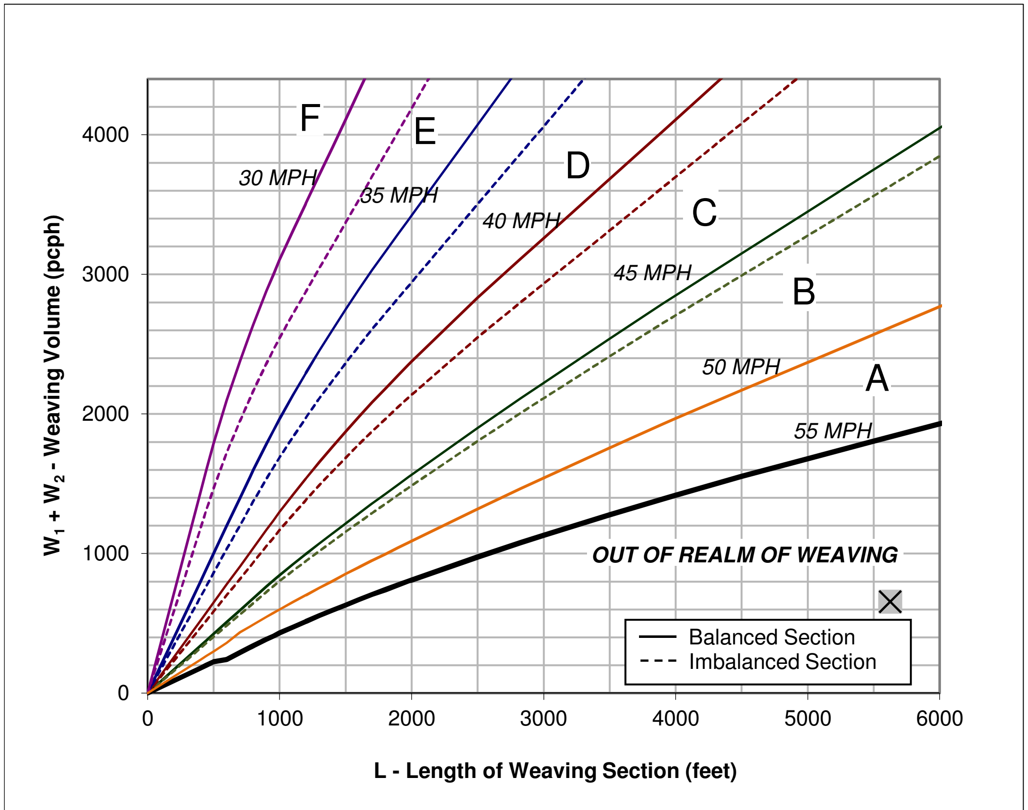
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	5,625

Project Information

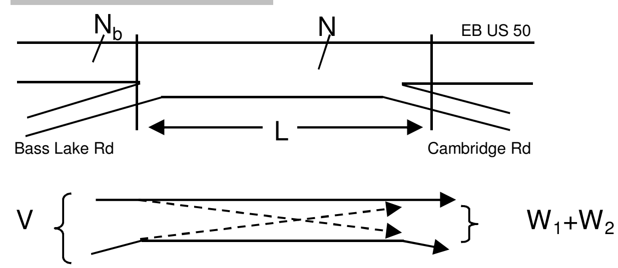
Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	EB US 50
On-ramp	Bass Lake Rd
Off-ramp	Cambridge Rd

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

*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)? **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): 1,065
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$
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

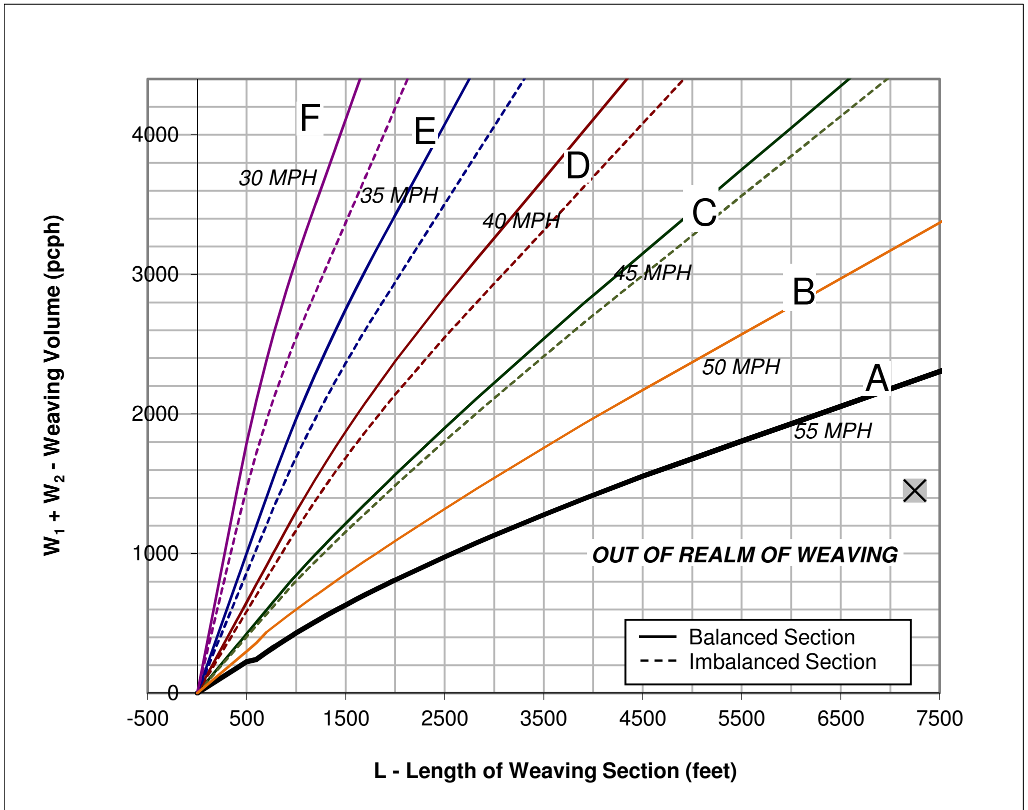
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

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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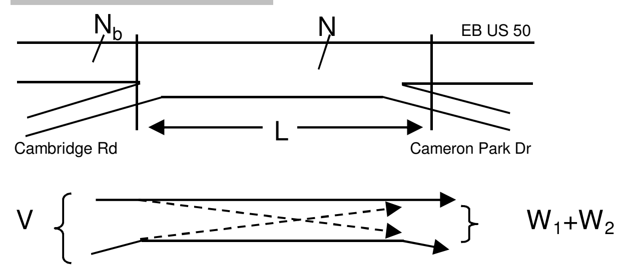


Capacity Analysis

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

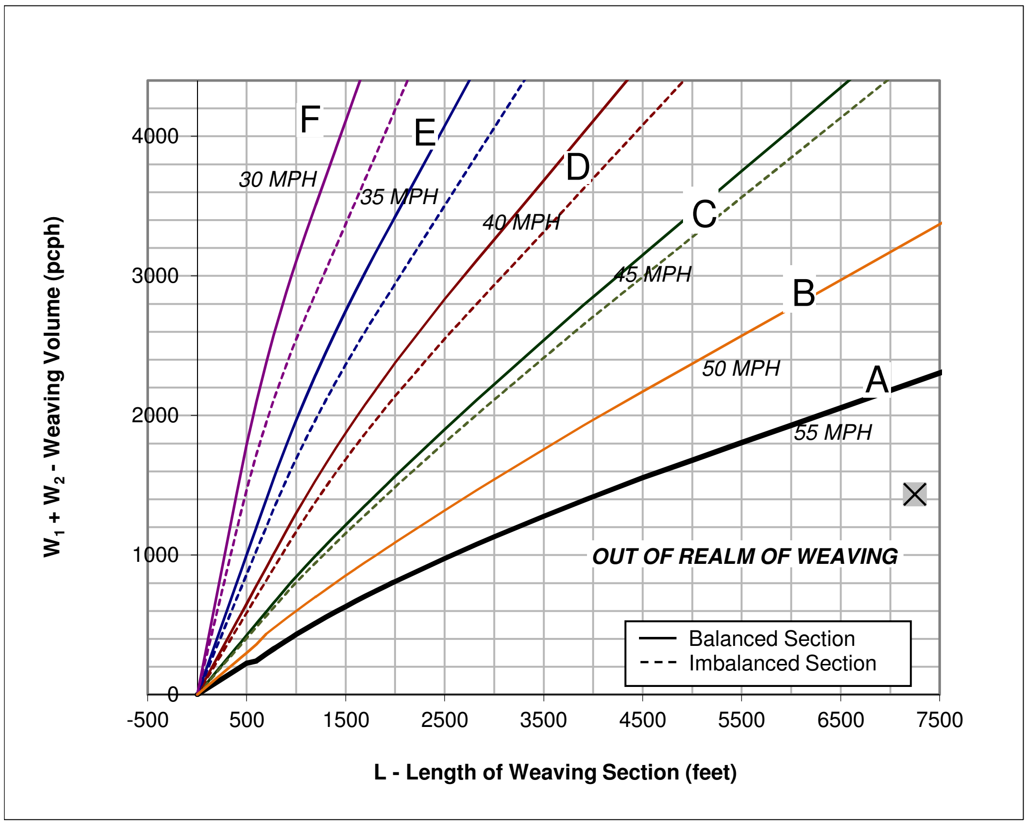
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	7,250

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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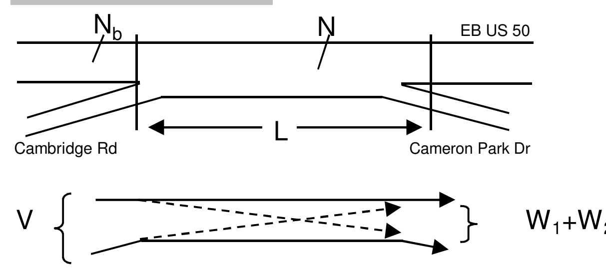


Capacity Analysis

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

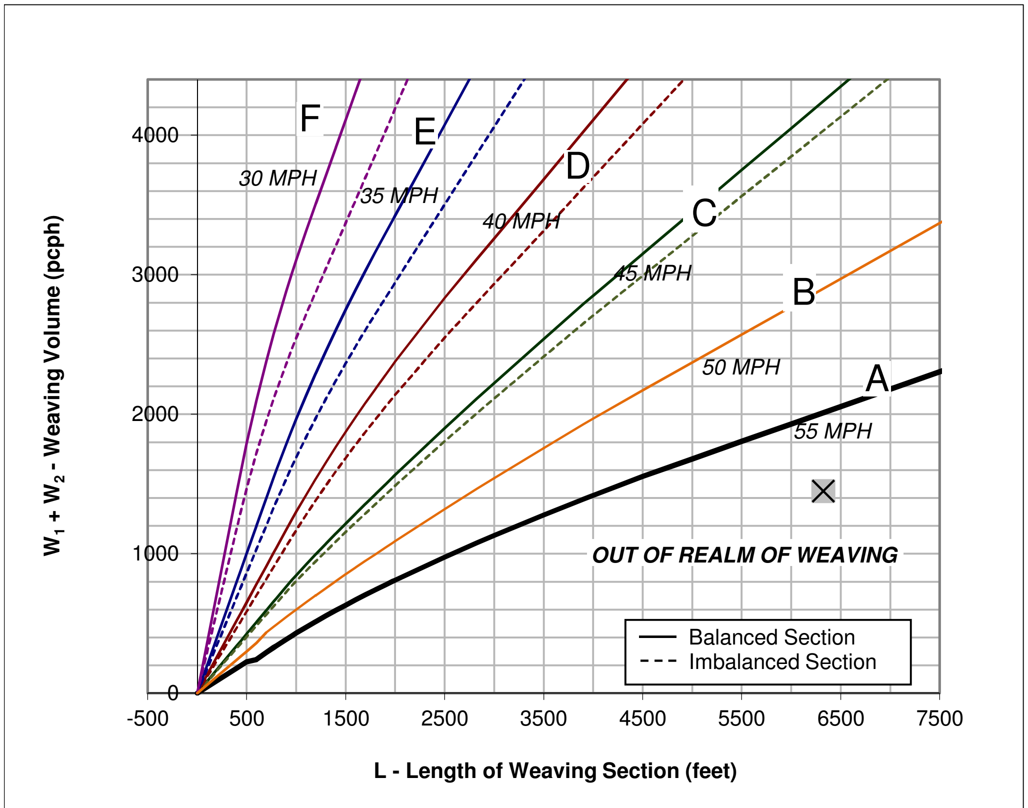
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

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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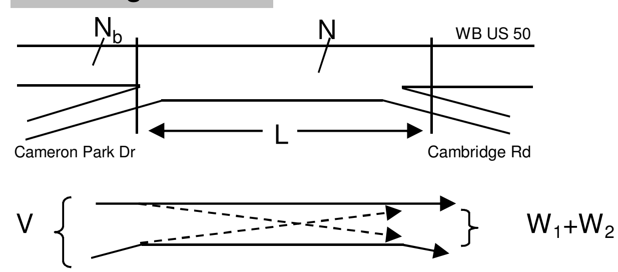


Capacity Analysis

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

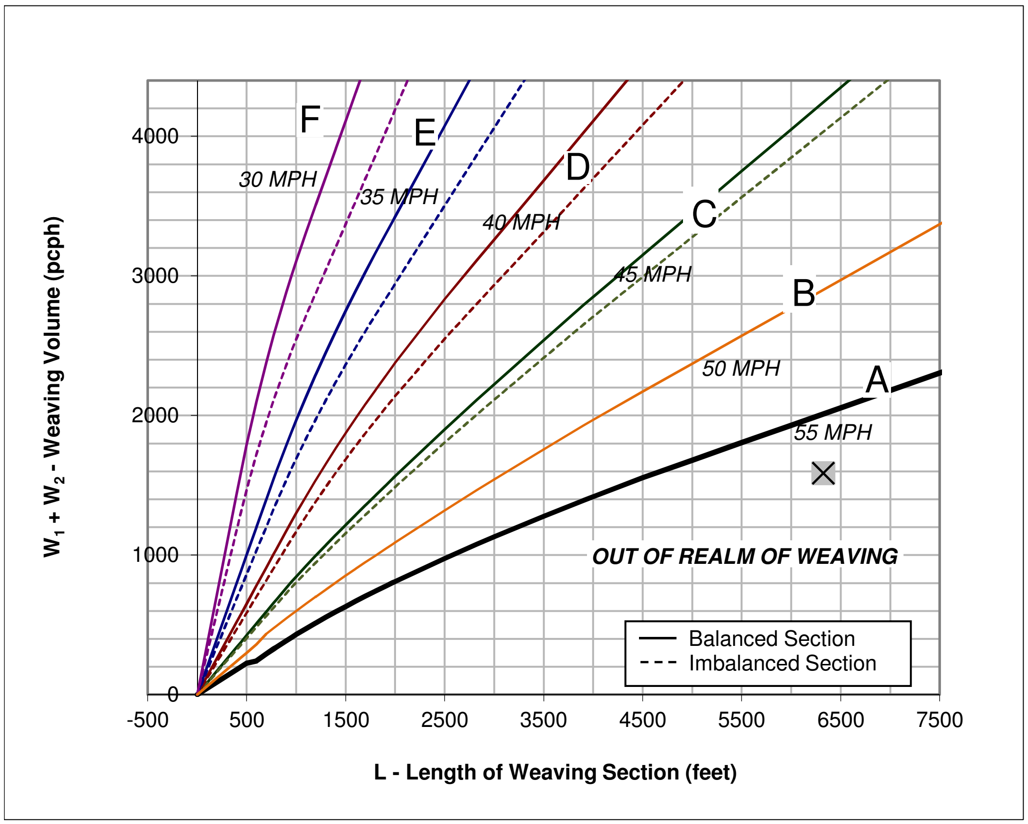
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	6,325

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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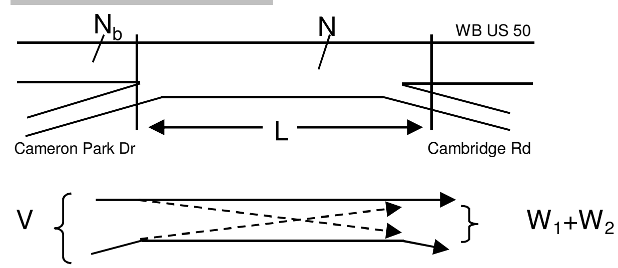


Capacity Analysis

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

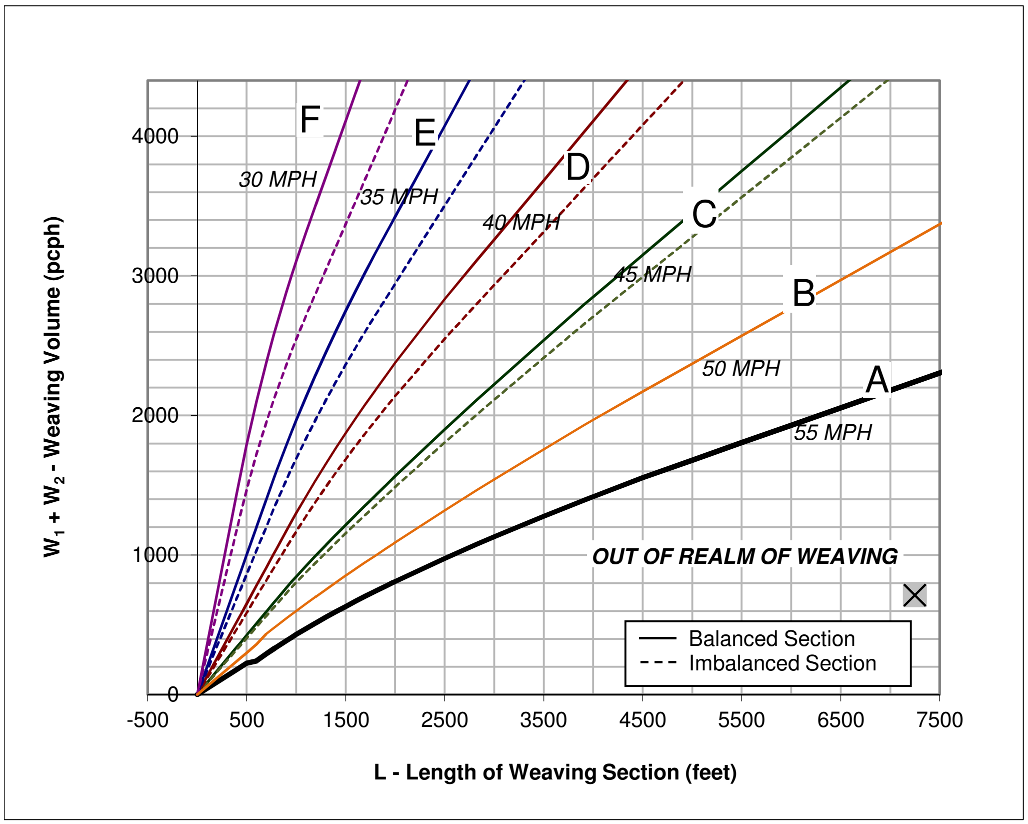
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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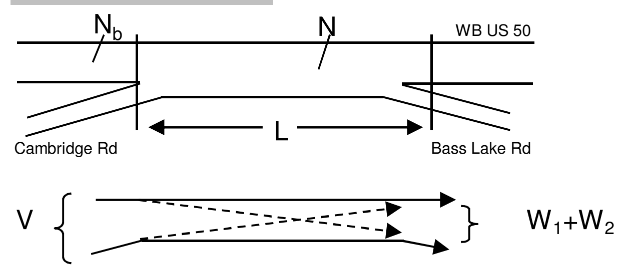


Capacity Analysis

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

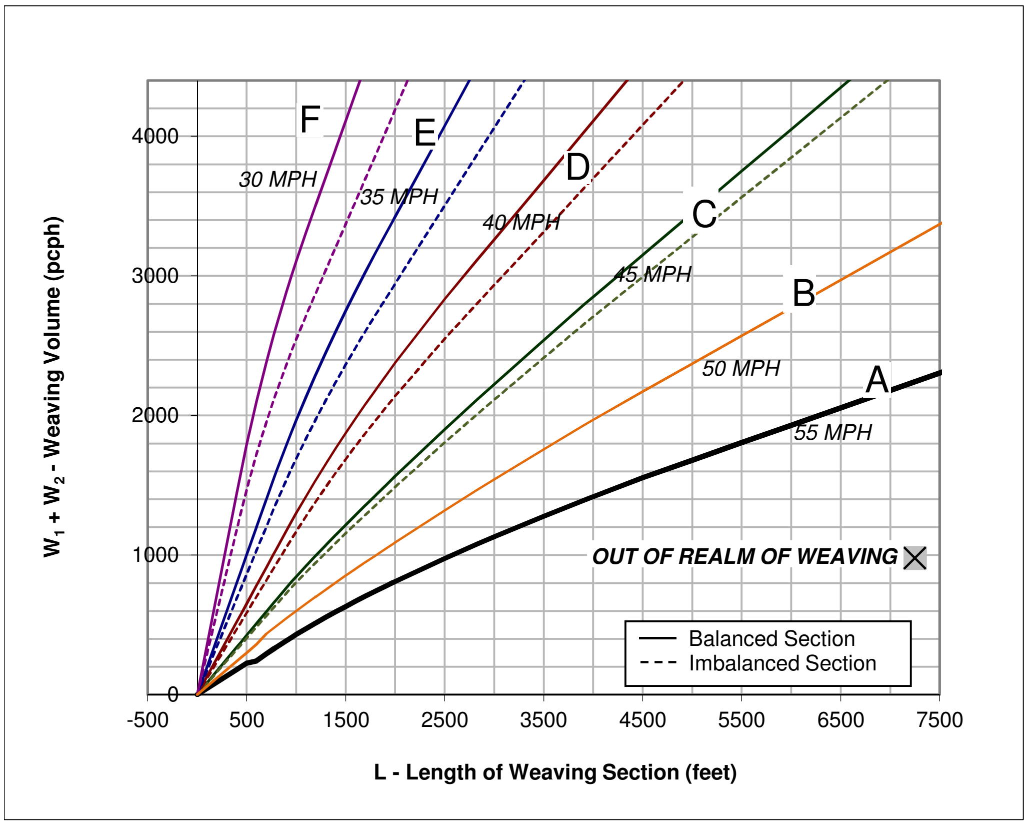
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	7,250

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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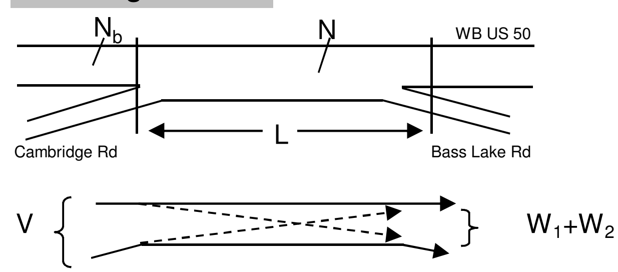


Capacity Analysis

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

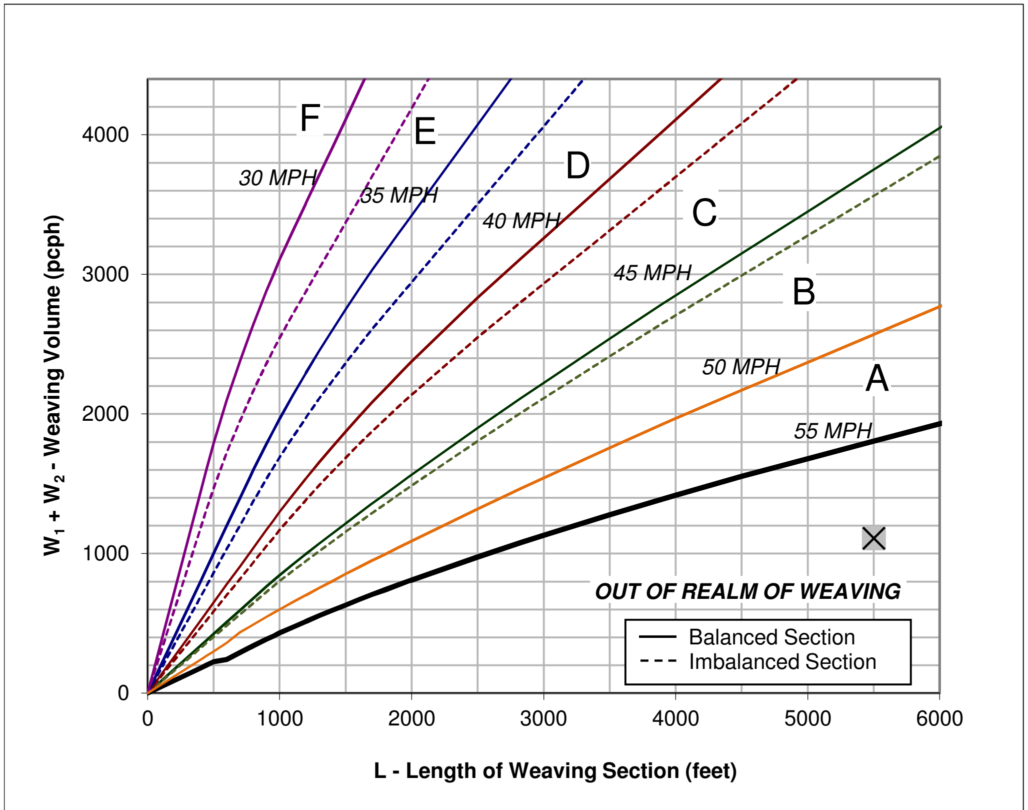
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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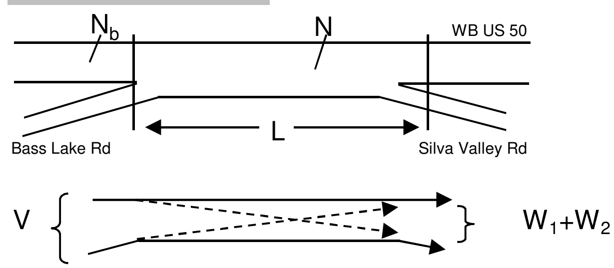


Capacity Analysis

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

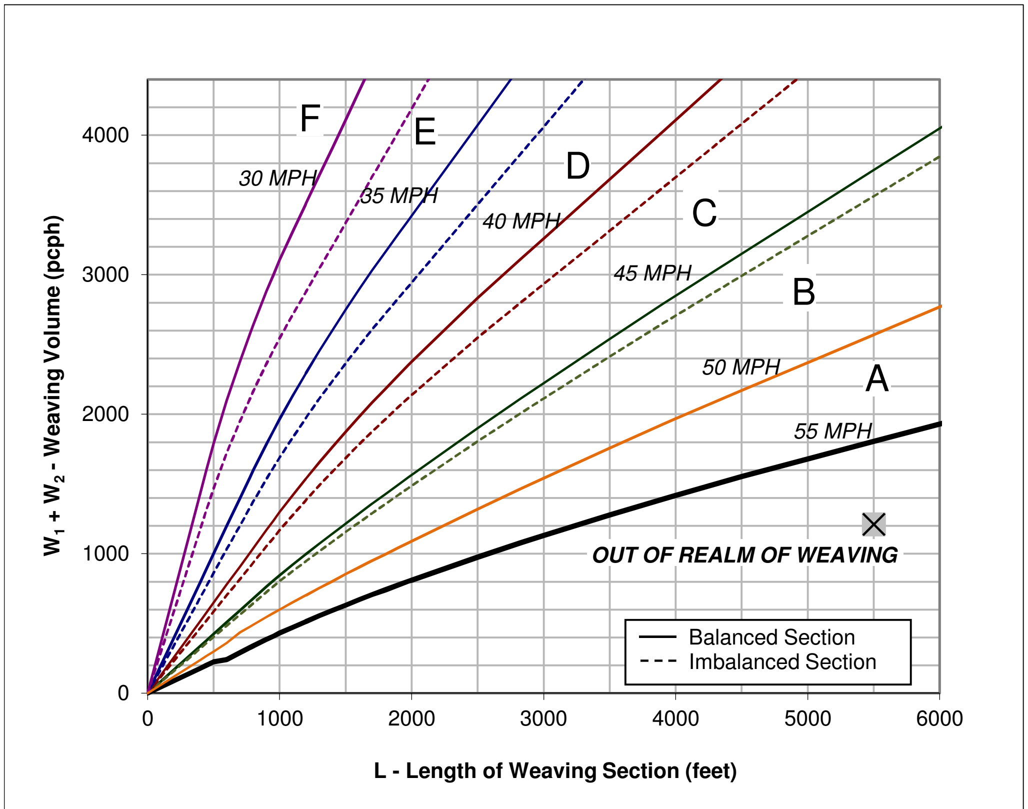
Number of Entering Mainline Lanes	N_b	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5,500

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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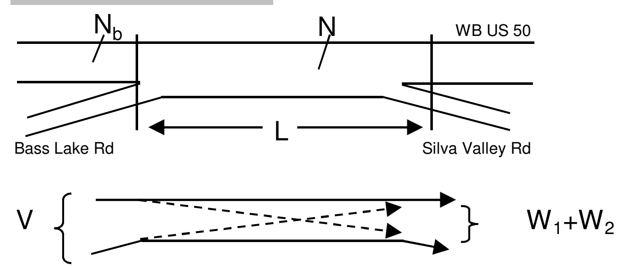


Capacity Analysis

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

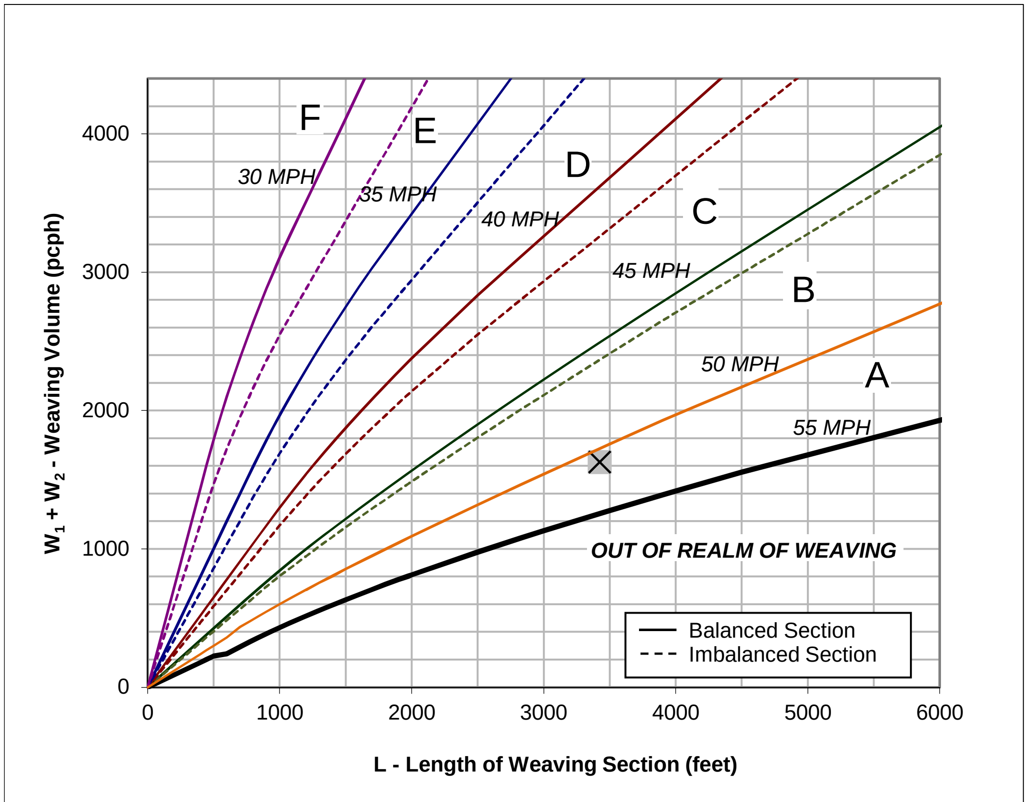
Leisch Method for Weaving Analysis

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

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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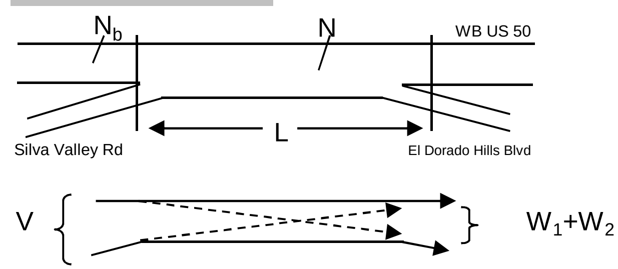


Capacity Analysis

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

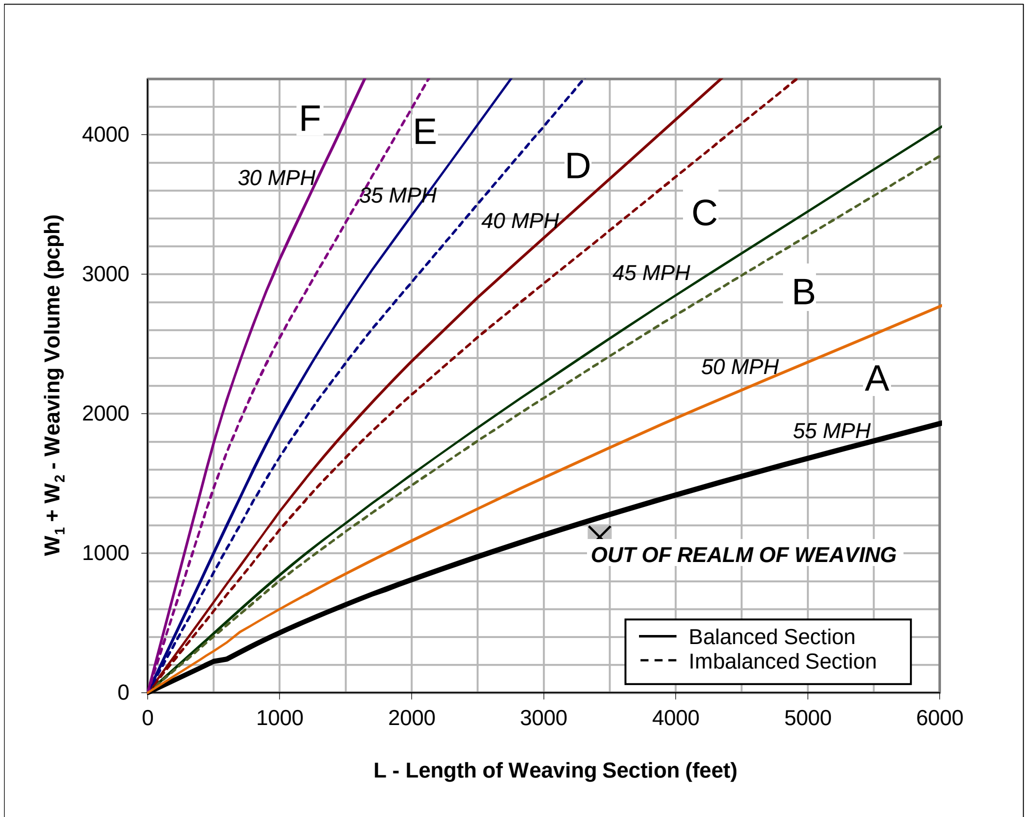
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,425

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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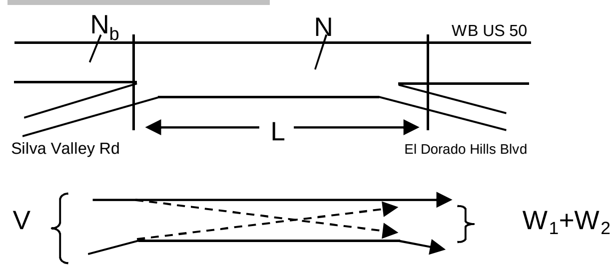


Capacity Analysis

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

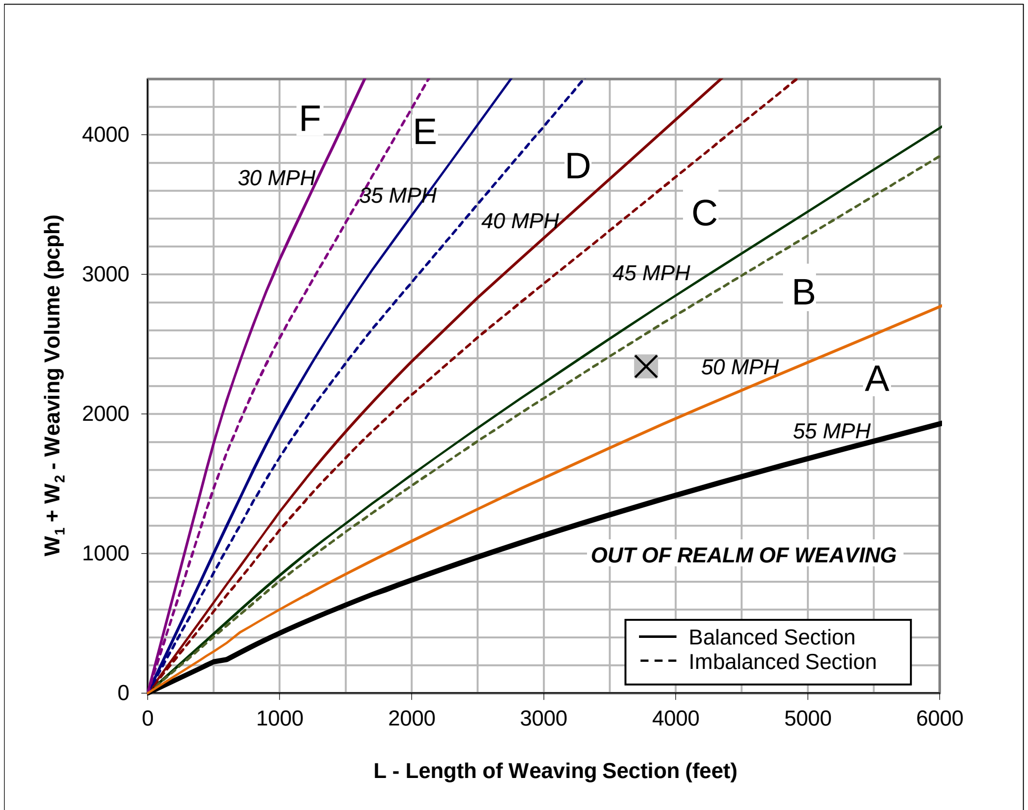
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

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

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

*Some vehicles were assumed to continue from the on-ramp to the off-ramp without weaving



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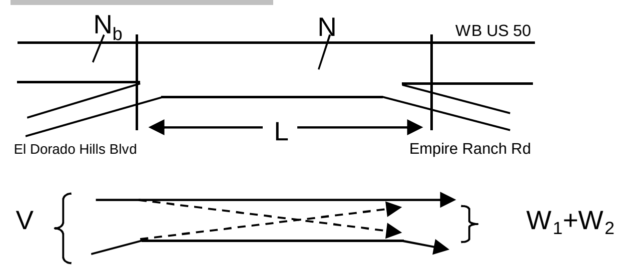


Capacity Analysis

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

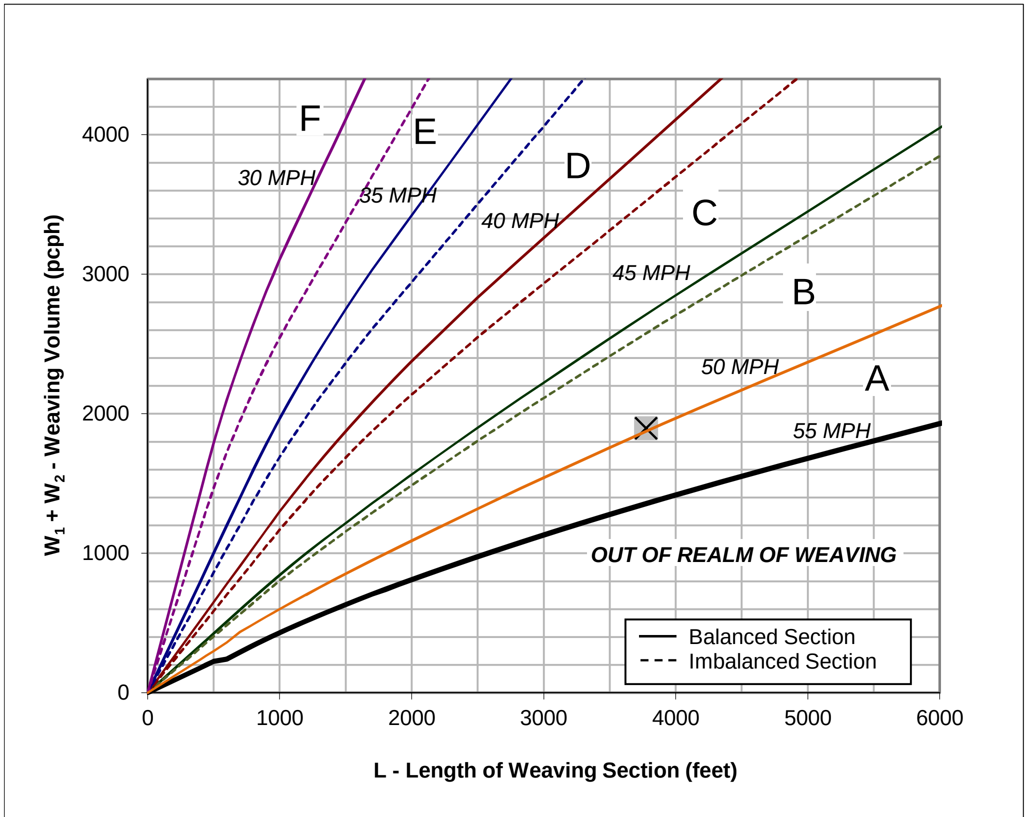
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,775

Project Information

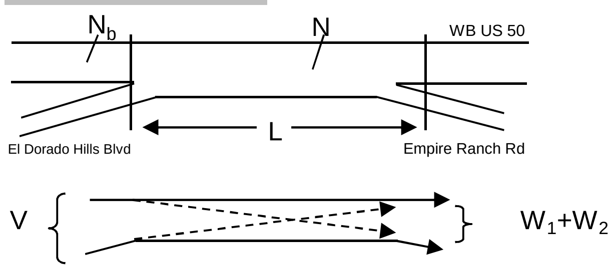
Project	Marble Valley/Lime Rock/Pedregal
Scenario	Cumulative Plus Project - PM Pk Hr
Freeway	WB US 50
On-ramp	El Dorado Hills Blvd
Off-ramp	Empire Ranch Rd

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

*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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside/Pedregal
Cumulative Plus Project Mitigations
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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside
Cumulative Plus Project Mitigations
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
Average Results from 10 Runs
Volume and Delay by Movement

Serrano Westside/Pedregal
Cumulative Plus Project Mitigations
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**

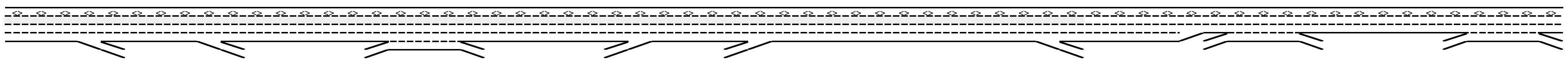
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	210	250	30	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	228	272	33	22	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent 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

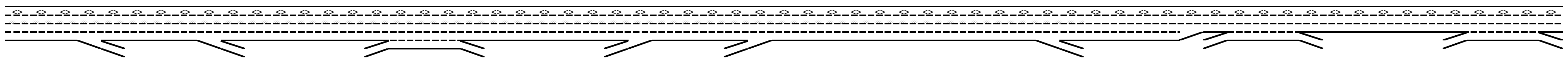
Data Entry Value
Calculated Value



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

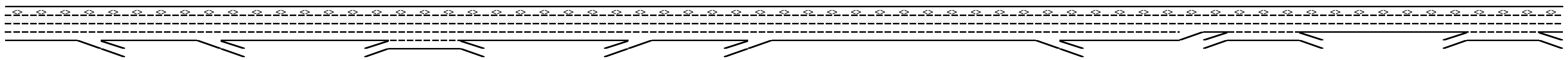
Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
<> Express Lane (HOV)
No Trucks

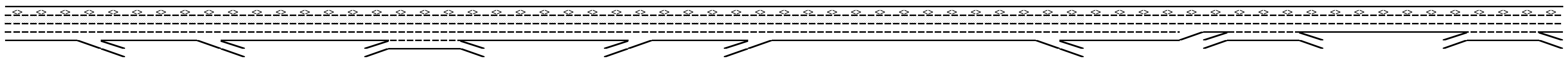
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
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

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
<> Express Lane (HOV)
No Trucks

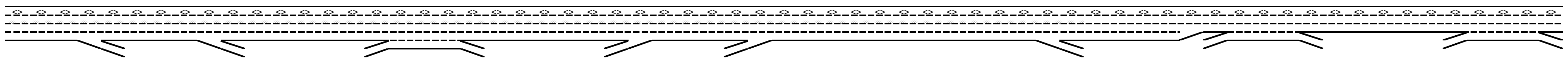
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy on-ramp	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off to on-ramp	Cambridge Rd to Cameron Park
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_F (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							



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
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

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



Key
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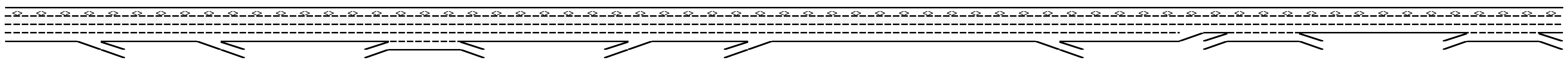
No Trucks

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 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



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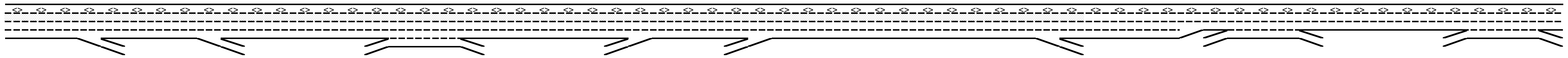
Define Freeway Segment													
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Weave
Length (ft)	1,500	850	1,975	3,000	1,575	800	3,400	3,400	1,500	2,100	6,625	1,350	8,250
Accel Length						550							
Decel Length	150	150							150				
Mainline Volume	6,440	5,670	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



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No Trucks

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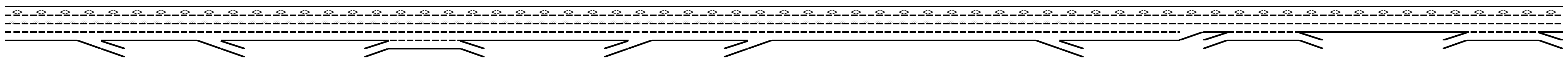
Calculate Flow Rate in Express Lanes (EL)													
EL Volume (vph)	966	851	771	668	683	683	709	906	906	671	671	629	587
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level
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		

Location	1	2	3	4	5	6	7	8	9	10	11	12	13



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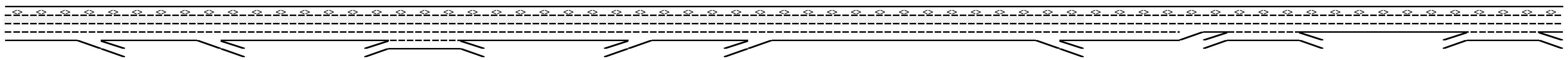
<> Express Lane (HOV)

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 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_F (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							

Location	1	2	3	4	5	6	7	8	9	10	11	12	13

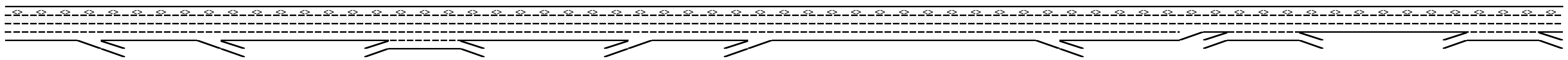


Key

<> 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
Calculate Diverge Influence Area Operations													
Effective v_F (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

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
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

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	AM

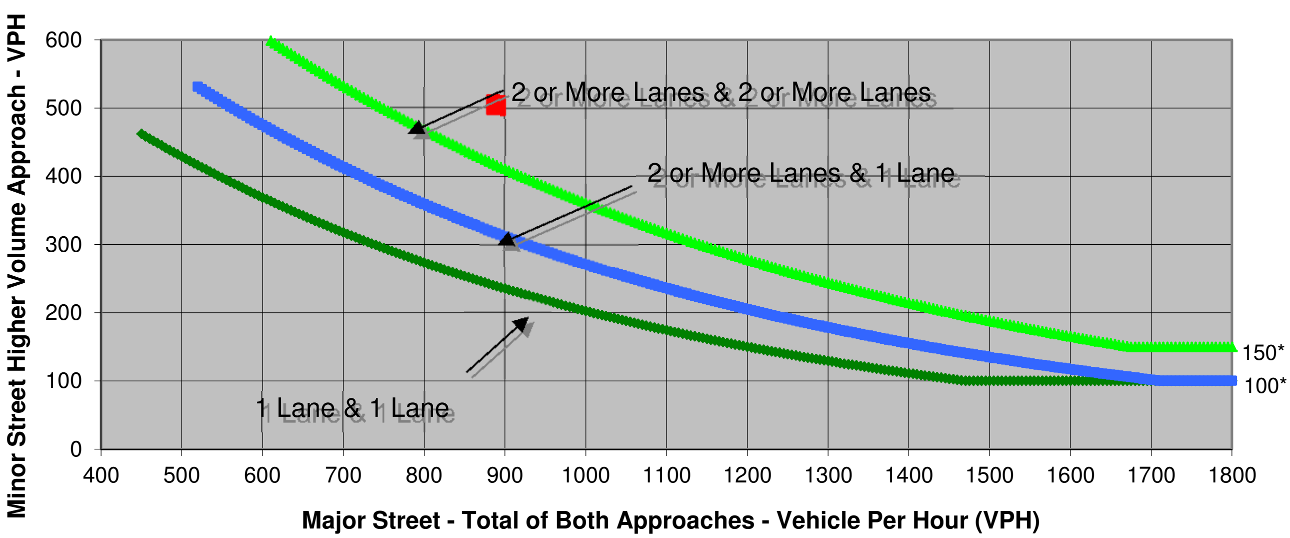
Turn Movement Volumes

	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 El Dorado Hills Blvd	Minor Street Francisco Dr	Warrant Met
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

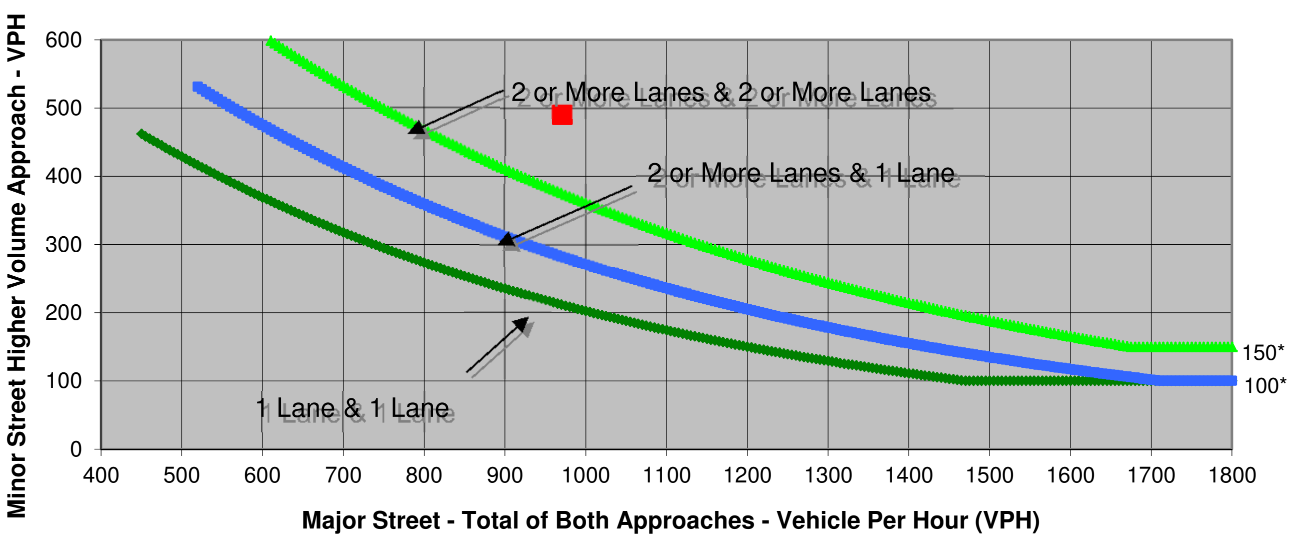
Turn Movement Volumes

	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 El Dorado Hills Blvd	Minor Street Francisco Dr	Warrant Met
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		

Major Street: Silva Valley Pkwy
Minor Street: Charter Way/Appian Way

Project: Central El Dorado
Scenario: Existing Conditions
Peak Hour: AM

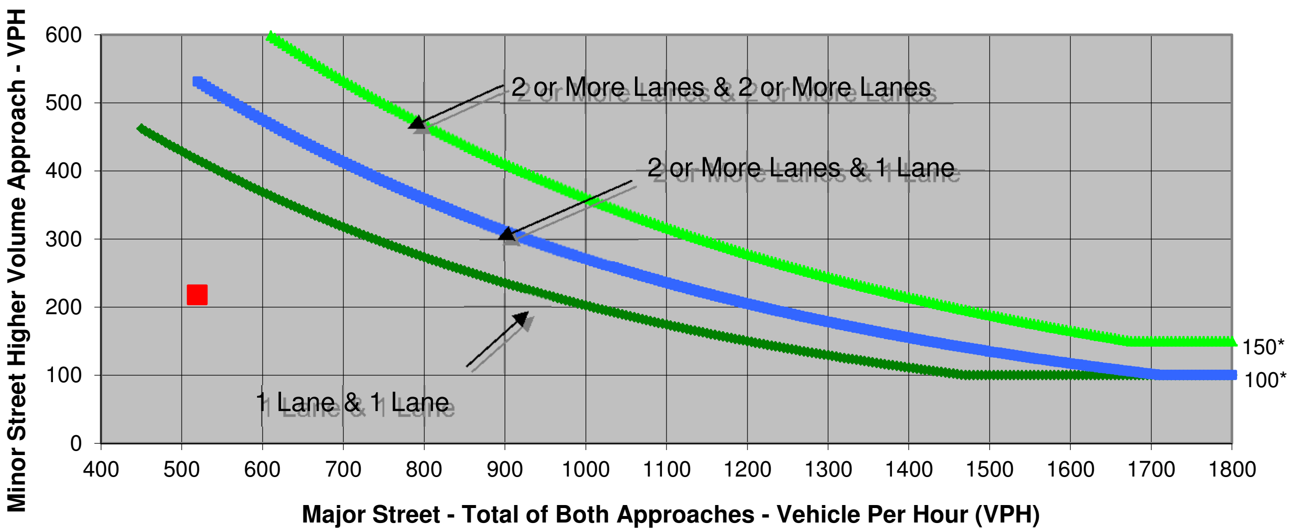
Turn Movement Volumes

	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 Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

Project	Central El Dorado
Scenario	Existing Conditions
Peak Hour	PM

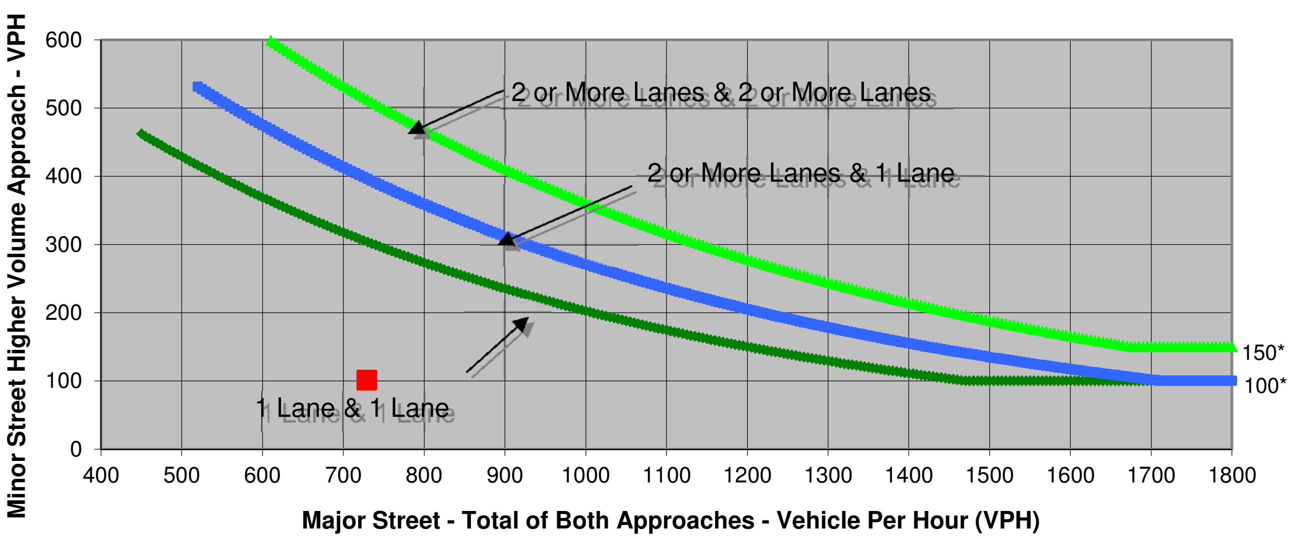
Turn Movement Volumes

	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 Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
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

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

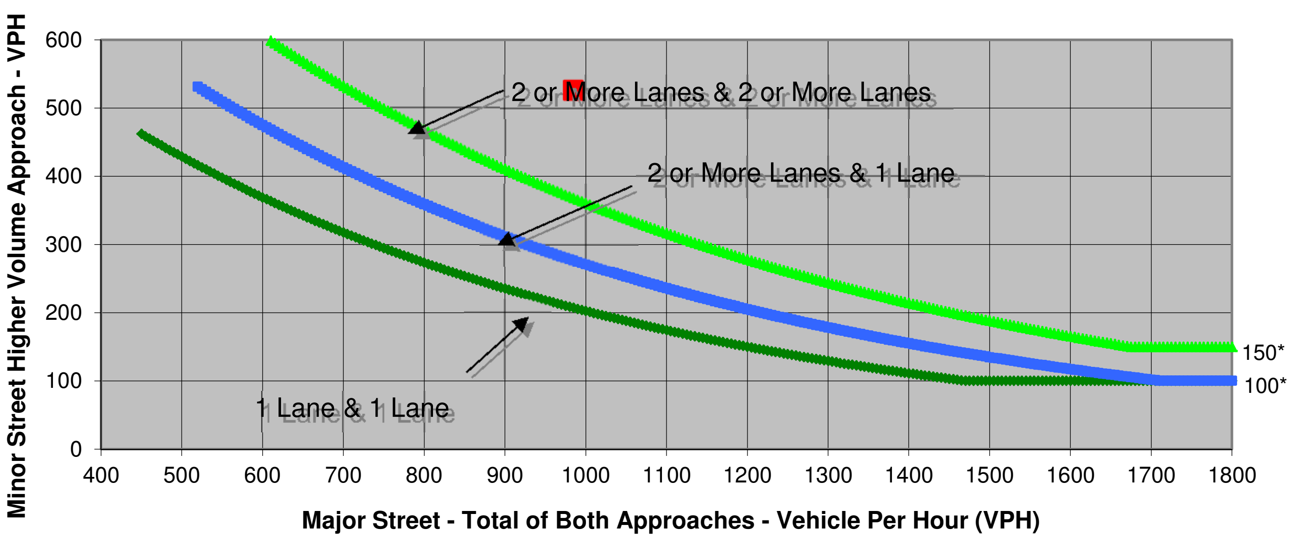
Turn Movement Volumes

	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 El Dorado Hills Blvd	Minor Street Francisco Dr	Warrant Met
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

Major Street	El Dorado Hills Blvd
Minor Street	Francisco Dr

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

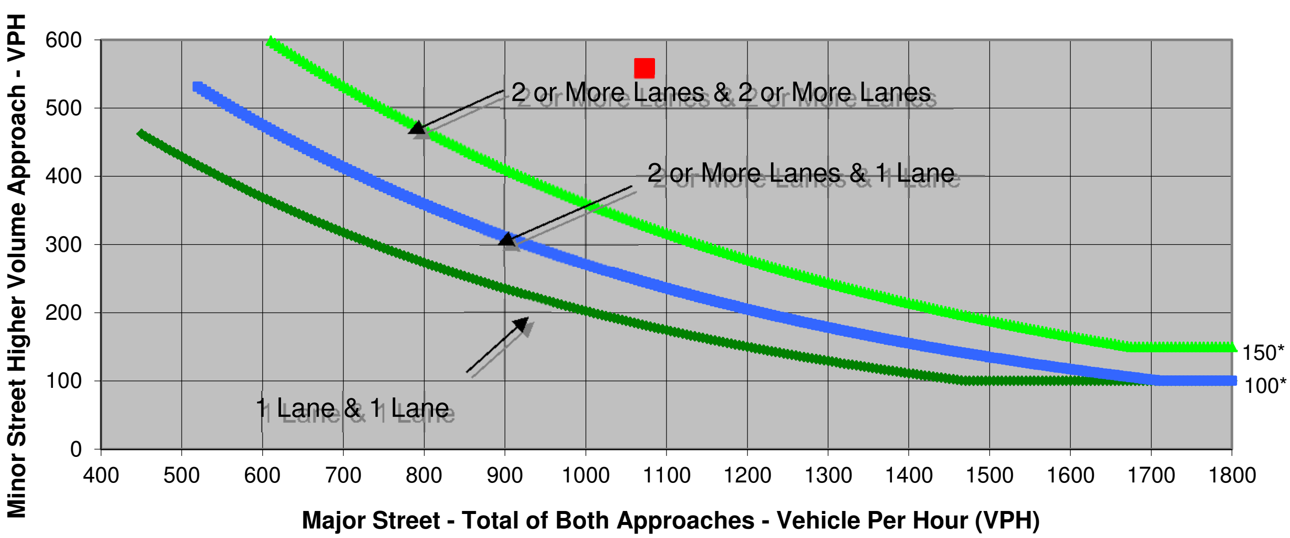
Turn Movement Volumes

	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 El Dorado Hills Blvd	Minor Street Francisco Dr	Warrant Met
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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

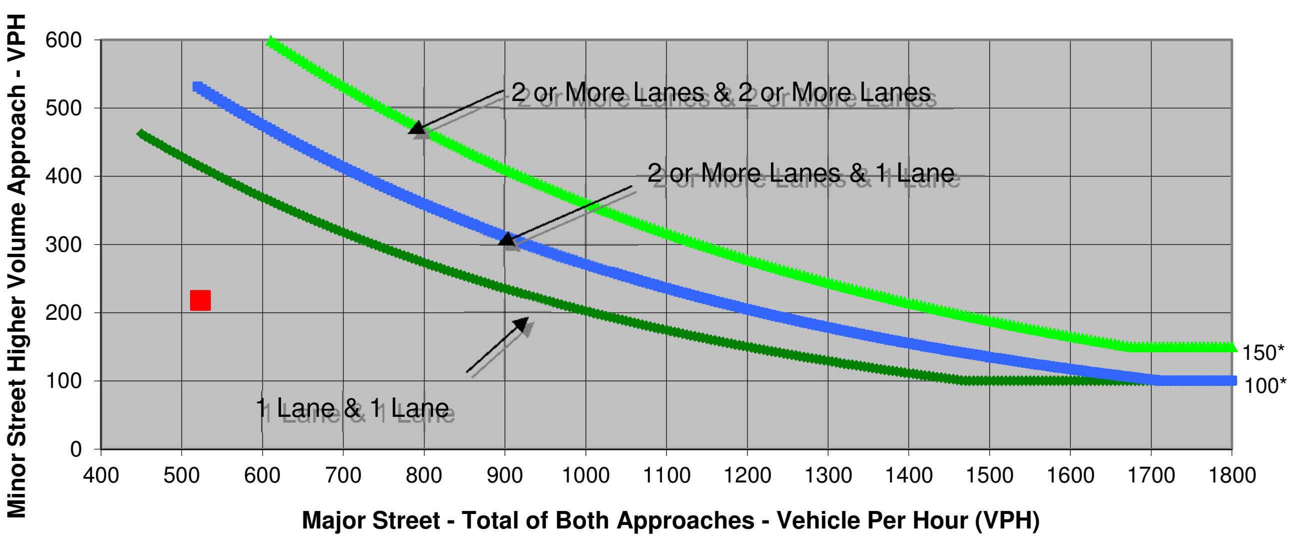
Turn Movement Volumes

	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 Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way

Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

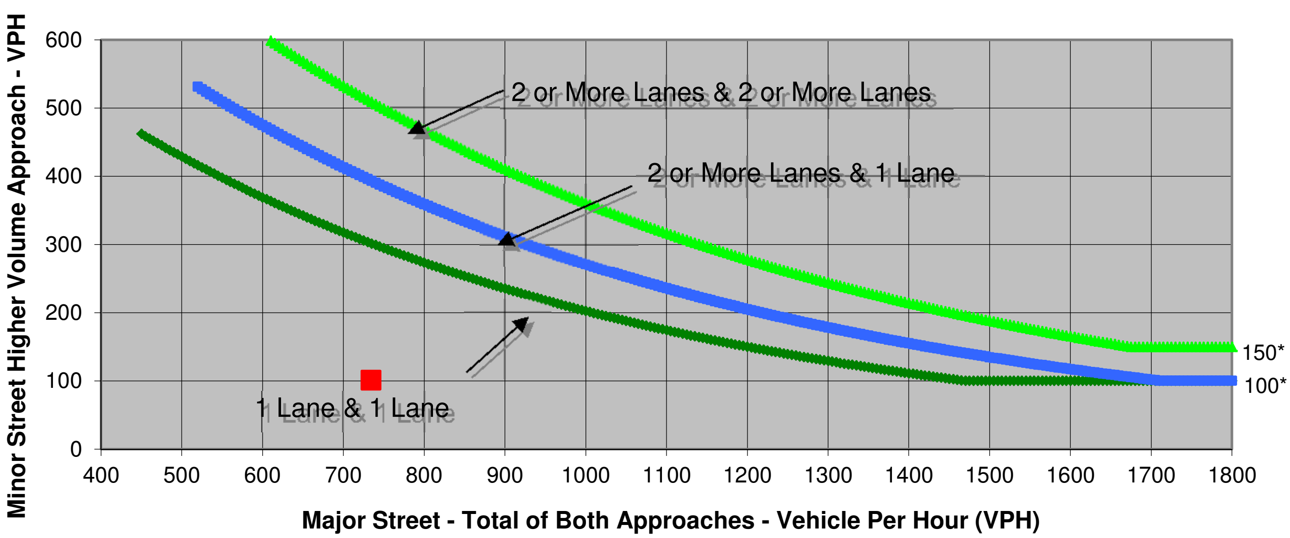
Turn Movement Volumes

	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 Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
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

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy
Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	AM

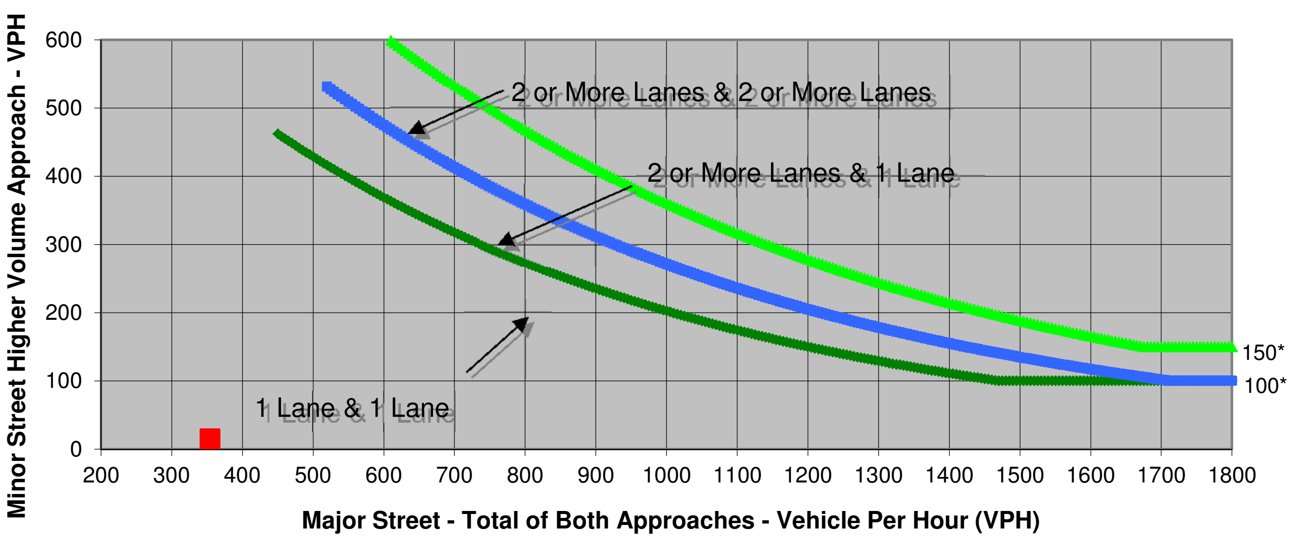
Turn Movement Volumes

	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 Wilson Blvd	Minor Street Pedregal Drwy	Warrant Met
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.

Sheet No	6	of	6	

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy
Project	Central El Dorado
Scenario	Existing Plus Project
Peak Hour	PM

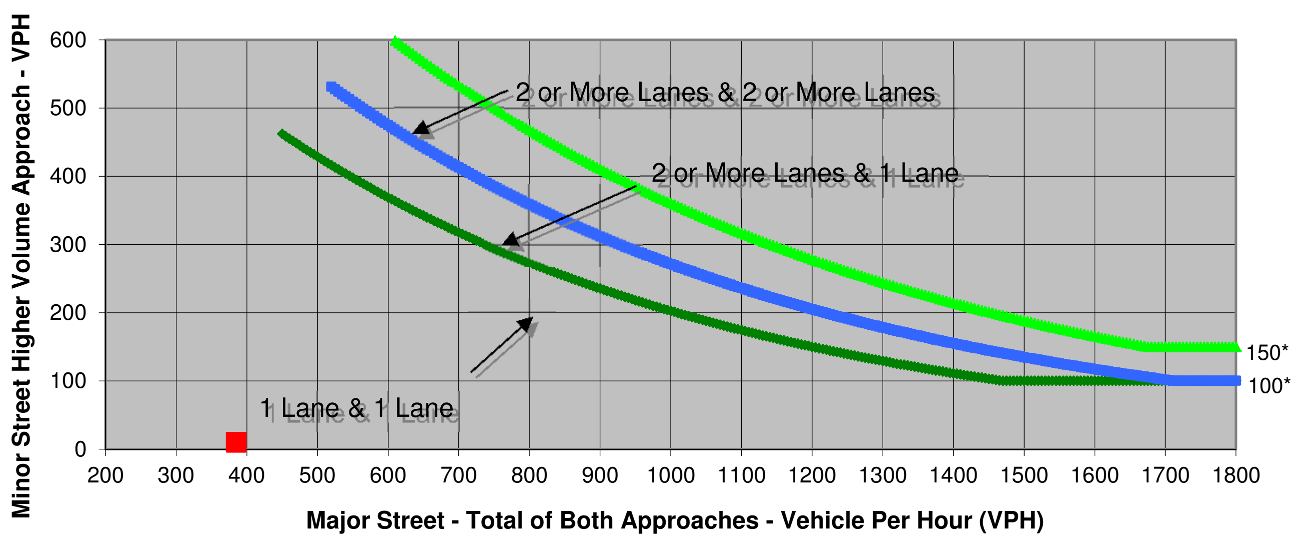
Turn Movement Volumes

	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 Wilson Blvd	Minor Street Pedregal Drwy	Warrant Met
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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way
Project	Central El Dorado
Scenario	Cumulative No Project
Peak Hour	AM

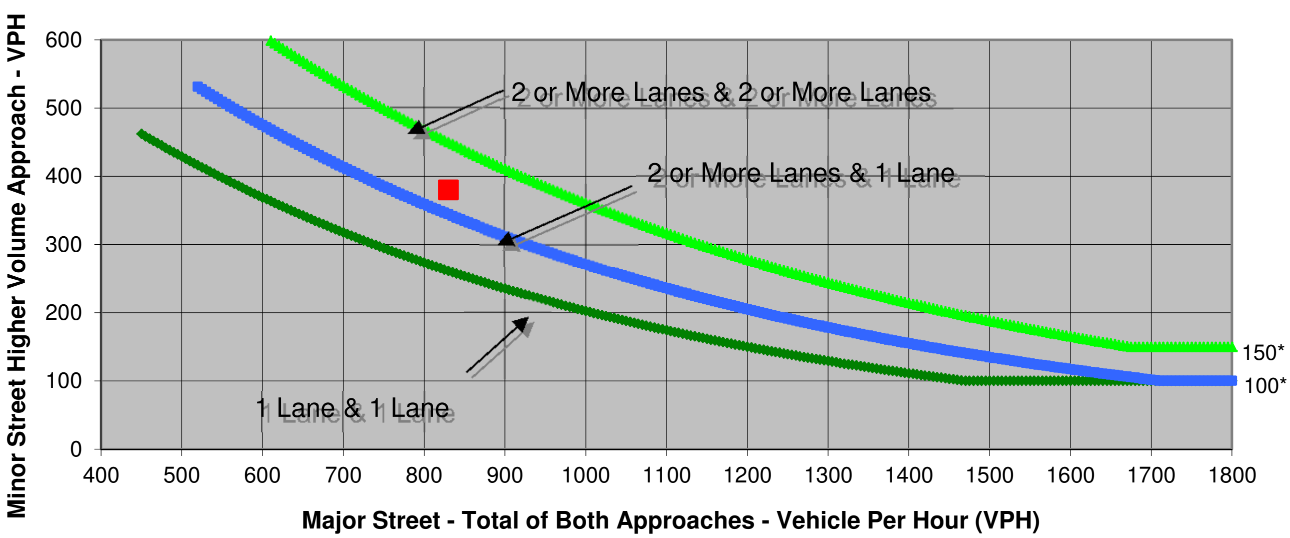
Turn Movement Volumes

	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		

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way
Project	Central El Dorado
Scenario	Cumulative No Project
Peak Hour	PM

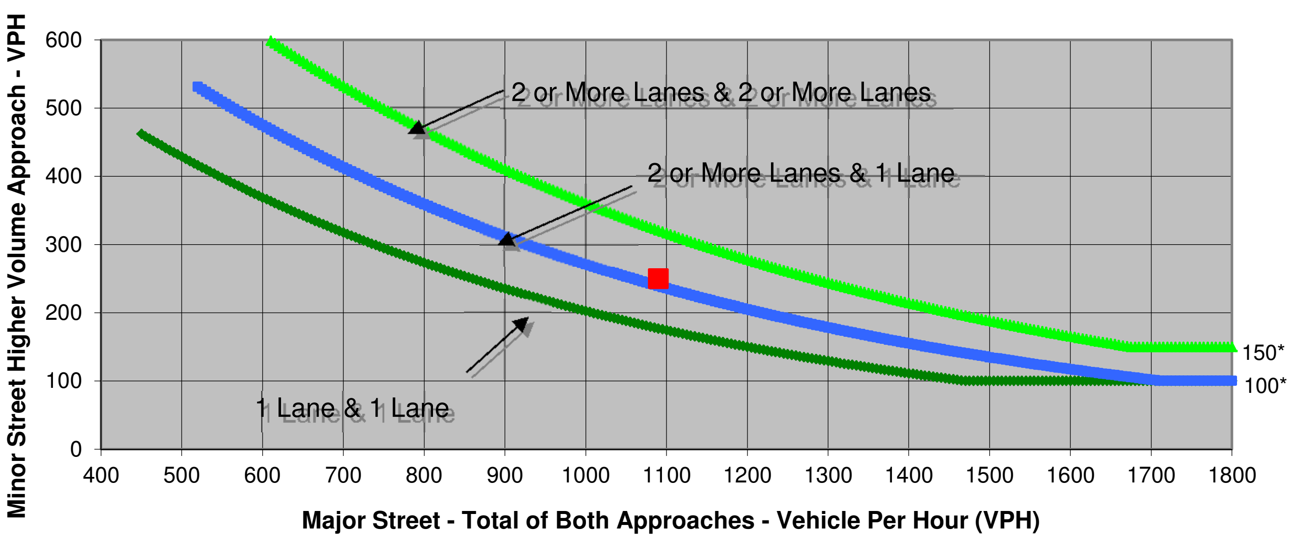
Turn Movement Volumes

	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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way
Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	AM

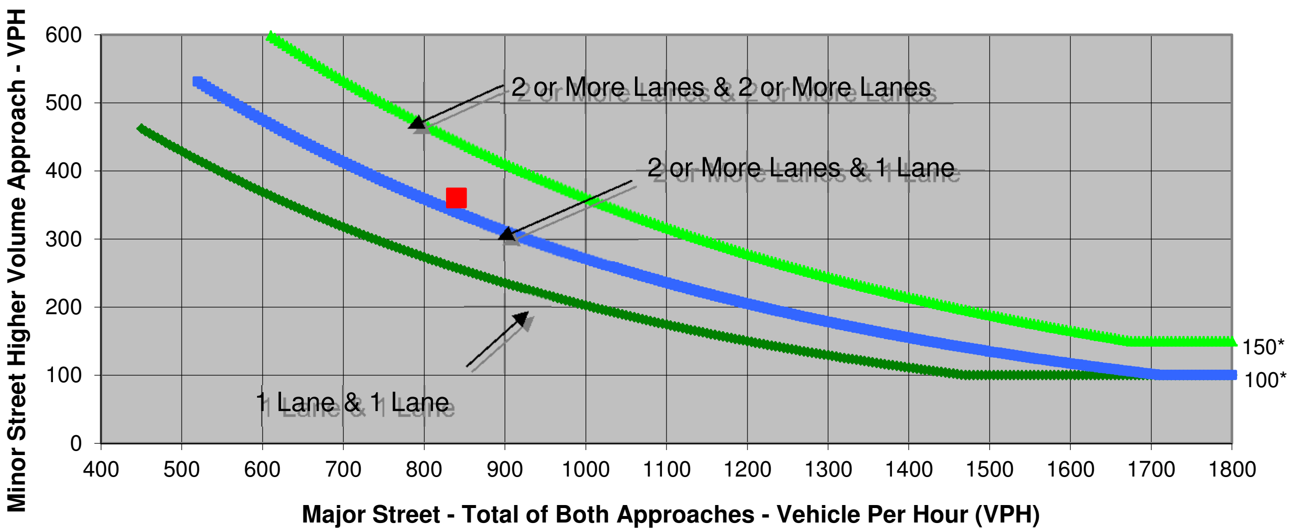
Turn Movement Volumes

	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 Silva Valley Pkwy	Minor Street Charter Way/Appian Way	Warrant Met
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

Major Street	Silva Valley Pkwy
Minor Street	Charter Way/Appian Way
Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	PM

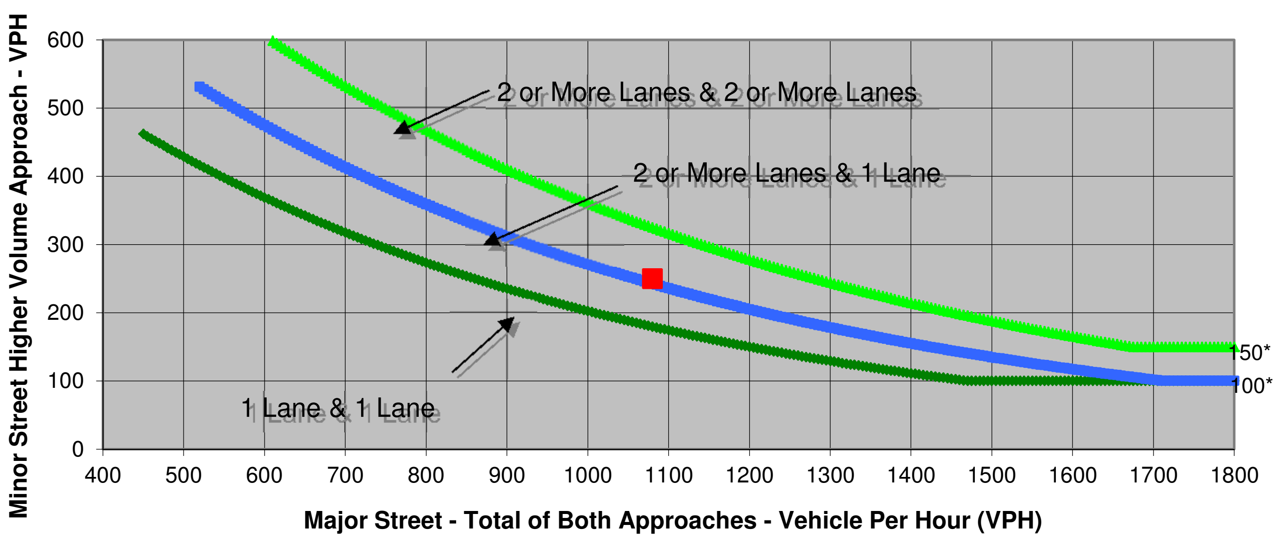
Turn Movement Volumes

	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	

Major Street: Wilson Blvd
Minor Street: Pedregal Drwy

Project: Central El Dorado
Scenario: Cumulative Plus Project
Peak Hour: AM

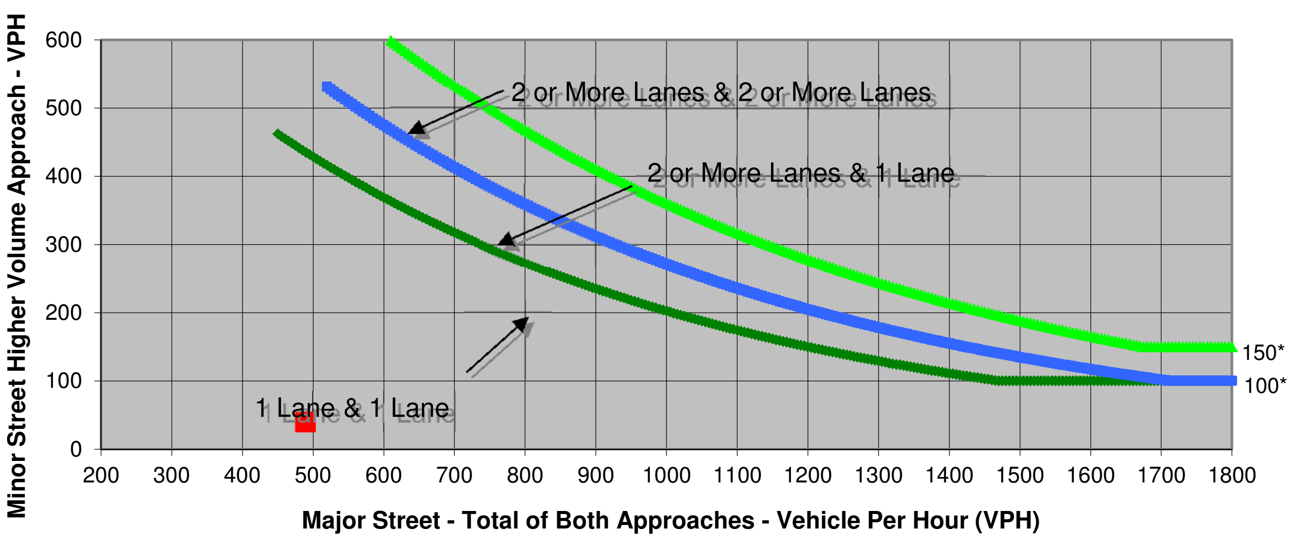
Turn Movement Volumes

	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 Wilson Blvd	Minor Street Pedregal Drwy	Warrant Met
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

Major Street	Wilson Blvd
Minor Street	Pedregal Drwy
Project	Central El Dorado
Scenario	Cumulative Plus Project
Peak Hour	PM

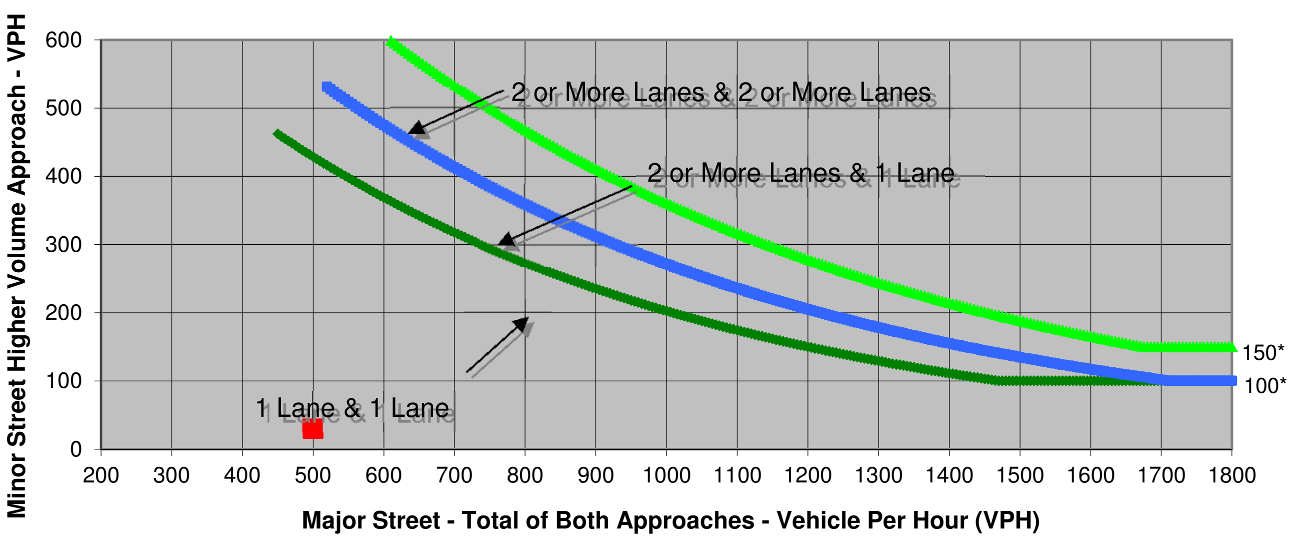
Turn Movement Volumes

	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 Wilson Blvd	Minor Street Pedregal Drwy	Warrant Met
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

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	

Chapter 4
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