CENTRAL EL DORADO HILLS SPECIFIC PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT

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Contents

Appendices are found on the attached CD

Tables

Figures

Figures follow the chapter or section in which they are referenced

Acronyms and Abbreviations

2008 Scoping Plan	2008 *Climate Change Scoping Plan* for AB 32
2009 Ozone Plan	*2009 Sacramento Metropolitan Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan*
2014 Master Plan	*El Dorado Union High School District 2014 Master Plan*
2014 Update	2014 West Slope Update to the 2007 Water Resources Development Plan
2015 CIP	County's Capital Improvement Program
AB	Assembly Bill
ACCM	asbestos-containing construction material
ACHP	Advisory Council on Historic Preservation
af	acre feet
AF	acre-feet
AF/AC	acre-feet of water use annually per acre of land
af/yr	acre-feet per year
AFY	acre-feet per year
AkC	Argonaut gravelly loam
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AMSL	above mean sea level
AP	Adopted Plan
APN	Assessor's Parcel Number
AQMD	Air Quality Management District
ARB	California Air Resources Board
AwD	Auburn silt loam
AxD	Auburn very rocky silt loam
AxE	Auburn very rocky silt loam
Basin Plan	*Water Quality Control Plan*
BAT	best available technology
BAU	business-as-usual
BCC	birds of conservation concern
BGEPA	Bald and Golden Eagle Protection Act
BMPs	best management practices
BTU	British thermal unit
Business Plan Act	The Hazardous Materials Release Response Plans and Inventory Act
C	Commercial
C_2H_3Cl	vinyl chloride
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model

Cal-EPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
California Energy Code	California Code of Regulations, Title 24, Part 6
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
Carl Moyer Program	Carl Moyer Memorial Air Quality Standards Attainment Program
CBSC	California Building Standards Code
CC&Rs	Covenants, Conditions and Restrictions
CCAA	California Clean Air Act
CCAs	Community Choice Aggregations
CCR	California Code of Regulations
CCRs	Conditions, Covenants, and Restrictions
CDA	Community Development Agency
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CDPH	California Department of Public Health
CEC	California Energy Commission
CED	Center for Economic Development
CEDHSP	Central El Dorado Hills Specific Plan
Central Valley Water Board	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CESQG	Conditionally Exempt Small Quantity Generators
CFD	Community Facilities District
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHSC	California Health and Safety Code
CHWMP	*El Dorado County Hazardous Waste Management Plan*
CIMP	Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program
CIP	Capital Improvement Program
CL1-PD	Civic–Limited Commercial-Planned Development
C-LC	Civic-Limited Commercial
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide

CO_2e	CO_2 equivalent
COG	council of governments
Construction General Permit	*General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ)*
County	El Dorado County
County General Plan	*El Dorado County General Plan*
County SWMP	*Western El Dorado County Stormwater Management Plan*
CPUC	California Public Utilities Commission
CREED	*Citizens for Responsible Equitable Environmental Development*
CRPR	California Rare Plant Ranks
CSD	Community Services District
CTC	California Transportation Commission
CUPA	Certified Unified Program Agency
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibel
dBA	A-Weighted Decibel
dBC	C-Weighted Decibel
Delta	Sacramento–San Joaquin Rivers Delta
Design Report	*Basis of Design Report–EID Recycled Water Seasonal Storage Reservoir*
DISM	Design and Improvement Standards Manual
DOF	California Department of Finance
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
Drainage Manual	County of El Dorado Drainage Manual
DTSC	California Department of Toxic Substances Control
du/ac	dwelling units per acre
DWR	California Department of Water Resources
Earthquake Fault Zones	corridors along active faults
EDCAQMD	El Dorado County Air Quality Management District
EDCAQMD CEQA Guidelines	EDCAQMD's 2002 *Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act*
EDCTC	El Dorado County Transportation Commission
EDCWA	El Dorado County Water Agency
EDHSP	*El Dorado Hills Specific Plan*
EDUs	equivalent dwelling units
EDWPA	El Dorado Water and Power Authority
EID	El Dorado Irrigation District
EIR	environmental impact report
El Dorado Transit	El Dorado County Transit Authority

EMD	Environmental Management Department
Emergency Operations Plan	*Multi-Hazard Functional Emergency Operations Plan*
EO	Executive Order
EP Act	Energy Policy Act of 2005
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	Endangered Species Act
ESPs	energy service providers
F	Fahrenheit
FAR	floor area ratio
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FCCs	Facility Capacity Charges
FED	Functional Equivalent Document
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	flood insurance rate maps
Five Year Plan	El Dorado Hills Fire Department *Five Year Plan for 2013–-2018*
FMMP	Farmland Mapping and Monitoring Program
FPR	Facility Plan Report
FR	*Federal Register*
GHG	greenhouse gas
GPS	global positioning system
Grading Ordinance	Grading, Erosion, and Sediment Control Ordinance
GREET	Gases, Regulated Emissions, and Energy Use in Transportation Model
H_2S	hydrogen sulfide
HCD	California Department of Housing and Community Development
HDR	High-Density Residential
HI	hazard index
Horizontal: Vertical	H:V
Hot Spots Act	Air Toxics Hot Spots Information and Assessment Act of 1987
HPTP	Historic Properties Treatment Plan
HSWA	Hazardous and Solid Waste Amendments of 1984
HUC	Hydrologic Unit Code
HVAC	heating, ventilation, and air conditioning
HWCA	Hazardous Waste Control Act
Hz	Hertz
I-5	Interstate 5
I-80	Interstate 80
IHMP	important habitat mitigation plan
IIG	Interim Interpretive Guidelines
IOUs	investor-owned utilities

IPCC	Intergovernmental Panel on Climate Change
IPM	integrated pest management
ISAC	Invasive Species Advisory Committee
ITE's	Institute of Transportation Engineers'
IWMP	Integrated Waste Management Plan
IWRMP	Integrated Water Resources Master Plan
Jch	Copper Hill Volcanics
km	kilometer
kWh	kilowatt-hours
lbs/sq ft/day	pounds per square foot per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night sound level
LED	light-emitting diode
LEPC	Local Emergency Planning Committee
L_{eq}	equivalent sound level
LID	low impact development
L_{max}	maximum sound level
L_{min}	minimum sound level
LOS	level of service
LRVSP	Lime Rock Valley Specific Plan
LTAB	Lake Tahoe Air Basin
LUST	leaking underground storage tank
L_{xx}	Percentile-Exceeded Sound Level
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MCFH	thousand cubic feet per hour
MCL	maximum contaminant level
MERV	minimum efficiency reporting value
MFI	median family income
MFR	Multifamily Residential
mgd	million gallons per day
MLDs	most likely descendants
MOU	Memorandum of Understanding
MPO	metropolitan planning organization
-MR	no mineral resources
MRF	Material Recovery Facility
MRZ	mineral resource zone
MS4	municipal separate storm sewer system
MS4 Permit	*General Permit for Municipal Separate Storm Sewer Systems* (MS4)
MSL	mean sea level
MTIP	*2013/16 Metropolitan Transportation Improvement Program*

MTP	Metropolitan Transportation Plan
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
mv	Metavolcanic
MW	megawatts
MWELO	Model Water Efficient Landscape Ordinance
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAT	no action taken
NCIC	North Central Information Center
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Act
NHPA	National Historic Preservation Act
NISC	National Invasive Species Council
NMFS	National Marine Fisheries Service
NNL	National Natural Landmarks
NO	nitric oxide
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWPs	nationwide permits
O&M	operations and maintenance
OAL	Office of Administrative Law
Ocean Plan	Water Quality Control Plan for Ocean Waters of California
OEHHA	Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
OHP	California Office of Historic Preservation
OHWM	ordinary high water mark
OS	Open Space
OS1-PD	Open Space-Planned Development
OSHA	Division of Occupational Safety and Health
OSMP	Open Space Management Plan
OWMP	Oak Woodland Management Plan
PAD	Pedregal Archaeological District
Pb	lead
pCi/L	picocurie per liter

pCi	picocurie
PD	Planned Development
Peak Velocity or PPV	Peak Particle Velocity
PeMS	Performance Measurement System
PEV	plug-in electric vehicles
PG&E	Pacific Gas and Electric
PHF	peak hour factor
PM	particulate matter
PM10	PM 10 microns in diameter or less
PM2.5	PM 2.5 microns in diameter or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
PPV	peak particle velocity
PRC	Public Resources Code
PrD	Placer diggings
proposed project	proposed Central El Dorado Hills Specific Plan
psi	pounds per square inch
PUC	Public Utility Commission
PV	photovoltaic
Qal	Quaternary Alluvium
R1	Single-Family Residential
R1-PD	Single-Family Residential-Planned Development
R2-DC	Limited Multifamily Residential-Design Control
RCEM	Roadway Construction Emissions Model
RCRA	Resource Conservation and Recovery Act of 1976
Reclamation	U.S. Bureau of Reclamation
Reduction Guide	*Recommended Guidelines for Land Use Emissions Reductions*
Regional Water Board	Regional Water Quality Control Board
RF	Recreational Facilities
RFH1-PD	Recreational Facilities High-Planned Development
RHNA	Regional Housing Needs Allocation
RHNP	*Regional Housing Needs Plan*
Rk	Rescue clay
RM1-PD, RM2-PD	CEDHSP zone districts Multifamily Residential-Planned Development
Roadway Protocol	SMAQMD's (2011) *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*
ROG	reactive organic gas
RPS	Renewables Portfolio Standard
RPW	relatively permanent water
RRNC	Radon-Resistant New Construction
RTP	regional transportation plan
RTPA	Regional Transportation Planning Agency
RTPs	regional transportation plans
RWD	report of waste discharge

SAA	streambed alteration agreement
SACOG	Sacramento Area Council of Governments
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SB 375	Senate Bill 375
SCS	sustainable communities strategy
SCWA	Sacramento County Water Agency
SED	Substitute Environmental Document
sf	square feet
SFNA	Sacramento Federal Nonattainment Area
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
Small MS4 Permit	*Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems General Permit No. CAS000004 (Order 2013-0001-DWQ)*
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act of 1975
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SO_4	sulfates
SR	State Route
SRAs	State Responsibility Areas
STARS	Sheriff's Team of Active Retirees
State Water Board	State Water Resources Control Board
STIP	State Transportation Improvement Program
SVP	Society of Vertebrate Paleontology
SWANCC	*Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*
SWMP	stormwater management program
SWPPP	stormwater pollution prevention plan
TACs	toxic air contaminants
Tanner Act	Toxic Air Contaminant Identification and Control Act
TAZs	traffic analysis zones
TCR/CSMP	*Transportation Concept Report and Corridor System Management Plan*
TDM	Travel Demand Model
TGPA	targeted amendments to certain County General Plan policies and land use designations
TGPA/ZOU	targeted general plan amendment and zoning ordinance update
TIM	Traffic Impact Mitigation Fee
TMDL	total maximum daily load
TMP	traffic management plan
TNW	tributaries of traditional navigable waters

Transit Plan	*El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan*
TRI	Toxic Release Inventory
TRPA	Tahoe Regional Planning Agency
TSDFs	treatment, storage, and disposal facilities
TSN	Transportation Systems Network
um	Ultramafic Rocks
US 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USBM	U.S. Bureau of Mines
USC	United States Code
USDOE	U.S. Department of Energy
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
VELB	Valley Elderberry Longhorn Beetle
VMT	vehicle miles traveled
VMVSP	Village of Marble Valley Specific Plan
VOC	volatile organic compounds
VP	Village Park
VRH	Village Residential – High
VRL	Village Residential – Low
VRM-H	Village Residential Medium – High
VRM-L	Village Residential Medium – Low
WDRs	waste discharge requirements
Williamson Act	California Land Conservation Act of 1965
WMMP	Wetland Mitigation and Monitoring Plan
WMP	waste management plan
WRDMP	Water Resources Development and Management Plan
WSA	water supply assessment
WTP	Water Treatment Plant
WWFMP	*Wastewater Facilities Master Plan*
WWTP	Wastewater Treatment Plant
ZNE	zero net energy
ZOU	zoning ordinance

Introduction

This executive summary identifies the purpose of the draft 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 also presents other conclusions required by the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. These discussions provide an overview and are to be used in conjunction with the Draft EIR and technical appendices.

The project area is 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 covers 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 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.

Purpose of the Draft EIR

This Draft EIR has been prepared by El Dorado County, as lead agency, pursuant to CEQA (Public Resources Code 21000 et seq.); the State CEQA Guidelines (California Code of Regulations 15000 et seq.), as amended; and the County's environmental thresholds of significance, as applicable. CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. Approval of the proposed project, which includes a general plan amendment and rezoning, constitutes a *project* under CEQA.

An EIR is an informational document used in the planning and decision-making process. It is not the purpose of an EIR to recommend either approval or denial of a project. An EIR is a public document that assesses the environmental effects related to the planning, construction, and operation of the proposed project and identifies ways to reduce or avoid possible environmental damage. The EIR discloses significant environmental impacts that cannot be avoided; growth-inducing impacts; effects found not to be significant; and significant cumulative impacts of all past, present, and reasonably anticipated future projects.

This EIR will be used by the El Dorado County Planning Commission and Board of Supervisors to determine whether implementation of the proposed project would result in significant environmental impacts. If environmental impacts are identified as significant and unavoidable, the County may still approve the project if it believes that social, economic, or other benefits outweigh the unavoidable impacts. When that is the case, the County must disclose the specific benefits in writing. This EIR may also be used by other agencies, such as state and federal regulatory agencies,

and local service providers such as the El Dorado Irrigation District and the El Dorado Hills Community Services District (CSD) in conjunction with issuing permits and/or approvals or providing service, which are described in greater detail under the "Required Permits and Approvals" subheading at the end of this Executive Summary.

Level of Review in EIR

CEQA identifies various types of EIRs, the most common of which is the project EIR. A project EIR focuses primarily on the changes in the environment that would result from a development project. It examines all phases of the project, including planning, construction, and operation. For the proposed project, this Draft EIR covers environmental impacts at a project level for onsite improvements and is supported by site-specific studies.

Offsite improvements associated with the proposed project, including connections to existing infrastructure such as water and wastewater systems, 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 of detail available at the time when this Draft EIR was prepared and subsequent environmental review based on review of this EIR may be required once infrastructure details are known.

Public Review Process

Notice of Preparation Review and Scoping

A Notice of Preparation (NOP) was prepared for the proposed project and published for a 30-day public review and comment period beginning February 20, 2013 (Appendix A). The County conducted a public scoping meeting on March 14, 2013, at Oak Meadow Elementary School in El Dorado Hills, from 6:30 to 8:30 p.m. Nearly 150 individuals provided written or oral comments on the NOP. A summary of these comments is included in Appendix A.

EIR Public Review

The County encourages public review of this EIR. This Draft EIR is being circulated for a 60-day public review period. During this time, written comments may be submitted to the following staff person for consideration in the Final EIR.

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Following the close of the public comment period, the County will prepare a Final EIR that contains this Draft EIR plus any technical clarifications and responses to significant environmental points raised in the public review and resource agency consultations. The Draft and Final EIR will be considered by the El Dorado County Planning Commission and the Board of Supervisors and, subsequently, a decision will be made to approve or deny the proposed project.

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 Village Park, 1 acre of neighborhood park within the 169 acres of natural open space 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 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.

General Plan Amendments

The proposed project would amend the County General Plan, under application A14-0003, in two ways.

- Amend the General Plan Land Use Map designation of lands within the CEDHSP area 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 VP.
- Amend 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, under application SP86-0002R, 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 rezone land, under application Z14-0005, in two ways.

- Amend zone districts from One-Family Residential (R1), One-Family Residential-Planned Development (R1-PD), Limited Multifamily Residential-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 Facilities High-Planned Development (RFH1-PD), and Open Space-Planned Development (OS1-PD).
- Amend zone designation 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, a 1-acre neighborhood park, and 169 acres of natural open space. Through the specific plan, the Planned Development (PD) will be established for the entire plan area.

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 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
- Greenhouse gas emissions
- 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

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 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 this 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	LTS	LTS w/mit	(>)	LTS	(<)	LTS	(<)
Conflict with Plan	LTS	LTS	(>)	LTS	(<)	LTS	(<)
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	(>)

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(=) equal to proposed project.
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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, but the development of one-third fewer residential units (328 fewer 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 (with the exception of water supply), and recreational facilities. The Reduced-Density Alternative would meet some but not all of the project objectives.

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) 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.

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 Permits and Approvals

This EIR will be used by the County to document the potential 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 under CEQA 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 is 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, 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 El Dorado Irrigation District.
- 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 the County of building and grading permits, General Permit for Municipal Separate Storm Sewer Systems (MS4) compliance, small lot tentative maps, and final maps.

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 for project implementation. State permits or 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 Resources Control Board (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 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	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 and perform naturally occurring asbestos evaluations during site grading as necessary	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	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	Less than significant
		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	
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	Less than significant
		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	
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	Less than significant
		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	

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	Less than significant
		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	
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	Less than significant
		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	
Impact BIO-12: Conflict with the County General Plan oak protection policies	Less than significant	–	–
Impact BIO-13: Potential introduction and spread of invasive plant species	Significant	Mitigation Measure BIO-13: Avoid the introduction and minimize spread of invasive 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	Less than significant
		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	

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	Less than significant
		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	
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	Less than significant
		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	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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 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	Less than significant
Impact BIO-18: Loss or disturbance of valley elderberry longhorn beetle and its 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-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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 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	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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 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	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Less than significant	–	–
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Less than significant	–	–
Impact GHG-3: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment as a result of offsite improvements	Less than significant	–	–
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	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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 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

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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 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-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	Less than significant
		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	

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 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 BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs	
		Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction	
		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-3: 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-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 NOX 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	

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 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 BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs	
		Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		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-3: 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-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 NOX 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	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		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	
		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	

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		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 BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs	
		Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction	
		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-3: 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-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	–	–
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	–	–

Impact	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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: Pay applicable TIM fees towards improvement of the Francisco Drive/El Dorado Hills Boulevard intersection 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 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-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 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	Level of Significance before Mitigation	Mitigation Measure	Significance after Mitigation
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	Additional 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 Mitigation Measure CUM-B: Improve the Silva Valley Parkway/Harvard Way intersection Mitigation Measure CUM-C: Improve the Serrano Parkway/Silva Valley Parkway intersection Mitigation Measure CUM-D: Improve the El Dorado Hills Boulevard/Park Drive/Saratoga Way intersection Mitigation Measure CUM-E: Improve Latrobe Road/Town Center Boulevard intersection Mitigation Measure CUM-F: Improve US 50 Eastbound Off-Ramp to Bass Lake Road	Impact is less than significant

Chapter 1
Introduction

1.1 Project Background and Overview

The proposed Central El Dorado Hills Specific Plan (CEDHSP) (proposed project) is a primarily residential development plan for the area of El Dorado Hills adjacent to El Dorado Hills Boulevard, north of U.S. Highway 50 (US 50). This area is divided into two planning areas. The Pedregal planning area is west of El Dorado Hills Boulevard and is currently encompassed only by the *El Dorado County General Plan* (County General Plan). The Serrano Westside planning area is east of El Dorado Hills Boulevard and partially within the existing El Dorado Hills Specific Plan (EDHSP) boundary. 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 Village Park, a 1-acre neighborhood park, and 169 acres of natural open space in the center of the El Dorado Hills community, and would convert a portion of the EDHSP currently approved for residential development to open space.

1.2 Purpose of this Environmental Impact Report

This draft environmental impact report (EIR) (State Clearinghouse No. 2013022044) has been prepared according to the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Chapter 3) to evaluate the potential environmental impacts associated with implementing the proposed project, including implementing the CEDHSP, and amending El Dorado County's (County's) general plan and related specific plans, and making zoning changes (see Chapter 2, *Project Description*).

CEQA requires public agencies to consider the potential adverse environmental impacts of projects under their consideration. This includes both direct impacts and reasonably foreseeable indirect impacts. A discretionary project that would have a significant adverse impact on the environment cannot be approved without the preparation of an EIR. This includes the proposed project.

According to Section 15002 of the State CEQA Guidelines, the basic purposes of CEQA include the following.

- 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.

CEQA establishes a process for analyzing a project's potential environmental impacts. It is not a permit and does not regulate the project. CEQA also does not require 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 measures).

The County Planning Commission and Board of Supervisors will review the Draft EIR to understand the project's impacts before taking action. They will also consider other information and testimony that will arise during deliberations on the project before making their decision.

1.2.1 Level of Detail and Scope of EIR

CEQA identifies various types of EIRs, the most common of which is the project EIR. A project EIR focuses primarily on the changes in the environment that would result from a development project. It examines all phases of the project, including planning, construction, and operation. For the proposed project, this Draft EIR covers environmental impacts on a project level for onsite improvements, supported by site-specific studies.

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.

Senate Bill 375 and the Sustainable Communities Strategy

Streamlined CEQA review and analysis is available to residential or mixed-use residential projects that are consistent with an adopted SCS. SB 375 requires consistency with the SCS to be determined by the CEQA lead agency (in this case, El Dorado County). A Determination of MTP/SCS Consistency was prepared as part of this Draft EIR and is included in Appendix I. Based on the analysis presented in Appendix I, the CEDHSP is consistent with SACOG's MTP/SCS. As such, the project was found to qualify for CEQA streamlined review and analysis of residential or mixed-use projects consistent with provisions pursuant to PRC Section 21159.28 CEQA.

The Determination of MTP/SCS Consistency for the proposed project finds the following.

- The CEDHSP meets the definition of Residential or Mixed Use Residential Project pursuant to PRC Section 21159.28(d).
- The CEDHSP is consistent with the General Use Designation, Density and Intensity in MTP/SCS.
- The CEDHSP is consistent with the MTP/SCS.

Therefore, the CEDHSP qualifies for CEQA streamlining that is applicable to residential or mixed-use projects, and is not required to reference, describe or discuss the following issues.

- Growth-inducing impacts.
- A reduced-density alternative to address impacts on transportation or climate change of increased car and truck vehicle miles traveled (VMT) induced by project.

- Any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation.

However, the County has decided not to apply the CEQA streamlining process for this project and this document analyzes impacts related to air quality, greenhouse gases, traffic, and growth-inducing impacts of the proposed project in this EIR.

1.3 Scoping and Public Involvement

1.3.1 Purpose of Scoping

CEQA outlines a scoping process as part of the environmental review of a proposed project. Section 15083 of the State CEQA Guidelines defines early consultation, also called *scoping*, as the opportunity for reviewing agencies and the public to identify the range of actions, alternatives, mitigation measures, and significant impacts to be analyzed in depth in an EIR. The opportunity to provide input on the issues and alternatives to be evaluated during the environmental process is provided to potentially affected federal, state, and local agencies; Native American tribes; and other interested persons or organizations that may be concerned with the environmental effects of the project.

As described below, the scoping process for this EIR involved the distribution of a Notice of Preparation (NOP) of a draft EIR, holding a public scoping meeting, and requesting comments and input from agencies and individuals on the NOP. The County continued to accept comments and include individuals on distribution lists after the official end of the comment period.

1.3.2 Notice of Preparation Scoping Meetings

A NOP was prepared for the proposed project and published for a 30-day public review and comment period beginning February 20, 2013 (Appendix A). The County held a public scoping meeting on March 14, 2013, at Oak Meadow Elementary School in El Dorado Hills, from 6:30 to 8:30 p.m. The scoping meeting was an open-house-style event, with presentation boards and materials at stations operated by County staff and County consultants. The applicants were also present. Thirty-seven people attended the meeting.

Nearly 150 individuals provided written or verbal comments on the NOP. A summary table of these comments and where pertinent discussions can be found in this document is included in Appendix A. These comments were considered in preparing this Draft EIR. After review of all relevant comments received during the NOP comment period on environmental issues, the County determined that the following resource areas would be reviewed for potential environmental impacts.

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, Minerals, and Paleontological Resources

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology, Water Quality, and Water Resources
- Land Use Planning and Agricultural Resources
- Noise and Vibration
- Population and Housing
- Public Services and Utilities
- Recreation
- Traffic and Circulation

In addition, in May 2011 (prior to submitting a formal application for the proposed project), the applicants began hosting informational meetings with specific groups. These meetings have continued, with the most recent meeting in April 2015. The applicants and the County have been in consultation with representatives from the Wilton Rancheria, the Shingle Springs Band of Miwok Indians, and the United Auburn Indian Community, in accordance with Senate Bill 18.

1.3.3 Future Opportunities for Public Input

The review period for this Draft EIR will be a minimum of 60 days, beginning on November 20, 2015 and ending on January 19, 2016. The Draft EIR and the Public Review Draft CEDHSP are available on the County's website (http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx); at the El Dorado Hills Library, 7455 Silva Valley Parkway, El Dorado Hills; the Placerville Library, 345 Fair Lane, Placerville; and at the public counter at the Community Development Agency, 2850 Fairlane Court, Building C, Placerville.

Written comments can be submitted by mail to:

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

Written comments can be submitted by email to: CEDHSP@edcgov.us

There will be an opportunity for the public to provide comments on the Draft EIR at a meeting of the Planning Commission during the review period. The meeting date and time will be publicly noticed. No action will be taken by the County Planning Commission on the Draft EIR or the proposed project.

Comments may also be submitted after the end of the formal review period; however, it is possible that they may not be responded to in writing and included in the Final EIR. No comments on the Draft EIR will be responded to outside of the CEQA process, and commenters will not be sent individual responses to their comments. The responses will be contained in the Final EIR. Comments that are received too late for inclusion in the Final EIR will nonetheless be made available to the County Planning Commission and the Board of Supervisors during their deliberations on the project.

1.3.4 Final EIR

After the close of the public review period for the Draft EIR, the County will prepare a Final EIR. The Final EIR will consist of the Draft EIR and the Final EIR and will include: the comments received during the formal review period of the Draft EIR; responses to the comments received that relate to environmental issues; and any revisions made to the Draft EIR in response to the comments in errata format. The Final EIR will also contain copies of the comments received during the public review period.

The Final EIR and accompanying Draft EIR will be available to the County Planning Commission and Board of Supervisors for consideration during their decision-making process to approve or deny the project.

1.4 Intended Use of this EIR

This Draft EIR will examine the potential impacts of the project (the proposed CEDHSP). The Final EIR will be considered by the County Planning Commission and the Board of Supervisors prior to taking their final action on the project. The agencies expected to use the Final EIR in the future include those listed below.

- El Dorado County Planning Commission.
- El Dorado County Board of Supervisors.
- El Dorado Hills Community Services District.
- El Dorado County Community Development Agency, Long Range Planning.
- El Dorado Irrigation District.
- Central Valley Regional Water Quality Control Board (Central Valley Water Board).
- State Water Resources Control Board (State Water Board).
- California Department of Fish and Wildlife (CDFW).

Section 2.4, *Required Approvals*, in Chapter 2, *Project Description*, identifies the specific County and state approvals and permits that would be required.

Federal agencies may use this EIR as reference for permitting purposes. These agencies may include the U.S. Army Corps of Engineers (USACE) and U.S. Fish and Wildlife Service (USFWS), among others.

1.5 Document Format

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

- **Executive Summary** summarizes the contents and findings contained in this Draft EIR. It also contains a brief description of the project, alternatives, areas of known controversy, public review procedures, and a summary table listing project impacts, mitigation measures that have been recommended to reduce any significant impacts, and the level of significance of each impact following mitigation.

- **Chapter 1** is the introduction to the Draft EIR.
- **Chapter 2** contains the project description. It summarizes the proposed CEDHSP. Full copies of the CEDHSP are available for public review at the County Community Development Agency: 2850 Fair Lane, Building C, Placerville and at the following El Dorado County public libraries.

  El Dorado Hills Library, 7455 Silva Valley Pkwy El Dorado Hills, CA.

  Placerville Library, 345 Fair Lane Placerville, CA.

  A complete version of the CEDHSP is also available on the County's website: http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx.
- **Chapter 3** consists of sections containing the environmental analysis for each environmental topic (e.g., aesthetics, air quality, noise). Each section is organized according to the following framework.
  - Existing Conditions
    - Regulatory Setting
    - Environmental Setting
  - Environmental Impacts
    - Methods of Analysis
    - Thresholds of Significance
    - Impacts and Mitigation Measures
- **Chapter 4** contains discussion of the project alternatives. As allowed by CEQA, most of the impacts of these alternatives are evaluated at a more general level than the analyses contained in Chapter 3.
- **Chapter 5** contains discussions of additional topics required by CEQA, including growth-inducing impacts, cumulative impacts, unavoidable impacts, and significant irreversible environmental changes.
- **Chapter 6** lists the organizations and persons consulted in preparation of the Draft EIR and the Draft EIR preparers.
- **Chapter 7** provides details about the references cited and personal communications related to preparation of the Draft EIR.
- **Appendices A through L** contain copies of the NOP and comment letters and supporting technical reports.
  - Appendix A, *Notice of Preparation and Comment Matrix*
  - Appendix B, *Consistency with El Dorado County General Plan Policies*
  - Appendix C, *Air Quality Model Output (Construction Output/Emissions)*
  - Appendix D, *EDCAPCD Rule 223-1 Best Management Practices*
  - Appendix E, *Plant Species*
  - Appendix F, *Biological Resources Study and Important Habitat Mitigation Plan*

- Appendix G, *Native American Consultation Documentation*
- Appendix H, *Determination of MTP/SCS Consistency for the Central El Dorado Hills Specific Plan*
- Appendix I, *Drainage Analysis*
- Appendix J, *CEQA Guidelines Appendix F: Energy Conservation*
- Appendix K, *Water Supply Assessment*
- Appendix L, *Transportation Impact Analysis*

Chapter 2
Project Description

The proposed Central El Dorado Hills Specific Plan (CEDHSP) (proposed project), features a variety of residential types supported by civic–limited commercial and recreational uses accessible to the public. The proposed project would be developed in multiple phases with full build-out anticipated in 2025 or later. This chapter describes the project setting and project objectives; provides an overview of the proposed project entitlements, land use plan, and project features; and identifies the approvals required to implement the proposed project.

A specific plan is defined as a tool for the systematic implementation of the general plan. It establishes a link between implementing policies of the general plan and the individual development proposals in a defined area. The CEDHSP includes goals, objectives, policies, development standards, and design guidelines that will help guide the development and build-out of the plan area.[1] The CEDSHP 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 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. To move forward with a particular CEDHSP project, the County will require full compliance with the CEDHSP policies and development standards; the EIR mitigation measures; applicable chapters of the County Code; and other County standards, policies, and regulations. Processing of individual development applications will be subject to review and approval by the County.

2.1 Project Setting

The proposed project site is in El Dorado Hills, California, an unincorporated area of El Dorado County (County) that is approximately 29 miles northeast of downtown Sacramento and 17 miles west of Placerville and considered part of the larger Sacramento Metropolitan Area. El Dorado Hills consists of a number of smaller community developments and has a mix of low-density, large residential lots; high-density, multifamily residential housing; open space; and commercial and retail uses. Figure 2-1 shows the regional location of the proposed project.

2.1.1 Location

Generally, land uses within the El Dorado Hills community are governed by different specific plans such as the Promontory Specific Plan, the Valley View Specific Plan, or the El Dorado Hills Specific Plan (EDHSP). The proposed project site covers 341 acres within and immediately adjacent to the EDHSP area, north of U.S. Highway 50 (US 50), south of Green Valley Road and Folsom Lake, east of

[1] The Central El Dorado Hills Specific Plan Public Review Draft is available on the County's website http://www.edcgov.us/LongRangePlanning/ProposedSpecificPlans/Proposed_Specific_Plans.aspx, at the El Dorado County library in El Dorado Hills, and at the public counter at the Community Development Agency, 2850 Fairlane Court, Building C, Placerville.

El Dorado Hills Boulevard and the Sacramento–El Dorado County line, and west of Bass Lake Road (El Dorado County Community Development Department 1987:Figure 3).

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 west of El Dorado Hills Boulevard between Wilson Boulevard and Olson Lane, adjacent to the Ridgeview subdivision.

The proposed project also includes rezoning Serrano Village D-1, Lots C and D, which are part of the approved EDHSP area, to Open Space, thereby relocating 135 planned housing units (EDHSP-vested density at Serrano Village D-1, Lots C and D; File numbers TM08-1483 and TM 08-1484) from the EDHSP area to the Serrano Westside planning area. The existing Lots C and D of Village D-1 are immediately east of, and adjacent to, the Serrano Westside planning area. All of Lot C and all of Lot D, which are currently part of the EDHSP area, would become part of the Serrano Westside planning area.

2.1.2 Existing Conditions and Land Uses

The two planning areas are primarily undeveloped with differing existing uses, elevations, and vegetation. The Serrano Westside planning area comprises 141.67 acres within the EDHSP. The remaining portion of the Serrano Westside planning area and the Pedregal planning area are outside of the EDHSP. However, both planning areas lie within the established Community Region of El Dorado Hills, which is an *El Dorado County General Plan* (2004) (County General Plan) designation that denotes the geographic areas in the county with suitable infrastructure and the ability to support higher-intensity land uses. Table 2-1 summarizes the Assessor's Parcel Number (APN), land uses, and zoning. A description of the existing land uses and zoning designations of each planning area is provided below. Figure 2-3 identifies the existing conditions in the vicinity of the Serrano Westside and Pedregal planning areas.

Table 2-1. Existing Land Use Designations and Zoning

Assessor's Parcel No.	Area (acres)	Land Use	Zoning	Max No. Units
Serrano Westside Planning Area				
121-160-05	98	OS & C	RF	0
121-040-20	64	AP	R1-PD	65
121-040-29	15	AP	R1-PD	70
121-040-31	57	AP	OS	0
121-120-24 (portion)	5	AP	OS	0
Subtotal	239			135
Pedregal Planning Area				
120-050-01	69	HDR	R1	345
	6	MFR	R2-DC	144
120-050-05	27	HDR	R1	135
Subtotal	102			624
Total	341			759

General Plan Land Use

OS = Open Space.
C = Commercial.
AP = Adopted Plan.
HDR = High-Density Residential.
MFR = Multifamily Residential.

Zoning

RF = Recreational Facilities.
R1-PD = Single-Family Residential-Planned Development.
OS = Open Space.
R1 = Single-Family Residential.
R2-DC = Limited Multifamily Residential-Design Control.
PD = Planned Development Combining Zone.
DC = Design Control Overlay Zone.

Serrano Westside Planning Area

The Serrano Westside planning area is 239 acres, consisting of the former El Dorado Hills Executive Golf Course, (approximately 30%) and oak savannah and annual grasslands (the remaining 70%). The elevation ranges from approximately 600 to 1,020 feet above mean sea level. The majority of the former golf course is not actively mowed or irrigated; however, small portions around the driving range and 18th green are currently mowed and irrigated. The former fairways, tees, and greens are made up of Bermuda grass and bluegrass. Introduced tree species are scattered throughout the golf course and include valley oak, blue oak, olive, willows, and cottonwoods. This area includes the following APNs: 121-160-05; 121-040-20, -29, and -31; and a portion of 121-120-24. The land use designations, as identified by the County General Plan, are Open Space (OS), Commercial (C), and Adopted Plan (AP) associated with the EDHSP. The OS land use designation can be used to designate public lands under governmental title (e.g., County, State Parks), where no development other than that specifically needed for government-related open spaces is desired. It may also be used on private lands to maintain natural features within clustered development where a general plan amendment is processed. The C land use designation provides a full range of

commercial retail, office, and service uses to the residents, businesses, and visitors of El Dorado County. Mixed-use development of commercial lands within Community Regions and Rural Centers, which each combine commercial and residential uses, can be permitted. The AP land use designation recognizes areas for which specific land use plans have been prepared and adopted (i.e., EDHSP). These plans are accepted and incorporated by this reference, and the respective land use map associated with each such plan is adopted as the general plan map for the area. The existing zoning of the Serrano Westside planning area is Recreational Facilities (RF), Single-Family Residential-Planned Development (R1-PD), and OS.

Village D-1, Lots C and D

Lots C and D of Serrano Village D-1 consist of undeveloped vacant land with a diverse mix of native (e.g., oak trees) and nonnative vegetation (e.g., grasses). Lot C is approximately 64 acres with the residential area consisting of approximately 32 acres and Lot D is approximately 17 acres. Lot C APNs include 121-040-20 and -31, and Lot D includes APNs 121-040-29, -31, and -20. Currently, the zoning of Lots C and D is R1-PD. The applicant submitted tentative subdivision map applications to the County in November 2008 (TM 08-1483 and TM 08-1484), and the County deemed them complete for processing on December 1, 2008. Approximately 5.7 acres of Lots C and D are zoned OS and are within the EDHSP area, but entitled for residential development.

Pedregal Planning Area

The Pedregal planning area consists of oak savannah on steep terrain ranging in elevation from approximately 740 to 1,060 feet above mean sea level. The area is approximately 102 acres. Tree species onsite include blue oak, interior live oak, California buckeye, and gray pine. This area includes APNs 120-050-01 and -05. The land use designations, as identified by the County General Plan, are High-Density Residential (HDR) and Multifamily Residential (MFR). The HDR land use designation identifies those areas suitable for intensive single-family residential development at densities from one to five dwelling units per acre (du/ac). Allowable residential structure types include single-family attached. The MFR land use designation identifies those areas suitable for high-density, multifamily structures such as apartments or condominiums, single-family attached dwelling units, and multiplexes. Mobile home parks, as well as existing and proposed manufactured home parks, are also permitted. The existing zoning of this area is Single-Family Residential (R1) and Limited Multifamily Residential-Design Control (R2-DC).

2.1.3 Surrounding Land Uses

The Serrano Westside planning area is 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.

The Pedregal planning area is immediately adjacent to high-density residential uses (the existing Ridgeview neighborhood) to the west and three existing multifamily projects (the Copper Hill Apartments, Sterling Ranch Apartments, and El Dorado Village Apartments) along El Dorado Hills

Boulevard to the east (Figure 2-3). Pedregal is less than 1 mile north of US 50 and less than 2 miles south of Folsom Lake.

2.2 Project Objectives

El Dorado County's (County's) primary objective for the proposed project is to create development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. There are an additional 15 objectives of the proposed project, as follows.

- ***Fulfill regional land use objectives by achieving Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) Consistency.*** Establish new development that fulfills regional land use objectives by directing growth to the established community of El Dorado Hills and achieving consistency with The Sacramento Area Council of Governments' (SACOG's) adopted 2035 MTP/SCS.
- ***Curtail suburban sprawl.*** Curtail suburban sprawl (County General Plan Goal 2.1) by utilizing undeveloped infill sites and promoting mixed-use development patterns to accommodate the County's future population growth and support economic expansion.
- ***Assist in meeting future Regional Housing Needs Allocations (RHNA) needs.*** 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.*** Maximize opportunities for higher-density housing as an alternative to single-family detached dwellings. 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).
- ***Provide a strong community identity and quality built environment.*** Establish a community setting with an identifiable character and a visually attractive design theme that is compatible with the surrounding area and contributes to the quality of life and economic health (County General Plan Goal 2.4). Carefully plan and incorporate visual elements that enhance and promote a sense of community (County General Plan Goal 2.5) and provide quality residential environments for all income levels (County General Plan Goal HO-2).
- ***Utilize existing infrastructure and public services.*** 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).
- ***Improve connectivity of the regional roadway network.*** Provide an opportunity for the County to expand its regional roadway network and improve parallel capacity to US 50.
- ***Encourage future transit opportunities.*** Locate development in the El Dorado Hills Community Region within walking distance of El Dorado Hills Boulevard to 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).

- ***Create a new non-motorized transportation system.*** Create a new non-motorized transportation system (County General Plan Goal TC-4) linking new development to existing retail services. Incorporate Class I bike paths, "complete streets" with Class II bike lanes, and sidewalks in new development to promote alternative transportation modes and reduce vehicle miles traveled.
- ***Improve north-south pedestrian and bicycle connectivity.*** Reduce barriers to pedestrians created by US 50 and improve access between the north and south sides of the freeway and improve pedestrian and bicycle safety.
- ***Provide opportunities for recreational facilities in El Dorado Hills.*** Provide recreational facilities for the health and welfare of residents and visitors (County General Plan Goal 9.1), thus promoting opportunities to capitalize on recreational uses through tourism and recreational-based businesses and industries (County General Plan Goal 9.3).
- ***Maintain characteristics of natural landscape.*** Maintain natural landscape features, including ridgelines (County General Plan Goal 2.3), conserve existing natural resources for ecological value (County General Plan Goal 7.4), and conserve open space to provide for the enjoyment of scenic beauty (County General Plan Goal 7.6).
- ***Minimize impacts on oak woodlands.*** Minimize impacts on the oak woodlands by directing new development to areas with minimal or little oak canopy.
- ***Protect important cultural resources.*** Protect the County's important cultural resources (County General Plan Goal 7.5), including significant pre-historic and Native American resources and unique historical features of the County's Gold Rush history.
- ***Foster sustainable communities.*** Foster sustainable communities (County General Plan Goal 2.1) by utilizing sustainable design practices to reduce greenhouse gas emissions, and increase the efficiency of energy and water use in new development (County General Plan Goal HO-5).

2.3 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. As mentioned in Section 2.1.2, *Existing Conditions and Land Uses*, 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 include civic or commercial and community park development.
- The Pedregal planning area would have residential neighborhoods, which may or may not be gated.

2.3.1 Project Entitlements

The proposed project includes an amendment to the existing EDHSP to transfer the density from Serrano Village D-1, Lots C and D to the Serrano Westside planning area, and to reduce the density and development of the Pedregal planning area as currently provided for in the County General Plan. Specifically, the 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. These entitlements are requested under application SP12-0002. A separate application for a Development Agreement for the proposed project is filed under application DA14-0003. Applications have also been filed for a General Plan Amendment (A14-0003), a Rezone (Z14-0005), Planned Development (PD 14-0004), and a Large Lot Tentative Subdivision Map (TM14-1516).

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 HDR (1–5 du/ac), MFR (5–24 du/ac), C, OS, and 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). See Table 2-2.
- Amend the County 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 APN 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 area to the EDHSP area.

Rezoning

The proposed project would include the following rezoning.

- Amend zone districts from R1, R1-PD, R2-DC, 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). Table 2-3 summarizes the definitions of densities per residential zoning.
- 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 use (50,000 square feet of commercial use), 15 acres of Village Park (VP), 1 acre of neighborhood park, and 168 acres of natural open space.

2.3.2 Proposed Land Use Plan

The proposed project would establish the CEDHSP, which proposes the land uses provided in Table 2-2. Figures 2-4a and 2-4b show the specific plan amendments and the land use designations in the Serrano Westside and the Pedregal planning areas.

Table 2-2. Proposed Land Use Summary (acres)

Land Use	Serrano Westside (percent of total area)		Pedregal (percent of total area)		Residential Units Total	Commercial Area (square feet)
Residential						
VRL—Village Residential – Low (<1.0 average du/ac)	–		45	(13)	37	–
VRM-L—Village Residential Medium – Low (5–8 du/ac, average 5.3 du/ac)	23	(7)	–		123	–
VRM-H—Village Residential Medium – High (8–14 du/ac, average 8.3 du/ac)	37	(11)	–		310	–
VRH—Village Residential – High (14–24 du/ac, average 18.3 du/ac)	16	(5)	13	(4)	530	–
Civic–Limited Commercial						
C-LC—Civic–Limited Commercial	11	(3)	–		–	50,000
Public Facilities						
VP—Village Park[a]	15	(4)	–		–	–
Open Space						
OS—Open Space	130[b]	(38)	39	(12)	–	–
Roads and Landscaped Lots	7	(2)	5	(1)	–	–
Total	239	(70)	102	(30)	1,000	50,000

Source: Serrano Associates, LLC 2015.

du/ac = dwelling unit per acre.
– = no acres.

[a] Formal developed active park to be maintained by the El Dorado Hills Community Services District (CSD).

[b] Includes a 1.2-acre neighborhood park.

As part of the proposed project, rezoning would be required for the two new planning areas. In addition, existing Lots C and D of Village D-1 would need to be rezoned to correctly capture their

undeveloped open space use. Table 2-3 shows the proposed zoning of the two planning areas. Figure 2-4c shows the location of the proposed zoning for the Serrano Westside and the Pedregal planning areas.

Table 2-3. Proposed Zoning Summary (acres)

Zoning Designations	Serrano Westside (percent of total area)		Pedregal (percent of total area)		Residential Units Total	Commercial Area (square feet)
Residential						
R20-PD (<1 du/ac)	–		45	(13)	37	–
R-4 (5–8 du/ac, average 5.3 du/ac)	23	(7)	–		123	–
RM1-PD (8–14 du/ac, average 8.3 du/ac)	37	(11)	–		310	–
RM2-PD (14–24 du/ac, average 18.3 du/ac)	16	(5)	13	(4)	530	–
Civic						
CL1-PD	11	(3)	–		–	50,000
Public Facilities						
RFH1-PD	15	(4)	–		–	–
Open Space						
OS1-PD (Private Open Space)	130	(38)	39	(12)	–	–
Roads and Landscaped Lots	7	(2)	5	(1)	–	–
Total	239	(70)	102	(30)	1,000	50,000

Source: Serrano Associates, LLC 2015.

du/ac = dwelling unit/acre.
– = no acres.
PD = Planned Development Combining Zone.
R20-PD = Village Residential – Low (<1 du/ac).
R4-PD = Village Residential Medium – Low (5–8 du/ac).
RM1-PD = Village Residential – Medium – High (8–14 du/ac).
RM2-PD = Village Residential – High (14–24 du/ac).
CL1-PD = Civic–Limited Commercial-Planned Development.
RFH1-PD = Recreational Facilities High-Planned Development.
OS1-PD = Open Space-Planned Development.

Large Lot Tentative Subdivision Map

The applicant submitted an application for a large lot tentative subdivision map that would divide the 341-acre project site into five separate lots (TM14-1516). Lots 1 and 2 would be the Pedregal planning area, and Lots 3 and 4 would be in the Serrano Westside planning area. Lot 5 would be a portion of the El Dorado Hills Specific Plan. Figure 2-5 shows the locations of the lots. The purpose of the large lot map is to facilitate the sale, lease, and financing of the project area. The County will not

issue any building permit for any large lot until the corresponding small lot final subdivision map has been approved and recorded.

2.3.3 Project Features

The CEDHSP proposes 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 Village Park (VP), 169 acres[2] of open space (168 acres of natural open space and a 1-acre neighborhood park) within the 341-acre CEDHSP area. The CEDHSP area would be served by open space and active recreational opportunities, including a bike trail network that would connect to and enhance existing trails in the immediate area. The proposed project's circulation system would enhance existing circulation in El Dorado Hills by providing a direct connection from El Dorado Hills Boulevard to the Serrano Westside planning area, with a potential connection to Silva Valley Parkway. The development would be anchored by daily retail and public services within walking distance to the site, including the Raley's shopping center, La Borgata, The Shops, Town Center, El Dorado Hills Fire Station #85, El Dorado Hills Senior Center, and several schools within the Buckeye Union School District.

Vehicle Circulation Plan

The preliminary vehicle circulation plan for both planning areas is shown in Figure 2-6. The Serrano Westside planning area would provide a direct public connection between El Dorado Hills Boulevard and the Serrano Westside planning area, with a potential connection to Silva Valley Parkway (parallel to US 50). The new roadway from El Dorado Hills Boulevard would connect to Park Drive at a roundabout in the Serrano Westside planning area and is expected to improve access to the Raley's and La Borgata shopping centers for existing residences. The potential connection from Park Drive to Silva Valley Parkway is not required for the project, it would not be constructed as part of the project, and it is not currently in the County General Plan or the MTP/SCS. However, right-of-way within the Serrano Westside planning area and the El Dorado Hills Specific Plan is reserved for such use, and this improvement is addressed briefly in this document for future planning. Other access would include a connection to Wilson Boulevard (north of El Dorado Hills Fire Station), a new full- to partial-access intersection on El Dorado Hills Boulevard (about 1,200 feet north of Serrano Parkway), a partial access (right out) to westbound Serrano Parkway, and potentially a full-access intersection at the entrance of the former golf course parking lot. The Pedregal planning area would be primarily accessed from Wilson Boulevard instead of utilizing adjacent neighborhood roadways, and a new full- to partial-access intersection on El Dorado Hills Boulevard. The proposed project does not propose and would not need access through the circulation systems that serve adjacent residential neighborhoods unless access is required by the El Dorado County Department of Transportation or the local fire protection district or to mitigate traffic impacts.

Trail Circulation Plan and Recreation Opportunities

The proposed project would establish open space and active recreational opportunities that exceed the requirements of the County General Plan and the requirements of the El Dorado Hills

[2] In the original project application, approximately 84 acres were designated open space. In 2013, after the initial project application was submitted, the project applicant added 85 acres of open space to the northeast corner of the Serrano Westside planning area, bringing the total open space area to 169 acres. The additional 85 acres of open space are referred to in this Draft EIR as the "85-acre addendum area."

Community Services District (CSD). 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 preliminary trail circulation plan shown in Figure 2-7 shows the location of the trail and identifies the proposed open space and recreational opportunities and their integration with trail facilities.

The 15 acres of VP land use designation and RFH1 zoning is applied to an area that would include active and passive recreation facilities for public use and that would be maintained by the El Dorado Hills CSD. This area has some of the flattest terrain in the CEDHSP area to comply with the 2007 *Parks and Recreation Facilities Master Plan* requirement that community parks be 80% level with a maximum of 2% slope. This site allows access from the potential extension of Park Drive and is within walking distance to existing and proposed residences and existing retail establishments. Because it is adjacent to US 50, it is suitable for lighted athletic fields and natural or artificial turf to promote tournament use and provides green space views to highway travelers.

Utility Plan

In general, both planning areas would infill existing areas where wastewater, water, recycled water, storm drainage, electricity, natural gas, telephone, and roadways are already in place. Most new utility lines that would be required within the planning areas would be placed within the rights-of-way of existing roads in the planning areas, future roads that would be built as part of the proposed project, or within dedicated easements. Figures 2-8a and 2-8b identify the preliminary water, recycled water, and wastewater utility plan for the Serrano Westside planning area and the Pedregal planning area, respectively.

Stormwater runoff from the project would be directed to new storm drain lines within planning area roadways. These swales and underground lines would connect to an existing drainage channel (an unnamed tributary to Carson Creek) that runs along El Dorado Hills Boulevard north of Serrano Parkway and on the east side of the Raley's and La Borgata shopping centers. This existing drainage channel has sufficient capacity for project-generated storm flows.[3] The project would also incorporate stormwater quality protection features by providing riparian corridor and wetland enhancement in the project area. In the drainage channel, the project would remove noxious plants and plant wetland species. In addition, the open space area adjoining the drainage channel would incorporate wetland enhancement and water quality protection features, including regrading the slope to facilitate the wetland enhancements.

Offsite Improvements

Several offsite infrastructure improvements, outside the CEDHSP area, would be required to support the proposed project. These offsite improvements are shown in Figure 2-9 and are as follows.

- New Pedregal water line from Ridgeview Drive to the northern portion of the Pedregal planning area.

[3] A 0.6-acre detention basin would be constructed in the Pedregal planning area to attenuate flows before they reach the drainage channel. Detention basins for stormwater runoff in the Serrano Westside planning area are not required.

- New Pedregal water line in the southern portion of the Pedregal planning area.
- Extension of Park Drive, a public road, to the project site from El Dorado Hills Boulevard to the Serrano Westside planning area, including realignment of a portion of Park Drive between the Raley's and La Borgata shopping centers and reconfiguration of shopping center parking stalls (see Figure 2-10), with a potential connection to Silva Valley Parkway.
- Two new pedestrian accesses along the southwestern border of the Serrano Westside planning area to connect to the existing office and retail uses at Raley's and La Borgata.
- 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.
- An approximately 300-foot-long segment of existing sewer pipeline within the Serrano Westside planning area north of and extending offsite under Serrano Parkway requires upsizing to conform with the existing 18-inch line in that area.
- One 12-inch recycled water line, 3,000 feet long, generally adjacent to US 50 from the Serrano Westside planning area to Silva Valley Parkway, with a potential need to upsize the line to 16-inch.

The potential environmental impacts of implementing these offsite infrastructure improvements have been evaluated in this EIR as part of the proposed project.

Public Services

The proposed project site is located within the EID service area for potable and recycled water service and wastewater treatment and is within the El Dorado Hills CSD (El Dorado County 2012). The El Dorado Hills CSD provides public services, such as public parks and recreation services and facilities (El Dorado Hills Community Services District 2013). The El Dorado Hills CSD would be responsible for the amenities in the proposed Village Park (VP). The County would require the El Dorado Hills CSD to submit an application for a Planned Development permit to construct and operate the park. The El Dorado Hills CSD would be responsible for ensuring park operations comply with applicable County ordinances.

The proposed project site is located within the El Dorado Hills Fire Department boundaries and would be expected to be served by the closest fire station (Station #85) in the case of an emergency. The proposed project would be served by the El Dorado County Sheriff's Office for police protection. The residential neighborhoods in the Serrano Westside planning area are proposed to be gated similar to the Serrano neighborhoods in the existing EDHSP (approved in 1988). The Pedregal planning area may or may not be gated. If the communities are gated, they may also have their own security in addition to the public protection offered by the sheriff.

The proposed project site is in the Buckeye Union Elementary School District and the El Dorado Union High School District. As stated in Section 2.1.3, *Surrounding Land Uses*, the two closest schools to the proposed project site are to the north and northeast, Oak Ridge High School (9th grade through 12th grade) and Silva Valley Elementary School (year round Kindergarten through 5th grade). The County General Plan explains that the El Dorado Hills school districts determine their own minimum levels of service. No new schools or school services are proposed as part of this project.

2.3.4 Project Phasing and Construction

It is anticipated that the necessary entitlements for the proposed project would be approved in late 2015 or early 2016. Buildout of the project would likely occur over several years and would ultimately be dictated by housing market conditions. It is anticipated construction would be phased within each planning area.

Construction hours of all phases would conform to County noise ordinances, which apply to construction activities occurring between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends and federally recognized holidays. These standards range from 45 to 90 decibels (dB) equivalent sound level (L_{eq}), with the most stringent levels being in Community Regions and AP areas (El Dorado County 2004).

In addition to the implementation of standards required by the proposed CEDHSP, the project proponent would be required to comply with El Dorado County's Storm Water Management Plan; Grading, Erosion, and Sediment Control Ordinance; the Design and Improvement Standards Manual; and the Drainage Manual, all of which require construction site runoff control. At the time of preparation of this EIR, the County is in the process of implementing new requirements of the State Water Resources Control Board's (State Water Board's) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Order No. 2013-0001-DWQ (Order). The proposed project qualifies as a "Regulated Project" as defined in Section E.12 of the Order and therefore will be required to comply with the standards provided in the Order. The project proponent would be required to follow the County's Development Standards and implement post-construction runoff control.

2.4 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 permits and approvals required by the County are identified 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 a 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 for 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 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.

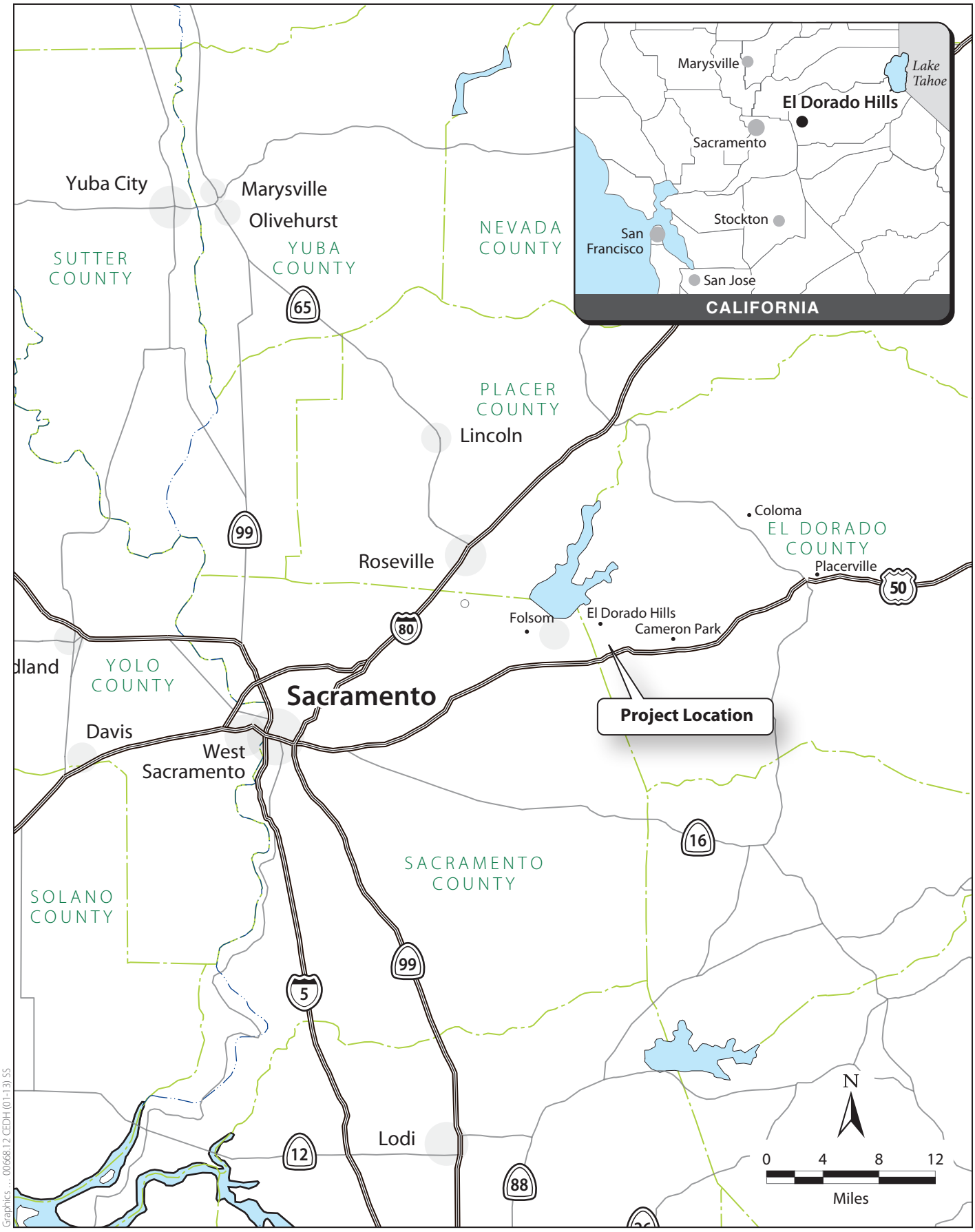

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Figure 2-1
Regional Location

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Figure 2-2
Project Location

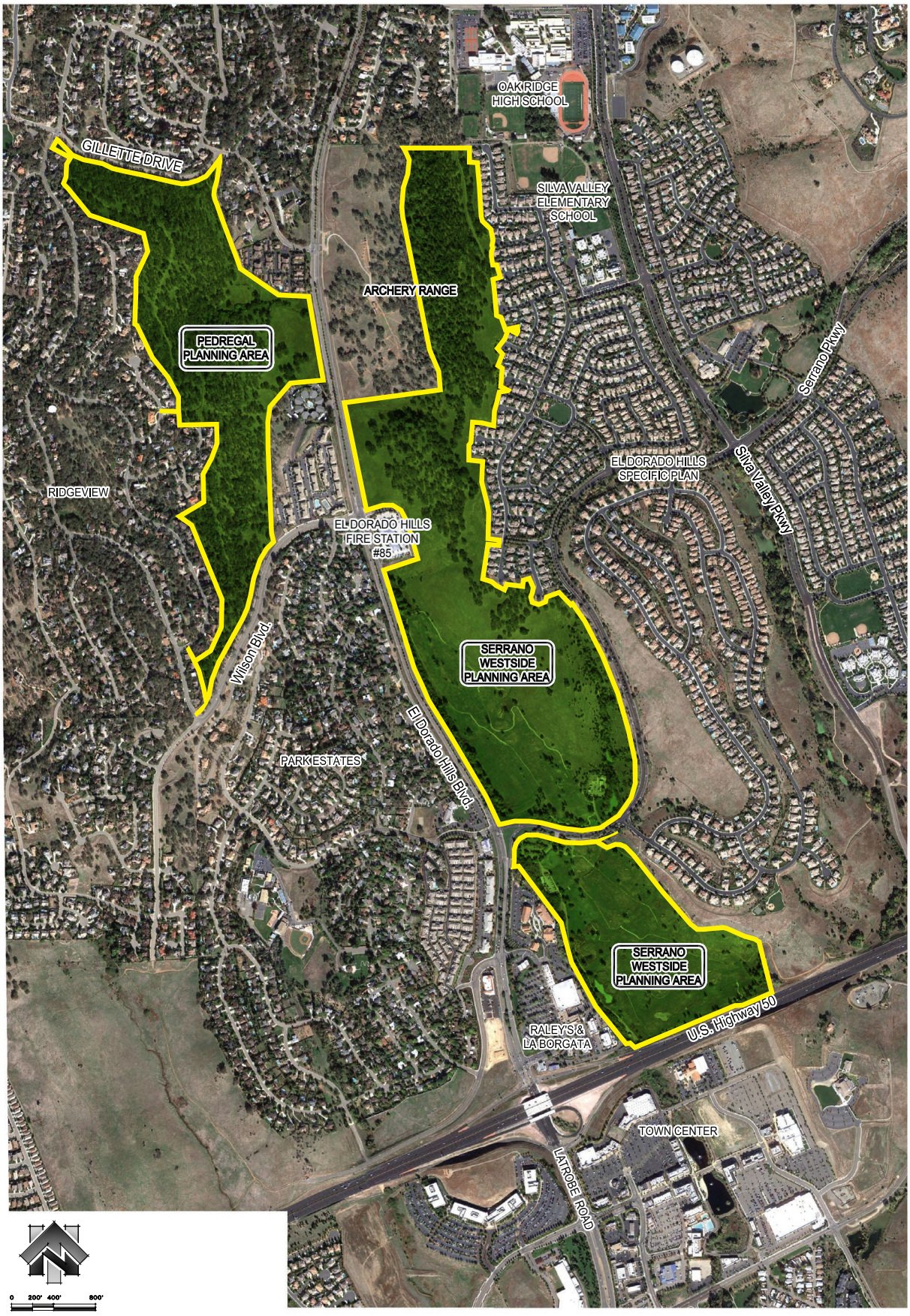

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Figure 2-3
Existing Conditions

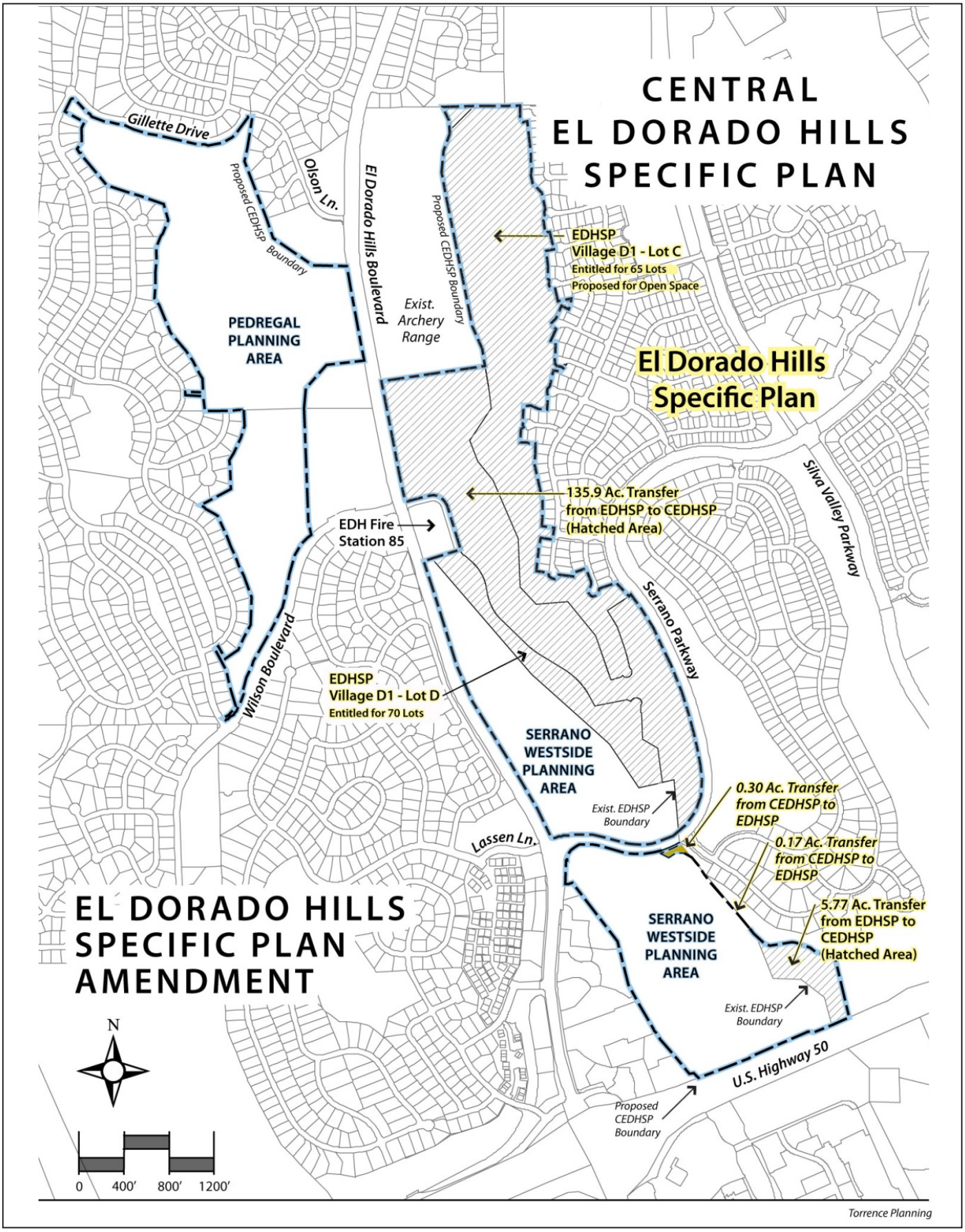

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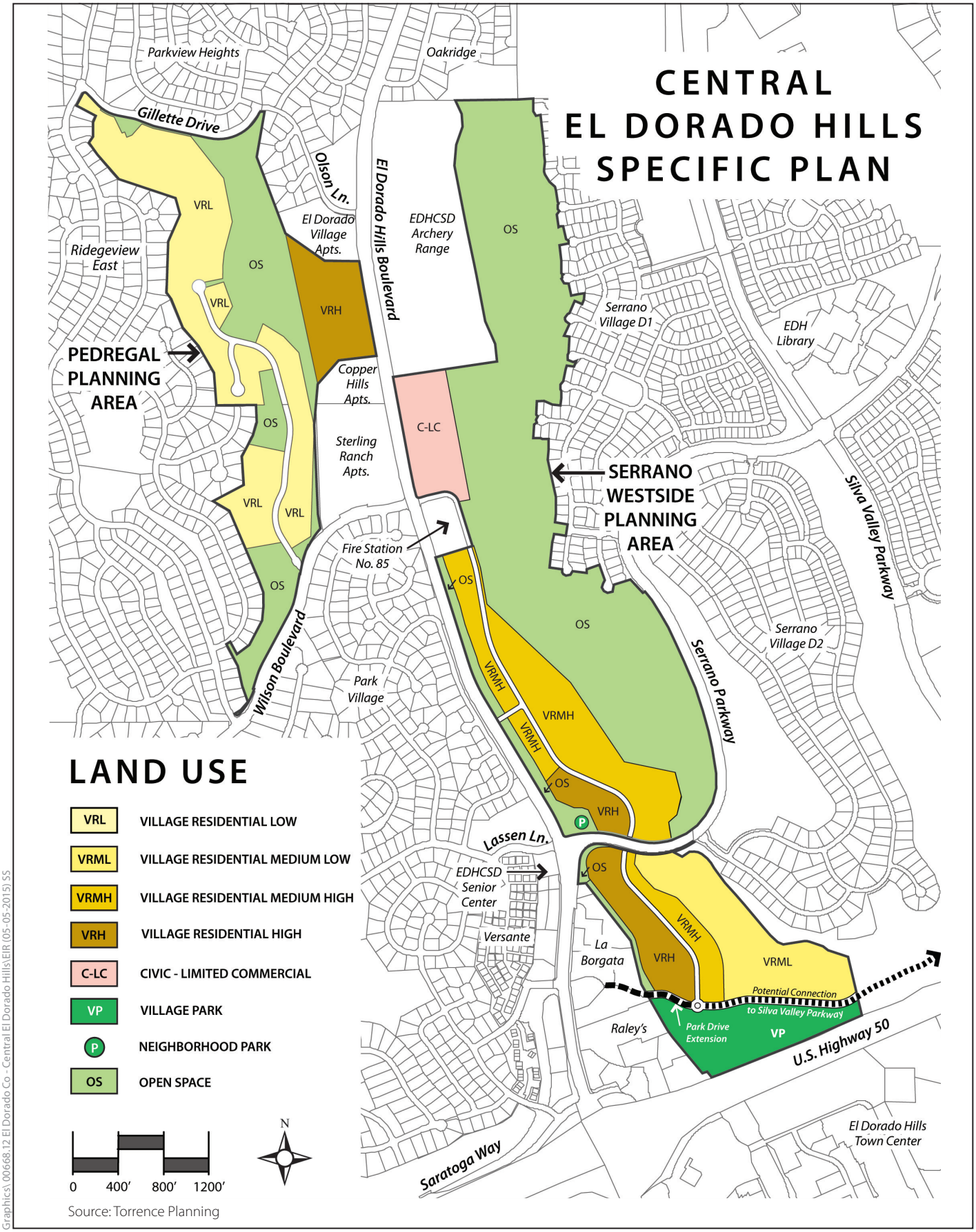
Figure 2-4a
Proposed Specific Plan Amendments



Source: Torrence Planning

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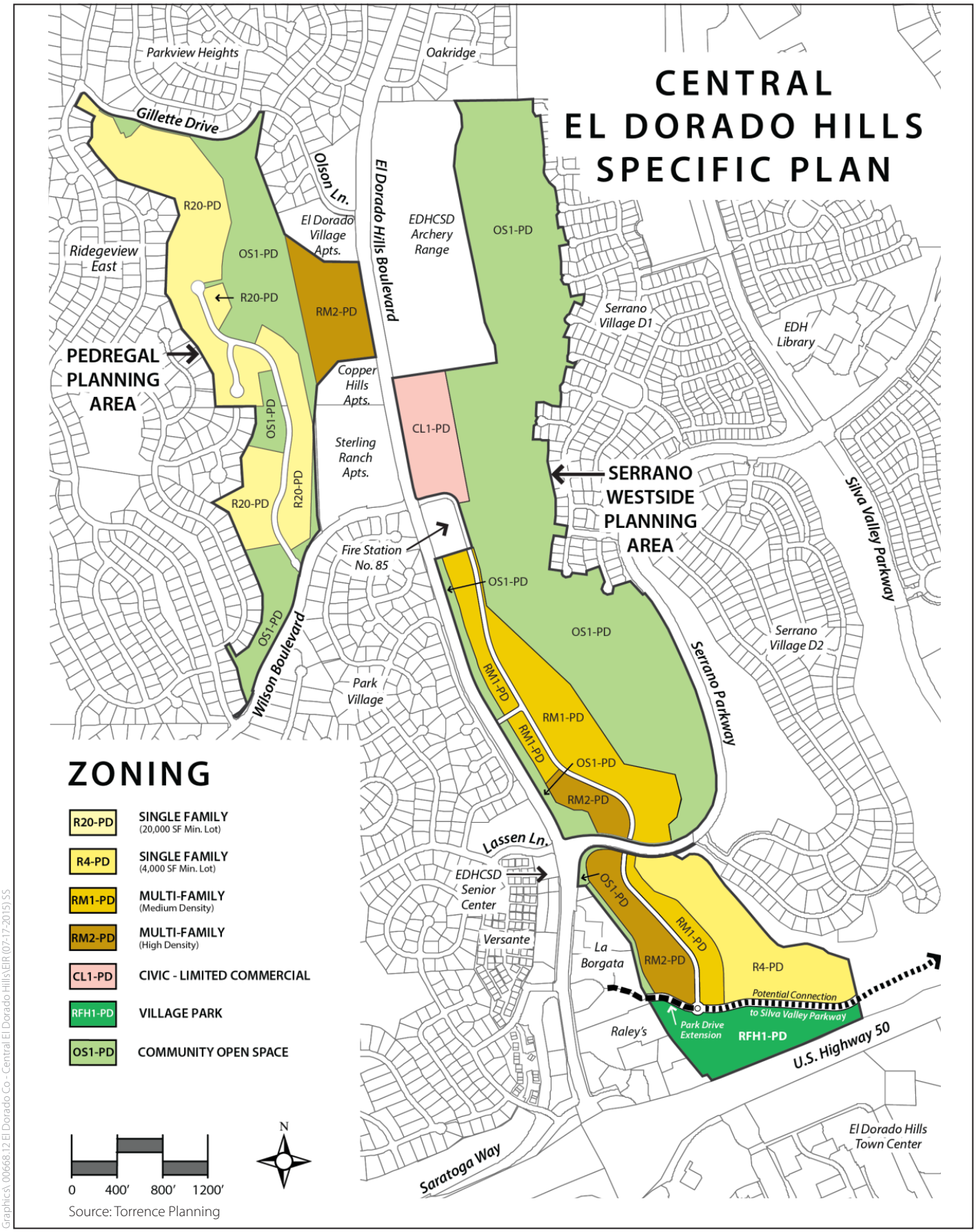
Figure 2-4b
Proposed Land Use Designations



Source: Torrence Planning

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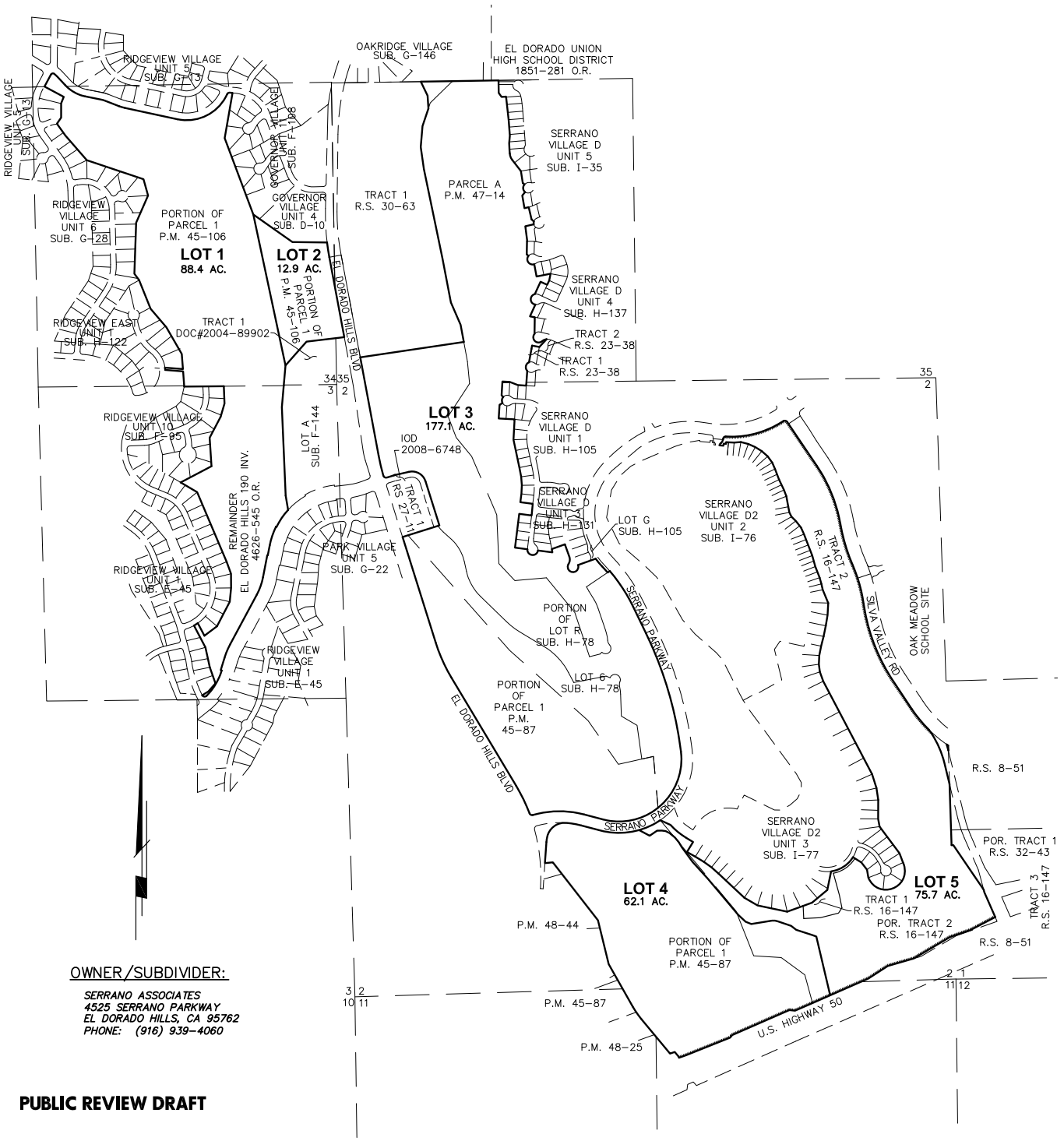
Figure 2-4c
Proposed Zoning



Source: R.E.Y. Engineers, Inc. (05-22-2014)

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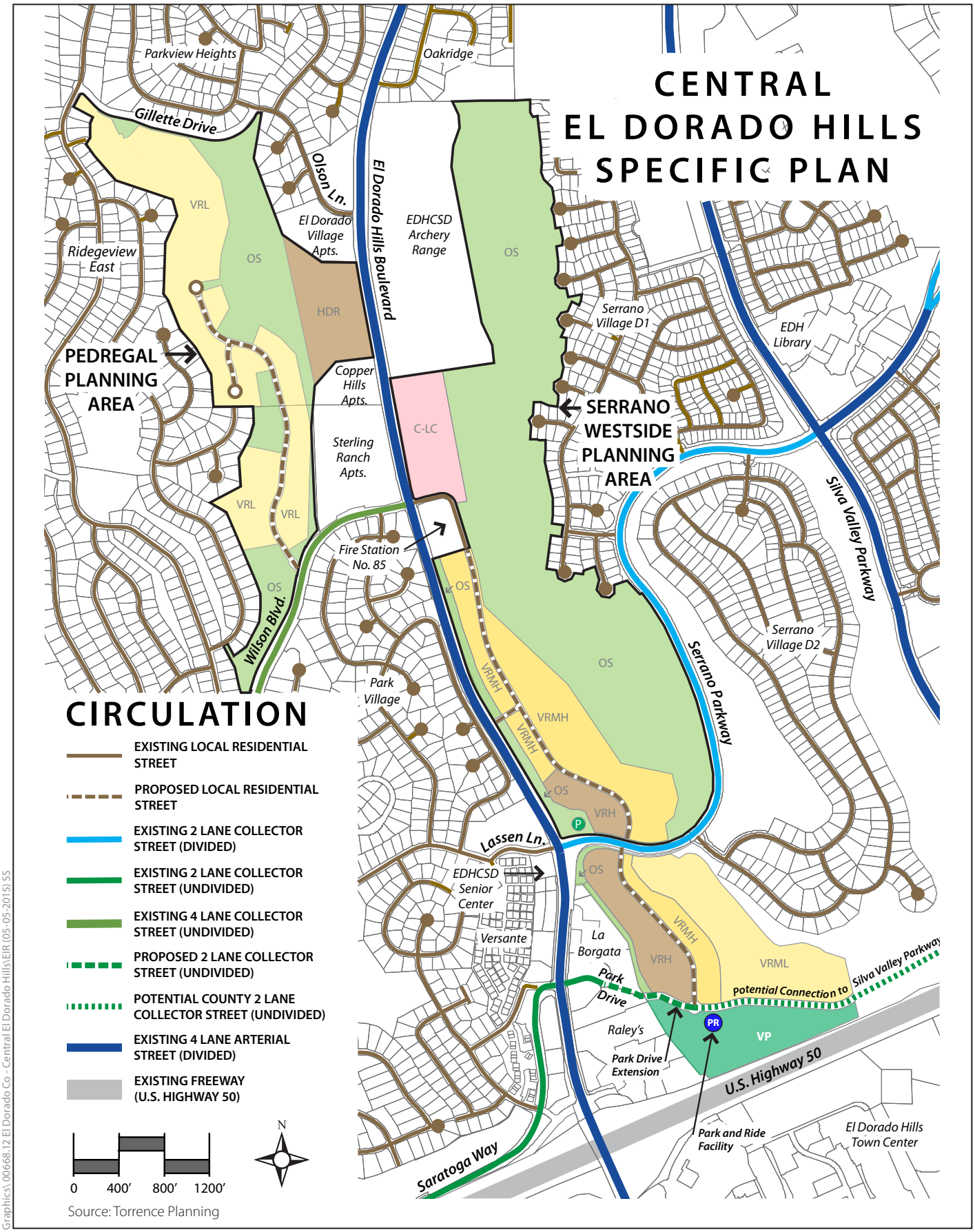
Figure 2-5
Large Lot Tentative Plan Map



Source: Torrence Planning

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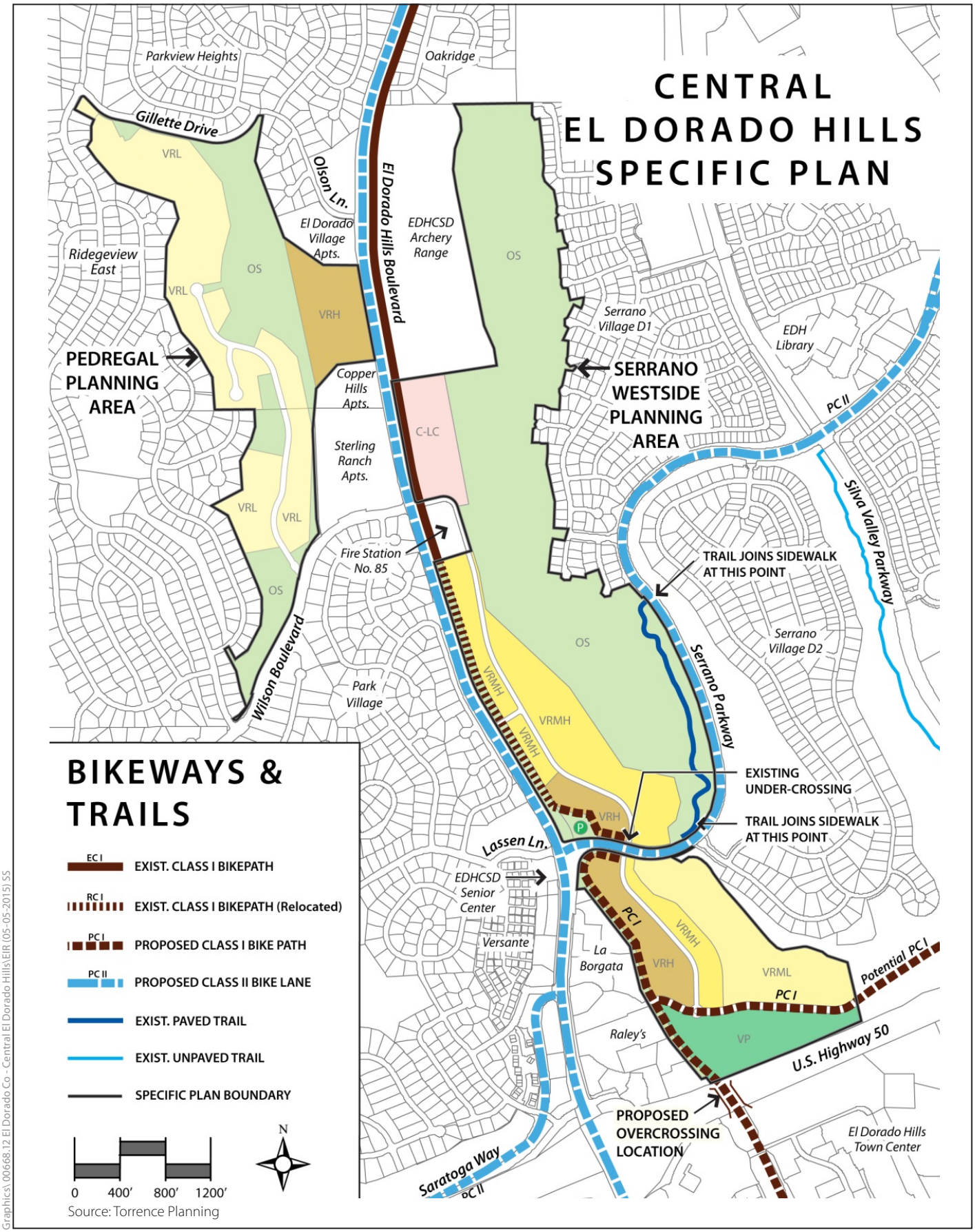
Figure 2-6
Preliminary Vehicle Circulation Plan



Source: Torrence Planning

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Figure 2-7
Preliminary Trail Circulation Plan

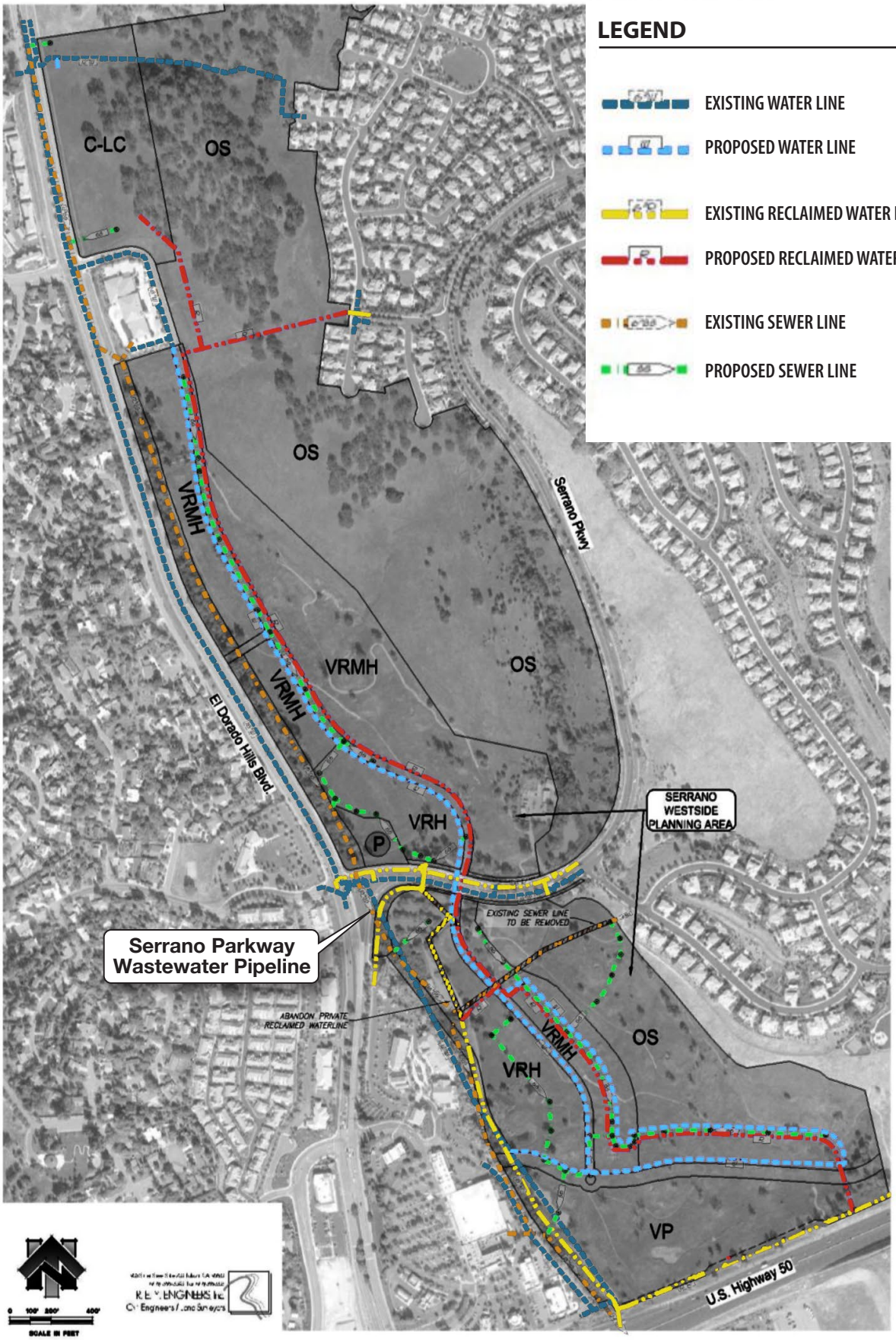

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Figure 2-8a
Preliminary Utility Plan
for Serrano Westside Planning Area

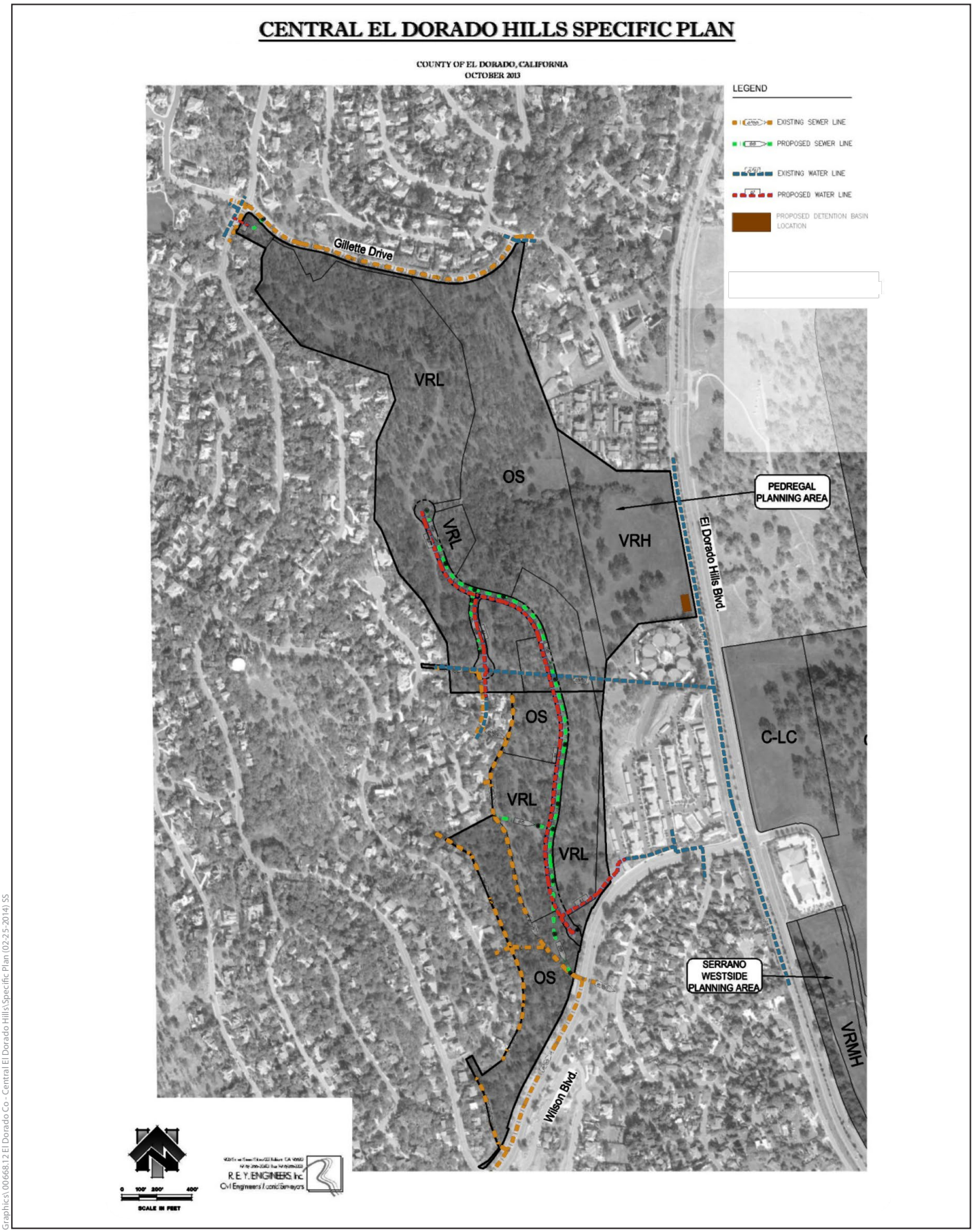

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Figure 2-8b
Preliminary Utility Plan
for Pedregal Planning Area

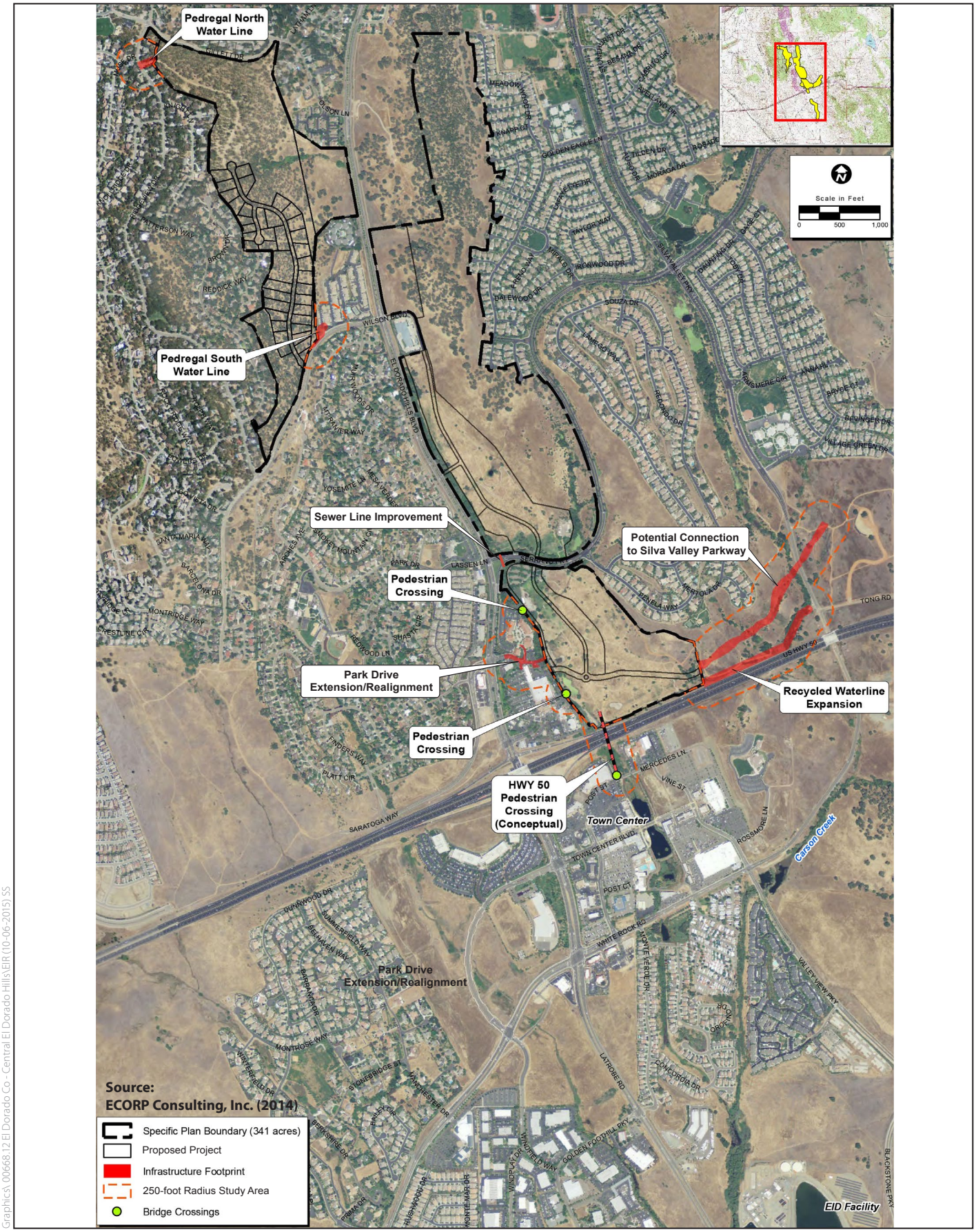

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Figure 2-9
Offsite Infrastructure Improvement Areas

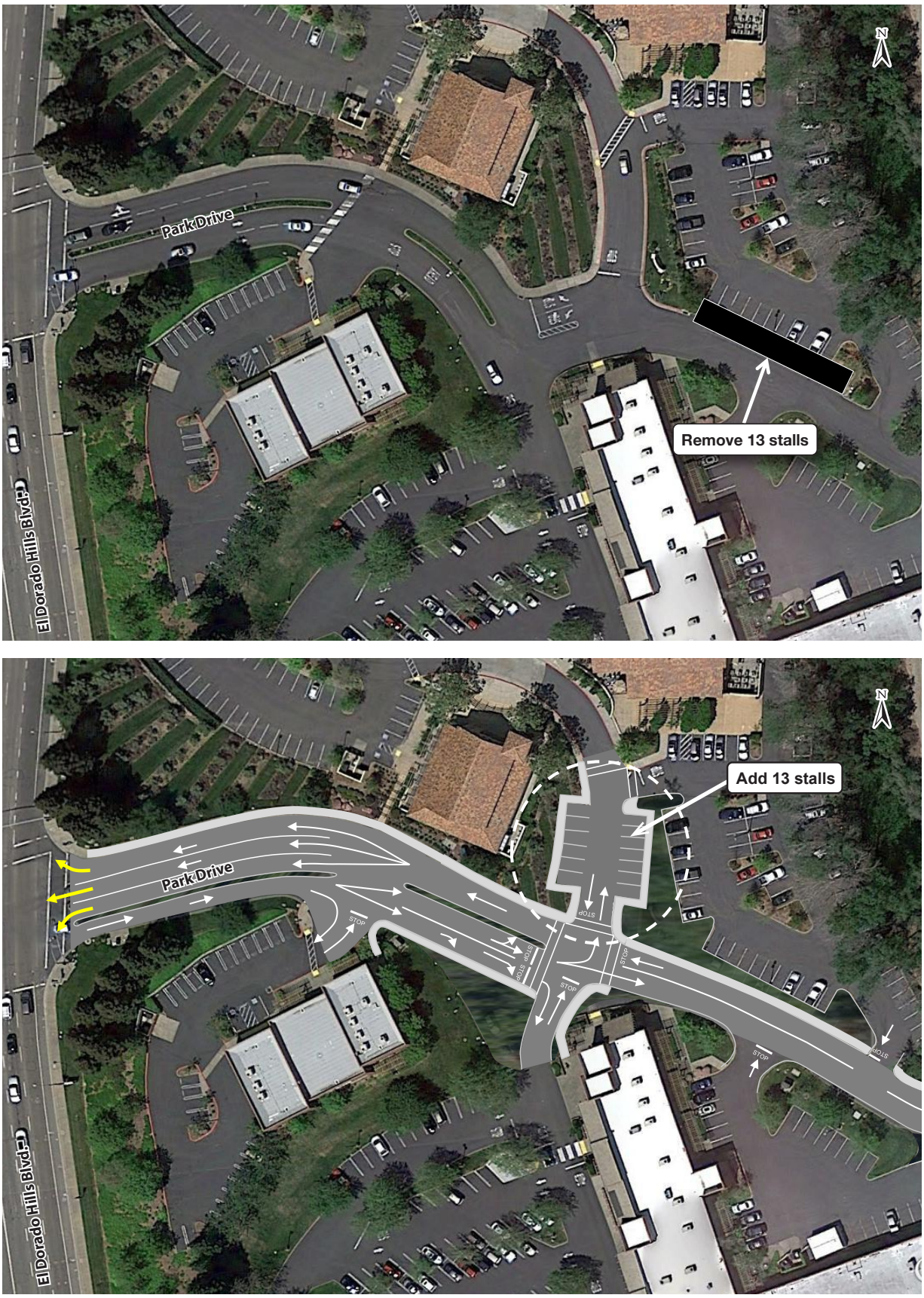

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Figure 2-10
Park Drive Reconfiguration

Chapter 3
Impact Analysis

This chapter contains an evaluation of the environmental impacts of the proposed project for compliance with the California Environmental Quality Act (CEQA). The following sections examine the short-term, permanent, direct, and indirect effects on the physical environment.

Resources Considered in the EIR

Based on the project description and El Dorado County's understanding of the environmental issues associated with the project, the following topics are analyzed in detail in Chapter 3, Sections 3.1 through 3.14, of this EIR.

- 3.1, *Aesthetics*
- 3.2, *Air Quality*
- 3.3, *Biological Resources*
- 3.4, *Cultural Resources*
- 3.5, *Geology, Soils, Minerals, and Paleontological Resources*
- 3.6, *Greenhouse Gas Emissions*
- 3.7, *Hazards and Hazardous Materials*
- 3.8, *Hydrology, Water Quality, and Water Resources*
- 3.9, *Land Use Planning and Agricultural Resources*
- 3.10, *Noise and Vibration*
- 3.11, *Population and Housing*
- 3.12, *Public Services and Utilities*
- 3.13, *Recreation*
- 3.14, *Traffic and Circulation*

Pursuant to CEQA Guidelines Section 15065(a), the Mandatory Findings of Significance were considered in the selection of the above resource topics and discussions are subsumed within each of the above applicable sections.

Terminology

For each resource topic, the EIR presents following information.

- **Regulatory Setting**—Pertinent federal, state, and local policies, regulations, and standards are described.
- **Environmental Setting**—Existing site and study area conditions are described.

- **Impacts and Mitigation Measures**
    - **Methods for Analysis**—describes the technical methodology for impact assessment. If models were used to assess impacts, they are described in this section, as are other technical tools.
    - **Thresholds of Significance**—presents the thresholds used to determine the significance of the impacts. The significance conclusions that can be noted at the end of each impact discussion are defined below.
        - **No Impact:** This level of significance is used for impacts where there is clearly no effect. Where it was clear at the outset that there would be no impact on a particular resource topic under any of the alternatives.
        - **Less than Significant:** This level of significance is used for impacts where there would be an impact, but the degree of the impact would not meet or exceed the identified thresholds.
        - **Less than Significant with Mitigation:** This level of significance is used for impacts that would meet or exceed the identified thresholds, but implementing mitigation measures would reduce such impacts to less-than-significant levels.
        - **Significant and Unavoidable:** This level of significance is used for significant impacts where mitigation is not available or feasible to reduce the significant impact to a less-than-significant level.
    - **Impacts and Mitigation Measures**—describes the effects of the proposed project. For each identified significant or potentially significant impact, mitigation measures are identified. As stated above, where mitigation is not available or feasible to reduce the impact to a less-than-significant level, the impact is identified as significant and unavoidable.

CEQA requires that each public agency mitigate or avoid the significant impacts of any project it approves or implements (State CEQA Guidelines Section 15126.4). State CEQA Guidelines Section 15370 defines mitigation as follows.

- Avoiding the impact altogether by not taking a certain action or part of an action.
- Minimizing the impact by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or improvements to the environment.

This EIR recommends feasible mitigation measures consistent with State CEQA Guidelines to reduce impacts of the proposed project.

Topics required by CEQA in addition to the resource topics addressed in Chapter 3 are addressed in Chapter 4, *Alternatives Analysis*, and Chapter 5, *Other CEQA Considerations*. Chapter 4 examines a range of feasible alternatives to the project, including no project, which would reduce one or more of its potential environmental impacts. Chapter 5 includes the following additional topics.

- Cumulative Impacts
- Growth-Inducing Impacts
- Significant and Unavoidable Impacts
- Significant Irreversible Environmental Changes
- Mitigation Measures with the Potential for Environmental Effects Under CEQA

3.1 Aesthetics

This chapter describes existing conditions and the regulatory setting related to aesthetics or visual resources and analyzes potential impacts that could result from implementation of the proposed project.

3.1.1 Concepts and Terminology

Identifying a project area's visual resources and conditions involves three steps.

1. Objective identification of the visual features (visual resources) of the landscape.
2. Assessment of the character and quality of those resources relative to overall regional visual character.
3. Determination of the importance to people, or *sensitivity*, of views of visual resources in the landscape.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1988:26–27, 37–43, 63–72). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980:2-3). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Scenic vistas generally encompass a wide area with long-range views to the middle- and background of surrounding elements in the landscape. Scenic vistas are typically visible from elevated vantages (e.g., hilltops, high points, and slopes higher than the surrounding area); flat landscapes, such as out and over open agricultural lands; and roadways with cleared rights-of-way on hilly and flat terrain that run through or near the study area. In addition, vistas have a directional range. Some areas have scenic vistas with a 360-degree view in all directions, while others may be limited in one direction in a manner that reduces the line-of-sight angle and amount of vista that is visible for a narrower vista view. Scenic vista viewsheds provide expansive views of a highly valued landscape for the benefit of the general public.

Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USDA Forest Service 1995:28–34, 1-2–1-15; Federal Highway Administration

1988:37–43). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration (FHWA), employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1988:46–59; Jones et. al. 1975:682–713), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.
- Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Visual Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1988:26–27). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middleground zone from the foreground zone to 3–5 miles from the viewer, and the background zone from the middleground to infinity (Litton 1968:3).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USDA Forest Service 1995:3-3–3-13; Federal Highway Administration 1988:63–72; U.S. Soil Conservation Service 1978:3, 9, 12).

Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978:3). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.1.2 Existing Conditions

Regulatory Setting

There are no roadways within the project area that are designated in federal or state plans as a scenic roadway or as a corridor worthy of protection for maintaining and enhancing scenic viewsheds (California Department of Transportation 2014). Local applicable policies and guidelines are discussed below.

El Dorado County General Plan

The *El Dorado County General Plan* (County General Plan) Land Use Element, Public Services and Utilities Element, and Conservation and Open Space Element (El Dorado County 2009:34, 37–42; El Dorado County 2004:94–95, 100, 135, 142–1 43, 149, 155–15757) include the following relevant goals, objectives, and policies. 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.

Land Use Element

- Goal 2.2, *Land Use Designations,* addresses maintenance of the rural and open character of the County and includes Objective 2.2.5, *General Policy Section*, and implementing policy 2.2.5.21.
- Goal 2.3, *Natural Landscape Features*, addresses the unique landscapes of each area of the County and includes Objective 2.3.2, *Hillsides and Ridge Lines,* and implementing policy 2.3.2.1.
- Goal 2.4, *Existing Community Identity*, seeks to maintain and enhance the existing character of communities, and includes Objective 2.4.1, *Community Identity,* and implementing policy 2.4.1.4.
- Goal 2.6, *Corridor Viewsheds*, addresses scenic road corridors, and includes Objective 2.6.1, *Scenic Corridor Identification*, and implementing policy 2.6.1.5.
- Goal 2.7, *Signs*, addresses the size, quantity, and location of signage, and includes Objective 2.7.1, *Signs Regulation*, and implementing policy 2.7.1.2.
- Goal 2.8, *Lighting*, addresses issues related to lighting and glare, and includes Objective 2.8.1, *Lighting Standards,* and implementing policy 2.8.1.1.

Public Services and Utilities Element

- Goal 5.4, *Storm Drainage*, includes Objective 5.4.1, *Drainage and Flood Management Program,* and implementing policy 5.4.1.2, which addresses aesthetic qualities of drainage ways.
- Goal 5.6*, Gas, Electric, and Other Utility Services*, includes Objective 5.6.1, Provide Utility Services, and implementing policy 5.6.1.1, which address aesthetic issues related to overhead utilities.

Conservation and Open Space Element

- Goal 7.1, *Soils Conservation*, includes Objective 7.1.2, *Erosion/Sedimentation,* and implementing policy 7.1.2.2, which addresses conforming earthworks to natural contours.
- Goal 7.3, *Water Quality and Quantity*, includes Objective 7.3.3, *Wetlands*, and implementing policy 7.3.3.5, which addresses the preservation of the scenic value of wetland features, Objective 7.3.4, *Drainage*, and implementing policy 7.3.4.1, which encourages the integration of natural water courses, and Objective 7.3.5, *Water Conservation,* and implementing policy 7.3.5.1, which encourages the use of native plants.
- Goal 7.4, *Wildlife and Vegetation Resources*, includes Objective 7.4.4, *Forest and Oak Woodland Resources*, and implementing policy 7.4.4.2, which encourages the protection of native trees.
- Goal 7.5, *Cultural Resources*, includes Objective 7.5.2, *Visual Integrity*, which addresses the visual integrity of historic resources, and implementing policies 7.5.2.2, 7.5.2.4, and 7.5.2.5.

El Dorado County Zoning Ordinance

The following provisions contained in the El Dorado Zoning Ordinance are relevant to the visual resources in the project area.

130.14.170 Outdoor Lighting

The purpose and intent of this ordinance is to ensure "that the creation of artificial light and glare be controlled to the extent that unnecessary and unwarranted illumination of an adjacent property be prohibited."

B. Lighting Plans Required

1. Any commercial, industrial, multi-family, civic, or utility project that proposes to install outdoor lighting shall submit plans for such lighting, to be reviewed by the Planning Director as a part of a site plan review. If the project requires a design review, special use permit, or development plan application, said lighting plan shall be included as a part of that application, and shall be subject to approval by the approving authority.
2. Lighting plans shall contain, at a minimum, the location and height of all light fixtures, the manufacturer's name and style of light fixture, and specifications for each type of fixture.

C. Outdoor Lighting Standards

All outdoor lighting shall conform to the following standards:

1. All outdoor lighting, including residential outdoor lighting, shall be hooded or screened as to direct the source of light downward and focus onto the property from which it originates and shall not negatively impact adjacent properties or directly reflect upon any adjacent residential property.

2. Parking lot and other security lighting shall be top and side shielded to prevent the light pattern from shining onto adjacent property or roadways, excluding lights used for illumination of public roads. [See Exhibit 130.14.170(A) of the zoning ordinance]
3. External lights used to illuminate a sign or the side of a building or wall shall be shielded to prevent the light from shining off of the surface intended to be illuminated.
4. Lights that shine onto a road in a manner which causes excessive glare and may be considered to be a traffic hazard shall be prohibited.
5. Outdoor floodlights shall not project above 20 degrees below the horizontal plane. [See Exhibit 130.14.170(B) of the zoning ordinance]
6. Lighting of outdoor display area, including but not limited to vehicle sales and rental, and building material sales, shall be turned off within thirty (30) minutes after the closing of the business. Security lighting, as approved by the Planning Director may remain on after the close of business hours.
7. Lighted signs shall also conform to Section 130.16.070 (37–38).

130.14.180 Cellular Communication Facilities

A. The County Zoning Ordinance currently does not contain any explicit standards regulating cellular and PCS communication facilities (antennas, saucers, towers and equipment buildings; hereinafter "cellular communication facilities.")

B. The Planning Director issued an interpretation of the Ordinance regulating cellular communication facilities in the same manner as telephone trunk lines, supporting structures and saucers.

C. This interpretation allowed cellular communications facilities within any zone district as a matter of right if the facilities did not exceed the maximum height allowed in the district by more than fifteen (15) feet. Cellular communications facilities exceeding those height restrictions required a special use permit.

H. Approving cellular communications facilities on an ad hoc basis has the potential to significantly alter the aesthetic character of the County and cause incompatibility adjoining land uses.

I. The County intends to draft and consider an ordinance addressing among other potential issues, the location, height and visual characteristics of cellular communication facilities, and their proximity to potentially incompatible land uses (38–39).

Design Review

Though El Dorado Hills is not an officially designated design district, development projects 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. Per Chapter 130.44, the board of supervisors, with consideration by the planning commission, can create new design review districts if they determine the following.

1. An area of special, natural beauty and aesthetic interest forming a basic resource in the economy of the county; the preservation of which would enhance the character of the county and local communities and promote tourist attractions; or (Ord. 4228, 1992)
2. Areas, places, sites, structures or uses which have special historical significance as identified by an agency representing federal, state or local historical concerns; or
3. Both subdivisions 1 and 2 of this subsection (303–304).

Environmental Setting

Existing Visual Character

Regional Visual Character

The project site is in El Dorado County, east of the city of Sacramento, California. The project region, as discussed in this section, is considered the area within 30 miles of the project site. The gently rolling project site lies in the transition zone between the flat Sacramento Valley and the Sierra Nevada. The Sierra Nevada foothills and mountains, primarily including the Eldorado National Forest, largely comprise the easternmost portion of the region. The westernmost portion of the region primarily consists of agricultural and suburban land uses, with the urban core of Sacramento located in the southwestern portion of the region. The landscape pattern is influenced by development extending from existing city cores and the major roadways, such as U.S. Highway 50 (US 50), State Route (SR) 99, and Interstate 5 (I-5) and Interstate 80 (I-80), in the region.

Much development in the western region is located between and just outside of the I-80 and US 50 and I-5 and SR 99 corridors, with remaining lands still largely in agricultural production and grazing, but there has been and continues to be an increasing conversion of agricultural land to urban and suburban land uses as development grows along expanding and upgraded transportation corridors, such as along SR 65, in Placer County north of I-80, and smaller local roadways. This trend is evident throughout the region, such as in Natomas, Roseville, Folsom, Rancho Cordova, El Dorado Hills, Cameron Park, Elk Grove, and West Sacramento. Smaller, valley and foothill towns and communities in this region, such as Lincoln, Rocklin, Placerville, Diamond Springs, and Wilton to the south, are experiencing similar growth. However, agricultural land, planted predominantly with row crops, and grazing land stretch for miles in the region. When haze is at a minimum, views can extend from the foreground to the middleground and background.

While development is centralized along I-80, US 50, and SR 49 in the eastern region, terrain and vegetation play a major role in limiting development patterns in this portion of the region. High intensity development transitions to sparser development near the project site, where the terrain is rolling, and where slopes influence where development can feasibly occur. In addition, mature oak woodlands and coniferous forests also limit where development occurs due to a natural proclivity to retain such vegetation and visual features and because County policies and zoning regulate the removal of trees within these plant communities. Development within the foothills tends to be older residential and commercial development that is often centered around local business enterprises and agriculture, such as near the apple and Christmas tree farms of Apple Hill and Camino, near Sierra Pacific Industries.

Depending on the viewer's location within the western region, middleground and background views consist of Sutter Buttes to the northwest, Sierra Nevada foothills and mountains to the east, and the high-rise buildings of downtown Sacramento rising up above the horizon and Vaca Mountains to the west. These types of landscape views are strongly characteristic of the Sacramento Valley and contribute to the region's identity. Within the western part of the region, topography and vegetation limit many views to the immediate foreground. However, transportation corridors with cleared rights-of-way and public and private vantages that are elevated and sparsely vegetated—such as where a hillside or hilltop residence has cleared or thinned vegetation to allow for views—facilitate views that extend beyond the immediate foreground, toward the middleground and background.

Growth, radiating outward from the city and town cores, is reducing the amount of open land in the region and closing the gap between the Sacramento metropolitan region and outlying cities and towns. This growth is changing the visual character from rural to suburban. The development of the smaller cities in the region is typified by a growing core of residential, commercial, and some industrial land uses with agricultural fields or vegetated foothills surrounding the city outskirts. Residential and commercial development in the western region tends to be homogenous in nature, having similar architectural styles, building materials, plan layouts, and commercial entities. While the eastern region has retained a great deal of its older architectural styles and visual character, newer development is occurring in this portion of the region, as well, introducing more homogenous development.

Overall, a mix of developed and natural landscapes characterizes the region. Water features include Pleasant Grove, Orchard, Deer, Elder, and Morrison Creeks; Auburn Ravine; Folsom, Bass, and Stone Lakes; Lake Natoma; the Sacramento and American Rivers and their tributaries; the Yolo Bypass (when flooded); and numerous other smaller lakes creeks, drainages, and local irrigation ditches.

Project Vicinity Visual Character

The project vicinity is defined as the area within 0.5 mile of the project site that is located directly northwest of US 50, along El Dorado Hills Boulevard, which provides access to the project site. The project site and vicinity are located at the beginning of the foothills, on rolling terrain. As shown on Figure 2-3, the project site is made up of three areas: one area west of El Dorado Hills Boulevard that makes up the Pedregal planning area and two areas that are separated by Serrano Parkway, east of El Dorado Hills Boulevard, which make up the Serrano Westside planning area. Both planning areas support grasslands and remnant oak woodlands (Figure 3.1-2a, Photos 1 and 2). The Serrano Westside planning area also supports riparian vegetative communities along an onsite drainage way (Figure 3.1-2b, Photo 3). 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.

Views of Pedregal planning area and Serrano Westside planning area vary based on the viewer's position in the landscape. Residents, roadway users, and recreationists have more open views of the project where roadways and elevation provides vista views out and over the landscape, such as from Gresham Drive (Figure 3.1-2b, Photo 4) and Wilson Boulevard (Figure 3.1-2c, Photo 5). Many views, though, are often limited by terrain, development, and trees (Figures 3.1-2c and 2d, Photos 6 and 7). Trees and terrain also prevent views of substantial portions of the site's interior from El Dorado Hills Boulevard (Figures 3.1-2d and 2e, Photos 8 and 9), except where gaps in vegetation are present. Roadways do sometimes provide glimpses of the site down narrow vegetated corridors throughout the vicinity. In addition, residents recreating in the area may informally access and have views of the project site from dirt trails located through the oak woodlands. Views of the planning areas and project vicinity also vary seasonally when grasslands are either green or brown, when trees are dormant or in leaf, and when plants are flowering in the spring or turning color in the fall.

Views from residential lots surrounding the site are mostly limited to the foreground and middleground by the rolling topography, trees, and development. However, residents and roadways at elevated vantages have views out and over the project site to the middleground and background, including vista views of Folsom Lake (Figure 3.1-2e, Photo 10). Background views vary based on atmospheric conditions, and haze often obscures background details.

Infrastructure such as water tanks, roadways, and street lighting are visible elements in the vicinity. However, power and telephone transmission lines are underground, which benefit the visual environment by reducing the amount of vertical infrastructure that is present. Permanent features such as windows and building surfaces and temporary features such as parked cars are sources of glare in the vicinity. The vicinity is well-lit at night and ambient sky glow currently radiates from the area. Mature vegetation in the area aids in reducing the amount of glare and light coming from existing sources. The project vicinity is characterized by public facilities, suburban, commercial, institutional, civic, and open space land uses. The project vicinity is moderate in vividness, intactness, and unity due to pleasant views offered in well-designed developed area combined with the commonality of the visual character associated with development within the region. Therefore, the overall visual quality of the project vicinity is moderate.

Viewer Groups and Viewer Response

Residents

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. However, 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. Residents are likely to have a moderate sensitivity to visual changes at the project site because, while they have high sense of ownership over views, they are familiar with developed land uses that are characteristic within the vicinity.

Businesses

Businesses are located along El Dorado Hills Boulevard near US 50. Businesses would have limited views toward the project site south of Serrano Parkway and would have low sensitivity to their surroundings because they are in a very developed area, near busy roadways, and their focus is concentrated on tasks associated with running the business.

Recreationists

Recreationists include people using the local roadways for walking, jogging, running, or cycling or informally accessing and using the project site for similar uses. There are no formal recreational facilities located on or near the project site that would offer views of the proposed project. Given the density of rural residential areas, the number of recreationists with views of the site is anticipated to be small. Recreationists are likely to be moderately sensitive to visual changes at the project site. They are more likely to regard the natural and built surroundings as a holistic visual experience. However, they are accustomed to the presence of infrastructure in the project vicinity.

Roadway Users

Travelers on local roadways include residents, workers, haulers, people accessing local businesses, and commuters driving in and through the area. 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. The passing landscape becomes familiar for roadway users, and their attention typically is not focused on the passing views. At standard roadway speeds, views are of short duration and roadway users are fleetingly aware of surrounding traffic, road signs, their

immediate surroundings within the automobile, and other visual features especially due to the winding nature of roadways in the vicinity. Roadway users, as a whole, have moderately low sensitivity to their surroundings because their focus is concentrated on driving and roadway conditions yet views in the area are scenic.

As shown on Figure 3.1-1, the downgrade portion of US 50 passing near the project site is considered a corridor with important public scenic viewpoints by the County for its views of the Sacramento Valley. Travelers on this portion of US 50 have views of the site, but they would be traveling at high rates of speed—the posted speed limit is 65 miles per hour. Viewers on this portion of US 50 would more frequently be focused on views toward the Sacramento Valley and not the project site, which is already surrounded by existing development. While views are of short duration at highway speeds, and drivers are focused on surrounding traffic, drivers and passengers on US 50 who are traveling between the Lake Tahoe area and cities within the region for recreational purposes enjoy the scenic nature of views from US 50 as they travel through the foothills. 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, roadway users pass by the site quickly.

3.1.3 Environmental Impacts

Methods of Analysis

Using the concepts and terminology, described at the beginning of this section, and criteria for determining significance, described above, analysis of the visual effects of the project are based on the following.

- Direct field observation from vantage points, including neighboring buildings, property, and roadways (June 7, 2013).
- Photographic documentation of key views of and from the project site.
- Evaluation of regional visual context.
- Review of the project description and proposed land uses and zoning.
- Review of the project in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.
- Review of photo simulations.

Professional Standards

Professional standards result from professional and direct expertise gained by staff working on visual analyses and consulting with other experienced staff, subconsultants, and clients on visual effects, including knowledge gained from public input on a broad range of projects. The effects listed represent collective knowledge that is professionally agreed upon and represents common, general public concerns. According to professional standards, a project may be considered to have significant impacts if it would significantly:

- Conflict with local guidelines or goals related to visual quality.
- Alter the existing natural viewsheds, including changes in natural terrain where the project dominates the view.

- Alter the existing visual quality of the region or eliminate visual resources.
- Increase light and glare in the project vicinity.
- Result in backscatter light into the nighttime sky.
- Result in a reduction of sunlight or introduction of shadows in community areas.
- Obstruct or permanently reduce visually important features.
- Result in long-term (that is, persisting for 2 years or more) adverse visual changes or contrasts to the existing landscape as viewed from areas with high visual sensitivity.

Thresholds of Significance

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.

Impacts and Mitigation Measures

Impact AES-1: Temporary visual impacts caused by construction activities (less than significant)

As described in Chapter 2, *Project Description*, construction would be phased over several years and take place Monday through Friday, between 7 a.m. and 7 p.m., and between 8 a.m. and 5 p.m. on the weekends, as dictated by County noise ordinances. Therefore, construction would not result in a substantial amount of nighttime lighting to operate in the dark. Construction activities would occur on approximately 172 acres of the total 341 acres of the project site, leaving 169 acres in open space (168 acres of natural open space and a 1-acre neighborhood park). Therefore, construction would take place on roughly 50% of the site. The project would require temporary facilities such as access roads, parking areas, construction management offices, and staging areas. Construction of the project would create changes in views of and from the project site over the course of phased development. Dust control would be implemented during construction to reduce the potential for slow moving dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. Construction traffic would access the site via local roads connecting to the site and would be visible in the foreground and middleground, in addition to staging areas and associated facilities. 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 project would also be required to comply with the Central

El Dorado Hills Specific Plan (CEDHSP), once adopted, and development standards and protocols required by the County that seek to reduce project impacts and aide in preserving onsite visual resources.

The proposed project would introduce construction activities into viewsheds available to all viewer groups and occur for a period of time greater than 2 years, starting and stopping based on market demands. Many construction activities would be obscured by terrain and the remaining trees in designated open space areas. However, construction would still be visible and viewers would see the visual transition of the site over time. Because the area is highly developed, viewers are accustomed to seeing construction in the area (e.g., construction activities at the US 50/Silva Valley Parkway interchange), and compliance with County development standards and protocols identified in the *Regulatory Setting*, above, and the proposed CEDHSP would reduce construction impacts by reducing the potential for negative visual impacts that could occur as a result of construction. Therefore, temporary visual impacts from construction would be less than significant.

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 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 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.

Simulation 1 illustrates how development of medium-sized residential units would require the removal of oak trees to accommodate the homes. The homes are similar in size to nearby homes and their uniform, lighter coloring draws attention toward the homes because they are brighter than the surrounding oak woodlands within which they are located within the vista view, whereas existing development blends better within existing tree canopies. Simulation 2 illustrates how much of the existing ridgeline would remain and the development would be located at the base of the hills, with no ridgeline development. Also, lower profile single-family homes and roof coloring aid in reducing the visual appearance of homes in the landscape. However, the light coloring of the homes draws a viewer's attention toward the homes and the proposed development.

The design of the development minimizes visual intrusion upon the landscape by preserving natural areas through more site-sensitive design. Open space buffers, terrain, and remaining oak trees would reduce visibility of portions of the project site in vista views but other portions of the site would be more readily available because residential areas are at higher elevations than the project site and would have views toward ridgeline development. Compared to existing conditions, the

proposed project would still permanently alter the existing visual character of the site and these changes would be more apparent in vista views. The proposed project would change the visual landscape from oak woodland and grassland open space to a planned development, permanently altering the existing visual character and aesthetic resources on portions of the project site and decreasing the amount and availability of open space resources in the vicinity. These changes would be visible in scenic vista views.

When seen from these higher elevations, the permanent conversion of the project site from natural open space to one with a residential subdivision is likely to affect sensitive viewers. Some viewers may view the visual changes associated with the proposed project neutrally or beneficially, as a sign of growth and development. Conversely, while development is very common in the vicinity and surrounding the project site, other viewers may see this transition and view the conversion of oak woodlands and grasslands to a development negatively because many viewers enjoy the scenic nature of this open space area that are available from their properties and have a high sense of ownership of such views. The combination of potential viewer sensitivity, permanent visual changes resulting on the site, and nature of existing, undeveloped scenic vista views toward the project site would result in impacts that would be significant. As described above, County policies, zoning ordinances, design review, and the proposed CEDHSP ensure that the proposed project minimizes visual impacts to the degree feasible. 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.

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.

- 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.

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)

There are no officially designated federal, state, or local scenic roadways or resources in the project area but, as shown on Figure 3.1-1, a portion of US 50 bordering the project site is a corridor with

important public scenic viewpoints because of existing views of the Sacramento Valley to the west. Portions of the project closest to US 50 include the Serrano Westside planning area south of Serrano Parkway. Other portions of the project would not be visible from US 50 when traveling in either direction due to intervening terrain, trees, highway infrastructure, and existing development. Areas of the Serrano Westside planning area that would be most visible from US 50 have proposed land use designations of Village Park (VP), while portions of Village Residential – High (VRH), Village Residential Medium – High (VRM-H), and Village Residential Medium – Low (VRM-L) would be less visible, as illustrated in Figures 3.1-5 (Simulation 3) and 3.1-6 (Simulation 4) that show the existing and proposed conditions of the CEDHSP.

Simulation 3 shows how the proposed park would be visible from US 50, back-dropped by the proposed residential development that would be separated from the park area by vegetative buffers. Simulation 4 shows how a similar visual condition would be seen closer to the El Dorado Hills Boulevard exit off of US 50. As seen in these simulations, the design of the development minimizes the visual intrusion upon the landscape through site-sensitive design and, while some existing trees would be removed at this location, more trees would be planted to create the buffer between park and residential uses. The proposed project would change the visual landscape from predominantly grassland with scattered oaks to a park space and residential development. However, this is in an area that is already surrounded by development, proposed residential uses would largely be screened by the vegetative buffer, and park space would keep a portion of this area in open space uses.

While the approved EDHSP slates approximately 50 acres of the Serrano Westside planning area for development, those portions of the site have not been developed, and the remainder of the Serrano Westside planning area and the Pedregal planning area are also minimally developed or not developed.

Implementation of County policies such as Policy 2.6.1.3, zoning ordinances, design review, and the proposed CEDHSP policies would ensure that the proposed project would be well-designed, sensitive to the site's natural and aesthetic resources, and would minimize the visual intrusion on the landscape by preserving oak trees and other aesthetic qualities and features of the site to the degree feasible. When seen from scenic portions of US 50, the permanent conversion of the site from open space surrounded by existing development to one with a park back-dropped by well screened residential development are likely to minimally affect sensitive viewer groups and views from US 50. Views from US 50 on this segment of highway are considered scenic for their views toward the Sacramento Valley, not the project site, and the project vicinity is already highly developed. Therefore, travelers on US 50 are likely to see the proposed project as an extension of existing development in the vicinity, as they pass by the site at a high rate of speed. Therefore, impacts would be less-than-significant. In addition, Mitigation Measure AES-2 would further reduce the appearance of buildings located within oak woodland and grassland areas, as seen from US 50.

Impact AES-4: Substantially degrade the existing visual character or quality of the site and its surroundings (less than significant with mitigation)

Compared to existing conditions, the proposed project would permanently alter the existing visual character of the site. The proposed project would change the visual landscape from oak woodland and grassland to a planned development, permanently altering the existing visual character and aesthetic resources on portions of the project site and decreasing the amount and availability of views of undeveloped land in the vicinity.

Many views of the proposed project are obscured by terrain, trees, and existing development. However, views do exist where breaks in these features allow for views of the site. Views of the proposed project are likely to be more visible from vantages that are at a higher elevation than lower vantages, such as from vista views (refer to Impact AES-2) or other hillside locations, because viewers would have views out and over the project site as shown in Simulations 1 and 2 (Figures 3.1-3 and 3.1-4). These simulations illustrate how medium sized residential units would require the removal of oak trees to accommodate the homes. While similar in size to nearby homes, their light coloring draws a viewer's attention toward the homes because they are brighter than the surrounding oak woodlands and grasslands within which they are located.

Simulations 3 and 4 (Figures 3.1-5 and 3.1-6) show how the proposed park would be visible from US 50, back-dropped by the proposed residential development that is separated from the park area by vegetative buffers. As seen in these simulations, the site-sensitive design of the development minimizes the visual intrusion on the landscape and, while some existing trees would be removed at this location, more trees would be planted to create the buffer between park and residential uses.

As illustrated in Figure 3.1-7 (Simulation 5), VRH and VRM-H would require the removal of oak trees and conversion of grasslands to accommodate the homes. Existing development is located on the ridgeline, seen at a distance, and while existing development is located nearby east of Serrano Parkway and behind the ridge, it is not visible in this vantage. Locating the proposed development at the base of the slope reduces the visual prominence and scale of the buildings. In addition, proposed plantings would provide vegetative buffers that would help screen views and reduce the visual intrusion of the proposed development within the viewshed. However, the lighter coloring of roofs and building facades draws a viewer's attention toward the homes because they are brighter than the surrounding existing oak woodlands, irrigated turf, and proposed tree plantings in which they are located. These colors do, however, blend well with the seasonal colors of the grasslands on the hillsides located behind the proposed development.

The design of the development would minimize visual intrusion on the landscape by preserving areas of open space and through site-sensitive design. Open space buffers, terrain, and remaining oak trees would reduce visibility of portions of the project site in views but other portions of the site would be more readily available because existing residential areas are at higher elevations than the project site and would have views toward the proposed development.

The CEDHSP contains policies to ensure the project would be well-integrated visually into the El Dorado Hills community. CEDHSP Policy 3.4 requires that design review, architectural review, and site plan review processes be used for development proposals to ensure the proposed building materials, landscaping, lighting, grading, and improvement plans create a sense of place and integrate with the existing character of El Dorado Hills. CEDHSP Policy 3.5 requires that, concurrent with the recording of the small lot final subdivision map, applicants prepare a development notebook for any single-family detached lot of 20,000 square feet or greater that establishes building setbacks and site-specific development criteria (similar to lot notebooks currently used in the Serrano development). CEDHSP Policy 3.6 directs that design standards are used to create a distinctive character and high-quality community, and that site development, architectural design, and landscaping standards are consistent with the Specific Plan development standards (Appendix B in the Specific Plan). Conditions, Covenants, and Restrictions (CCRs) are recorded (Pedregal) or would be recorded (Serrano Westside) for each lot to ensure compliance with policies and development standards.

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.

Some viewers may view the visual changes associated with the proposed project neutrally or beneficially, as a sign of growth and development. Conversely, while development is very common in the vicinity and surrounding the project site, other viewers may see this transition and view the conversion of oak woodlands and grasslands to a development negatively because many viewers enjoy the scenic nature of open and undeveloped areas associated with the project site that are available from their properties and have a high sense of ownership of such views. 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.

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. 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.

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

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 shall be designed and constructed in a manner as to complement and blend with nearby existing noise barriers. Therefore, new barriers built along Serrano Parkway and El Dorado Hills Boulevard shall be visually consistent with the design of existing and proposed barriers in the project vicinity. The design will include similar dimensions, barrier materials, and plant species as the existing barriers along Serrano Parkway and the barriers proposed to be installed east of the project area.

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)

Once the development has been built, permanent features such as windows and building surfaces and temporary features such as parked cars would introduce new sources of glare. The proposed nighttime lighting associated with sports fields at the Village Park and Civic–Limited Commercial (if developed as a recreational facility) would introduce a new source of light and glare. 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.

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.

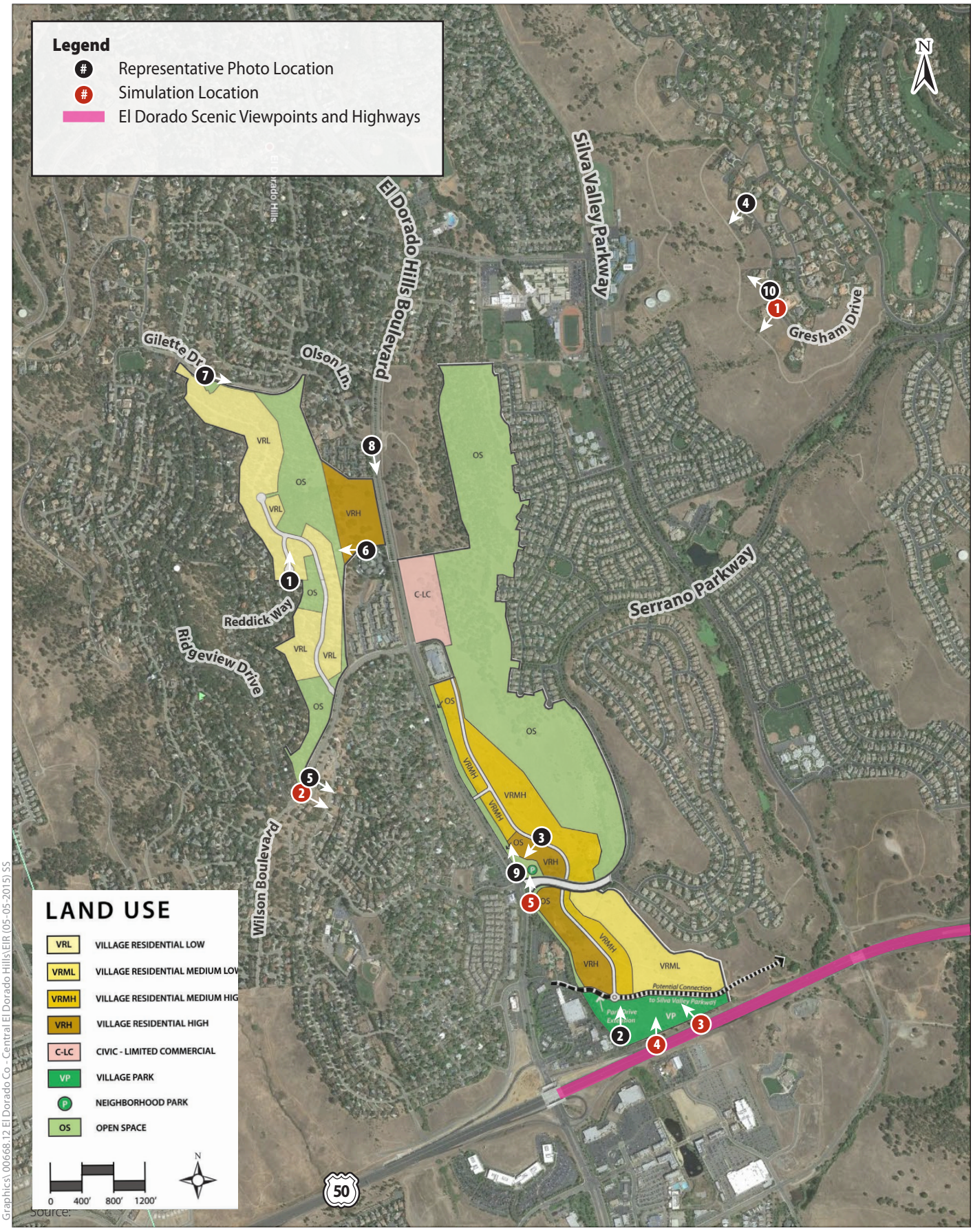
Impact AES-6: Adversely affect scenic highways and vistas, the existing visual character or quality of the site and its surroundings, or create a new source of substantial light or glare as a result of offsite improvements (less than significant)

Offsite improvements (Figure 2-9) would be visible in scenic vistas and views to varying degrees. The new Pedregal planning area water lines and the 12-inch recycled water line would not be noticeable in vistas or views because they would be underground and the work sites would be restored after the upgrades are constructed. Therefore, the affected sites would appear visually similar to existing conditions once the project has been implemented. In addition, most of these locations are likely partially or fully obscured in vistas and views due to terrain and presence of existing buildings and vegetation. Similarly, while the two pedestrian crossings would be visible to viewers immediately adjacent to the sites, they would not constitute a substantial visual change because pedestrian crossings are familiar visual elements in the landscape and they would likely be partially or fully obscured in many vistas and views due to terrain and presence of existing buildings and vegetation. Therefore, these impacts would be less than significant.

The project includes the Park Drive extension, which would realign Park Drive from El Dorado Hills Boulevard within the Raley's and La Borgata shopping centers to the Village Park roundabout. The potential connection to Silva Valley Parkway would extend from the Park Drive roundabout through the Serrano Westside planning area. The realignment between the shopping centers would not greatly alter the existing visual landscape, vistas, or views because it would be in an area that is commercially developed with similar, familiar visual elements available to viewers in the immediate vicinity and these would likely be partially or fully obscured in vistas and views due to terrain and presence of existing buildings and vegetation. However, the potential connection to Silva Valley Parkway would be in an area that is currently undeveloped and would likely be visible in vistas and views from nearby developed areas, as depicted in Photo 5 (Figure 3.1-2c), and would occur in a presently undeveloped area. However, terrain, trees, and existing development would limit views of the connection so that only portions of the connection would be visible from the vicinity and US 50.

This would increase the amount of roadway infrastructure seen in the area to a small degree. Development of the CEDHSP would further limit views of the connection to Silva Valley Parkway if it is built. Therefore, these impacts would be less than significant.

The proposed new location for the planned US 50 pedestrian overcrossing would be visible in views, including vista views, available in the project vicinity and from US 50. The portion of US 50 that would be crossed is designated as scenic for its views toward the Sacramento Valley when traveling west. While the pedestrian overcrossing would be a visible crossing over the highway on the downgrade from Bass Lake Road it would not obscure or detract from vista views of the Sacramento Valley because the proposed overcrossing is at a low point of US 50. The highway slopes up to the east and west from this point and views of the Sacramento Valley are mostly available on the higher elevation segment of US 50 that is located between Bass Lake Road and the potential Silva Valley Parkway connection, which is located just over 0.5 mile away from the proposed pedestrian overcrossing. 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. Locating the overcrossing 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. In addition, the overcrossing would not greatly alter views from the project vicinity because it would occur in an area that is already developed with infrastructure associated with mixed-use development and transportation facilities, where bridges and overcrossings are currently present and visually familiar. Therefore, the overcrossing would not stand out or create visual discordance in vistas or views because it would be located 0.5 mile away from the portion of US 50 that has the most prevalent views of the Sacramento Valley and it would not be large or prominent enough within the view to degrade vistas and views. Furthermore, as described above, County policies, zoning ordinances, design review, and the proposed CEDHSP ensure that the proposed pedestrian overcrossing would minimize visual impacts to the degree possible. Therefore, these impacts would be less than significant.



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Source:

Figure 3.1-1
Representative Photo and Simulation Locations

Photo 1: Looking north from the end of Reddick Way towards the project site and the Pedregal Planning Area.

Photo 2: Looking north from the Serrano Westside Planning Area near US 50, out and over the project site.

Figure 3.1-2a
Representative Photographs

Photo 3: Looking southwest from the Serrano Westside Planning Area, north of Serrano Parkway, toward the riparian area along El Dorado Hills Boulevard.

Photo 4: Looking southwest from Gresham Drive towards the project site and the Serrano Westside and Pedregal Planning Areas.

Figure 3.1-2b
Representative Photographs
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Photo 5: Looking southeast from Wilson Boulevard towards the project site and the Serrano Westside Planning Area.

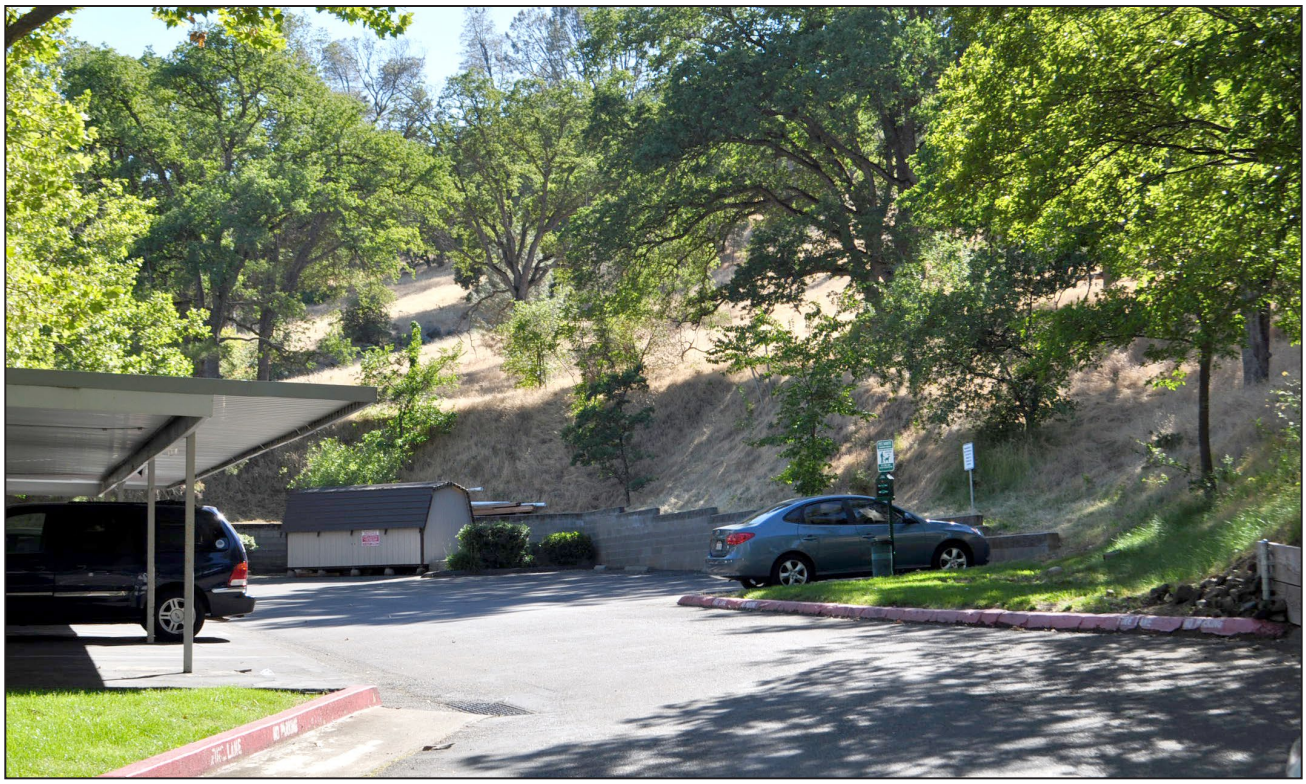

Photo 6: Looking west from Copper Hill Apartments towards the project site and the Pedregal Planning Area.

Figure 3.1-2c
Representative Photographs

Photo 7: Looking east down Gillette Drive towards the project site and the Pedregal Planning Area.

Photo 8: Looking south down El Dorado Hills Boulevard at its intersection with Olson Lane towards the project site and the Serrano Westside and Pedregal Planning Areas.

Figure 3.1-2d
Representative Photographs
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Photo 9: Looking north from El Dorado Hills Boulevard towards the project site and the Serrano Westside Planning Area.

Photo 10: Looking northwest from Gresham Drive towards Folsom Lake.

Figure 3.1-2e
Representative Photographs

Source: Torrence Planning (January 2014)

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Figure 3.1-3
Visual Simulation 1 of the Proposed Project
from Crestland Drive

Source: Torrence Planning (January 2014)

Graphics/00668.12_CEDH/EIR (03-28-14) SS

Figure 3.1-4
Visual Simulation 2 of the Proposed Project from Wilson Boulevard

Graphics/00668.12_CEDH/EIR (03-28-14) SS

Source: Architectural Nexus (2014)

Figure 3.1-5
Visual Simulation 3 of the Proposed Project from US 50

Source: Architectural Nexus (2014)

Graphics/00668.12_CEDH/EIR (03-28-14) SS

Figure 3.1-6
Visual Simulation 4 of the Proposed Project from US 50

Source: Architectural Nexus (2014)

Figure 3.1-7
Visual Simulation 5 of the Proposed Project
from Serrano Parkway

3.2 Air Quality

This section describes the environmental and regulatory setting for air quality. It also describes impacts on air quality that would result from implementation of the proposed project and mitigation for significant impacts. Impacts related to greenhouse gases and climate change are described in Section 3.6, *Greenhouse Gas Emissions*.

3.2.1 Existing Conditions

Regulatory Setting

The agencies of direct importance to the project for air quality are the U.S. Environmental Protection Agency (EPA), California Air Resources Board (ARB), and El Dorado County Air Quality Management District (EDCAQMD). EPA has established federal air quality standards for which ARB and EDCAQMD have primary implementation responsibility. ARB and EDCAQMD are also responsible for ensuring that state air quality standards are met.

Federal Regulations

Clean Air Act and National Ambient Air Quality Standards

The federal Clean Air Act (CAA) was first enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as national ambient air quality standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 3.2-1 shows the NAAQS currently in effect for each criteria pollutant. The California ambient air quality standards (CAAQS) (described below) are also provided for reference.

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	0.075 ppm
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[c]	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	–[d]	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 2013a.

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 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.

[d] 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%.

Nonroad Diesel Rule

The EPA established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. New construction equipment used to implement the proposed project, including heavy-duty trucks and off-road construction equipment, will be required to comply with the emission standards.

Radon Action Level

There are no current state or federal regulations related to permissible exposure levels for radon. However, EPA has recommended an indoor action level for radon exposure, which is 4 picocurie[1] per liter (pCi/L). In existing homes with radon levels of more than 4 pCi/L, EPA recommends taking corrective measures to reduce exposure to radon gas. Although EPA has developed an action level of 4 Ci/L for radon exposure, there is no known safe level of exposure to radon (U.S. Environmental Protection Agency 2014).

State Regulations

California Clean Air Act and California Ambient Air Quality Standards

In 1988, the state legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates (SO_4), hydrogen sulfide (H_2S), vinyl chloride (C_2H_3Cl), and visibility-reducing particles. The CAAQS and NAAQS are listed together in Table 3.2-1.

The ARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, ARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the plan, including heavy duty trucks, off-road construction equipment, tugboats, and barges, will be required to comply with the standards.

[1] 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.

Carl Moyer Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) is a voluntary program that offers grants to owners of heavy-duty vehicles and equipment. The program is a partnership between ARB and the local air districts throughout the state to reduce air pollution emissions from heavy-duty engines. Locally, the air districts administer the Carl Moyer Program.

Toxic Air Contaminant Regulation

California regulates toxic air contaminants (TACs) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Hot Spots Act). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The Hot Spots Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

ARB identified diesel particulate matter (DPM) emissions as a TAC in 1998 (California Air Resources Board 1998). Shortly thereafter, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (California Air Resources Board 2000). The goal of the plan is to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75% in 2010 and by 85% by 2020. The proposed project would be required to comply with applicable diesel control measures.

Local Regulations

El Dorado County General Plan

The Public Health, Safety, and Noise Element of the *El Dorado County General Plan* (El Dorado County 2004b) includes the following goals, objectives, and policies regarding air quality. 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 6.7, *Air Quality Maintenance*, strives to achieve and maintain ambient air quality standards established by the EPA and ARB, and to minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors. This goal includes:
    - Objective 6.7.2, *Vehicular Emissions*, and implementing Policy 6.7.2.5, which encourages use of and facilities for alternative-fuel vehicles, including low-emission vehicles used in construction.
    - Objective 6.7.4, *Project Design and Mixed Uses*, and implementing Policies 6.7.4.1, 6.7.4.2, and 6.7.4.4 that encourage project design that protects air quality and minimizes direct and indirect emissions of air contaminants.
    - Objective 6.7.6, *Air Pollution-Sensitive Uses*, and implementing Policies 6.7.6.1 and 6.7.6.2, which direct that air pollution sensitive land uses be separated by significant sources of air pollution.
    - Objective 6.7.7, *Construction-Related, Short-Term Emissions*, and implementing Policy 6.7.7.1, which requires that short-term construction, long-term operations, and toxic and odor-

related impacts be evaluated in accordance with EDCAQMD CEQA Guidelines and feasible mitigation for such impacts.

In addition, the Public Health, Safety, and Noise Element includes the following goal that addresses naturally occurring asbestos (NOA).

- Goal 6.3, *Geologic and Seismic Hazards*, addresses minimizing threats to life and property from geologic hazards such as NOA through evaluation of NOA hazards and includes Objective 6.3.1, *Building and Site Standards*, and implementing Policies 6.3.1.1, 6.3.1.2, and 6.3.3.3.

El Dorado County Air Quality Management District

As described above, under the CCAA, the EDCAQMD is required to develop an air quality plan for nonattainment criteria pollutants within the air district. Air districts within the Sacramento Federal Nonattainment Area (SFNA)[2] have adopted the *2009 Sacramento Metropolitan Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2009 Ozone Plan), which was last updated in 2013. This plan outlines how the region continues to meet federal progress requirements and demonstrates that the Sacramento Region will meet the 1997 ozone NAAQS by 2018.

The EDCAQMD develops and adopts rules to regulate sources of air pollution in El Dorado County. The rules most pertinent to the proposed project are briefly described below.

- Rule 202, Visible Emissions. Limits emissions that are darker in shade than No. 1 on the "Ringelmann Chart" or of such opacity as to obscure an observer's view to a degree equal to or greater than smoke.
- Rule 205, Nuisance. Prohibits discharge of air contaminants or other material that 1) cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; 2) endanger the comfort, repose, health, or safety of any such persons or the public; or 3) cause, or have a natural tendency to cause, injury, or damage to business or property
- Rule 207, Particulate Matter. Limits particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas.
- Rule 215, Architectural Coatings. Specifies volatile organic compounds (VOC) content limits for architectural coatings applied within El Dorado County.
- Rule 223-1, Fugitive Dust. Limits fugitive dust emissions from construction and construction-related activities. The rule requires submission of a detailed Fugitive Dust Control Plan to the EDCAQMD prior to the start of any construction activity for which a grading permit was issued by El Dorado County.
- Rule 223-2, Asbestos Hazard Mitigation. Requires an Asbestos Dust mitigation plan must be prepared, submitted, approved and implemented when more than 20 cubic yards of earth will be moved at all sites identified as being in an Asbestos Review Area as shown on the *El Dorado County Naturally Occurring Asbestos Review Map* maintained by the EDCAQMD.
- Rule 224, Cutback Asphalt Paving Material. Specifies VOC content limits for cutback asphalt.

[2] Air districts in the SNFA consist of the Sacramento Metropolitan Air Quality Management District and Yolo-Solano Air Quality Management District, as well as parts of EDCAQMD, Placer County Air Pollution Control District, and Feather River Air Quality Management District.

- Rule 233, Stationary Internal Combustion Engines. Limits nitrogen oxides (NO_X) and carbon monoxide (CO) emissions from stationary internal combustion engines.

Environmental Setting

Regional Climate and Meteorology

The primary factors that contribute to overall air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Meteorological conditions and topography are also important contributing factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

California is divided into 15 air basins based on geographic features that create distinctive regional climates. The proposed project's air quality study area is located in the Mountain Counties Air Basin (MCAB), which lies along the northern Sierra Nevada, close to or contiguous with the Nevada border, and covers roughly 11,000 square miles. Elevations range from over 10,000 feet at the Sierra Nevada crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout El Dorado County, the topography is highly variable and includes rugged mountain peaks and valleys with extreme slopes and altitude differences in the Sierra Nevada, as well as rolling foothills to the west. The western slope of El Dorado County, from the Tahoe Basin rim on the east to the Sacramento County boundary on the west, lies within the MCAB.

The general climate of the MCAB varies considerably with elevation and proximity to the Sierra Nevada crest. The terrain features of the MCAB make it possible for various climates to occur in relatively close proximity. The pattern of mountains and hills causes a wide variation in rainfall, temperature, and localized winds throughout the MCAB. Temperature variations have an important influence on basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry.

The Sierra Nevada receives large amounts of precipitation from storms moving in from the Pacific Ocean in the winter, with lighter amounts from intermittent "monsoonal" moisture flows from the south and cumulus buildup during the summer. Precipitation levels are high in the highest mountain elevations but decline rapidly toward the western portion of the basin. Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial depths of snow can accumulate. In the western foothills, however, winter temperatures usually dip below freezing only at night, and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime peaks in the 70s to low 80s°F, but the lower elevations in western portions of the county can routinely exceed 100°F.

The topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers (where warm air overlays cooler air) frequently form and trap pollutants close to the ground. In the winter, these conditions can lead to elevated CO concentrations, known as hot spots, along heavily traveled roads and at busy intersections.

During longer daylight hours in summer, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic

compounds (ROG) and NO_X (ozone precursors) that results in the formation of ozone. In the summer, the strong upwind valley air flowing into the basin from the Central Valley located to the west is an effective transport medium for ozone precursors and ozone generated in the San Francisco Bay Area and the Sacramento and San Joaquin Valleys to flow into the MCAB. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for exceedances of the state and federal ozone standards in the MCAB. ARB has officially designated the MCAB as "ozone impacted" by transport from those areas (Title 17 California Code of Regulations, Section 70500).

Criteria Pollutants of Concern

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 considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, 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 in the study area are ozone (including ROG and NO_X), CO, and PM. Principal characteristics surrounding these pollutants are described 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. Ozone poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and premature death. Ozone can also act as a corrosive, resulting in property damage such as the degradation of rubber products is a 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 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.

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: inhalable course particles, or PM10, and inhalable fine particles, 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. Both PM10 and PM2.5 may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Existing Air Quality Conditions

ARB collects ambient air quality data through a network of air monitoring stations throughout the state. In El Dorado County, there are three stations that record ozone levels and one station that records PM10 levels. There are no monitoring stations in the county that collect data on CO, PM2.5, or NO_2. The closest ozone monitoring station is the Placerville-Gold Nugget Way station, which is approximately 14 miles east of the project area. The PM10 monitoring station is located in the Lake Tahoe Air Basin (LTAB) portion of El Dorado County. Given the distinct meteorological conditions in the LTAB that can influence pollutant concentrations, PM10 data from the Sacramento-Branch Center Road monitoring station in Sacramento County[3] are used as representative data for the project area. The Sacramento-Branch Center Road station is approximately 16 miles west of project area.

Table 3.2-2 summarizes ozone and PM10 levels for the last 3 years for which complete data are available (2012-2014). As shown in Table 3.2-2, the Placerville-Gold Nugget Way station has experienced frequent violations of the ozone standards. At least 6 violations of the state 24-hour PM10 standard were recorded each year at the Sacramento-Branch Center Road station.

Attainment Status

Local monitoring data (Table 3.2-2) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are defined as follows.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.

[3] Sacramento County is located in the Sacramento Valley Air Basin, which borders the MCAB to the west.

- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

Table 3.2-2. Ambient Criteria Air Pollutant Monitoring Data (2012-2014)

Pollutant Standards	2012	2013	2014
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.108	0.097	0.104
Maximum 8-hour concentration (ppm)	0.096	0.084	0.090
Number of days standard exceeded [a, b]			
CAAQS 1-hour (>0.09 ppm)	6	1	1
CAAQS 8-hour (>0.070 ppm)	50	21	36
NAAQS 8-hour (>0.075 ppm)	20	11	12
Particulate matter (PM10)[c]			
National[d] maximum 24-hour concentration (μg/m³)	60.0	59.0	45.0
National[d] second-highest 24-hour concentration (μg/m³)	58.0	48.0	39.0
State[e] maximum 24-hour concentration (μg/m³)	60.0	63.0	46.0
State[e] second-highest 24-hour concentration (μg/m³)	58.0	49.0	41.0
National annual average concentration (μg/m³)	23.7	22.7	18.1
State annual average concentration (μg/m³)[f]	24.3	23.6	18.6
Number of days standard exceeded[b]			
NAAQS 24-hour (>150 μg/m³)[f]	0	0	0
CAAQS 24-hour (>50 μg/m³)[f]	18	6	0

Source: California Air Resources Board 2015.
ppm = parts per million.
NAAQS = National Ambient Air Quality Standards.
CAAQS = California Ambient Air Quality Standards.
μg/m³ = micrograms per cubic meter.
mg/m³ = milligrams per cubic meter.
– = data not available.

[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 summarizes the attainment status of the project area with regard to the NAAQS and CAAQS.

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] nonattainment	Nonattainment
CO	Attainment	Unclassified
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Unclassified
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen sulfide	(No federal standard)	Attainment
Visibility reducing particles	(No federal standard)	Unclassified

Source: California Air Resources Board 2013b; U.S. Environmental Protection Agency 2013.
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.

Toxic Air Contaminants

TACs are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. TACs are emitted from a variety of sources, including on-road vehicles, gas stations, and dry cleaning facilities. The primary TACs of concern associated with the proposed project are DPM and NOA. Both are discussed below.

Diesel Particulate Matter

In 1998, following a 10-year scientific assessment process, ARB identified PM from diesel-fueled engines as a TAC. ARB estimates that DPM emissions are responsible for about 70% of the total ambient air toxics risk (California Air Resources Board 2000).The closest proposed residential unit in the project area is approximately 400 feet north of U.S. Highway 50 (US 50), which is a heavily traveled roadway and is a source of DPM. There are four gas stations located on Saratoga Way and Town Center Drive, which are a source of TACs. Existing (ambient) cancer risk at the closest proposed residential unit from these sources is approximately 83 per million (Sacramento Metropolitan Air Quality Management District 2011; San Joaquin Valley Air Pollution Control District 2007).

Naturally Occurring Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals. It has been mined for applications requiring thermal insulation, chemical and thermal stability, and high tensile strength. Before the adverse health effects of asbestos were identified, asbestos was widely used as insulation and fireproofing in buildings, and it can still be found in some older buildings. It is also found in its natural state in rock or soil.

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). 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 in the general vicinities of Georgetown and El Dorado Hills (California Department of Conservation 2000). Construction activities in ultramafic rock deposits may be a source of asbestos emissions if NOA is present.

As shown in Figure 3.2-1, portions of the project would be located within areas known to contain NOA. Youngdahl Consulting Group completed an assessment of NOA for the Pedregal and Serrano Westside 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 (Youngdahl Consulting Group 2012a). 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 (Youngdahl Consulting Group 2012b).

Radon

Although not a TAC and not regulated by EPA, ARB, or EDCAQMD, radon is a naturally occurring odorless, tasteless, and invisible radioactive gas that is formed from the natural decay of uranium in soil, rock, and water. Typical exposure is from inhalation of radon as it moves up through the ground into the air above. Radon can seep into homes through cracks in foundations, walls, and joints (California Department of Public Health 2014; U.S. Environmental Protection Agency n.d.). It is estimated the average indoor radon concentration in U.S. homes is approximately 1.3 pCi/L of air, while the average outdoor radon concentration is 0.4 pCi/L (U.S. Environmental Protection Agency 2014). Prolonged human exposure to radon can lead to lung cancer. It is estimated that radon is the second leading cause of lung cancer in the United States and results in approximately 21,000 cancer-related deaths each year (U.S. Environmental Protection Agency 2012). Radon exposure is the leading cause of lung cancer among non-smokers (U.S. Environmental Protection Agency n.d.).

Radon is found throughout California because it exists in all soil and rock, although certain areas of the state have higher radon levels than others (California Department of Public Health 2014). It is estimated that nearly 1 out of every 15 homes in the United States has elevated radon levels (U.S. Environmental Protection Agency 2012). Within El Dorado County, most radon potential is found in the Lake Tahoe portion of the County (California Geological Survey 2009), although there are non-Lake Tahoe areas within the County with elevated tested levels (California Department of Health Services 2010). Although certain areas within the state and county are more likely to contain higher

radon levels than others, the California Department of Public Health (CDPH) notes that radon is a house-to-house issue. A house located in an area with low radon potential may have elevated radon levels, while a neighboring house could have low radon levels (California Department of Public Health 2014).

As discussed above, neither EPA nor EDCAQMD has established exposure limits for radon, given that background concentrations vary and are highly dependent on household conditions and site-specific geology. Moreover, because radon is most concentrated in the Lake Tahoe portion of the county, exposure in the project area is not anticipated to represent a significant concern (for example, the CDPH radon sampling database indicates that out of 31 tests, there were 3 with reported concentrations in excess of 4 pCi/L). Accordingly, radon is not discussed further in this analysis.

Sensitive Receptors

EDCAQMD generally defines a sensitive receptor as people or facilities that generally house people (e.g., schools, hospitals, clinics, elderly housing, residences), that may experience adverse effects from unhealthful concentrations of air pollutants. The Serrano Westside planning area is adjacent to existing residential uses to the east (the Serrano Community). Four schools (Oak Ridge High School, Rolling Hills Middle School, Silva Valley Elementary School, and Oak Meadow Elementary School) are approximately 0.50 mile to the east. The Cornerstone Christian Church is west of the planning area near Lassen Lane and El Dorado Hills Boulevard. El Dorado Hills KinderCare is adjacent to the southern Serrano Westside planning area on Saratoga Way. There is also private gated "elderly only" housing (Versante) located just off Lassen Lane on Park Drive that borders El Dorado Hills Boulevard and a senior center (Ramona "Moni" Gilmore Senior Center) across from the Cornerstone Christian Church on the corner of El Dorado Hills Boulevard and Lassen Lane.

The Pedregal planning area is adjacent to low-density residential uses (the existing Ridgeview neighborhood) to the west and three existing multifamily uses (the Copper Hill Apartments, Sterling Ranch Apartments, and El Dorado Village Apartments) along El Dorado Hills Boulevard to the east. Froggie Frontier Preschool and St. Stephen's Lutheran Church are adjacent to the northern planning area boundary on Olson Lane.

Table 3.2-4 summarizes sensitive receptors within the 1,000 feet of the Serrano Westside and Pedregal planning areas.

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	100 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.

Odors

Although offensive odors rarely cause physical harm, they can be unpleasant and lead to considerable distress among the public. This distress often generates citizen complaints to local governments and air districts. A project that included activities that could frequently expose the public to objectionable odors would be deemed as one having a significant impact. According to the EDCAQMD CEQA Guidelines and ARB's *Air Quality and Land Use Handbook* (California Air Resources Board 2005), land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing. The El Dorado Irrigation District (EID) El Dorado Hills Wastewater Treatment Plant (WWTP) is approximately 1.20 miles south of the Serrano Westside planning area and 2.20 miles south of the Pedregal planning area. The EDCAQMD has not received any odor complaints (Baughman pers. comm. D), but residents in the nearby Blackstone subdivision have reported odor complaints to EID and the Central Valley Regional Water Quality Control Board (which is responsible for ensuring the WWTP implements state permit requirements). 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.

3.2.2 Environmental Impacts

Methods of Analysis

Air quality impacts associated with construction and operation of the proposed project were assessed and quantified using standard and accepted software tools, techniques, and emission factors. A summary of the methodology is provided below.

Construction

Construction of the proposed project would generate emissions of ROG, NO_X, CO, PM10, and PM2.5 that would temporarily change ambient air quality in the study area. Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, dust from land clearing, and application of architectural coatings. Criteria pollutant emissions from these sources were estimated using 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. It was assumed construction would progress according to the general schedule summarized in Table 3.2-5. See Appendix C for model outputs and detailed assumptions.

Construction of the proposed project would generate DPM from heavy-duty equipment exhaust. Potential health risks from exposure of construction-generated DPM were evaluated qualitatively, consistent with guidance published by ARB (2000) and the Office of Environmental Health Hazard Assessment (OEHHA) (2003) regarding the relationship between exposure duration and adverse effects.

Table 3.2-5. Construction Scheduling and Phasing

Land Use Type	No.	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential																
Village Residential-Low (du)	37	X	X	X	X	X	X	X	X	X	X					
Village Residential Medium-Low (du)	123		X	X	X	X	X	X	X	X	X					
Village Residential Medium-High (du)	310			X	X	X	X	X	X	X	X					
Village Residential-High (du)	530			X	X	X							X	X	X	X
Commercial/Other																
Civic-Limited Commercial (acres)	11														X	
Village Park (acres)	15							X	X							
Roads and Landscaped Lots (acres)	12	X	X		X											
Trails	–						X				X					
Wetlands	–					X				X						
Offsite Improvements																
Park Drive Extension[a] (linear feet)	1,200		X													
Potential connection to Silva Valley Parkway[b] (linear feet)	3,700														X	X
Recycled Water Line[c] (linear feet)	3,000				X											
Pedregal water lines[d] (linear feet)	365	X	X													
Pedestrian crossings from LaBorgata/Raley's to Serrano Westside[e]	–						X				X					
Relocated US 50 pedestrian crossing[f]																
EID sewer line at Serrano Parkway (linear feet)	300				X											

du = dwelling unit.

[a] From El Dorado Hills Boulevard to the Serrano Westside roundabout.

[b] Potential connection east of Serrano Westside roundabout to Silva Valley Parkway. Not required for project and would not be constructed as part of the project. However, right-of-way within the Serrano Westside planning area and the El Dorado Hills Specific Plan is reserved for such use.

[c] 12-inch line with potential for upsizing to 16 inches.

[d] Assumed constructed as part of the 37 units in Pedregal.

[e] Wooden bridges included as part of trails.

[f] Relocation of currently planned County project, timing to be determined.

Operation

Operation of the proposed project would generate emissions of ROG, NO_X, CO, PM10, and PM2.5 that could result in long-term changes to ambient air quality. Two types of air pollutant sources are expected during occupancy of the Central El Dorado Hills Specific Plan (CEDHSP): mobile and area. Mobile sources are sources of emissions from motor vehicle trips associated with the land uses. Area sources include emissions from natural gas combustion for heating requirements, landscaping activities, consumer products (e.g., personal care products), and periodic paint and architectural coatings emissions from facility upkeep.

Emissions were estimated using CalEEMod, version 2013.2.2. Vehicle trip information was obtained from the proposed project's traffic impact assessment (see Section 3.14, *Traffic and Circulation*) and accounts for trip reductions associated with mixed-use design (Appendix L).[4] The primary trip reductions would be achieved by residents who 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 (Appendix L). The area sources emissions were modeled using CalEEMod default values. The analysis accounts for emissions benefits achieved from mandatory CEDHSP policies that prohibit wood-burning fireplaces and stoves (CEDHSP Policies 8.50 and 8.51) and require buildings to exceed the Title 24 energy standards (CEDHSP Policy 8.11).

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) and cumulative (2035) traffic conditions were modeled to evaluate CO hot spot concentrations at four study area intersections. Receptors were placed 9.8 feet from the traveled way at each intersection corner. A standard receptor elevation of 5.9 feet was used consistent with CO protocol guidance (Garza et al. 1997). Worst-case wind angles and meteorological conditions were modeled to estimate conservative CO concentrations at each receptor. Pursuant to consultation with EDCAQMD staff, CO concentrations from EDCAQMD's 2002 *Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDCAQMD CEQA Guidelines) were used to define background CO levels because no monitoring stations in El Dorado County collect CO data (Baughman pers. comm. A).

The potential for operational PM10 emissions to exceed the CAAQS was assessed qualitatively based on the emissions analysis completed using CalEEMod (see above) and implementation of CEDHSP policies that would reduce PM10 emissions. Violations of the EDCAQMD's quantitative ozone thresholds (described below) were also used as a proxy for potential PM10 impacts (Baughman pers. comm. B).

The proposed project itself is not expected to represent a significant operational source of DPM, because DPM-generating equipment and activities, such as heavy-duty diesel trucks, would be limited under proposed project operations. Accordingly, project-generated operational DPM health risks are not evaluated further because there would be no project-level impact.

Future resident exposure to background DPM concentrations was evaluated through an analysis of nearby stationary and highway sources. Screening tables from the SMAQMD's (2011) *Recommended*

[4] Trip reductions achieved by bicycle facilities (CEDHSP Policy 8.2), off-street parking limits (CEDHSP Policy 8.1), electric vehicle use (CEDHSP Policies 8.4–8.5), and creation of a transportation management association (CEDHSP Policy 8.10) are not included in the Fehr & Peers trip rates.

Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Roadway Protocol) were used to evaluate cancer risk from US 50, consistent with guidance provided by EDCAQMD (Baughman pers. comm. A). The hazard index (HI) for US 50 was quantified based on the estimated cancer risk from SMAQMD's Roadway Protocol and the unit risk factor for DPM (300 per million cancer exposure per 1 microgram/cubic meter). A reference exposure level of 5 was assumed, consistent with guidance from the California Office of Environmental Health Hazard (2012). The San Joaquin Valley Air Pollution Control District (SJVAPCD) (2007) *Guidance for Air Dispersion Modeling* and fuel data provided by the EDCAQMD (Baughman pers. comm. B) were used to evaluate health risks from gas stations within 1 mile of the project area. The following assumptions were made to evaluate health risks from US 50 and nearby gas stations.

- The current peak hour traffic volume on US 50 at Latrobe Road is 7,000 vehicles (California Department of Transportation 2013).
- The proposed project's nearest residential receptor to US 50 would be approximately 400 feet from US 50.
- Approximately 6.7 million gallons of fuel are dispensed by four gas stations within 1 mile of the project area (Baughman pers. comm. B).
- All gas stations have Phase 1 and 2 controls. The nearest receptor was conservatively assumed to be within 90 feet of the stations.

Thresholds of Significance

Based on 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.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard (see below under *Local Air District Thresholds*) or contribute substantially to an existing or projected air quality violation.
- 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).
- Expose sensitive receptors to substantial (see below under *Local Air District Thresholds*) pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

Local Air District Thresholds

According to the State CEQA Guidelines Section 15064.7, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. As described above, the EDCAQMD is responsible for ensuring that state and federal ambient air quality standards are not violated within El Dorado County. The EDCAQMD has developed its own thresholds of significance to evaluate both construction and operational impacts (El Dorado County Air Quality Management District 2002). The following section summarizes the local air district thresholds and presents sustainable evidence regarding the basis upon which the thresholds were developed, as

well as describes how they are used to determine whether project construction and operational emissions would result in the following.

- Interfere or impede with attainment of State or federal ambient air quality standards (CAAQS and NAAQS, respectively).
- Cause increased risk to human health.

Regional Thresholds for Air Basin Attainment of State and Federal Ambient Air Quality Standards

As described in Section 3.2.1, the western portion of El Dorado County is in the SFNA for ozone. The EDCAQMD has adopted ozone precursor (ROG and NO_X) thresholds to assist the Sacramento area in reaching attainment status with the federal and state ozone standards. The thresholds, which are described below for both construction and operations, represent levels above which project-generated emissions could affect EDCAQMD's commitment to attain the ozone standards in the Sacramento Region (El Dorado County Air Quality Management District 2002). Similarly, thresholds for construction-generated fugitive dust and operations-generated CO and PM10, which are the CAAQS, have been adopted to identify projects that could make a substantial contribution to an existing violation of the applicable CAAQS.

Adopted ozone thresholds for construction and operational emissions are described below, as well as thresholds for construction-generated fugitive dust and operations-generated CO and PM10.

***Construction-Generated Ozone Precursors*[5]**

In 2002, EDCAQMD adopted a fuel-based screening threshold for criteria pollutant emissions where projects with equipment (1996 engine year or newer) that consume less than 402 gallons of fuel per day are considered to have a less than significant impact (Resolution 079-2002). Modeling indicates that the proposed project would exceed this screening threshold. Accordingly, the district's quantitative threshold of 82 pounds per day is used to evaluate ROG and NO_X emissions. This threshold is combined to obtain a total ozone threshold of 164 pounds per day. With the combined threshold, emissions of one pollutant may be in excess of 82 pounds per day; however, as long as the combined total is below 164 pounds per day, the EDAQMD considers the impact to be less than significant. For example, a project with NO_X emissions of 100 pounds per day and ROG emissions of 20 pounds per day would be considered to have a less-than-significant impact because the combined total would be 120 pounds per day, which is below the combined threshold of 164 pounds per day (Otani pers. comm.).

Construction-Generated Fugitive Dust

According to the EDCAQMD's *Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (EDCAQMD CEQA Guidelines), emissions of fugitive dust PM10 need not be quantified and may be assumed to be not significant if the proposed project includes mitigation measures that will prevent visible dust beyond the property lines (El Dorado County Air Quality Management District 2002). This is because mitigation measures that

[5] The EDCAQMD CEQA Guidelines indicate that other criteria pollutants (e.g., CO) may result in a significant impact during construction if they exceed state or federal ambient air quality standards. However, the Guidelines (Chapter 4, page 3) also state that if ROG and NOx emissions are deemed not significant, then exhaust emissions of CO and PM10 from construction equipment and worker commute vehicles may also be deemed not significant. Due to the short-term nature of construction, primary pollutants of concern are ozone precursors and PM (Baughman pers. comm. A), which are addressed by the thresholds described above.

control fugitive dust emissions can reduce fugitive dust emissions by approximately 50–75%. However, without mitigation, uncontrolled construction dust could contribute to exceedances of the CAAQ and would be considered a significant impact. Use of the PM10 standard as a surrogate for the assessment of PM2.5 impacts is considered appropriate because PM2.5 is a substituent of PM10.

Operations-Generated Ozone Precursors

EDCAQMD has adopted size thresholds for various land uses to identify projects that would result in operational emissions in excess of the district's threshold of 82 pounds per day for ROG and NO_X. Unlike with construction emissions, the 82 pound per day threshold for ROG and NO_X cannot be combined for a total ozone threshold. Accordingly, ROG and NO_X emissions associated with proposed project operations must be evaluated separately against the 82 pound per day threshold (Otani pers. comm.). Based on the EDCAQMD's CEQA Guidelines, the proposed project would exceed the residential screening thresholds (230 single-family dwelling units; 350 multifamily dwelling units). Accordingly, the district's quantitative threshold of 82 pounds per day is used to evaluate ROG and NO_X emissions.

Operations-Generated CO and PM10[6]

EDCAQMD considers CO and PM10 emissions significant if they would cause or contribute to violations of the CAAQS or NAAQS (El Dorado County Air Quality Management District 2002).

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

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.[7] 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, asphyxiation). 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 [e.g., age, gender]). In particular, ozone precursors (ROG and NO_X) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations and, therefore, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment 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.[8]

[6] The EDCAQMD's (2002) CEQA Guidelines also consider SO_2, Pb, sulfates, hydrogen sulfide, vinyl chloride, and visibility particulate to be significant if they exceed the state or federal ambient air quality standards. However, these pollutants are typically associated with industrial sources, which are not included as part of the plan. Accordingly, they are not evaluated further.

[7] On October 1, 2014, the California Supreme Court granted the real party in interest and respondent Friant Ranch, L.P.'s petition for review.

[8] As an example, the Bay Area Air Quality Management District's Multi-Pollutant Evaluation Method requires a 3 to 5% increase in ROG to produce a material change in modeled human health impacts. Based on 2008 ROG and NO_X emissions in the Bay Area, a 3 to 5% increases equates to over 20,000 pounds per day of ROG and NO_X. Although this example is specific to the Bay Area, similar model limitations would be observed in the Sacramento Valley.

Consequently, an analysis of impacts on human health associated with project-generated regional emissions is not included in this analysis. Increased emissions of ozone precursors (ROG and NO_X) generated by the project could increase photochemical reactions and the formation of tropospheric ozone, which at certain concentrations, could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. Although these health effects are associated with ozone, the effects are a result of cumulative and regional ROG and NO_X emissions, and the incremental contribution of the project to specific health outcomes from criteria pollutant emissions would be limited and cannot be solely traced to the project. Please refer to Impact AQ-3 for a discussion of cumulative impacts.

Because localized pollutants generated by a project can directly affect adjacent sensitive receptors, 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,[9] (2) locally concentrated CO (i.e., CO hot-spots),[10] and (3) NOA. Locally adopted thresholds and analysis procedures for each 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).

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).

[9] 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.

[10] Although SO_2 and lead may also concentration locally, the project does not represent a significant source of these pollutants. Accordingly, they are not discussed or evaluated further.

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.

Impacts and Mitigation Measures

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (significant and unavoidable)

El Dorado County is currently designated a nonattainment area for the federal 8-hour ozone and PM2.5 standards (Table 3.2-3). The applicable air quality plan is the 2009 Ozone Plan (last revised in September 2013), which outlines how the SFNA, including western El Dorado County, will meet the 1997 ozone NAAQS by 2018. The 2009 Ozone Plan estimates future emissions in the SFNA and determines strategies necessary for emissions reductions through regulatory controls. Emissions projections are based on population, vehicle, and land use trends typically developed by the regional air quality management districts (e.g., EDCAQMD, SMAQMD) and metropolitan planning organizations, including the Sacramento Area Council of Governments (SACOG).

The EDCAQMD considers projects consistent with the 2009 Ozone Plan if the project satisfies the following criteria.

- Does not require a change in the existing land use designation, such as through a general plan amendment or rezone.
- Does not exceed the "project alone" significance criteria.
- Implements applicable 2009 Ozone Plan emission reduction measures.
- Complies with all applicable district rules and regulations.

Project consistency with each criterion is evaluated below.

Change to Land Use Designation Plan

As described in Section 3.9, *Land Use and Planning and Agricultural Resources*, the CEDHSP includes amendments to *El Dorado County General Plan* land use designations that would change the designation of lands now designated for open space in the El Dorado Hills Specific Plan (EDHSP) to urban development. In addition, undeveloped lands now designated for development in the EDHSP would be redesignated to open space. Because approving the proposed project would amend the General Plan land use diagram, it would conflict with EDCAQMD's first criterion for defining consistency with the 2009 Ozone Plan.

Although the proposed General Plan amendments would not meet the EDCAQMD's first analysis criterion, anticipated growth associated with the CEDHSP is accounted for in the 2009 Ozone Plan and SACOG's Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). As described in Section 3.11, *Population and Housing*, the proposed project would include construction of up to 1,000 residential units, increasing El Dorado County's population by approximately 2,618 residents, based on El Dorado Hills Census and 2009-2013 American Community Survey. The 50,000 square feet of civic-limited commercial use would also slightly increase employment. SACOG's 2012 MTP/SCS forecast is for 6,189 new homes and 14,925 new jobs for Established Communities within El Dorado Hills, including the project area west of El Dorado Hills Boulevard,

and 5,107 new homes and 691 new jobs for Developing Communities within El Dorado Hills, including the project area east of El Dorado Hills Boulevard. Accordingly, the number of new jobs and housing units, and the estimated direct population increase associated with the proposed project would be within the projections of both SACOG and the County, and the proposed project would be consistent with recent growth projections for the region.

Exceedance of "Project Alone" Significance Criteria

As described below under Impact AQ-2, construction of the proposed project would not exceed EDCAQMD's significance criteria with implementation of Mitigation Measures AQ-2a through AQ-2c. However, annual ROG emissions generated during combined project operations would exceed 82 pounds per day. Accordingly, operation of the proposed project would exceed EDCAQMD's "project alone" significance criteria.

Implementation of Applicable Ozone Plan Reduction Measures

Appendix E to the EDCAQMD CEQA Guidelines outlines measures designed to reduce ozone emissions. The measures target mobile source emissions through bicycle/pedestrian/transit, parking supply, and transportation demand management strategies. The measures target area source and energy emissions through building design strategies. As described above, the proposed project would provide a new specific plan that allows for pedestrian-scale development, a walkable community linking neighborhoods, and mixed-use development. This is consistent with the 2009 Ozone Plan and El Dorado County's long-term goal to encourage infill and integrated land use planning. Siting land uses closer to employment would reduce vehicle miles traveled, encourage alternative transportation, and contribute to long-term mobile source reductions. The CEDHSP contains the following proposed policies that would be consistent with mobile source reduction measures in the 2009 Ozone Plan.

- Policy 8.1, minimize off-street parking
- Policy 8.2, provide bicycle parking
- Policy 8.3, provide parking for low-emitting vehicles
- Policy 8.4, install plug-in electric vehicle charging stations
- Policy 8.5, pre-wire residential parking areas for future electric vehicles
- Policy 8.10, create or participate in a transportation management association

The CEDHSP also includes the following energy efficiency and renewable energy measures that would reduce building energy consumption, consistent with the area source and building energy reduction measures in the 2009 Ozone Plan.

- Policy 8.11, Title 24 standards
- Policy 8.16, EnergyStar appliances
- Policies 8.20–8.21, High efficiency lighting

Compliance with Air District Rules and Regulations

As described in Impact AQ-2 (below), implementation of Mitigation Measure AQ-2c requires compliance with EDCAQMD Rule 223-1. In addition, Mitigation Measure AQ-4 would require the proposed project to be consistent with EDCAQMD Rule 223-2, which requires submittal of an Asbestos Dust Mitigation Plan to the EDCAQMD prior to the start of any construction activity (see Impact AQ-4). Proposed project implementation also would comply with all other applicable EDCAQMD rules, as described under *Regulatory Setting* in Section 3.2.1.

Conclusion

Although the proposed project requires an amendment to the General Plan, anticipated growth associated with the proposed project would not exceed SACOG's socioeconomic projections for the region. Moreover, the CEDHSP Sustainability Element includes several policies that would contribute to criteria pollutant reductions. These policies are consistent with reduction measures in the 2009 Ozone Plan and SACOG's MTP/SCS. The plan also would comply with applicable EDCAQMD rules and regulations, including Rules 223-1 and 223-2. Nevertheless, operational ROG emissions are estimated to exceed EDCAQMD's project alone significance criteria (see Impact AQ-2b and Impact AQ-2c) even with implementation of applicable CEDHSP policies. Estimated ROG emissions would primarily result from the use of personal consumer products and application of architectural coatings on private residences. There is no feasible mitigation to reduce ROG emissions below the EDCAQMD's threshold.

Accordingly, based on EDCAQMD's analysis criteria for consistency with applicable air quality plans, the proposed project could 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.

Impact AQ-2a: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction (less than significant with mitigation)

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, and material-hauling truck trips. In addition, fugitive dust emissions would result from site preparation and grading. Criteria pollutant emissions generated by these sources were quantified using CalEEMod and RCEM. See Appendix C for model outputs and detailed assumptions.

Estimated construction emission levels are summarized in Table 3.2-6. As shown in Table 3.2-5, several construction activities would likely occur concurrently. To ensure a conservative analysis, maximum daily emissions during these periods of overlap were estimated assuming all equipment would operate at the same time. This approach identifies the maximum total project-related air quality impact during construction.

Table 3.2-6. Estimated Maximum Unmitigated Construction Emissions (pounds per day)[a, b]

				PM10			PM2.5		
Year	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
2016	10	**109**	58	18	5	21	10	5	13
2017	13	**133**	82	26	7	32	12	6	17
2018	16	**112**	80	18	5	23	10	5	15
2019	284	117	99	19	6	25	10	5	15
2020	253	25	32	2	1	3	<1	1	2
2021	**142**	22	25	1	1	2	<1	1	1
2022	140	50	51	19	2	21	10	2	12
2023	136	45	48	19	2	21	10	2	12
2024	**98**	17	22	<1	1	1	<1	1	1
2025	57	15	22	<1	1	1	<1	1	1
2026	0	0	0	0	0	0	0	0	0
2027	3	24	25	18	1	19	10	1	11
2028	64	38	45	18	2	20	10	1	11
2029	295	15	24	1	1	2	<1	1	1
2030	222	35	53	6	1	7	1	1	2
Threshold	82	82	–	BMPs	–	–	BMPs	–	–

Source: CalEEMod and RCEM (based on ICF modeling conducted in May and August 2015).

BMPs = best management practices.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM2.5 = particulate matter less than or equal to 2.5 microns.
PM10 = particulate matter less than or equal to 10 microns.
ROG = reactive organic compounds.

[a] Exceedances of the EDCAQMD's thresholds are shown in underline.

[b] **Bold** text and shading indicate that although the EDCAQMD NO_X threshold of 82 pounds per day would be exceeded, combined ROG and NO_X emissions would not exceed EDCAQMD's total ozone threshold of 164 pounds per day.

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.

Implementation of Mitigation Measures AQ-2a and AQ-2b, identified below, is required to reduce ROG emissions from architectural coatings and NO_X emissions from construction equipment, respectively. The EDCAQMD CEQA Guidelines consider dust impacts to be less than significant for projects that implement best management practices (BMPs). Mitigation Measure AQ-2c outlines these BMPs and is required to reduce the impact of construction-related fugitive dust to a less-than-

significant level. Table 3.2-7 summarizes maximum daily emissions with implementation of Mitigation Measures AQ-2a through AQ-2c.

Table 3.2-7. Estimated Maximum Mitigated Construction Emissions (pounds per day)[a]

				PM10			PM2.5		
Year	ROG[b]	NO_X[c]	CO	Dust[d]	Exhaust	Total	Dust[d]	Exhaust	Total
2016	7	52	50	7	4	10	4	3	7
2017	13	**93**	82	14	7	20	5	6	11
2018	11	78	80	7	5	12	4	5	9
2019	14	82	99	8	6	13	4	5	9
2020	13	18	32	1	1	2	<1	1	1
2021	8	15	25	<1	1	1	<1	1	1
2022	11	35	51	7	2	10	4	2	6
2023	7	31	48	7	2	9	4	2	6
2024	6	12	22	<1	1	1	<1	1	1
2025	2	11	22	<1	1	1	<1	1	1
2026	0	0	0	0	0	0	0	0	0
2027	3	16	25	7	1	8	4	1	5
2028	4	26	45	7	2	9	4	1	5
2029	14	10	24	1	1	1	<1	1	1
2030	12	24	53	5	1	6	1	1	2
Threshold	82	82	–	BMPs	–	–	BMPs	–	–

Source: CalEEMod and RCEM (based on ICF modeling conducted in May and August 2015).

BMPs = best management practices.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM2.5 = particulate matter less than or equal to 2.5 microns.
PM10 = particulate matter less than or equal to 10 microns.
ROG = reactive organic compounds.

[a] **Bold** text and shading indicate that although the EDCAQMD NO_X threshold of 82 pounds per day would be exceeded, combined ROG and NO_X emissions would not exceed EDCAQMD's total ozone threshold of 164 pounds per day.

[b] Assumes use of low-VOC coatings that have a VOC content of 10 g/L per Mitigation Measure AQ-2a.

[c] Assumes a 30% reduction in NO_X per Mitigation Measure AQ-2b.

[d] Assumes a 61% reduction in fugitive dust per Mitigation Measure AQ-2c.

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. Accordingly, construction emissions would result in a less-than-significant impact with implementation of Mitigation Measures AQ-2a through AQ-2c.

Mitigation Measure AQ-2a: Use low-VOC coatings during construction

The project applicant will require all construction contractors to use low-VOC coatings that have a VOC content of 10 g/L or less during construction. The project applicant shall submit evidence of the use of low-VOC coatings to EDCAQMD prior to the start of construction.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X 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, 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 project applicant will ensure that the heavy-duty off-road equipment used 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, 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 prior to the start of construction that the 30% 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]).

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 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 EDCAQMD prior to the start of any construction activity.

Impact AQ-2b: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operation (significant and unavoidable)

Occupancy of the proposed project has the potential to create air quality impacts primarily associated with mobile and area sources. Motor vehicle traffic would include daily resident access, visitor trips, waste management trucks, and employee trips. Area sources would include landscaping equipment, off-gassing during the reapplication of architectural coatings, consumer products

(solvents, cleaning supplies, cosmetics, toiletries), and onsite natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the plan's long-term operational emissions, which were quantified using CalEEMod and traffic data from the project's transportation impact assessment (Appendix L).

Estimated operational emissions at full build-out in 2035 are summarized in Table 3.2-8. As described above, the analysis accounts for emissions benefits achieved by mandatory CEDSHP policies that prohibit wood-burning fireplaces and stoves (Policies 8.50 and 8.51) and require buildings to exceed the Title 24 energy standards (Policy 8.11). Vehicle trip reductions associated with mixed-use design, including walking and internal trips in the project area, are also included in the analysis. Additional reductions may be achieved by voluntary CEDHSP policies that reduce energy consumption, particularly natural gas usage, and encourage alternative transportation (e.g., bicycling and walking); however, these policies were not quantified and were not included as part of the emissions benefits because the exact number of features is currently unknown. Accordingly, the emissions presented in Table 3.2-8 likely represent a conservative estimate of operational impacts. See Appendix C for model outputs and detailed assumptions.

Table 3.2-8. Estimated 2035 Operational Emissions (pounds per day)[a]

Location	ROG	NO_X	CO	PM10	PM2.5
Pedregal					
Area sources	20	1	20	1	1
Mobile sources	4	5	33	10	3
Total Pedregal[b]	24	6	52	11	3
Serrano Westside					
Area sources	57	4	64	2	2
Mobile sources	15	20	131	41	11
Total Serrano Westside[b]	72	24	196	43	13
Total combined emissions[b]	<u>96</u>	30	248	54	16
EDCAQMD threshold	82	82	CAAQS[c]	CAAQS	CAAQS

Source: CalEEMod and RCEM (based on ICF modeling conducted in May 2015).

CAAQS = California ambient air quality standards.
CO = carbon monoxide.
EDCAQMD = El Dorado County Air Quality Management District.
NO_X = nitrogen oxides.
PM2.5 = particulate matter less than or equal to 2.5 microns.
PM10 = particulate matter less than or equal to 10 microns.
ROG = reactive organic compounds.

[a] Exceedances of the EDCAQMD's thresholds are shown in <u>underline</u>. Emissions account for reductions achieved by mixed-use design and CEDHSP Policies 8.11, 8.50 and 8.51.

[b] Values may not add due to rounding.

[c] Refer to Impact AQ-4c for significance determination.

As shown in Table 3.2-8, ROG emissions would exceed the EDCAQMD's pollutant threshold of 82 pounds per day. PM emissions may also exceed EDCAQMD's CAAQS significance criterion.

As noted above, the CEDHSP Sustainability Element includes several policies that would reduce operational criteria pollutant emissions. CEDHSP Policy 8.11 requires that all buildings exceed

energy efficiency standards in Title 24 by a minimum of 15%. CEDHSP Policy 8.50 establishes requirements for installed gas fireplaces and woodstoves. CEDHSP Policy 8.51 prohibits open-hearth wood-burning fireplaces. Emissions benefits achieved by CEDHSP Policies 8.11, 8.50 and 8.51 have been incorporated into the emissions modeling presented in Table 3.2-8. Based on CalEEMod modeling, these policies would reduce criteria pollutant emissions by 48% to 96%, depending on the pollutant (see Appendix C) relative to emissions levels without implementation of the policies. Additional reductions may be achieved by policies that reduce natural gas usage and vehicle trips. For example, potential mobile source reductions achieved by CEDHSP Policies 8.1 through 8.5 and 8.10 could range from 7% to 52%, depending on the pollutant (California Air Pollution Control Officers Association 2010).

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 ROG emissions on air quality during proposed project operation would be significant and unavoidable. The impact of PM10 emissions would also be 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)

As shown in Table 3.2-5 and Appendix C, construction of several residential units would begin in 2016 with site-preparation and grading. Vertical construction of these units would occur in 2018 and operation emissions could begin immediately thereafter in 2019. Accordingly, concurrent construction and operational activities would occur from 2019 to 2030, resulting in higher maximum daily emissions than either component when analyzed separately.

Combined construction and operational emissions are presented in Table 3.2-9 and compared with the EDCAQMD's thresholds. Note that construction emissions assume implementation of Mitigation Measures AQ-2a through AQ-2c; operational emissions include emissions benefits from applicable CEDHSP policies. The analysis also conservatively assumes all structures would be fully occupied immediately following construction.

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, 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 ROG and NO_X emissions during combined project construction and operation would be significant and unavoidable. The impact of PM10 emissions would also be significant and unavoidable.

Table 3.2-9. Estimated Mitigated Combined Construction and Operational Emissions (pounds per day)[a]

				PM10			PM2.5		
Year	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
2019	14	82	101	7	4	10	4	3	7
2020	24	26	82	21	7	28	7	7	13
2021	34	34	149	26	7	32	9	6	15
2022	42	57	196	30	7	37	10	7	16
2023	43	55	210	27	3	30	7	3	10
2024	65	40	212	33	5	36	9	3	12
2025	64	40	220	42	4	47	13	4	18
2026	64	30	207	44	4	48	14	4	18
2027	66	47	233	37	3	40	10	3	13
2028	68	57	252	37	3	40	10	3	12
2029	78	41	234	37	2	39	10	2	12
2030	84	55	284	52	4	56	16	3	19
EDCAPCD threshold	82	82	CAAQS[b]	–	–	CAAQS	–	–	CAAQS

Source: CalEEMod and RCEM (based on ICF modeling conducted in May and August 2015).

CAAQS = California ambient air quality standards.
CO = carbon monoxide.
EDCAQMD = El Dorado County Air Quality Management District.
NO_X = nitrogen oxides.
PM2.5 = particulate matter less than or equal to 2.5 microns.
PM10 = particulate matter less than or equal to 10 microns.
ROG = reactive organic compounds.

[a] Emissions assume implementation of Mitigation Measures AQ-2a through 2c, mixed-use design, and CEDHSP Policies 8.11, 8.16, 8.50, and 8.51.

[b] Refer to Impact AQ-4c for significance determination.

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)

EDCAQMD considers projects to have less-than-significant cumulative air quality impacts if the project satisfies the criteria described in Impact AQ-1 for consistency with applicable air quality plans.

Although the proposed project requires an amendment to the General Plan, anticipated growth associated with the proposed project would not exceed SACOG's socioeconomic projections for the region. Moreover, the CEDHSP Sustainability Element includes several policies that would contribute to criteria pollutant reductions. These policies are consistent with reduction measures in the 2009 Ozone Plan and SACOG's MTP/SCS. The proposed project also would comply with applicable EDCAQMD rules and regulations, including Rule 223-1 and 223-2. Despite these plan benefits, combined construction and operational ROG and NO_X and operational ROG emissions are estimated to exceed the EDCAQMD's project-alone significance criteria (see Impacts AQ-2b and AQ-2c). Although ROG and NO_X emissions would slightly increase, which could increase photochemical

reactions and the formation of tropospheric ozone, concentrations depend on ROG and NO_X emissions throughout the air basin and complex photochemistry. Moreover, an increase in ozone concentration does not guarantee an increase in respiratory ailments as individuals may be exposed and experience no symptoms at varying concentrations. Nevertheless, based on EDCAQMD's analysis criteria outlined in the district's CEQA Guidelines, the proposed project would result in a cumulative air quality impact. This impact would be significant and unavoidable, and no additional mitigation is available to reduce the impact to a less-than–significant level.

Impact AQ-4a: Expose sensitive receptors to substantial diesel particulate matter concentrations during construction (less than significant)

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 70-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. 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.

Construction of the entire project would occur over a 15-year period, which is shorter than the 70-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 DPM benefits (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. 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.

Impact AQ-4b: Expose sensitive receptors to substantial toxic air contaminant concentrations during operation (less than significant)

The residential, civic-limited commercial, and open space uses would be minimal sources of operational DPM emissions because DPM-generating equipment and activities, such as heavy-duty diesel trucks, would be limited under proposed project operations. Accordingly, project-generated operational DPM health risks are not evaluated further because there would be no project-level impact.

However, implementation of the proposed project would result in residential uses within an urban environment adjacent to a heavily traveled roadway (US 50). Vehicle emissions are a source of toxic air contaminants, of which DPM composes the largest percentage of the emissions and related risk. In addition, there are four gas stations permitted by EDCAQMD located on Saratoga Way and Town Center Drive. Vapors from fuels are released during the filling of underground fuel storage tanks and during fueling of individual vehicles, and some of the vapors are TACs. However, EDCAQMD has stringent requirements for the control of vapor emissions from such facilities. Consistent with the guidance from EDCAQMD (Baughman pers. comm. A), SMAQMD's (2011) Roadway Protocol was used to assess potential health risks from traffic on US 50. The SJVAPCD (2007) *Guidance for Air Dispersion Modeling* and the quantity of fuel dispensed annually by the four gas stations were used to evaluate TAC health risks from the stations. Table 3.2-10 summarizes the results of the analysis. See Appendix C for the calculation files. As shown in Table 3.2-10, background cancer risk and HI would be below the EDCAQMD-designated cancer risk threshold of 100 per million and HI threshold of 10. The potential ambient TAC health risks to existing and future receptors would exist regardless of whether the proposed project is implemented.

Table 3.2-10. Resident Exposure to Background Health Risks

Source	Cancer Risk (per million)	Hazard Index
US 50	83	0.05
Local gasoline stations	0.00	0.06
Total[a]	83	0.11
Threshold	100	10

Sources: Sacramento Metropolitan Air Quality Management District 2011 (US 50 data); San Joaquin Valley Air Pollution Control District 2007 (gas station data); Bay Area Air Quality Management District 2011 (threshold).

[a] Two back-up diesel generators are also located approximately 1,000 from southern border of the CEDHSP area. However, these sources were excluded from the analysis because their use would be temporary and only occur in emergency situations. A natural gas boiler is also located at the Holiday Inn Express on Town Center Boulevard; however, insufficient data are available to quantify health risks. Moreover, the boiler is more than 1,500 feet from the southern border of the planning area.

Although there would not be substantial adverse risk to project occupants, risks would be reduced through CEDHSP Policy 8.59, which requires installation of MERV-6 air filters on all residential central air or ventilation systems. Filters more thorough than MERV 8 are required in nonresidential central air or ventilation systems. According to the EPA (2009), MERV 6 filters remove 35% to 50% of PM10 and MERV 8 filters remove greater than 70% of PM10. Implementation of Policy 8.59 will further reduce project resident exposure to ambient health risks from TACs.

Based on the above analysis, CEDHSP exposure to ambient TAC health risks would be a less-than-significant impact.

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) 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).

- 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). The EDCAQMD recognizes SMAQMD's screening criteria as a valid approach for evaluating potential CO impacts (Baughman pers. comm. A). Consequently, exposure of sensitive receptors to 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.

Impact AQ-4d: Expose sensitive receptors to naturally occurring asbestos during construction (less than significant with mitigation)

Disturbance of rock and soil that contains NOA can result in exposure of the public to health risks from inhalation of NOA-containing dust. As shown in Figure 3.2-1, portions of the proposed project would lie within areas with known to contain asbestos. Youngdahl Consulting Group completed an assessment of NOA for the Pedregal and Serrano Westside 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 area (Youngdahl Consulting Group 2012a). NOA traces (less than 0.25%) were also identified in 6 of 14 samples of rock and soil collected from the test pits in the Serrano Westside area (Youngdahl Consulting Group 2012b).

The presence of soil that contains NOA does not guarantee that construction activities would result in increased incidence of illness. Nevertheless, earthmoving activities during construction could expose NOA and increase the potential for individuals to become exposed. This would be a potentially significant impact. Compliance with EDCAQMD's Rule 223-2 and periodic monitoring of earthwork activities for NOA would minimize the public's exposure to NOA (Youngdahl Consulting

Group 2012a, 2012b). Rule 223 also requires specific actions such as capping with clean material if NOA is present in the near-surface or at finish-grade elevations. With implementation of Mitigation Measure AQ-4, the impact of NOA exposure would be reduced to a less-than-significant level.

Mitigation Measure AQ-4: Submit and implement an Asbestos Dust Mitigation Plan and perform naturally occurring asbestos evaluations during site grading as necessary

If in a NOA area and required by EDCAQMD, the project applicant shall prepare and submit an Asbestos Dust Mitigation Plan to EDCAQMD prior to the start of any construction activity, consistent 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.

Impact AQ-5: Create objectionable odors affecting a substantial number of people (less than significant)

Potential odor sources during construction activities would include diesel exhaust from heavy-duty equipment and the use of architectural coatings. Construction-related operations near existing receptors would be temporary in nature, and construction activities would not be likely to result in nuisance odors that would violate EDCAQMD Rule 205.

Potential odor sources from proposed project operations could include diesel exhaust from ongoing trash pick-up and the use of architectural coatings during routine maintenance; limited odors may also result from residential cooking appliances (e.g., range hood vents). These odors are expected to be minor and are not likely to dominate ambient odors generated by the surrounding environment, which includes adjacent residential and commercial land uses, as well as traffic on US 50. Moreover, the land uses associated with the proposed project are not considered by EDCAQMD to be facilities with the potential to result in nuisance odors. Accordingly, proposed project operation is not expected to result in odor that would affect a substantial number of people, and impacts would be less than significant.

The proposed project operations would not generate nuisance odors, and it is expected that new residences would not be exposed to nuisance odors produced by the EID El Dorado Hills WWTP because the planning areas are at least a mile away, and because EID is currently installing an odor-control system at the WWTP that will be operational before the proposed project is constructed. This impact would be 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 (less than significant)

Construction

Construction criteria pollutant emissions for the Park Drive extension, potential Silva Valley Parkway connection, Pedregal water lines, recycled water line are included in the emissions reported in Impact AQ-2a (Table 3.2-6). On an individual basis, none of the offsite improvements would result in emissions that would exceed thresholds (Appendix C). Emissions from

infrastructure improvements would be further reduced through implementation of Mitigation Measures AQ-2a, AQ-2b, and AQ-2c. Impacts would be less than significant.

Construction activities have the potential to disturb rock and soil that contains NOA if the offsite improvements are located in areas known to contain asbestos. However, compliance with EDCAQMD Rule 223-2 and implementation of Mitigation Measure AQ-4 would reduce the impact of NOA exposure to a less-than-significant level by requiring soils testing and implementation of NOA control measures if NOA is present.

Operation

It is anticipated that operation of the recycled water line, and Pedregal water lines would not result in a significant impact related to TACs or CO concentrations, because operation of the facilities and infrastructure are not anticipated to generate substantial TAC sources or motor vehicle trips sufficient to cause elevated CO concentrations in excess of EDCAQMD standards. The extension of Park Drive to the Westside Roundabout and the potential Silva Valley Parkway connection would also not result in CO emissions that would exceed thresholds, because these offsite improvements would result in vehicle traffic substantially less than the SMAQMD screening criterion of 31,600 vehicles per hour and would not affect any intersections experiencing more than 31,600 vehicles per hour. The proposed pedestrian crossings into the project from the La Borgata and Raley's shopping complex would be wooden bridges, which would not involve a substantial amount of construction activities that would generate TAC or CO emissions or generate odors, and their exclusive use for non-motorized activities would result in no TAC or CO emissions.

Criteria pollutant emissions associated with the use of offsite utility and roadway improvements were included in the analysis of project emissions, because the activities that generate emissions, such as consuming water or driving, are associated with the land uses in the specific plan and were included in the project analysis. There would be additional minor emissions associated with operations and maintenance (O&M) activities for the water lines and roadways that are not included in the analysis of project operational emissions. However, O&M vehicle trips to service the water lines and roadways would amount to a limited number of trips, and would not contribute an appreciable amount of emissions.

The offsite improvements include road extensions and infrastructure and are not anticipated to generate significant levels of odors.

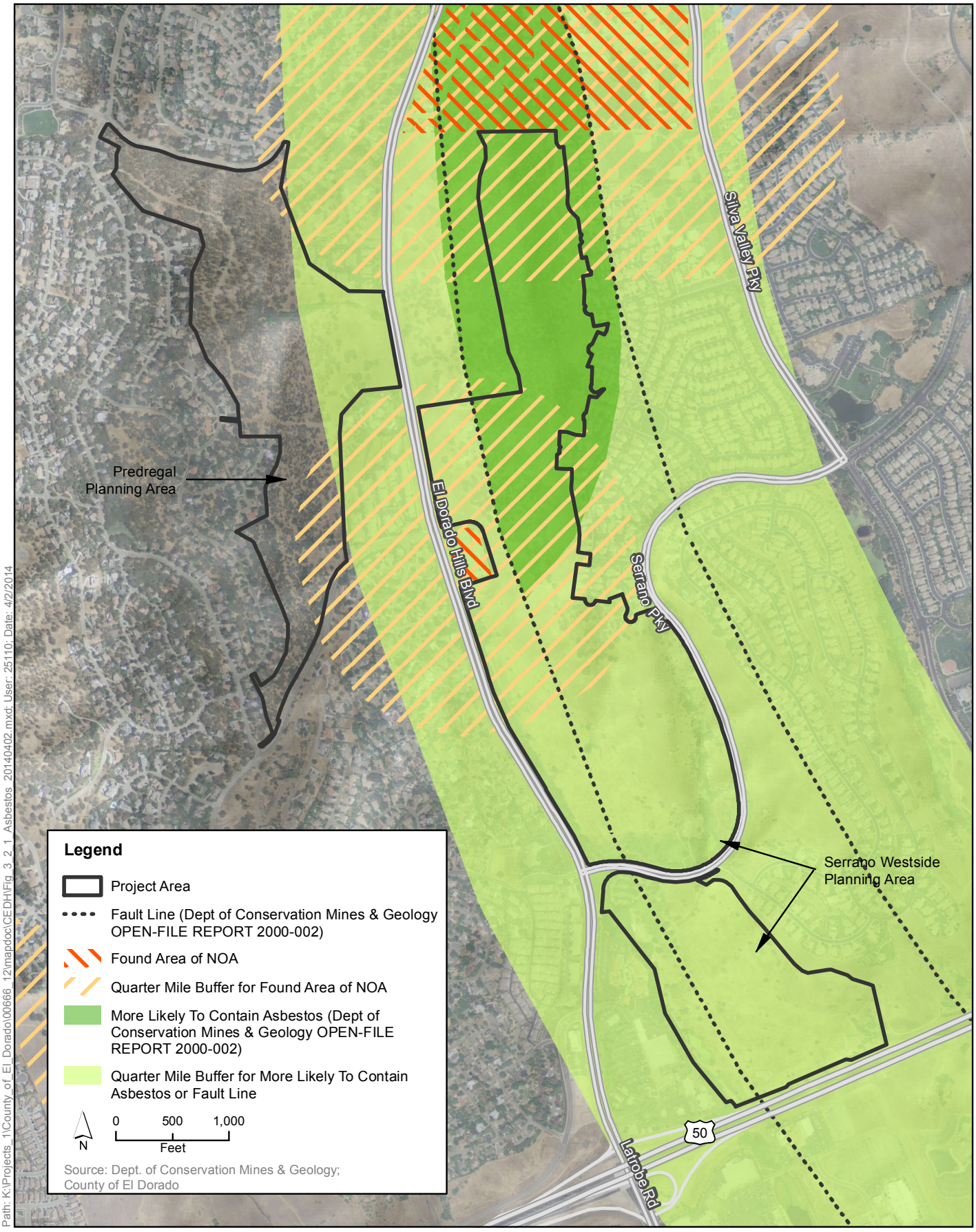

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Figure 3.2-1
Naturally Occurring Asbestos in the Planning Area

3.3 Biological Resources

This section describes the regulatory setting and environmental setting for biological resources and analyzes potential impacts that could result from implementation of the project.

3.3.1 Existing Conditions

Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS) (with jurisdiction over plants, wildlife, and resident fish) and the National Marine Fisheries Service (NMFS) (with jurisdiction over anadromous fish and marine fish and mammals) oversee the ESA. Section 7 of the ESA mandates that all federal agencies consult with USFWS and NMFS if they determine that a proposed project may affect a listed species or its habitat. Section 7 requirements do not apply to nonfederal actions. At present, a federal permit is expected to be required for the proposed project and would allow consultation under Section 7 for effects on federally listed species. Potential habitat for the federally listed California red-legged frog occurs within the Central El Dorado Hills Specific Plan (CEDHSP) area.

Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. *Take* is defined as the action of or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with respect to take at the time of listing.

Section 10 of the ESA requires the issuance of an incidental take permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires the preparation and implementation of a habitat conservation plan, incidental to implementation of the project, which would offset the take of individuals that may occur by providing for the overall preservation of the affected species through specific mitigation measures.

Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

CWA empowers EPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader

area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands, including any or all of the following.

- Areas within the ordinary high water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands, including coastal wetlands.

On January 9, 2001, the U.S. Supreme Court made a decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* (SWANCC) [121 S.CT. 675, 2001] that affected U.S. Army Corps of Engineers' (USACE) jurisdiction in isolated waters. Based on SWANCC, the USACE no longer has jurisdiction or regulates isolated wetlands (i.e., wetlands that have no hydrologic connection with waters of the United States).

A federal ruling on two consolidated cases (June 19, 2006; *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers*), referred to as the Rapanos decision, affects whether some waters or wetlands are considered jurisdictional under the CWA. In these cases, the U.S. Supreme Court reviewed the USACE definition of waters of the United States and whether or not it extended out to tributaries of traditional navigable waters (TNW) or wetlands adjacent to those tributaries. The decision provided two standards for determining jurisdiction of water bodies that are not TNWs: (1) if the non-TNW is a relatively permanent water (RPW) or is a wetland directly connected to a RPW, or (2) if the water body has "significant nexus" to a TNW. The significant nexus definition is based on the purpose of the CWA ("restore and maintain the chemical, physical, and biological integrity of the Nation's waters"). Guidance issued by EPA and USACE on the Rapanos decision requires application of the two standards to support a jurisdictional determination for a water body.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. The USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. The nationwide permits (NWPs) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of the National Environmental Policy Act (NEPA), ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401. Because the proposed project would discharge fill into waters of the United States in the project area, a Section 404 permit would be required. The applicant has applied for a Section 404 permit.

Permits for Stormwater Discharge (Section 402)

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the Regional Water Quality Control Boards (Regional Water Boards) (see the related discussion under *Porter-Cologne Water Quality Control Act*). The project area is under the jurisdiction of the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants. Because the proposed project would disturb more than 1 acre of land, an NPDES permit and SWPPP would be required for construction activities.

Additionally, the County is in the process of implementing requirements of the State Water Board's NPDES General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Order 2013-0001-DWQ (Order). The proposed project qualifies as a "Regulated Project" as defined in Section E.12 of the Order and therefore will be required to comply with the standards provided in the Order.

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401. A Section 401 Water Quality Certification from the Central Valley Water Board would be required for waters of the United States identified in the project area.

For each of the above sections of the CWA, the project applicant would obtain and comply with the applicable federal and state permits, and all conditions that are attached to those permits would be implemented as part of the proposed project. The permit conditions would be clearly identified in the construction plans and specifications, and monitored during and after construction to ensure compliance. Because the proposed project would require a Section 404 permit and has potential to discharge pollutant into waters of the United States, a Section 401 permit would be required. The applicant will apply for a Section 401 permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) domestically implements a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act further provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird…" (United States Code [USC], Title 16, Section 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in the November 1, 2013 *Federal Register* (FR) (Code of Federal Regulations [CFR], Title 50, Section10.13). This list comprises several hundred species, including essentially all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and of personal property. USFWS publishes a list of birds of conservation concern (BCC) to identify migratory nongame birds that are likely to become candidates for listing under ESA without additional conservation actions. The BCC list is intended to stimulate coordinated and collaborative conservation efforts among federal, state, tribal, and private parties.

The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 USC 668) prohibits take and disturbance of individuals and nests. Take permits for birds or body parts are limited to religious, scientific, or falconry pursuits. However, the BGEPA was amended in 1978 to allow mining developers to apply to USFWS for permits to remove inactive golden eagle (*Aquila chrysaetos*) nests in the course of "resource development or recovery" operations. With the 2007 removal of bald eagle from the ESA list of threatened and endangered species, USFWS issued new regulations to authorize the limited take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles under the BGEPA, where the take to be authorized is associated with otherwise lawful activities. A final Eagle Permit Rule was published on September 11, 2009 (74 FR 46836–46879; 50 CFR 22.26).

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order (EO) 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO established the National Invasive Species Council (NISC), which is composed of federal agencies and departments, and a supporting Invasive Species Advisory Committee (ISAC) composed of state, local, and private entities. In 2008, the NISC released an updated national invasive species management plan (National Invasive Species Council 2008) that recommends objectives and measures to implement the EO and prevent the introduction and spread of invasive species. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them. Because the proposed project construction would require federal permits and has potential to spread invasive plant species, measures are included in this CEQA document to prevent the introduction and spread of invasive plants.

State

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a species that is federally and state listed, compliance with the ESA satisfies the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only state listed, project proponents must apply for a take permit under Section 2081(b).

California Fish and Game Code

Several sections of the California Fish and Game Code apply to the proposed project and are described below: 1602, 3503, 3503.5, 3511, and 3513.

Section 1602: Streambed Alteration Agreements

Under California Fish and Game Code 1602, public agencies are required to notify CDFW before undertaking any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a streambed alteration agreement (SAA) that becomes part of the plans, specifications, and bid documents for the project. Because the proposed project would alter the natural flow, bed, and bank of streams in the project area, an SAA would be required.

Sections 3503 and 3503.5: Birds and Raptors

Section 3503 of the California Fish and Game Code prohibits the killing of birds and the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Trees and shrubs in and adjacent to the project area provide suitable nesting habitat for birds and raptors.

Section 3511, 3515, 4700, and 5050: Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species, referred to as fully protected species. Section 5050 lists fully protected amphibians and reptiles; Section 3515 lists fully protected fish; Section 3511 lists protected birds; and Section 4700 lists protected mammals. The California Fish and Game Code defines *take* as "an action hunt, pursue, catch, capture, or kill or an attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

Section 3513: Migratory Birds

California Fish and Game Code 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. CESA defers to CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under CNPPA are protected under CEQA, not under CESA. Because the proposed project has potential to adversely affect rare and endangered plants, surveys for these plants and mitigation for any effects are required and are discussed in this document.

Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. Therefore, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under CWA Section 404. If USACE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the Regional Water Board may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state. Because the project would place fill material into wetlands and drainages, which are also waters of the state, an application for water quality certification from the Central Valley Water Board would be needed.

Oak Woodlands Conservation Act

Senate Bill (SB) 1334, the Oak Woodlands Conservation Act was enacted by the Legislature in 2004 to add Section 21083.4 to the Public Resources Code (CEQA) regarding oak woodlands conservation. Section 21083.4(b) requires that a county shall make a determination whether a project within its jurisdiction may result in conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect on oak woodlands, the county must require one or more of four oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of woodlands. These alternatives are: conserving oak woodlands through conservation easements; planting an appropriate number of trees and maintaining them; contributing funds to the Oak Woodlands Conservation Fund; or other mitigation measures developed by the county. The County of El Dorado implements the requirements of this act through the County General Plan Policy 7.4.4.4.

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. Because the additional CEQA analysis for the OWMP has not been completed and the fund is not currently available, Option B cannot be used as a mitigation strategy for development project impacts on oak woodlands, and the proposed project mitigation will follow Option A.[1])

Environmental Setting

Planning Areas

The Serrano Westside and Pedregal planning areas (341 acres total) are considered the onsite project area. An additional offsite project area includes nine locations proposed for infrastructure improvements or potential infrastructure improvements related to the proposed project.

[1] Under Option A, project applicants shall adhere to tree canopy retention and replacement standards presented in County General Plan Policy 7.4.4.4, the full text of which is presented in Appendix B. The Interim Interpretive Guidelines (IIG) for implementing General Plan Policy 7.4.4.4 (El Dorado County 2007) provide specific guidance for determining canopy and retention requirements.

Serrano Westside

Serrano Westside planning area consists of approximately 239 acres of the former El Dorado Hills Executive Golf Course and undeveloped oak woodland and annual grassland associated with Serrano Village D1, Lots C and D. The elevation ranges from approximately 600 to 1,020 feet above mean sea level (AMSL). Although most of the Serrano Westside planning area was developed as a golf course, it has not been maintained since approximately 2007and most of the fairways have reverted to annual grassland. Annual grassland covers much of the site, with oak woodland dominated by blue oak in the northwest portion of Serrano Westside, and riparian woodland along the creek, intermittent drainages, and around a few of the ponds. Adjacent land uses consist of a shopping center, residences, El Dorado Hills Fire Station 85, and undeveloped land.

Pedregal

Pedregal consists of approximately 102 acres on steep terrain, ranging in elevation from approximately 740 to 1,060 feet AMSL. Vegetation communities on the Pedregal parcel consist of oak woodland, riparian woodland, and annual grassland. The area is currently undeveloped, but is surrounded to the north, south, and west by residential development. Adjacent land uses are houses and apartment complexes.

Methods

The data provided in this section were summarized from the following studies prepared for the project. Impact conclusions and mitigation measures were based on the results of these studies and reconnaissance-level biological surveys:

- *Special-Status Plant Survey for Pedregal Property, El Dorado County* (ECORP Consulting 2006).
- *Special-Status Plant Survey for Executive Golf Course* (ECORP Consulting 2009a).
- *Special-Status Plant Survey for Central El Dorado Hills Specific Plan* (El Dorado County, California) (ECORP Consulting 2013a).
- *Central El Dorado Hills Specific Plan Area—Early Season Special-Status Plant Survey Results* (ECORP Consulting 2013b).
- *Wetland Delineation for Pedregal Property, El Dorado County, California* (ECORP Consulting 2005a).
- *Pedregal Property Revised Wetland Delineation* (ECORP Consulting 2005b).
- *Re-Verification of the Pedregal Property Wetland Delineation* (ECORP Consulting 2011).
- *Wetland Delineation for Executive Golf Course, El Dorado County, California* (ECORP Consulting 2009b).
- *Executive Golf Course, El Dorado County, California—Revised Wetland Delineation* (ECORP Consulting 2009c).
- *2012 Dry Season 90-Day Report of Findings Regarding Federally-Listed Branchiopods for Central El Dorado Hills Specific Plan* (El Dorado County, California) (ECORP Consulting 2013c).
- *Valley Elderberry Longhorn Beetle (VELB) Survey for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013d).

- *California Red-Legged Frog (*Rana draytonii*) Habitat Assessment for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013e).
- *Foothill Yellow-Legged Frog Survey and Habitat Assessment Results for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013f).
- *California Tiger Salamander (*Ambystoma californiense*) Habitat Assessment for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013g).
- *Results of Surveys for Blainville's Horned Lizard and Western Spadefoot Toad for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013h).
- *Western Pond Turtle Survey Results for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013i).
- *Special Status Nesting Bird Survey for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013j).
- *Bat Study Report Central El Dorado Hills Specific Plan, El Dorado County, California* (Wyatt 2013).
- *Central El Dorado Hills Specific Plan – Fisheries Assessment, El Dorado County, California* (ECORP Consulting 2013k).
- *2012-2013 Wet Season 90-Day Report of Findings Regarding Federally-Listed Branchiopods for Central El Dorado Hills Specific Plan (El Dorado County, California)* (ECORP Consulting 2013l).
- *California Rapid Assessment Method Analysis for Central El Dorado Hills Specific Plan, El Dorado County, California* (ECORP Consulting 2013m).
- *Biological Resources Study and Important Habitat Mitigation Plan for Oak Woodlands in the Central El Dorado Hills Specific Plan, El Dorado County* (ECORP Consulting 2014a).
- *Preliminary Wetland Assessment for Central El Dorado Hills Specific Plan Off-Site Infrastructure Improvement Areas, El Dorado County, California* (ECORP Consulting 2014b).
- *Preliminary Wetland and Special-Status Species Assessment for Central El Dorado Hills Specific Plan 85-Acre Addendum Area, El Dorado County, California* (ECORP Consulting 2014c).
- *Special-Status Species Assessment for Central El Dorado Hills Specific Plan Off-Site Infrastructure Improvement Areas, El Dorado County, California* (ECORP Consulting 2014d).
- *Application for Clean Water Act Section 404 Individual Permit for Central El Dorado Hills Specific Plan, El Dorado County, California* (U.S. Army Corps of Engineers No. SPK-2009-00387 & SPK-2006-00102) (ECORP Consulting 2014e).
- *Off-Site Oak Canopy Impacts for Central El Dorado County Specific Plan Area, El Dorado County, California* (ECORP Consulting 2014f).
- *Central El Dorado Hills Specific Plan 85-Acre Addendum Area, El Dorado Hills, CA* (ECORP Consulting 2015a) (early season special-status plant survey).
- *Central El Dorado Hills Specific Plan 85-Acre Addenum Area, El Dorado Hills, CA* (ECORP Consulting 2015b) (late season special-status plant survey).

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. 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). 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 3.3-1. Biological Resource Survey Dates

Resource	Date	Location	Surveyor	Observations
Plant communities	June 5 and 25, 2012	CEDHSP	ECORP	Identified four terrestrial plant communities.
Blue oak woodland	February 10, 2014	CEDHSP	ECORP	Evaluated oak canopy coverage and presents a mitigation plan in accordance with County General Plan policies.
Delineation of waters of the United States	July 6 and 7, 2005	Pedregal planning area	ECORP	Identified seeps and drainages (including drainage ditch and roadside ditch).
Delineation of waters of the United States	February 28, 2006	Pedregal planning area	ECORP	Revised 2005 delineation and added five additional features; verified August 3, 2006; reverified June 7, 2011 (SPK-2006-00102).
Delineation of waters of the United States	August 4, 5, 9, and 10, 2005; April 21, 2008; September 18, 2008	Serrano Westside planning area	ECORP	Identified drainage ditch, roadside ditch, seeps, seasonal wetland swale, creek, intermittent drainage, and ponds.
Delineation of waters of the United States	March 18, 2009	Serrano Westside planning area	ECORP	Field meeting with USACE, revised March 27, 2009; verified May 8, 2009 (SPK-2009-00387).
Wetland assessment	October 21, 2013	Offsite Infrastructure Improvement Areas	ECORP	Identified additional areas of wetlands, drainages, and a pond at a preliminary assessment level.
California Rapid Assessment Method (CRAM) analysis of wetlands	June 11 and 19, 2012 and January 14, 2013	Serrano Westside planning area	ECORP	Evaluated habitat quality in six wetlands and five drainages using CRAM.
Special-status species habitat assessment	January 10, 2006	Pedregal planning area	ECORP	Identified potential habitat for 9 plants species and 15 wildlife species.
Special-status species habitat assessment	February 25, 2014	Offsite Infrastructure Improvement Areas	ECORP	Identified potential habitat for 13 plants and 17 wildlife species.
Preliminary wetland and special-status species assessment	February 24, 2014	85-Acre Addendum Area	ECORP	Identified additional areas of pond, drainage (ephemeral and intermittent), and swale habitat; potential habitat for 12 special-status plants and 12 special-status wildlife were identified within this area; one special-status bird (white-tailed kite) was present onsite.
Special-status plants	June 6 and 8, 2012	CEDHSP	ECORP	No special-status plants observed.
Special-status plants (early season)	April 19, 2013	CEDHSP	ECORP	No special-status plants observed.
Special-status plants (early season)	April 20, 2015	85-acre addendum area	ECORP	Identified one CRPR 4.3 species (Sierra Monardella [*Monardella candicans*]).

Resource	Date	Location	Surveyor	Observations
Special-status plants (late season)	June 23, 2015	85-acre addendum area	ECORP	Identified one CRPR 4.3 species (Sierra Monardella [*Monardella candicans*]).
Special-status plants (late season)	June 5 and September 25, 2012	CEDHSP	ECORP	No special-status plants observed.
Federally listed branchiopods—protocol-level dry-season surveys	October 19, 2012	CEDHSP	ECORP	No vernal pool branchiopod cysts observed during soil analysis.
Federally listed branchiopods—protocol-level wet-season surveys	December 7 and 20, 2012; January 3, 17, and 30, 2013; February 13 and 27, 2013; March 13 and 27, 2013; April 10, 2013	CEDHSP	ECORP	No vernal pool branchiopod species observed.
Valley elderberry longhorn beetle—elderberry shrub survey	June 13, 2012	CEDHSP	ECORP	No elderberry shrubs observed.
California red-legged frog—habitat assessment	May 11, 2012; June 20, 2012; September 25, 2012	CEDHSP	ECORP	Ponds on the Serrano Westside planning area may provide marginal habitat; suitable upland habitat on both planning areas for refuge dispersal and foraging; suitable dispersal and foraging habitat in drainages and other waters on both planning areas.
Foothill yellow-legged frog—habitat assessment	May 9, 2012, and June 20, 2012	CEDHSP	ECORP	No suitable habitat observed.
California tiger salamander—habitat assessment	May 11, 2012	CEDHSP	ECORP	No suitable habitat on the Pedregal planning area; potential marginal habitat in ponds and creek on the Serrano Westside planning area.
Blainville's horned lizard and western spadefoot toad survey and site assessment	June 1, 2012	CEDHSP	ECORP	No horned lizards or sign (pellet/scat) observed, and site assessment found no suitable habitat; no western spadefoot toads or tadpoles observed; potential spadefoot breeding habitat, but suitable upland habitat lacking.
Western pond turtle	May 8 and 11, 2012	CEDHSP	ECORP	Four western pond turtles observed on the Serrano Westside planning area; also suitable upland habitat for egg-laying, aestivation, or hibernation.
Special-status nesting birds survey	April 30, 2012; May 22 and 24, 2012; June 25, 2012	CEDHSP	ECORP	Observed three red-tailed hawk nests—one on the Pedregal planning area and two on the Serrano Westside planning area; additional special-status birds observed during surveys.

Resource	Date	Location	Surveyor	Observations
Bat acoustic survey	May 17–27, 2012; October 25–November 13, 2012	CEDHSP	David Wyatt	Two special-status bats were detected in addition to three other bat species; two bat species were potentially detected during surveys but not confirmed.
Fisheries assessment	December 11, 2012	CEDHSP	ECORP	No suitable anadromous fish habitat observed.
Reconnaissance for all resources	May 23, 2013	CEDHSP	ICF	Confirmed previous observations.

CEDHSP = Central El Dorado Hills Specific Plan area.
CRPR = California Rare Plant Rank.

Vegetation Communities

The overall project area occurs within the northern Sierra Nevada Foothills subdivision of the California Floristic Province (Baldwin et al. 2012:39, 42–43). Seven distinct vegetation communities and five open water communities occur in the project area (Table 3.3-2). These communities are described below and are shown in Figure 3.3-1 for the CEDHSP project area and in Figure 3.3-2 for the offsite infrastructure improvement areas. A list of the plant species observed in the project area is included in Appendix E.

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[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.

[c] The developed areas within the CEDHSP project area and offsite instructure improvement areas include irrigated grasses and ornamental, which is included in this community type category.

Oak Woodland

The northeast part of the Serrano Westside planning area, the majority of the Pedregal planning area, and parts of the offsite infrastructure improvement areas support oak woodland. The canopy of the oak woodland is dominated by blue oak, with occasional interior live oak, California buckeye, and gray pine. The understory is dominated by a variety of nonnative annual grasses and forbs, including red brome, hedgehog dog-tail grass, hedge parsley, and soft geranium. Poison-oak is scattered throughout the oak woodland. Acorns are a key resource for deer, squirrels, turkeys, jays, quail, and bear. Standing dead trees provide an important habitat resource for raptors, bats, salamanders, and lizards. Coarse woody tree material lying on the ground, particularly large logs, is a very important wildlife habitat element because the logs retain moisture in a relatively dry ecosystem. Oak woodlands near riparian resources such as creeks, rivers, or lakes support the greatest number of wildlife species.

A complete biological resources study was performed for the project area (ECORP Consulting 2014a) to evaluate the existing oak woodland and oak canopy. Oak canopy covers 94.3 acres, a total of 27.7% of the total project area. A tree survey based on County General Plan Policy 7.4.5.1 was not performed as part of the surveys, because the County General Plan policy requires the survey prior to issuance of a grading permit. Accordingly, CEDHSP Policy 5.18 requires applicants to quantify

site-specific and cumulative oak tree impacts and prepare a tree conservation and replacement plan as part of any small lot tentative subdivision map application, planned development permit, grading permit, or other similar action that will impact oak canopy.

Local and state agencies recognize native oak woodlands as sensitive natural communities. County General Plan Policies 7.4.4.2, 7.4.4.4, 7.4.4.5, and 7.4.5.1 protect oak trees and oak woodlands.

Riparian Woodland

In the Serrano Westside planning area, riparian woodland occurs along an unnamed perennial creek that is tributary to Carson Creek and around wetlands and along intermittent drainages in the southeast corner of the area. These riparian areas are dominated by Fremont's cottonwood, red willow, sandbar willow, and interior live oak, with a few valley oaks. A shopping center borders the entire west side of the riparian woodland along the unnamed creek in the southern half of the Serrano Westside planning area, and a golf cart path that is occasionally used as a maintenance access road borders part of the east side of the riparian woodland. The understory along the creek is mostly Himalayan blackberry with a sparse herbaceous layer. Riparian habitat on the east side and in the southeast corner of the area supports annual grassland in the understory. Riparian woodland also occurs along intermittent drainages in the 85-acre addendum area north of Serrano Parkway. Tree canopy in this riparian area includes Fremont cottonwood, interior live oak, arroyo willow, black willow, sandbar willow, and privet with a patchy understory of Himalayan blackberry, poison oak, wild rose, and coyote brush.

Riparian woodland occurs along the intermittent drainage in the central part of the Pedregal planning area. The overstory of the riparian woodland is dominated by valley oak, interior live oak, fig, willow, and Fremont's cottonwood. A dense vine/shrub understory of poison-oak and California wild grape provides a closed canopy over much of the creek, with very sparse herbaceous plants.

With the exception of the Pedregal water line locations, the offsite infrastructure improvement areas also have riparian woodland habitats along creeks (Carson Creek and unnamed tributaries).

Local, state, and federal agencies recognize riparian habitats as sensitive natural communities. County General Plan Policy 7.4.2.2 protects riparian habitats that are critical wildlife areas and migration corridors by using open space designations and setbacks from development.

Annual Grassland

The majority of the Serrano Westside planning area, the eastern part of the Pedregal planning area, and parts of the offsite infrastructure improvement areas support annual grassland, primarily composed of nonnative, naturalized Mediterranean grasses such as ripgut brome, soft brome, medusahead grass, and foxtail barley. Other species commonly found in this community include yellow star-thistle, rose clover, twining brodiaea, and hedge parsley. On the Serrano Westside planning area, native and nonnative trees have been planted throughout the annual grassland, including catalpa, sweetgum, nonnative pines, olive, valley oak, interior live oak, Fremont's cottonwood, and black locust.

Annual grassland is not considered a sensitive natural community.

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 planning area and 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.

Seasonal Wetland

The Serrano Westside planning area supports four seasonal wetlands in the southwest and southeast corners of the study area. Plant species observed in seasonal wetlands include rabbits-foot grass, tall flatsedge, broadleaf cattail, curly dock, and sandbar willow. The wetlands may have reduced wetland functions as a result of disturbed conditions (ECORP Consulting 2013m).

No seasonal wetlands occur within the Pedregal planning area.

Two seasonal wetlands were preliminarily mapped in the offsite infrastructure improvement areas. These wetlands occur east of the existing Silva Valley Parkway within the potential connection to Silva Valley Parkway corridor.

Seasonal Wetland Swale

Serrano Westside also supports six seasonal swales, which convey water between drainages or seasonal wetlands during storm events. One of these swales is located in the 85-acre addendum area. Plant species in the swales includes Italian ryegrass, curly dock, hyssop loosestrife, Fremont's cottonwood, Bermuda grass, tall flatsedge, red willow, broadleaf cattail, Himalayan blackberry, and Monterey centaury.

No seasonal wetland swales occur within the Pedregal planning area.

Seven seasonal wetland swales were preliminarily mapped in the offsite infrastructure improvement areas. These wetlands occur within the proposed corridors for the potential connection to Silva Valley Parkway, and the recycled water line expansion.

Seep

Seeps are perennial or nearly perennial features where groundwater comes to the surface and supports wetland plants. This wetland type can also be classified as emergent wetland. Five seeps occur in the Serrano Westside planning area. Two of the seeps are in the area north of Serrano Parkway: one connects to an intermittent drainage, and one is at the edge of the fire station driveway. Three seeps are south of Serrano Parkway: two are centered on historic wells or pump houses that presumably used the high water table, and one is a naturally occurring seep that connects to an intermittent drainage. Dominant plant species in most of these seeps are slender willow-herb, bull thistle, and little quaking grass. Other plant species commonly observed in the seeps are annual rabbits-foot grass, cut-leaved geranium, scarlet pimpernel, Torrey's willow-herb, and Baltic rush. One seep supports mostly broadleaf cattail.

The Pedregal planning area has five seeps, two of which connect to intermittent drainages. Plant species in the seeps include tall flatsedge, Italian ryegrass, and creeping spikerush.

Six seeps were preliminarily mapped in the offsite infrastructure improvement areas. These wetlands occur west of the existing Silva Valley Parkway within the potential connection to Silva Valley Parkway corridor.

Marsh

Areas identified as marsh vegetation are seasonally or perennially inundated and support emergent wetland vegetation. Two areas of marsh are within the proposed offsite infrastructure improvement areas. One marsh is adjacent to the proposed La Borgata pedestrian crossing, and the other is within the proposed U.S. Highway 50 (US 50) pedestrian crossing. Both marshes are associated with creek habitat in the unnamed tributary to Carson Creek, which is described below.

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 planning area and 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.

Creek

A perennial creek that is an unnamed tributary of Carson Creek flows from north to south parallel to the western boundary of Serrano Westside, originating south of the fire station area and draining offsite into decorative ponds in the El Dorado Hills Town Center complex south of US 50. Carson Creek is a tributary to Deer Creek and ultimately the Cosumnes River. The creek receives water year-round from sheet flow and groundwater from the area to the east, as well as from storm drains along El Dorado Hills Boulevard. Vegetation in and along the creek includes red willow, tall flatsedge, and rice-cut grass. Riparian woodland borders the drainage, as described above. The creek may have reduced functions as a result of disturbed conditions (ECORP Consulting 2013m).

The part of the creek south of US 50 is within the proposed corridor for the US 50 pedestrian crossing.

Intermittent Drainage/Ephemeral Drainage

Intermittent drainages are natural features that carry water when the groundwater level is high, when irrigation runoff is present, and following storm events. Ephemeral drainages are similar to intermittent drainages, but only receive water from storm events and are not influenced by groundwater levels.

Ten intermittent drainages occur in the Serrano Westside planning area, outside of the 85-acre addendum area, and generally flow from east to west, ultimately draining to the unnamed tributary to Carson Creek or to Carson Creek itself. Some of the drainages have culverts at golf cart path

crossings. The intermittent drainages are partially to fully vegetated and support species such as bentgrass, tall flatsedge, water primrose, toad rush, and scarlet pimpernel. Three of these intermittent drainages may have reduced functions as a result of disturbed conditions (ECORP Consulting 2013m).

The 85-acre addendum area includes one intermittent drainage and three ephemeral drainages. The intermittent drainage is mostly unvegetated, but has a string of ponds along its length (described under *Ponds* below) that support sparse vegetation.

Six intermittent drainages cross the Pedregal planning area, generally flowing west to east. The northernmost drainage is surrounded by riparian woodland vegetation, as described above. The other two drainages flow through the oak woodland and support sparse annual grassland vegetation, including California oat grass, Italian ryegrass, creeping spikerush, and soft brome. Two intermittent drainages occur at the western edge of the proposed Pedregal South Water Line area.

Three intermittent drainages occur within the potential connection to Silva Valley Parkway corridor.

Drainage Ditch

Drainage ditches are human-made features. The southern half of the Serrano Westside planning area contains a drainage ditch that connects to a seasonal wetland swale in the southwest corner of the area. The ditch supports species such as brome fescue, annual rabbits-foot grass, and cutleaf geranium.

In the Pedregal planning area, one drainage ditch constructed near the western boundary directs flow from a culvert that carries urban runoff from the adjacent residential area. This ditch is deeply incised and supports Italian ryegrass and little quaking grass.

One ditch occurs within the potential connection to Silva Valley Parkway corridor, south of the housing development and west of the existing Silva Valley Parkway.

Roadside Ditch

In the northern half of the Serrano Westside planning area, a 6-foot-deep ditch runs along the western boundary parallel to El Dorado Hills Boulevard. The ditch flows from north to south, transitioning into a vegetated creek and terminating at a seasonal wetland at the intersection of El Dorado Hills Boulevard and Serrano Parkway, and carries runoff from the road and sheet flow from the Serrano Westside planning area during storm events. The ditch is sparsely vegetated with areas of exposed bedrock. The limited vegetated areas support species such as annual rabbits-foot grass, bur clover, and Italian ryegrass.

A roadside ditch runs along the eastern boundary of the Pedregal planning area parallel to El Dorado Hills Boulevard. The ditch carries runoff from the road, sheet flow from the Pedregal planning area during storm events, and flow from the intermittent drainages. The ditch is vegetated and supports herbaceous wetland species.

One roadside ditch occurs within the potential connection to Silva Valley Parkway corridor, along the east side of the existing Silva Valley Parkway.

Pond

Nine human-made ponds originally served as water features for the golf course in the Serrano Westside planning area. The ponds have reverted to seasonally inundated wetlands, many of which are dry during the summer, because irrigation no longer supplements the inflow. Each pond contains a drainage pipe that connects to an intermittent drainage to prevent overflowing during storm events. Vegetation in the ponds includes wetland species such as broadleaf cattail and water primrose, and several ponds are surrounded by native riparian and nonnative ornamental trees. Two of the ponds may have reduced functions as a result of disturbed conditions (ECORP Consulting 2013m).

In the 85-acre addendum area, a series of five ponds were created within the intermittent drainage by placing earth and rock within the natural drainage. These ponds are primarily unvegetated, but small areas of cattail, tall flatsedge, and Baltic rush established at the edges. Riparian vegetation occurs around the ponds.

Developed

Developed areas were mapped in the Serrano Westside planning area on the north and south sides of Serrano Parkway and within the annual grassland, where paved golf cart roads still exist. The developed areas on the north and south of Serrano Parkway consist of a small area of lawn near the clubhouse south of Serrano Parkway that is still watered and frequently mowed, a clubhouse, a maintenance yard, and irrigated ornamental shrubs and trees along Serrano Parkway. The Pedregal planning area does not include any currently developed areas; however, the proposed offsite infrastructure improvement area for the Pedregal planning area south water line includes an area of development in and adjacent to an apartment complex.

Soils

The project area includes six soil map units, as shown on Figure 3.5-3 in Chapter 3, Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*: (AkC) Argonaut gravelly loam, 2–15% slopes, (AwD) Auburn silt loam, 2–30% slopes, (AxD) Auburn very rocky silt loam, 2–30% slopes, (AxE) Auburn very rocky silt loam, 30–50% slopes, (PrD) Placer diggings, and (Rk) Rescue clay, clayey variant (Natural Resources Conservation Service 2014).

Rescue and Rescue clayey variant soil units often include gabbro soils, which are important because they are suitable habitat for several special-status plant species known to occur in the project region. The Rescue map unit occurs along the western edge of Serrano Westside in the riparian and annual grassland. None of the other map units are derived from gabbro or serpentine rock; however, inclusions of gabbro- or serpentine-derived soils could be present in areas smaller than the minimum mapping size of the soil map units.

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 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.

Special-Status Species

Special-status species are plants and animals that are legally protected under CESA, ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this Draft EIR, special-status species include the following.

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the FR [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (77 FR 69994 [November 21, 2012]).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (California Code of Regulations (CCR) Title 14, Section 670.5).
- Species that meet the definitions of rare or endangered under the State CEQA Guidelines Section 15380.
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).
- Animal species of special concern to the CDFW.
- Plants listed as rare under the CNPPA (California Fish and Game Code Section 1900 et seq.).
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Ranks (CRPR) 1B and 2, California Native Plant Society 2013).
- Plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution (CRPR 3 and 4, California Native Plant Society 2013), which may be included as special-status species on the basis of local significance or recent biological information.

Special-Status Plants

Based on results of database searches of the California Natural Diversity Database (CNDDB) and CNPS Inventory (California Department of Fish and Wildlife 2013, 2014; California Native Plant Society 2013, 2014), vegetation communities, conditions present in the project area, and data on known species' distribution, a total of 22 special-status plant species were identified as having potential to occur in the project area or vicinity (Table 3.3-3). No suitable habitat (coniferous forest, chaparral, alkaline wetlands, or vernal pools) is present in the project area for 4 of the 22 species. Marginal to suitable habitat is present in the project area for the remaining 18 species, 7 of which occur on gabbro or serpentine soils.

There are no previously-documented occurrences of the 18 special-status plants that could occur in the project area (California Department of Fish and Wildlife 2014), and surveys previously conducted in the Pedregal planning area (ECORP Consulting 2006) and Serrano Westside planning area (ECORP Consulting 2009b) did not identify any special-status plants in the project area. Special-status plant surveys were conducted again for the Pedregal and Serrano West planning areas on June 5 and September 25, 2012 (ECORP Consulting 2013a) and in suitable habitat for vernal pool/seasonal wetland species on April 19, 2013 (ECORP Consulting 2013b). An additional reconnaissance-level botanical survey was conducted on May 23, 2013 by ICF staff. No special-status plants were observed in the project area during any of the field surveys. A complete list of plant species encountered during these surveys is included as Appendix E.

An early-season blooming-period survey for special-status plants was conducted on April 20, 2015 in the 85-acre addendum area within the Serrano Westside planning area, and a late-season blooming-period survey was conducted on June 23, 2015. As noted above, the 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. A population of one CRPR 4.3 species was found in the area, Sierra Monardella (*Monardella candicans*). This population is not located outside of the normal range for this species and is not locally unique, therefore, it is not considered to be of local significance.

Blooming-period surveys for special-status plants were not conducted in the proposed offsite infrastructure improvement areas, but these areas have potential habitat for 11 special-status plant species.

Special-Status Fish and Wildlife

Based on results of database searches of the CNDDB (California Department of Fish and Wildlife 2013, 2014) and USFWS species list (U.S. Fish and Wildlife Service 2014) for the project region (an approximately 10-mile radius), vegetation communities, and existing conditions in the CEDHSP project area and offsite infrastructure improvement areas, a total of 34 special-status fish and wildlife species were identified as having potential to occur in the project area or vicinity (Table 3.3-4). After a review of species distribution and habitat requirements data, and results of wildlife surveys conducted within the project area by ECORP Consulting between 2005 and 2014 (Table 3.3-1), it was determined that 11 of these species would not occur in either the CEDHSP project area or infrastructure improvement project area because these areas lack suitable habitat for the species or are outside the species' known range (Table 3.3-4). Suitable habitat is present in the CEDHSP project area for 18 species and in the offsite infrastructure improvement areas for 23 species, which are discussed below.

Of these species, four wildlife species (Pacific pond turtle, white-tailed kite, pallid bat, and western red bat) were detected in the CEDHSP project area during the wildlife surveys. No previous special-status species occurrences have been documented by CNDDB within the project area (California Department of Fish and Wildlife 2014).

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp is a federally listed threatened species. The species is found from Shasta County in the north throughout the Central Valley and west to the central Coast Ranges, at elevations of 30 to 4,000 feet. Additional populations have been reported from the Agate Desert region of Oregon near Medford, and disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties. However, most known locations are in the Sacramento and San Joaquin Valleys and along the eastern margin of the central Coast Ranges (Eng et al. 1990:255–258).

Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats (Eng et al. 1990:255–258). Pools must remain inundated long enough for the species to complete its life cycle. Vernal pool fairy shrimp also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands (Helm 1998:137). Occupied wetlands range in size from as small as several square feet to more than 10 acres.

Vernal pool fairy shrimp and other fairy shrimp have been observed in artificial depressions and drainages where water ponds for a sufficient duration (Helm 1998:134–138). Examples of such areas include roadside ditches and ruts left behind by off-road vehicles or heavy equipment. Soil compaction from construction activity can sometimes create an artificial hardpan, or restrictive layer, which allows water to pond and form suitable habitat for vernal pool fairy shrimp.

Vernal pool tadpole shrimp is a federally listed endangered species. The species is distributed across the Central Valley of California and in the San Francisco Bay area and has a patchy distribution across the Central Valley of California from Shasta County southward to northwestern Tulare County (U.S. Fish and Wildlife Service 2007). The largest concentration of vernal pool tadpole shrimp occurrences is found in the Southeastern Sacramento Vernal Pool Region, where the species occurs on a number of public and private lands in Sacramento County (U.S. Fish and Wildlife Service 2005, 2007).

Vernal pool tadpole shrimp occur in a wide variety of seasonal habitats, including vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches. Habitats where vernal pool tadpole shrimp have been observed range in size from small (less than 25 square feet), clear, vegetated vernal pools to highly turbid alkali scald pools to large (more than 100 acres) winter lakes (Helm 1998:134–138; Rogers 2001:1002–1005). These pools and other ephemeral wetlands must dry out and be inundated again for the vernal pool tadpole shrimp cysts to hatch. This species has not been reported in pools that contain high concentrations of sodium salts but may occur in pools with high concentrations of calcium salts (Helm 1998:134–138; Rogers 2001:1002–1005).

The Pedregal planning area includes intermittent drainage, seep, drainage ditch, and roadside ditch aquatic features. These features were evaluated for their potential to support vernal pool fairy shrimp and vernal pool tadpole shrimp (federally listed branchiopods). None of these features were considered to be potential habitat for federally listed branchiopods because they are saturated throughout the year (i.e., seep), receive runoff throughout the year (i.e., roadside ditch), or are too steep with high water flows (i.e., intermittent drainage). Potential habitat characteristics of federally

Table 3.3-3. Special-Status Plant Species with Potential to Occur in the Central El Dorado Hills Specific Plan Project Region

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Allium jepsonii Jepson's onion	–/–/1B.2	Sierra Nevada foothills in Butte, El Dorado, Placer, and Tuolumne Counties	Serpentine or (volcanic) basalt outcrops in oak woodland, chaparral, and lower montane coniferous forest; 300–1,320 meters	Apr–Aug	Marginal habitat is present on rock outcrops in oak woodland in the project area. Nearest recorded occurrences are approximately 9 miles northeast of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Potential for occurrence in oak woodlands.
Balsamorhiza macrolepis Big-scale balsamroot	–/–/1B.2	Scattered occurrences in the Coast Ranges and Sierra Nevada foothills	Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 90–1,555 meters	Mar–Jun	Suitable habitat without serpentine soils is present in annual grassland and oak woodland in the project area. Nearest recorded occurrence is approximately 10 miles north of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in annual grassland and oak woodland in the 85-acre addendum area.	Potential for occurrence in annual grassland and oak woodland.
Calystegia stebbinsii Stebbins' morning-glory	E/E/1B.1	Northern Sierra Nevada foothills with reported occurrences in El Dorado and Nevada Counties	Serpentine or gabbroic soils in chaparral openings, cismontane woodland; 185–730 meters	Apr–Jul	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 5 miles east of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.
Ceanothus roderickii Pine Hill ceanothus	E/R/1B.2	Endemic to El Dorado County	Serpentine or gabbro soils in chaparral or cismontane woodland; 245–630 meters	Apr–Jun	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 4 miles north of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Chlorogalum grandiflorum Red Hills soaproot	–/–/1B.2	North and central Sierra Nevada foothills: Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne Counties	Serpentine or gabbro soils in chaparral, lower montane coniferous forest, and cismontane woodland; 245–1,240 meters	May–Jun	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 4 miles northeast of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.
Clarkia biloba ssp. *brandegeeae* Brandegee's clarkia	–/–/4.2	Northern Sierra Nevada foothills from Butte to El Dorado Counties	Chaparral, cismontane woodland, lower coniferous forest, often on roadcuts; 73–915 meters	May–Jul	Suitable habitat is present in oak woodland in the project area. The nearest recorded occurrence is approximately 2 miles north of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Potential for occurrence in oak and woodland.
Downingia pusilla Dwarf downingia	–/–/2B.2	Central Valley	Vernal pools and mesic valley and foothill grasslands; below 445 meters	Mar–May	Suitable habitat is present in the seeps, ponds, and seasonal wetlands in the project area. The nearest recorded occurrence is approximately 7 miles west of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale and ponds in the 85-acre addendum area.	Potential for occurrence in seeps, ponds, and seasonal wetlands and seasonal wetland swales.
Erigeron miser Starved daisy	–/–/1B.3	Lassen, Mono, Nevada and Placer Counties	Rocky places in upper montane coniferous forest; 1,840–2,620 meters	Jun–Oct	No coniferous forest habitat is present in the project area.	No coniferous forest habitat is present in the offsite areas.

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Eryngium pinnatisectum Tuolumne button-celery	–/–/1B.2	Amador, Calaveras, Sacramento, and Tuolumne Counties	Vernal pools and moist areas in cismontane woodland and lower montane coniferous forest; 70–915 meters	May–Aug	Marginal habitat is present in the seasonal wetlands in the southeast part of the project area. The nearest recorded occurrence is a historic (1941) occurrence approximately 10.5 miles north of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale in the 85-acre addendum area.	Potential for occurrence in seasonal wetlands.
Fremontodendron decumbens Pine Hill flannelbush	E/R/1B.2	Pine Hill area in El Dorado County, Grass Valley vicinity in Nevada County, Yuba County	Rocky gabbro or serpentinite soils in chaparral, cismontane woodland; 425–760 meters	Apr–Jul	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 5 miles northeast of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.
Galium californicum ssp. *sierrae* El Dorado bedstraw	E/R/1B.2	Endemic to El Dorado County	On gabbroic soils in chaparral, cismontane woodland, lower montane coniferous forest; 100–585 meters	May–Jun	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 5 miles east of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.
Gratiola heterosepala Boggs Lake hedge-hyssop	–/E/1B.2	Inner North Coast Ranges, Central Sierra Nevada foothills, Sacramento Valley and Modoc Plateau: Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama Counties; also Oregon	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 10–2,375 meters	Apr–Aug	Marginal habitat is present in ponds and seasonal wetlands in the project area. Nearest recorded occurrence is approximately 5 miles southwest of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale and ponds in the 85-acre addendum area.	Potential for occurrence in ponds seasonal wetlands, marshes, and seasonal wetland swales.

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Helianthemum suffrutescens Bisbee Peak rush-rose	–/–/3.2	Amador, Calaveras, El Dorado, Mariposa, Sacramento and Tuolumne Counties	Chaparral openings, often on serpentinite, gabbro, or Ione soils; 45–840 meters	Apr–Jun	No chaparral habitat is present in the project area.	No chaparral habitat is present in the offsite areas.
Horkelia parryi Parry's horkelia	–/–/1B.2	Amador, Calaveras, El Dorado, and Mariposa Counties	Chaparral, or cismontane woodland openings, especially Ione formation, dry slopes; 80–1,035 meters	Apr–Sep	Marginal habitat is present on in oak woodland in the project area. Nearest recorded occurrence is approximately 7.5 miles northeast of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Potential for occurrence in oak woodlands.
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	–/–/1B.2	Eastern Sacramento Valley, northeastern San Joaquin Valley with occurrences in Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba Counties	Wet areas in valley and foothill grassland, vernal pool margins; 30–229 meters	Mar–May	Marginal habitat is present in the seeps, ponds, and seasonal wetlands in the project area. The nearest recorded occurrence is approximately 13 miles southwest of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale in the 85-acre addendum area.	Potential for occurrence in seeps, ponds, and seasonal wetlands.
Legenere limosa Legenere	–/–/1B.1	Primarily in the lower Sacramento Valley, also from north Coast Ranges, northern San Joaquin Valley and the Santa Cruz Mountains	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and river banks; below 880 meters	Apr–Jun	Marginal habitat is present in ponds, seeps, and seasonal wetlands in the project area. Nearest recorded occurrence is approximately 9 miles southwest of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale and ponds in the 85-acre addendum area.	Potential for occurrence in seeps, ponds, seasonal wetland swales, marsh, and seasonal wetlands.

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Navarretia myersii ssp. *myersii* Pincushion navarretia	–/–/1B.1	Central Valley in Amador, Calaveras, Merced, Placer, and Sacramento Counties	Edges of vernal pools; 20–330 meters	Apr–May	Marginal habitat is present in ponds and seasonal wetlands in the project area. Nearest recorded occurrence is approximately 7 miles west of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in seasonal wetland swale in the 85-acre addendum area.	Potential for occurrence in ponds and seasonal wetlands.
Orcuttia tenuis Slender Orcutt grass	T/E/1B.1	Sierra Nevada and Cascade Range foothills from Siskiyou to Sacramento Counties	Vernal pools; 35–1,760 meters	May–Sep (Oct)	No vernal pool habitat is present in the project area.	No vernal pool habitat is present in the offsite areas.
Orcuttia viscida Sacramento Orcutt grass	E/E/1B.1	Endemic to Sacramento County	Vernal pools; 30–100 meters	Apr–Jul	No vernal pool habitat is present in the project area.	No vernal pool habitat is present in the offsite areas.
Packera layneae Layne's ragwort (or Layne's butterweed)	T/R/1B.2	Northern Sierra Nevada foothills, Butte, El Dorado, Placer, Tuolumne, and Yuba Counties	Rocky serpentinite or gabbro soils in chaparral and foothill woodland; 200–1,000 meters	Apr–Aug	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 4 miles east of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.
Sagittaria sanfordii Sanford's arrowhead	–/–/1B.2	Scattered locations in Central Valley and Coast Ranges	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 650 meters	May–Oct	Suitable habitat is present in the ponds, intermittent drainages, and creek in the project area. Nearest recorded occurrence is approximately 3 miles south of the project area. Species was not observed during the June and September 2012 or April and May 2013 surveys. Potential to occur in ponds and the intermittent drainage in the 85-acre addendum area.	Potential for occurrence in marsh, ponds, intermittent/ ephemeral drainages, ditches, and creek.

Scientific Name Common Name	Status[a] Federal/State/ CNPS	Geographic Distribution	General Habitat Description	Blooming Period	Potential for Occurrence in CEDHSP Area	Potential for Occurrence in the Offsite Infrastructure Improvement Areas
Wyethia reticulata El Dorado County mule ears	–/–/1B.2	El Dorado and Yuba Counties	On clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest; 185–630 meters	Apr–Aug	Suitable habitat is present on Rescue soils in oak woodland in the project area. Nearest recorded occurrence is approximately 4 miles northeast of the project area. Species was not observed during the June 2012 or April and May 2013 surveys. Potential to occur in oak woodland in the 85-acre addendum area.	Unlikely to occur, no Rescue soils are mapped in offsite areas.

Sources: California Native Plant Society 2013; California Department of Wildlife 2013.

[a] Status explanations:

Federal

T = listed as threatened under the federal Endangered Species Act.
E = listed as endangered under the federal Endangered Species Act.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act.
R = listed as rare under the California Endangered Species Act.
– = no listing.

California Native Plant Society (CNPS) California Rare Plant Rank

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2B = List 2B species: plants rare, threatened, or endangered in California, but more common elsewhere.
3 = List 3 species: plants about which we need more information – a review list.
4 = List 4 species: plants of limited distribution – a watch list.

CNPS Code Extensions:

0.1 = seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).
0.2 = fairly endangered in California (20–80% of occurrences threatened).

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Invertebrates					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–/–	Streamside habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	None – No elderberry shrubs (host plant) identified during 2012 and 2013 surveys.	Moderate – A focused elderberry shrub survey was not conducted for the offsite area. Potential for elderberry shrubs exists within riparian and wooded areas.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	None – Protocol-level 2012/2013 wet- and dry-season branchiopod surveys did not locate vernal pool fairy shrimp within potential habitat (Ponds 1, 2, and 10) in the project area.	Low – Aquatic features in the offsite area could be considered potential habitat for vernal pool fairy shrimp.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–/–	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	None – Protocol-level 2012/2013 wet- and dry-season branchiopod surveys did not locate vernal pool tadpole shrimp within potential habitat (Ponds 1, 2, and 10) in the project area.	Low – Aquatic features in the offsite area may provide potential habitat for vernal pool tadpole shrimp.
Amphibians					
California red-legged frog *Rana draytonii*	T/SSC/–	Along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods	Low – Habitat assessment identified potential aquatic breeding and dispersal habitat onsite and within 1 mile radius. The closest confirmed sighting is 26 miles to northeast.	Low – Potential breeding and dispersal habitat is present in offsite area. The closest confirmed sighting is 26 miles to the east.
California tiger salamander *Ambystoma californiense*	T/T/–	Central Valley, including Sierra Nevada foothills, up to approximately 1,500 feet, and coastal region from Butte County south to northeastern San Luis Obispo County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None – Project area is north of the known range, upland habitat onsite was a former golf course, and no salamander larvae were observed during protocol branchiopod surveys.	None – Offsite areas are north of species known range. No suitable habitat is present within offsite area.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Foothill yellow-legged frog *Rana boylii*	–/SSC/–	Found in most of northern California west of the Cascade crest and along the western Sierra Nevada foothills up to approximately 6,370 feet	Rocky streams in a variety of habitats including valley-foothill hardwood, conifer, and riparian forests, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral and wet meadow	None – No suitable breeding habitat is present in the project area and species was not observed during focused surveys conducted in May and June 2012 within potential stream habitats. Closest documented occurrence is 15 miles northeast (California Department of Fish and Wildlife 2014).	None – No suitable breeding habitat is present in offsite area and species was not observed during focused surveys conducted in 2012 within upstream portions of Carson Creek in the Serrano West planning area. Closest documented occurrence is 15 miles northeast (California Department of Fish and Wildlife 2014).
Western spadefoot *Scaphiopus hammondii*	–/SSC/–	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	Moderate – Potential habitat is present within the project area but species was not observed during protocol-level branchiopod surveys conducted within the project area. The nearest recorded occurrence is greater than 10 miles from the project area (California Department of Fish and Wildlife 2014).	Low – Potential habitat is present within drainages and seasonal wetlands within the offsite area. The nearest recorded occurrence is greater than 10 miles from the project area (California Department of Fish and Wildlife 2014).
Reptiles					
Blainville's horned lizard *Phrynosoma blainvillii*	–/SSC/–	Northern California to the tip of Baja California	Various scrublands, grasslands, coniferous and broadleaf forests and woodlands; associated with sandy soils that support native ant colonies and the presence of chaparral plants	Low – Grassland and riparian areas within the project area provide low quality habitat for the species based on the dense thatch layer and historic golf course disturbance. The species and its prey (harvester ants) were not observed during a habitat assessment in June 2012. The nearest recorded occurrence is 4 miles to the east (California Department of Fish and Wildlife 2014).	Moderate – Potential habitat is present within the offsite area. The nearest recorded occurrence is 3.5 miles to the east (California Department of Fish and Wildlife 2014).

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Giant garter snake *Thamnophis gigas*	T/T/–	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	None – Project area is outside of the species range.	None – Offsite area is outside of the species range.
Pacific pond turtle *Actinemys marmorata*	–/SSC/–	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of the Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Present – Pond turtles were observed within ponds in the project area during the 2012 survey. Turtles have also been previously documented within Carson Creek south of the project area (California Department of Fish and Wildlife 2014).	Present – Pond turtles were observed within ponds in the Serrano West planning area during the 2012 survey. Turtles have also been previously documented within Carson Creek adjacent to the offsite area (California Department of Fish and Wildlife 2014).
Birds					
Bald eagle *Haliaeetus leurocephalus*	BCC/E/FP	Breeding range includes the Sierra Nevada, Cascade Range and portions of the Coast Ranges; winter range expands to include most of the state	Forages primarily in large inland fish-bearing waters with adjacent large trees or snags and occasionally in uplands with abundant rabbits, other small mammals, or carrion	None – No suitable foraging or nesting habitat is present within the project area.	None – No suitable foraging or nesting habitat is present within the offsite area.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Bank swallow *Riparia riparia*	–/T/–	Breeds in much of lowland and riparian California, with 75% of the nesting colonies occurring on the Sacramento and Feather Rivers and their tributaries; additional breeding locations are scattered throughout the northern and central portions of the state; migrates south of California in fall/winter	Nests in vertical banks or bluffs, typically adjacent to water, devoid of vegetation with friable, eroding soils; forages in a wide variety of habitats	None – No suitable nesting habitat in the project area.	None – No suitable nesting habitat in the offsite area.
Golden eagle Aquilachrysaetos	BCC/FP/	Winter range spans most of California; breeding range excludes the Central Valley floor	Nests in cliffs, rocky outcrops and large trees; Forages in a variety of open habitats, including grassland, shrubland, and cropland	Moderate – Suitable foraging and nesting habitat is present within the project area; record of recent nest within 5 miles of the project area.	Moderate – Suitable nesting habitat is present within offsite improvement areas; record of recent nest within 5 miles of the project area.
Grasshopper sparrow *Ammodramus savannarum*	–/SSC/–	Breeding range spans much of the Central Valley and California coast, but populations are typically localized and disjunct; most individuals migrate, although some may be present year-round	Nests and forages in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs	Moderate – Suitable nesting and foraging habitat is present within the project area. However, species was not observed during 2012 breeding bird surveys.	Moderate – Suitable nesting and foraging habitat is present within the offsite area.
Loggerhead shrike *Lanius ludovicianus*	–/SSC/–	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Nests in isolated shrubs and trees and woodland/scrub edges of open habitats; forages in grasslands, agricultural fields and low, scrub habitats	Moderate – Suitable nesting and foraging habitat is present within the project area. However, species was not observed during 2012 breeding bird surveys.	Moderate – Suitable nesting and foraging habitat is present within the offsite area.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Swainson's hawk *Buteo swainsoni*	BCC/T/–	Breeding range spans the Central Valley and Sacramento–San Joaquin Delta west of Suisun Marsh, northeastern California, and a few additional scattered sites; most of the population migrates south of California in fall/winter, although a small number winters in the Sacramento–San Joaquin Delta	Nests in isolated trees, open woodlands, and woodland margins; forages in grasslands and agricultural fields	Low – Project area is east of known nesting range but suitable nesting habitat is present. Closest documented breeding record is 8 miles to the southwest (California Department of Fish and Wildlife 2014).	Low – Offsite area is east of known nesting range but suitable nesting habitat is present. Closest documented breeding record is 8 miles to the southwest (California Department of Fish and Wildlife 2014).
Tricolored blackbird *Agelaius tricolor*	BCC/SSC/–	Year-round resident throughout the Central Valley and the central and southern coasts, with additional scattered locations throughout California	Nests colonially in large, dense stands of freshwater marsh, riparian scrub and other shrubs; forages in grasslands and agricultural fields	Moderate – Potential nesting habitat is present in the project area. No breeding colonies were observed during the 2012 breeding bird surveys within most of project area; however, no surveys conducted within the 85-acre open space area. Recent breeding colony was documented in 2013 2 miles to the west (California Department of Fish and Wildlife 2014).	Moderate – Potential nesting habitat is present in the offsite area. Recent breeding colony was documented in 2013 2 miles to the west (California Department of Fish and Wildlife 2014).

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Burrowing owl *Athene cunicularia*	BCC/SSC/–	Year-round range includes the Central Valley and Sacramento–San Joaquin Delta and portions of the central coast, eastern California, and southern California	Nests and forages in grasslands, agricultural fields, and low scrub habitats, especially where ground squirrel burrows are present; occasionally inhabits artificial structures and small patches of disturbed habitat	Low – Annual grassland in the project area provides potential habitat; however, the area is characterized as disturbed (former golf course) and supports tall/dense grasses. No burrowing owls were observed during the 2012 breeding bird surveys. Closest documented occurrence is 1.5 miles to the southwest (California Department of Fish and Wildlife 2014).	Moderate – Annual grassland in the offsite area provides potential breeding and wintering habitat. Closest documented occurrence is 1.5 miles to the west (California Department of Fish and Wildlife 2014).
White-tailed kite *Elanus leucurus*	–/FP/–	Year-round range spans the Central Valley, Coast Ranges and coast, Sierra Nevada foothills, and Colorado River	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High – Suitable nesting and foraging habitat occurs in the project area. Species observed foraging and exhibiting territorial behavior during 2012 breeding bird surveys but no nests were detected. Closest documented nest is 1 mile to the northwest (California Department of Fish and Wildlife 2014).	High – Suitable nesting and foraging habitat occurs in the offsite area. Closest documented nest is 1 mile to the northwest (California Department of Fish and Wildlife 2014).
Yellow warbler *Setophaga petechia*	–/SSC/–	Range includes coastal and northern California and the Sierra Nevada below approximately 7,000 feet	Nests and forages in early successional riparian habitats	Moderate – Suitable migratory habitat is present within the project area. Species was not observed during 2012 surveys within most of project area; however, no surveys conducted within the 85-acre open space area. However, the species does not breed in this region.	Moderate – Suitable migratory habitat is present within the offsite areas. However, the species does not breed in this region.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Mammals					
Pacific fisher *Martes pennanti*	C/SSC/–	Uncommon resident of Sierra Nevada, Cascades, Klamath Mountains and North Coast Ranges	Inhabits large areas of conifer, mixed conifer, and hardwood forests; requires mature dense stands with snags and >50% canopy cover	None – No suitable habitat is present in the project area, and the project is not within the elevation range of this species.	None – No suitable habitat is present in the project area, and the project is not within the elevation range of this species.
Ringtail Bassariscus astutus	–/FP/–	Found throughout most of California except for the San Joaquin Valley and portions of southern deserts	Rocky outcrops in open grassland and oak woodland; riparian habitats	None – outside of species known range.	None – outside of species known range.
American Badger *Taxidea taxus*	–/SSC	In California, occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Wide variety of open, arid habitats but most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	None – suitable habitat not present in project area.	None –suitable habitat not present within the offsite areas.
Fringed myotis *Myotis thysanodes*	–/–/ WBWG: High priority	Widespread in California, occurring in all but the Central Valley and Colorado and Mojave deserts	Prefers pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally 4,000–7,000 feet elevation; roosts in caves, mines, buildings, or crevices	None – Preferred roosting areas not present within the project area and species was not detected during spring and autumn acoustic bat surveys.	Low – Preferred roosting areas do not appear to be present within the offsite area and species was not detected during spring and autumn acoustic bat surveys conducted in the nearby project area.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Hoary bat *Lasurius cinerius*	–/–/ WBWG: Moderate priority	Occurs in forested areas throughout most of California from sea level to 13,200 feet	Primarily found in forested habitats; also found in riparian areas and in park and garden settings in urban areas; day roosts in foliage of trees	Low – Suitable roosting and foraging habitat is present in the project area. However species was not detected during 2012 acoustic bat surveys.	Low – Suitable roosting and foraging habitat is present in the offsite area. However, species was not detected within the nearby Serrano Westside planning area during 2012 acoustic bat surveys.
Long-eared myotis *Myotis evotis*	–/–/ WBWG: Moderate priority	Occurs throughout California	Occurs in semi-arid shrublands, sage, chaparral and agricultural areas, but is usually associated with coniferous forests	None – Preferred roosting areas not present within the project area and species was not detected during spring and autumn acoustic bat surveys.	Low – Preferred roosting areas do not appear to be present within the offsite area and species was not detected during spring and autumn acoustic bat surveys conducted in the nearby project area.
Pallid bat *Antrozous pallidus*	–/SSC/ WBWG: High priority	Occurs throughout California except the high Sierra from Shasta to Kern Counties and the northwest coast, primarily at lower and mid-level elevations	Occurs in a variety of habitats from desert to coniferous forest; most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California	High – Suitable roosting and foraging habitat is present in the project area. Species was confirmed within the Serrano Westside planning area during 2012 acoustic bat surveys but was determined to be using the area only minimally.	High – Suitable roosting and foraging habitat is present in the offsite areas. Species was confirmed within the nearby Serrano West Planning Area during acoustic bat surveys but was determined to be using the area only minimally.
Silver-haired bat *Lasionycteris noctivagans*	–/–/ WBWG: Moderate priority	Only a few scattered breeding locations are known in the San Francisco Bay Area, Central Valley, or central coast	Typically roosts in tree cavities, crevices and under loose bark; may also use leaf litter, buildings, mines, and caves; breeds in coastal and montane coniferous forests, valley foothill and montane riparian habitats; may occur in any habitat during migration	Moderate – Suitable roosting and foraging habitat is present in the project area. Species is primarily known from higher elevations, but was potentially detected during 2012 acoustic bat surveys in both the Pedregal and Serrano Westside planning areas.	Moderate – Suitable roosting and foraging habitat is present in the offsite area. Species is primarily known from higher elevations, but was potentially detected within the nearby Serrano Westside planning area during 2012 acoustic bat surveys.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Townsend's big-eared bat *Corynorhinus townsendii*	–/C/ WBWG: High priority	Year-round range spans most of California except the highest elevations of the Sierra Nevada south of Lake Tahoe	Typically roosts in colonies of fewer than 100 individuals in caves or mines; occasionally roosts in buildings or bridges, and rarely, hollow trees; forages in all habitats except alpine and subalpine, although most commonly in mesic forests and woodlands	Low – Suitable roosting and foraging habitat is present in the project area. However, the species is unlikely to roost adjacent to urban development. Species was not detected during the 2012 acoustic bat surveys.	Low – Suitable roosting and foraging habitat is present in the offsite area. However, the species is unlikely to roost adjacent to urban development. Species was not detected within the nearby Serrano Westside Planning Area during the 2012 acoustic bat surveys.
Western red bat *Lasiurus blossevillii*	–/SSC/ WBWG: High priority	Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Ranges, and coast except Humboldt and Del Norte Counties	Found primarily in riparian and wooded habitats; occurs at least seasonally in urban areas; day roosts in trees within the foliage; found in fruit orchards and sycamore riparian habitats in the Central Valley	High – Suitable roosting and foraging habitat is present in the project area. Species was detected within the Serrano Westside planning area during the 2012 acoustic bat surveys, but was determined to be using the area only minimally.	High – Suitable roosting and foraging habitat is present in the offsite area. Species was detected within the nearby Serrano Westside planning area during 2012 acoustic bat surveys, but was determined to be using the area only minimally.
Western small-footed myotis *Myotis ciliolabrum*	–/–/ WBWG: High priority	Occurs throughout much of California except the northwest and coastal areas	Particularly associated with coniferous forests and rocky xeric habitats; typically roosts in rock crevices in mines, caves and occasionally in buildings, bridges, and other human structures; forages over a wide variety of habitats	Low – Suitable foraging habitat is present in the project area but there is limited roosting habitat. Species was not detected during the 2012 acoustic surveys.	Low – Suitable foraging habitat is present in the project area but there is limited roosting habitat. Species was not detected within the nearby Serrano Westside planning area during 2012 acoustic bat surveys.
Fish					
Delta smelt *Hypomesus transpacificus*	T/E/–	Sacramento–San Joaquin Delta	Brackish-water channels and sloughs	None – outside the range of the species.	None – outside the range of the species.
Central Valley steelhead *Oncorhynchus mykiss*	T/C/–	Sacramento River and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools	None – outside the range of the species and no suitable habitat present.	None – outside the range of the species and no suitable habitat present.

Common Name *Scientific Name*	Status[a] Fed/State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in CEDHSP Area	Potential Occurrence in Offsite Infrastructure Improvement Area
Central Valley spring-run chinook salmon *Oncorhynchus tshawytcha*	T/T/–	Upper Sacramento River and Feather River	Has the same general habitat requirements as winter-run Chinook salmon; coldwater pools are needed for holding adults (Moyle 2002)	None – outside the range of the species and no suitable habitat present.	None – outside the range of the species and no suitable habitat present.

[a] Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
C = candidate species for listing under the federal Endangered Species Act.
BCC = bird of conservation concern.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
C = candidate species for listing under the California Endangered Species Act.
– = no listing.

Western Bat Working Group (WBWG) 2013.

High priority = species are imperiled or at high risk of imperilment.
Moderate priority = this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

listed branchiopods are based on the life history of Central Valley endemics (Eriksen and Belk 1999; Helm 1998; Helm and Vollmar 2002).

Serrano Westside planning area includes seasonal wetland, seasonal wetland swale, seep, intermittent drainage, drainage ditch/roadside, pond, and creek aquatic features. All of these features were evaluated for their potential to support federally listed branchiopods. Because the majority of the aquatic features onsite are on steep slopes or are perennial to semi-perennial, only three of the seasonal ponds (Pond 1, Pond 2, and Pond 10 on Figure 3.3-1) were considered potential habitat for federally listed branchiopods. To determine occupancy within these habitats, protocol level surveys were conducted for federally listed branchiopods within Pond 1, Pond 2, and Pond 10 (Figure 3.3-1). The ponds were sampled using dry-season and wet-season techniques, as described in the 90-day Report of Findings (ECORP Consulting 2013c, 2013l). In summary, no cysts of any potential federally listed branchiopod species (e.g., *Branchinecta* sp. or *Lepidurus* sp.) were observed within any of the soil samples and no federally listed branchiopods were observed during dip-net surveys. Therefore, federally listed branchiopods are not expected to occur within the Pedregal and Serrano Westside planning areas.

The 85-acre addendum area and offsite infrastructure improvement areas were also evaluated for potential federally listed branchiopod habitat; however, protocol-level surveys have not been conducted within these additional project areas. A wetland swale and several ponds within the 85-acre addendum area occur along an intermittent drainage that terminates into a large perennial pond. Because the seasonal ponds are within a high-gradient, flowing drainage, they would not be likely to support federally listed branchiopods. Potential seasonal wetlands identified within the offsite infrastructure improvement areas (Figure 3.3-2) represent potential habitat for federally listed branchiopods.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is found only in association with its host plant, elderberry (*Sambucus* sp.), which is commonly found in riparian forests and adjacent uplands in the Central Valley and foothills (U.S. Fish and Wildlife Service 1999). Elderberries often grow vegetatively from rhizomes, resulting in shrubs that frequently have common root systems with multiple main stems (Talley et al. 2006) and multiple root crowns. Adult valley elderberry longhorn beetles feed on elderberry foliage and are present from March through early June, during which time the adults mate. Females lay their eggs in bark crevices or at the junction of stem/trunk or leaf petiole/stem. After hatching, the larva burrows into the stem to feed and develop into pupa and adult. After transforming into an adult, it chews an exit hole and emerges. The life cycle of valley elderberry longhorn beetle ranges from 1 to 2 years (Barr 1991:4–5).

The nearest record for valley elderberry longhorn beetle (CNDDB occurrence #169) is approximately 2.5 miles west of the project area. Other records exist west and north of the project area. A focused elderberry shrub survey was conducted for valley elderberry longhorn beetle on June 13, 2012, within the Pedregal and Serrano Westside planning areas. No elderberry shrubs were identified onsite during this survey. A follow-up survey was conducted for the 85-acre addendum area on December 6, 2013, with no elderberry shrubs observed. Based on the USFWS's 1999 Conservation Guidelines for Valley Elderberry Longhorn Beetle, the results of these surveys are valid for a period of 2 years from the date of the survey. Elderberry shrubs may occur in riparian and wooded areas in the offsite areas, where focused surveys have not been conducted.

California Red-legged Frog

California red-legged frog is a California species of special concern and is federally listed as threatened under the ESA. The current range of California red-legged frog consists of isolated locations in the Sierra Nevada, throughout the northern Coast Ranges, and in the northern Transverse Ranges.

California red-legged frogs use a variety of habitats, including various aquatic systems and riparian and upland habitats. The species inhabits marshes, streams, lakes, ponds, and other usually permanent sources of water (Stebbins 2003). Juvenile frogs seem to favor open, shallow aquatic habitats with dense submergent vegetation. As adults, California red-legged frogs are highly aquatic when active but depend less on permanent water bodies than other frog species, such as bullfrogs (*Lithobates catesbeianus*). Adults may take refuge during dry periods in rodent burrows or leaf litter in riparian habitats. Although California red-legged frogs typically remain near streams or ponds, marked and radio-tagged frogs have been observed moving more than 2 miles through upland habitat with no apparent regard to topography. These movements are typically made during wet weather and at night (U.S. Fish and Wildlife Service 2002).

California red-legged frogs typically breed from late November to late April. Female frogs lay between 2,000 and 6,000 eggs around aquatic vegetation; these hatch in 6–14 days (Jennings and Hayes 1994). Larvae require 11–20 weeks to metamorphose into adult frogs (U.S. Fish and Wildlife Service 2002). Juvenile frogs are active diurnally and nocturnally, whereas adult frogs are largely nocturnal. Feeding activity most commonly occurs along the shoreline and on the surface of the water (U.S. Fish and Wildlife Service 2002).

Nine ponds, one creek, and two intermittent drainages within the project area were assessed for their suitability as habitat for the California red-legged frog (ECORP Consulting 2013e). Potential breeding habitat onsite is limited to ponded features on the Serrano Westside planning area. However, most ponded features are lacking necessary habitat components commonly associated with successful California red-legged frog breeding and recruitment. The hydroperiod of most ponds is short, and all but the two largest ponds were dry by late May–early June in 2012, which coincides with the earliest timing of metamorphosis for red-legged frog tadpoles (Fellers 2005). However, 2012 was a drought year, and ponding duration could last longer in subsequent years. Four ponds in the southern portion of the project area are perennial or nearly perennial and could support successful breeding. Nonnative bullfrogs and crayfish, which prey upon and compete with California red-legged frogs of all life stages, were found in most longer-duration waters and some of the more ephemeral ones as well. The presence of these species cannot be taken as evidence for the absence of California red-legged frogs; however, their presence reduces the quality of the breeding habitat. Upland habitat in the project area, consisting of grassland and oak woodland, is within an area that has historically been used as a golf course. Presently these areas support dense annual grasses with abundant rodent populations, including pocket gophers, California voles, and California ground squirrels (*Otospermophilus beecheyi*). These species excavate extensive burrow systems that can be used by red-legged frogs as cover during dispersal movements or as temporary refuge if aquatic habitats dry out late in the summer. Thus, uplands in the project area would provide refuge, dispersal, and foraging habitat if California red-legged frogs are present. Similarly, intermittent drainages and other waters (seasonal wetlands, seasonal wetland swales, seeps, and roadside ditches), which could function as dispersal routes and foraging habitat for California red-legged frogs, are scattered throughout the project area.

California red-legged frogs were not observed during the May/June 2012 habitat assessment or during other species-focused and reconnaissance-level surveys conducted throughout the project area; however, protocol-level surveys have not been conducted within the project area or within 1 mile of the project area. There is one recorded occurrence of California red-legged frog approximately 3.9 miles northwest of the project area; however this record is considered suspect and no individuals have been observed in the vicinity before or after this 2005 record (ECORP Consulting 2013e; California Department of Fish and Wildlife 2014). The closest confirmed population of California red-legged frogs is at Spivey Pond approximately 26 miles east of the project area (California Department of Fish and Wildlife 2014). Given the lack of a nearby source population, the extensive development surrounding the project area (limiting dispersal opportunities), and historic habitat disturbance (golf course operation), there is a low likelihood of California red-legged frogs occurring within the project area. Potential aquatic (Carson Creek tributaries) and upland habitat for California red-legged frog is also present within the southern portion of the offsite infrastructure improvement areas.

Western Spadefoot

The western spadefoot is a medium sized, green, gray, or brown toad-like frog historically found through lower elevations within and surrounding California's Central Valley. They spend most of their time upland away from water and return to seasonally inundated pools and ephemeral drainages only to breed in late winter though early spring. Eggs and the subsequent tadpoles complete development in 3 to 11 weeks, after which they disperse as small froglets into upland areas where they forage and aestivate or hibernate (depending on season). Like most frogs, they are dietary generalists and eat a wide variety of beetles, flies, and other arthropods. Western spadefoots have declined throughout their range (Jennings and Hayes 1994; Morey 2005). They are closely tied to California's vernal pool landscapes, and as large vernal pool complexes have been lost, the distribution of western spadefoot has been reduced. Also, the introduction of nonnative American bullfrogs (*Lithobates catesbeianus*) and mosquitofish (*Gambusia affinis*) has negatively impacted some populations through predation (Jennings and Hayes 1994).

There are no CNDDB records for western spadefoot within El Dorado County (California Department of Fish and Wildlife 2014). The nearest record (CNDDB occurrence #55) is from Fair Oaks, Sacramento County, and is approximately 7.5 miles southwest of the project area. Other records exist for farther downslope in the Rancho Cordova and Roseville/Rocklin (Placer County) areas. The Sacramento County records represent the northeastern edge of the species' known distributional range.

No adult or larval stage (tadpole) western spadefoot were documented during protocol-level branchiopod surveys or during habitat assessment surveys throughout the project area. No potential breeding habitats were identified within the Pedregal planning area. Short-duration ponds were identified in the Serrano Westside planning area that may provide acceptable breeding habitat. However, upland dispersal/foraging habitat for adults in the vicinity of these ponds was, until somewhat recently, part of an active golf course. The only amphibian species observed within project area ponds were adult and larval Sierran treefrog (*Pseudacris sierrae*) and American bullfrog. Given the lack of CNDDB records for the species in the surrounding area, the paucity of records in nearby Sacramento County, and the lack of any observations of western spadefoots during extensive aquatic and terrestrial surveys of the project area, there is a low probability that western spadefoot occur in the project area. Limited surveys have been conducted within the offsite

infrastructure improvement areas; however, potential suitable breeding and upland habitat for western spadefoot is present within these areas.

Blainville's Horned Lizard

Blainville's (Coast) horned lizard is a California species of special concern. Although fragmented, the range of Blainville's horned lizard generally extends along the Pacific coast from the Baja California border west of the deserts and the Sierra Nevada, north to the Bay Area, and inland as far north as Shasta Reservoir, and south into Baja California (CaliforniaHerps 2013). The species occurs between sea level and an elevation of 8,000 feet (Stebbins 2003:301).

Blainville's horned lizard occupies a variety of habitats, including areas with an exposed gravelly-sandy substrate supporting scattered shrubs, chamise chaparral, annual grassland (Jennings and Hayes 1994:132), broadleaf woodland, and conifer forest (Stebbins 2003:300). It is most common in lowlands along sandy washes with scattered shrubs for cover. Habitat requirements include open areas for basking, patches of fine, loose soil where it can bury itself, and ants and other insect prey (Stebbins 2003:300–301). For extended periods of inactivity or hibernation, these lizards occupy small mammal burrows or burrow into loose soils under surface objects (Zeiner et al. 1988:148). Blainville's horned lizards have been observed to be active between April and October, and hatchlings first appear in July and August (Jennings and Hayes 1994:130).

Although no Blainville's horned lizards were documented during the onsite project surveys, portions of grassland in the project area provide potential habitat for this species. Much of the grassland habitat in the project area supports tall grasses with a dense thatch layer. These lizards could also utilize riparian and oak woodlands within the project area and vicinity. The closest documented occurrence is 3.5 miles east of the project area within chaparral habitat (California Department of Fish and Wildlife 2014).

Pacific Pond Turtle

Pacific pond turtle is a California species of special concern. The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992), inhabiting the quiet waters of ponds, reservoirs, marshes, or streams with rocky or muddy bottoms and vegetative cover (Stebbins 2003). Pacific pond turtles occasionally leave the water to bask, and females leave the water from May through July to lay eggs. These turtles can often be found sunning on emergent logs or rocks near the water's edge but quickly retreat to the water when disturbed (Stebbins 1954). They move up to 1,300 feet or more to upland areas adjacent to watercourses to deposit eggs and in cold climates to overwinter (Jennings and Hayes 1994).

Pacific pond turtles were observed in the two largest ponds at the southwestern corner of the project area during the May 2012 focused pond turtle surveys (Figure 3.3-1). Four adult pond turtles were observed in the water and basking on the west-facing banks of the ponds. Upland habitat surrounding the ponds is generally intact and provides suitable areas for egg-laying, particularly within open area to the east. One red-eared slider (nonnative species) was observed foraging in one of the ponds together with Pacific pond turtles during the survey. The tributary creek that drains south to Carson Creek likely serves as a movement corridor for both pond turtles and red-eared sliders. Pond turtle have also been previously reported from Carson Creek, approximately 1.5 miles south of the project area and adjacent to portions of the offsite infrastructure improvement areas. Creek and pond habitat located within the project area provides suitable aquatic habitat for pond turtles, while the grassland and woodland areas provide potential

upland nesting and dispersal habitat. Pond turtles could also occur within aquatic and upland habitat located within the southern portions of the offsite infrastructure improvement areas.

Golden Eagle

Golden eagle is fully protected under the California Fish and Game Code. It is also protected by the MBTA and the BGEPA.

Golden eagle is a year-round resident throughout much of California. The species does not breed in the center of the Central Valley but breeds in much of the rest of the state. Golden eagles typically occur in rolling foothills, mountain areas, sage-juniper flats, and deserts (Zeiner et al. 1990a:142–143). In California, golden eagles nest primarily in open grasslands and oak (*Quercus* spp.) savanna but will also nest in oak woodland and open shrublands. Golden eagles forage in open grassland habitats (Kochert et al. 2002:6). Preferred territory sites include those that have a favorable nest site, a dependable food supply (medium to large mammals and birds), and broad expanses of open country for foraging. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats (Johnsgard 1990:262). A few pairs of eagles nest on electrical transmission towers traversing grasslands (Hunt et al. 1999:13).

Oak woodlands in the project area provide suitable nesting habitat for golden eagle and foraging habitat is present in the annual grasslands. There are no CNDDB records of golden eagle nests within the project area. However, an active nest was recorded in 2014 (CNDDB Occurrence #321) and 2015 (CNDDB Occurrence #322) less than 0.5 mile west of the Pedregal planning area (California Department of Fish and Wildlife 2014, 2015).

Grasshopper Sparrow

The grasshopper sparrow is a California species of special concern. The species breeding range in California is fragmented throughout the state west of the Cascade-Sierra Nevada Crest (Dobkin and Granholm 2008; Vickery 1996). The species nest in shorter, moderately grazed open grasslands but have also been recorded in grassland-like cultivated lands such as alfalfa (Unitt 2008; Grinnell and Miller 1944).

There is one record (CNDDB Occurrence #15) of grasshopper sparrow nesting within 10 miles of the project area (California Department of Fish and Wildlife 2014). Grasshopper sparrows were not observed during 2012 breeding bird surveys. However, the project area and the offsite infrastructure improvement areas are within the range of this species and contain suitable grassland habitat for nesting and foraging.

Loggerhead Shrike

The loggerhead shrike is a California species of special concern and a USFWS bird of conservation concern. Loggerhead shrikes use a variety of open grasslands across their range, including grasslands, desert scrub, shrub-steppe, and open savannah (Yosef 1996). Nests are built in trees or shrubs with dense foliage surrounded by open habitat and are usually hidden well. Loggerhead shrikes search for prey from perches and frequently impale their prey on thorns, sharp twigs, or barbed-wire. The nesting period for loggerhead shrikes is March through June (Zeiner et al. 1990a:546).

There are no CNDDB records of loggerhead shrike nests within 10 miles of the project area (California Department of Fish and Wildlife 2014), and the species was not observed during 2012

breeding bird surveys. However, the project area and the offsite infrastructure improvement areas are within the range of this species and contain suitable grassland habitat for nesting and foraging.

Swainson's Hawk

Swainson's hawk is a state-listed threatened species. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (Estep 1989; Babcock 1995; Woodbridge 1998). The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawks arrive in California in early March to establish nesting territories and breed (California Department of Fish and Game 1994). They usually nest in large, mature trees. Most nest sites (87%) in the Central Valley are found in riparian habitats (Estep 1989:35) primarily because trees are more available there. Swainson's hawks also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August (Estep 1989:12, 35).

Although suitable nesting and foraging habitat for Swainson's hawks is present in the project area, Swainson's hawks more typically occur in grassland terrain and more rarely occur in the foothills. There is one record of a Swainson's hawk nest (CNDDB Occurrence #660) within 10 miles of the project area (California Department of Fish and Wildlife 2014). No Swainson's hawk nests or foraging adults were observed during breeding bird surveys in 2012. Suitable nesting and foraging habitat is present both in the project area and in the areas proposed for offsite improvements, however there is a low potential for this species to occur in the project area.

Tricolored Blackbird

Tricolored blackbird was recently "emergency-listed," and is now a protected species under CESA. Tricolored blackbird is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules and cattails, in Himalayan blackberries (*Rubus armeniacus*), and in silage and grain fields (Beedy and Hamilton 1997:3–4). The breeding season is from late February to early August (Beedy and Hamilton 1999). Tricolored blackbird foraging habitats in all seasons include annual grasslands, dry seasonal pools, agricultural fields (such as large tracts of alfalfa with continuous mowing schedules, and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular foraging sites. Most tricolored blackbirds forage within 3 miles of their colony sites but commute distances of up to 8 miles have been reported (Beedy and Hamilton 1997:5).

There are seven records of tricolored blackbird occurrences within 10 miles of the project area including one colony (CNDDB Occurrence #452) of approximately 1,000 individuals less than 2 miles west of the project site that was documented most recently in 2013 (California Department of Fish and Wildlife 2014). No breeding colonies or foraging adults were observed during the 2012 breeding bird surveys that were conducted within most of project area; however no surveys were conducted within the 85-acre addendum area. There is marginal suitable nesting habitat present in blackberry brambles along the riparian areas in the project area and in the area proposed for offsite improvements. However, the blackberry brambles are under a dense canopy of cottonwoods and willows, reducing the suitability of the brambles for nesting by tricolored blackbirds. In addition, the

patches of marsh vegetation in the former golf course on the Serrano Westside planning area are too small to support a tricolored blackbird nesting colony. Individuals from the recent recorded nesting colony west of the project site have been observed foraging in the open grasslands south of US 50, and are unlikely to forage in the fragmented grasslands within the project area.

Burrowing Owl

Western burrowing owl is a California species of special concern. Western burrowing owl is a year-round resident in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley. They occur primarily in grassland habitats but may also occur in landscapes that are highly altered by human activity. Suitable habitat must contain burrows with relatively short vegetation and minimal amounts of shrubs or taller vegetation. Western burrowing owl may also occur in agricultural areas along roads, canals, ditches, and drains. They most commonly nest and roost in California ground squirrel burrows, but may also use burrows dug by other species, as well as culverts, piles of concrete rubble, and pipes. The breeding season is March to August, but can begin as early as February. During the breeding season, owls forage near their burrows but have been recorded hunting up to 1.7 miles away. Rodent populations, particularly California vole populations, may greatly influence survival and reproductive success of California burrowing owls (Gervais et al. 2008).

There are four records of burrowing owl occurrences within 10 miles of the project area, and the closest documented occurrence is 1.5 miles to the west (California Department of Fish and Wildlife 2014). Annual grassland in the project area provides potential habitat. However, large areas are characterized as disturbed (former golf course) and support tall/dense grasses. There is more suitable breeding and wintering habitat in the annual grassland in the offsite infrastructure improvement areas. No owls were observed during the 2012 breeding bird surveys.

White-Tailed Kite

White-tailed kite is fully protected under the California Fish and Game Code. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands (Zeiner et al. 1990a:120).

The closest documented nest is 1 mile to the northwest (California Department of Fish and Wildlife 2014). Suitable nesting and foraging habitat occurs in the project area and in the areas proposed for offsite improvements. The species was observed foraging and exhibiting territorial behavior during 2012 breeding bird surveys, but no nests were detected.

Special-Status Fish

There is no habitat for special-status anadromous fish species within the project area. Two stream segments, tributaries to Carson Creek, are present within the project area. A Fisheries Assessment was completed for both of these unnamed stream segments. However, the project area is outside of the range of special-status anadromous fish species, and, as noted, there is no suitable habitat

present for these species. Therefore, special-status fish would not be affected by the proposed project and are not discussed further.

Other Protected Species

Bats

Pallid bat is a California species of special concern and is considered a high priority species in California by the Western Bat Working Group (2007). It is found throughout most of California at low to middle elevations (6,000 feet). Pallid bats are found in a variety of habitats including desert, brushy terrain, coniferous forest, and non-coniferous woodlands. Daytime roost sites include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are commonly under bridges but are also in caves and mines (Brown and Pierson 1996). Hibernation may occur during late November through March. Pallid bats breed from late October through February (Zeiner et al. 1990b:70), and one or two young are born in May or June (Brown and Pierson 1996).

Silver-haired bat is considered a moderate priority species in California by the Western Bat Working Group (2007). Silver-haired bats occur primarily in the northern portion of California and at higher elevations in the southern and coastal mountain ranges (Brown and Pierson 1996) but may occur anywhere in California during their spring and fall migrations. They are associated with coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats (Zeiner et al. 1990b:54). Silver-haired bats roost in trees almost exclusively in the summer, and maternity roosts typically are located in woodpecker hollows or in gaps under bark. Maternal colonies range from several to about 75 individuals (Brown and Pierson 1996).

Townsend's big-eared bat is a candidate species for listing under CESA, is a California state species of special concern, and a high priority species under the Western Bat Working Group's conservation priority matrix (Western Bat Working Group 2007). Townsend's big-eared bat occurs throughout California, but distribution appears to be limited by the availability of cavern-like roost structures. Townsend's big-eared bats have been found in a wide variety of habitats from desert to riparian and coastal woodland, but they are found in greatest numbers in areas with cavern-forming rock or abandoned mines (Western Bat Working Group 2005). Townsend's big-eared bats roost in dome-like spaces in caves or mines, where they roost hanging in the open from the ceiling. They have also been known to use cavern-like spaces in abandoned buildings or bridges, and in the basal hollows in large coast redwood trees (Mazurek 2004:60). Mating occurs in fall and spring, and pups are born in late spring to early summer (Pierson and Rainey 1998:2). Maternity roost size varies, and may contain only a few or up to several hundred individuals. The species is believed to be relatively sedentary, hibernating in caves and mines near summer maternity roosts, though seasonal movements are not well understood. Townsend's big-eared bats may have hibernated historically in aggregations of thousands of individuals (Pierson and Rainey 1998:1). They are highly sensitive to roost disturbance.

Western red bat is a California species of special concern and is considered a high priority species in California by the Western Bat Working Group (2007). It occurs throughout much of California at lower elevations. It is found primarily in riparian and wooded habitats but also occurs seasonally in urban areas (Brown and Pierson 1996). Western red bats roost in the foliage of trees that are often located on the edge of habitats adjacent to streams, fields, or urban areas. This species breeds in August and September, and young are born in May through July (Zeiner et al. 1990b:60).

Acoustic surveys for bats were conducted in the spring and fall of 2012 at the Pedregal and Serrano Westside planning areas. Two California species of concern were detected during the fall survey: pallid bat and western red bat. Both of these species are also identified as high priority species by the Western Bat Working Group. Three non-special-status species were confirmed within the project area: California myotis, western pipistrelle, and Mexican free-tailed bat. Three other species (big brown bat, Yuma myotis, and silver-haired bat) were also identified as "potentially detected" in the planning areas—this classification is due to inadequate data to conclusively identify these species. Of these three species, only the silver-haired bat is identified as sensitive (medium priority species by the Western Bat Working Group). This species is more commonly found in higher elevations and therefore would only be expected infrequently in lower elevations similar to the CEDHSP planning area. The majority of acoustic files from the three survey locations during the spring survey included Mexican free-tailed bat, big brown bat, and silver-haired bat. During the autumn survey, western pipistrelle accounted for the majority of acoustic files.

Invasive Plant Species

Invasive plants in the project area were identified based on the California Department of Food and Agriculture *Pest Ratings of Noxious Weed Species and Noxious Weed Seed* (California Department of Food and Agriculture 2010) and the California Invasive Plant Council's California Invasive Plant Inventory (California Invasive Plant Council 2006, 2007). The list of plant species observed is provided in Appendix E and identifies which species are included on either of these lists. An infestation of goat grass was observed in 2013 in the Pedregal planning area adjacent to the existing dirt road that extends through the north part of the area along the west side.

3.3.2 Environmental Impacts

Methods of Analysis

The impact analysis for biological resources was conducted based on the following anticipated project construction and operation activities, which could have direct and indirect effects of varying degrees on sensitive biological resources present in the project area.

- Vegetation removal.
- Grading and fill placement during construction.
- Channel dewatering or installation of temporary water-diversion structures.
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes.
- Soil compaction, dust, and water runoff from the construction site into adjacent areas.
- Introduction or spread of invasive plant species into adjacent open space areas.
- Runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction, operation, and maintenance into sensitive biological resource areas (e.g., riparian habitat, wetlands).

Construction and future operation-related activities associated with the proposed project could result in temporary or permanent impacts on biological resources. In assessing the magnitude of possible effects, the following assumptions were used in the impact analysis for biological resources

for onsite features. Assumptions for offsite improvements are described under the *Impacts on Biological Resources in the Offsite Improvements Areas* subsection.

- All construction, staging (including vehicle parking), and access areas would be restricted to the project development areas ("project area" outline) depicted in Figure 3.3-3. No construction or operation-related effects are anticipated within designated open space areas, except for minimal grading for trail construction, the onsite portion of the sewer line upgrade at Serrano Parkway, and as necessary for transitional grading between development and open space areas, provided that such activities do not exceed the minimum oak woodland retention requirements of County General Plan Policy 7.4.4.4, Option A.
- Oak mitigation planting activities within the designated open space portion of the project area could result in short-term temporary impacts associated with installation of oak saplings and irrigation lines. However, planting activities would avoid all sensitive habitats, including waters of the United States.
- No federally listed vernal pool branchiopods were documented during 2012/2013 protocol-level dry- and wet-season surveys conducted in of the CEDHSP area; therefore, the proposed project within the CEDHSP area is not anticipated to result in impacts on federally listed branchiopods. During the Section 404 permitting process, USACE will make a final determination whether measures must be implemented to address these species. CEDHSP Policy 5.11 specifically requires that any special-status vernal pool invertebrates be protected as required by federal and state agencies, and where protection is not feasible, vernal pool invertebrates shall be mitigated per the Wetland Mitigation and Monitoring Plan (WMMP), which is described in Impact BIO-3).
- Focused special-status wildlife surveys have not yet been conducted in 85-acre addendum area (natural open space) in the northeast section of the Serrano Westside planning area or in the offsite infrastructure improvement areas, which were added to the project after the 2012 and 2013 surveys. Therefore, this impact analysis assumes that these areas could support special-status species and/or sensitive habitats, including regulated wetlands and drainages.
- Loss of annual grassland vegetation community would not be considered a significant impact from a botanical standpoint and does not require further evaluation, because this habitat is common in the project region and beyond, is dominated by nonnative species at the project site, and is and not considered a sensitive community type by local, state, or federal agencies. Annual grassland vegetation also reestablishes more easily after disturbance than riparian or wetland communities. However, the loss of annual grassland habitat could be significant for some special-status wildlife species; these impacts are discussed below.

  The section of the unnamed tributary to Carson Creek in Serrano Westside would be retained, and the only impact on the creek would be a culvert for the Park Drive extension to the roundabout north of the proposed community park. Other culverts may be necessary if the potential connection to Silva Valley Parkway is constructed.

Thresholds of Significance

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, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as the County General Plan oak canopy retention standards.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

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
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 delineation of waters of the United States, 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.

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. 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. Impacts on oak woodland in the proposed offsite infrastructure improvement areas are discussed under Impact BIO-13.

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 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 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 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.[2] 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 installed, maintained, and monitored until the required survival rate has been achieved or until alternative mitigation has been secured.

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. 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.

[2] 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.

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.

Summary

Oak woodland is protected by policies in the County General Plan. 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 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. 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, it would not threaten to eliminate a plant community.

Mitigation Measure BIO-1a: Install construction barriers around the construction area to protect sensitive biological resources to be avoided

The project construction contractor will install orange construction barriers or other similar methods as discussed in the Biological Resources Study and IHMP to protect environmentally sensitive areas as one of the first orders of work. These sensitive areas will be protected by a barrier to avoid disturbance during construction. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans. The barrier will be installed before construction activities are initiated, maintained throughout the construction period, and removed when construction is completed. Sensitive biological resources that occur adjacent to the construction area include special-status wildlife habitats, oak woodland and riparian woodland to be retained as open space, and wetlands and other waters of the United States to be retained. The barrier will be removed within 72 hours of completion of work.

Mitigation Measure BIO-1b: Conduct environmental awareness training for construction employees

Prior to beginning construction activities, the project applicant will employ a qualified biologist to develop and conduct environmental awareness training for construction employees on the

importance of onsite biological resources, including oak woodland, riparian woodland, and mature trees to be retained; special-status wildlife habitats; potential nests of special-status birds; and roosting habitat for special-status bats. In addition, construction employees will be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations. The biologist will also explain the importance of other responsibilities related to the protection of wildlife during construction such as inspecting open trenches and looking under vehicles and machinery prior to moving them to ensure there are no lizards, snakes, small mammals, or other wildlife that could become trapped, injured, or killed in construction areas or under equipment.

The environmental awareness program will be provided to all construction personnel to brief them on the life history of special-status species in or adjacent to the project area, the need to avoid impacts on sensitive biological resources, any terms and conditions required by state and federal agencies, and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each person.

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, 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 provide the County with a monitoring log for each site visit, which will be provided to interested agencies upon request.

Mitigation Measure BIO-1d: Avoid and minimize potential disturbance of oak woodland habitat

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 surveys.

- 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.

Impact BIO-2: Loss of riparian woodland (less than significant with mitigation)

Riparian woodland habitat occurs in plan areas with proposed land use designations for residential, park, and open space. Riparian habitat in the residential and park land use designations would be permanently removed for project construction. Riparian habitat in the open space land use designation would be retained but could be indirectly affected by project construction activity and by project operation. For the proposed riparian corridor enhancement along the main drainage channel, the proposed activities (removal of invasive plants, new wetland plantings, and slope regrading in the open space area adjacent to the channel) would be expected to provide a benefit to riparian habitat. Impacts on riparian habitat in the proposed offsite infrastructure improvement areas are discussed below under Impact BIO-14.

Up to 2.40 acres of riparian woodland would be permanently removed for construction of residential development in the Serrano Westside and Pedregal planning areas. In the Serrano Westside planning area, riparian habitat would be removed in the areas proposed as Village Residential Medium – High (VRM-H) and Village Residential – High (VRH) north of Serrano Parkway, and in the Park Drive improvements extending to the Serrano Westside roundabout. Riparian habitat along the proposed trail east of the shopping center and adjacent to the construction zone elsewhere in the project area could also be temporarily affected due to damage during construction as a result of movement of equipment.

In the Pedregal planning area, riparian habitat would be preserved either in open space or in a designated avoidance area within the proposed VRH land use area.

The riparian woodland retained in the designated open space areas could be subject to indirect effects during and after construction. Construction activity adjacent to preserved riparian woodland could alter the topography and indirectly affect surface and groundwater flow that supports the riparian habitat. To protect riparian habitat outside of the proposed development area, the current County standards for development require a minimum setback of 50 feet from intermittent streams and wetlands and 100 feet from perennial streams. The County may modify these interim standards if more detailed information regarding slope, soil stability, vegetation, habitat, and other site-specific conditions demonstrates that a different setback is sufficient to protect the riparian area. Actual setbacks for the CEDHSP area would be determined during the permitting process in consultation with the resource agencies, including CDFW and USACE.

Local, state, and federal agencies recognize riparian habitats as sensitive natural communities. Impacts on riparian woodland in the project area would be a significant impact. Implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-1c would avoid temporary construction impacts on riparian woodland by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction. Implementation of the required construction setbacks would avoid the potential indirect impacts on riparian woodland. Mitigation Measure BIO-2 would compensate for unavoidable permanent loss of riparian

woodland and reduce the direct permanent impact to a less-than-significant level. Because the proposed project would avoid, minimize, and compensate for impacts on riparian woodland, it would not threaten to eliminate a plant community.

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

The project applicant will compensate for the loss of up to 2.40 acres of riparian woodland that cannot be avoided to ensure no net loss of habitat functions and values. Compensation will be at a minimum of 1:1 (i.e., 1 acre restored/created/enhanced or credits purchased for every 1 acre removed). Final compensation ratios will be based on site-specific information and determined through coordination with the appropriate state and federal agencies during the permitting process. Compensation may be a combination of mitigation bank credits and/or onsite habitat restoration and will be implemented as determined by the appropriate state and federal agencies during the permitting process. Permanent loss of riparian woodland will be compensated for by implementing one or a combination of the following options.

- The project applicant will purchase offsite mitigation bank credits for riparian woodland to allow for economy of scale and higher quality habitat due to large patch size and will provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits.
- The project applicant will employ a qualified restoration biologist to prepare a riparian restoration and monitoring plan that involves restoring or enhancing onsite riparian woodland, potentially along the perennial creek adjacent to the proposed bike trail. The project applicant and the County will ensure implementation of the riparian restoration and monitoring plan. Similar to the oak woodland mitigation plan in the CEDHSP, the restoration plan will include a species list and number of each species, planting locations, and maintenance requirements. Plantings will consist of cuttings taken from local plants, or plants grown from local seed. Planted species will be based on those removed from the project area and will include Fremont's cottonwood, red willow, sandbar willow, live oak, and/or valley oak. Native understory species, such as sedge species, mugwort, California wild rose, California wild grape, or other suitable species, will be planted. Plantings will be monitored annually for 10 years or as required in the project permits. For each monitoring period, the riparian restoration and monitoring plan will include a minimum percentage of planting survival to be considered successful. This percentage will be established in conjunction with the regulatory agencies, but will be in the range of 75–90%. If the survival criterion is not met in any monitoring year or at the end of the monitoring period, planting will be repeated after mortality causes have been identified and remedial measures have been implemented, and the monitoring period will be extended. The project applicant will implement the restoration plan, maintain plantings for 5 years (including weed removal, irrigation, and herbivory protection) during which annual success criteria monitoring will

occur. As feasible, existing native vegetation from the affected sites should be harvested and maintained for replanting after construction.

Impact BIO-3: Loss of jurisdictional wetlands, including seasonal wetlands, seasonal wetland swales, and seeps (less than significant with mitigation)

Several types of wetlands regulated by the USACE under CWA Section 404 occur in the project area. Wetlands in the Serrano Westside and Pedregal planning areas that are proposed for residential, park, and road land uses would be directly affected and filled as part of the project construction. Wetlands that are within the open space land use designation would be retained but could be indirectly affected by adjacent construction. Impacts on jurisdictional wetlands in the proposed offsite infrastructure improvement areas are discussed under Impact BIO-15.

Based on the USACE-verified extent of wetlands in the project area, project construction in the CEDHSP onsite areas would have direct permanent impacts on wetlands, as detailed below.

- Up to 0.072 acre of seasonal wetland and 0.130 acre of seasonal swale would be filled for construction of residences, the community park, and a local road in the Serrano Westside planning area south of Serrano Parkway, and the neighborhood park north of Serrano Parkway.
- Up to 0.126 acre of seep would be filled for construction of residences in the Serrano Westside planning area south of Serrano Parkway and in the Pedregal planning area.

One seep occurs in the proposed open space in the Pedregal planning area and would be avoided by project construction.

Earth-moving activities in the construction footprint could result in temporary and indirect impacts on wetlands that are outside of the construction footprint due to erosion and sedimentation into the nonconstruction areas. To protect wetlands outside of the proposed development area, the current County standards for development would require a minimum setback of 50 feet from the wetland edge. Actual setbacks for the CEDHSP area would be determined during the Section 404 permitting process in consultation with USACE.

Direct and indirect impacts on jurisdictional wetlands would be considered significant because they are regulated by the USACE and Regional Water Boards, requiring permits under CWA Sections 404 and 401, respectively. CEDHSP Policy 5.9 requires that construction, maintenance, and monitoring and compensation of wetlands comply with USACE requirements pursuant to the issuance of a Section 404 permit. In addition to implementing the measures required as part of the CWA permits, the project applicant would implement Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction; Mitigation Measure BIO-3a to avoid and minimize direct and indirect impacts on wetlands; and Mitigation Measure BIO-3b to compensate for direct impacts on wetlands. Further, CEDHSP Policy 5.10 requires preparation of a WMMP, which must include detailed information on the habitats present within conservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the conservation and mitigation areas, and funding mechanism information. Implementation CEDHSP policies and the following measures would reduce project impacts on wetlands to a less-than-significant level. Because the proposed project would avoid, minimize, and compensate for impacts on jurisdictional wetlands, it would not threaten to eliminate a plant community.

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

To the extent feasible, the project applicant will avoid and minimize impacts on waters of the United States, including wetlands, by implementing the following measures. These measures will be incorporated into contract specifications and implemented by the construction contractor.

- The project will be designed, to the extent feasible, to avoid direct and indirect impacts on waters of the United States, including wetlands.
- A SWPPP will be prepared and implemented during construction to identify appropriate BMPs for reducing construction impacts on waters of the United States.
- Within waters of the United States, including wetlands, that will be preserved as part of the proposed project, construction activities will be avoided in saturated or ponded natural wetlands and drainages during the wet season (spring and winter) to the maximum extent feasible. Where such activities are unavoidable, protective practices such as use of padding or vehicles with balloon tires will be employed.
- Exposed drainage banks and levees above drainages will be stabilized immediately following completion of construction activities. Other waters of the United States will be restored in a manner that encourages vegetation to reestablish to its preproject condition and reduces the effects of erosion on the drainage system.
- Any trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high water mark (OHWM) of streams will be removed in a manner that minimizes disturbance of the drainage bed and bank.
- To the extent feasible, in-stream construction within the OHWM of natural drainages will be restricted to the low-flow period (generally April through October).
- All activities will be completed promptly to minimize their duration and resultant impacts.

Mitigation Measure BIO-3b: Compensate for loss of jurisdictional wetlands

The project applicant will compensate for the loss of up to 0.072 acre of seasonal wetland, 0.130 acre of seasonal swale, and 0.126 acre of seep habitat to ensure no net loss of habitat functions and values. The compensation will be provided at a minimum ratio of 1:1, or as permitted by the USACE (1 acre restored or created for every 1 acre filled), but final compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies as part of the permitting process for the project. Compensation may be a combination of mitigation bank credits and restoration/creation of habitat and will be implemented before or immediately after completion of each phase of project

construction. Permanent loss of wetland habitat will be compensated for by implementing one or a combination of the following options.

- The project applicant will purchase offsite mitigation bank credits for the affected wetland type (seasonal wetland, seasonal swale, and seep) at a locally approved mitigation bank to allow for economy of scale and higher quality habitat due to large patch size. The project applicant will provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits.
- The project applicant will employ a qualified restoration biologist to develop a wetland restoration plan that involves creating or enhancing the affected wetland type (seasonal wetland, seasonal swale, and seep) on the project site. The project applicant and the County will coordinate with the USACE and Regional Water Board for plan approval and will ensure implementation of the wetland restoration plan. Potential restoration sites will be evaluated to determine whether this is a feasible option. If it is determined that onsite restoration is feasible, a restoration plan will be developed that describes where and when restoration will occur and who will be responsible for developing, implementing, and monitoring the restoration plan. The wetland restoration plan will also include a species list and number of each species, planting locations, and maintenance requirements. Plantings will be similar to those removed from the project area and will consist of inoculum taken from the affected wetlands, or plants grown from local material obtained within the project watershed. The vegetative cover of wetland plantings will be monitored annually for 3 years or as required in the project permits, and compared to nearby undisturbed reference wetlands. If vegetative cover of wetland plants is equivalent to reference sites at the end of the monitoring period, the revegetation will be considered successful. If the survival criterion is not met in any monitoring year or at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and remedial measures have been implemented, and the monitoring period will be extended to account for the required number of monitoring years for all plantings. Mitigation sites will be protected in perpetuity in a conservation easement.

Impact BIO-4: Loss of other waters of the United States, including intermittent drainages, drainage ditches/roadside ditches, and ponds (less than significant with mitigation)

Several types of other waters regulated by the USACE under CWA Section 404 occur in the project area. Other waters in the Serrano Westside and Pedregal planning areas that are proposed for residential, park, civic–limited commercial, and local road land uses would be directly affected and filled as part of the project construction. Other waters that are within the open space land use designation would be retained but could be indirectly affected by adjacent construction. Impacts on other waters of the United States in the proposed offsite infrastructure improvement areas are discussed under Impact BIO-15.

Based on the USACE-verified extent of other waters in the project area, project construction in the CEDHSP onsite areas would have direct permanent impacts on the areas listed below.

- Up to 0.039 acre of perennial creek for installation of a culvert for the Park Drive extension from El Dorado Hills Boulevard to the Serrano Westside planning area.
- Up to 0.236 acre of intermittent drainage for construction of residential, the community park, and a local road in the Serrano Westside planning area south of Serrano Parkway; residential

and commercial land uses north of Serrano Parkway; and residential and a local road in the Pedregal planning area.

- Up to 0.077 acre of drainage ditch/roadside ditch for construction of the community park in the Serrano Westside planning area south of Serrano Parkway, civic–limited commercial uses in the Serrano Westside planning area north of Serrano Parkway, and residential and a local road in the Pedregal planning area.
- Up to 2.261 acres of pond for construction of residential and the community park in the Serrano Westside planning area south of Serrano Parkway.

Earth-moving activities in the construction footprint could result in temporary and indirect impacts on other waters of the United States that are outside of the construction footprint due to erosion and sedimentation into the nonconstruction areas. To protect other waters outside of the proposed development area, County General Plan Policy 7.3.3.4 requires a minimum setback of 50 feet from the edge of intermittent streams and a minimum 100 feet from perennial streams. Actual setbacks for the CEDHSP area would be determined during the Section 404 permitting process in consultation with USACE.

Direct and indirect impacts on other waters of the United States would be considered significant because they are regulated by the USACE and Regional Water Boards, requiring permits under CWA Sections 404 and 401, respectively. However, in addition to implementing the measures required as part of the CWA permits, the project applicant would implement Mitigation Measures BIO-1a, BIO-1b, and BIO-1c to avoid temporary construction impacts on other waters of the United States by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction; Mitigation Measure BIO-3a to avoid and minimize direct and indirect impacts on other waters of the United States; and Mitigation Measure BIO-4 to compensate for direct impacts on waters of the United States. Implementation of the measures would reduce project impacts on other waters of the United States to a less-than-significant level. Because the proposed project would compensate for the loss of other waters of the United States, it would not substantially reduce the habitat of a fish or wildlife species or threaten to eliminate a plant or animal community.

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

The project applicant will compensate for the loss of up to 0.039 acre of perennial creek, 0.236 acre of intermittent drainage, 0.077 acre of drainage ditch/roadside ditch, and 2.261 acres of pond to ensure no net loss of habitat functions and values. The compensation will be provided at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected), but

final compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies as part of the permitting process for the project. Compensation may be a combination of mitigation bank credits and restoration/creation of habitat and will be implemented before or immediately after completion of each phase of project construction. In most, if not all, cases, other waters of the United States will be compensated out-of-kind by restoring riparian habitat adjacent to open water habitat. Restoration of riparian habitat will improve open water habitat quality by increasing the amount of cover adjacent to the aquatic habitat for birds and terrestrial species, and the amount of shaded riverine area in the aquatic habitat for fish and other aquatic species.

Permanent loss of other waters of the United States will be compensated for by implementing one or a combination of the following options.

- Purchase credits for created riparian stream channel at a locally approved mitigation bank. Out-of-kind compensation could also be used based on the vegetation type in the creek, i.e., seasonal wetland. Written evidence will be provided to the resource agencies that compensation has been established through the purchase of mitigation credits.
- Compensate out-of-kind for loss of drainages, ditches, and ponds by implementing other on-site wetland mitigation or compensatory mitigation for riparian woodland impacts described in Mitigation Measure BIO-2. The acreage required for compensation for loss of other waters of the United States will be added to the acreage for loss of riparian habitat.

Impact BIO-5: Potential impacts on special-status plant species within CEDHSP project area (less than significant with mitigation)

Construction of the proposed project has the potential to directly affect special-status plant species as part of vegetation removal for the project construction. No special-status species were identified in the proposed project area during the surveys conducted in 2012 and 2013 or in the 85-acre addendum area during the surveys conducted in 2015, which was the second consecutive year of drought in the project region. The 2015 surveys included visits to reference sites and review of herbarium collections. One CRPR 4.3 species (Sierra monardella) was identified in the 85-acre addendum area, however this species is not locally significant and, therefore, is not considered a special-status species for this analysis.

Although no special-status plants were found in the project area, additional special-status plant surveys could be necessary prior to project construction for two reasons. First, the survey findings for the 85-acre addendum area may be questioned because of the drought conditions in 2015, particularly for annual species that might not grow in drought years. Second, construction of the parts of the proposed project, including trails in the 85-acre addendum area, might not occur until at least 5 years after the most recent surveys, and updated preconstruction surveys of these areas could be required to confirm the absence of special-status plants.

Indirect impacts on special-status plants could occur adjacent to construction activities, where vegetation would be retained, but could be indirectly affected by movement of construction equipment and nearby vegetation removal.

The potential direct and indirect impacts on special-status plants would be significant effects. Implementation of Mitigation Measures BIO-5a and BIO-5b would reduce these potential impacts to a less-than-significant level. Because the proposed project would avoid, minimize, and compensate

for any impacts on special-status plants, it would not reduce the number or restrict the range of a rare or endangered plant.

Mitigation Measure BIO-5a: Conduct floristic surveys for special-status plants during appropriate identification periods

If required, the project applicant will employ a qualified botanist to conduct floristic surveys of the 85-acre addendum area and resurvey parts of the project area that will not be constructed for several years after project approval. These surveys will be conducted after final design of the area is complete and prior to all construction activities in order to document the presence of any special-status plants before project implementation. The botanist will consult with the appropriate resource agency regarding special-status species survey methods during drought periods, if needed, but will primarily follow the CDFW botanical survey guidelines (California Department of Fish and Game 2009). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the reported blooming period. The guidelines additionally recommend visiting reference populations of special-status species that may occur in the study area. Therefore, as feasible, the surveys will include site visits of reference populations of special-status plant species with potential to occur in the project area in order to ensure that they are identifiable during the survey period. This is particularly important for any annual plant species that has a long-lived seedbank and is known to not germinate when conditions are not conducive, e.g., during a drought. To account for different special status–plant identification periods, one or more series of field surveys may be required in spring and summer.

If any special-status plants are identified during the surveys, the botanist will photograph and map locations of the plants, document the location and extent of the special-status plant population. Requirements for compensatory mitigation will be based on the results of these surveys and are discussed in Mitigation Measure BIO-5b.

Mitigation Measure BIO-5b: Avoid or compensate for substantial effects on special-status plants

If one or more special-status plants are identified in the project area during preconstruction surveys conducted as part of Mitigation Measure BIO-5a, the project applicant will redesign or modify proposed project components of the project to avoid direct and indirect effects on special-status plants wherever feasible. If special-status plants can be avoided by redesigning projects, implementation of Mitigation Measures BIO-1a (barriers), BIO-1b (awareness training), and BIO-1c (biological monitor) would avoid significant impacts on special-status plants.

If complete avoidance of special-status plants is not feasible, then, if required by the concerned public resource agency (as determined by the legal status of the plant in question), the project applicant will prepare a mitigation plan in consultation with the resource agency. The project applicant will compensate for the effects of the project on special-status plants by transplanting or seeding replacements within appropriate habitats remaining in onsite Open Space areas. The conservation area will be preserved and managed by the County or by a conservation organization for the life of the project. Detailed information will be provided to the agencies on

the location and quality of the preservation area, the feasibility of protecting and managing the area in perpetuity, and the responsible parties. Other pertinent information also will be provided, to be determined through future coordination with the resource agencies.

Impact BIO-6: Potential mortality or disturbance of California red-legged frog within the CEDHSP project area (less than significant with mitigation)

No California red-legged frogs were observed during a habitat assessment conducted in 2012 within the CEDHSP project area (ECORP Consulting 2013e). However, potential aquatic breeding habitat was identified in perennial and nearly perennial ponds located within the Serrano Westside planning area. In addition, uplands within the project area support grasslands with small mammal burrows that would provide upland habitat for the species, and the intermittent drainages could function as dispersal routes for the species. Overall, there is a low likelihood that California red-legged frogs are present within the project area given the lack of a nearby source population (closest confirmed is 26 miles to east), the extensive development surrounding the project area (limiting dispersal opportunities), and historic habitat disturbances (former golf course operation within Serrano Westside). Protocol-level surveys have not been conducted within the project area to confirm presence or absence of the species. Up to 1.84 acres of potential aquatic breeding habitat (ponds) would be filled and up to 93 acres of upland grassland habitat for California red-legged frog would be converted to urban uses during construction of the residential housing, the community park, a local road in the Serrano Westside planning area south of Serrano Parkway, and the neighborhood park north of Serrano Parkway. If present in the project area, California red-legged frogs could be killed, injured, or disturbed by activities that remove suitable aquatic or upland habitat. Because California red-legged frog is a federally listed species, the species is rare, and populations within the Sierra Nevada foothills are uncommon and isolated, this potential impact would be significant. As described above, the project applicant will implement general protection measures for biological resources, including Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction; and Mitigation Measure BIO-3a to avoid and minimize direct and indirect impacts on wetlands. In addition to these general protection measures, if required by USFWS, the project applicant will implement all or some (as applicable) of Mitigation Measures BIO-6a and 6b, to avoid, minimize, and compensate for direct and indirect impacts on California red-legged frogs and their habitat. With the implementation of these collective measures, the proposed project would avoid, minimize, and compensate for direct and indirect impacts on California red-legged frogs 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 California red-legged frog.

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

Based on the presence of suitable California red-legged frog aquatic and upland habitat within CEDHSP project area, and because protocol-level surveys have not been previously conducted onsite, the project applicant will either assume presence of California red-legged frog in the project area or employ a qualified biologist to conduct protocol-level surveys for the species, unless USFWS determines a finding of no effect. If conducting surveys is the preferred approach, the surveys will follow protocols identified in the USFWS 2005 *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog*, which includes a survey area encompassing the entire project area and all suitable habitat within up to 1 mile from the project area (limits of survey area determined during coordination with USFWS). If protocol surveys determine absence of California red-legged frog adults, tadpoles, or egg masses from the project area and from aquatic habitats up to 1 mile from project area, and if USFWS confirms the results, then the proposed project would have no impacts on California red-legged frog and no further mitigation is required. If presence of California red-legged frog is inferred by the project applicant or confirmed during surveys, the project applicant will implement Mitigation Measure BIO-6b to avoid and minimize impacts on California red-legged frog.

If presence of California red-legged frog is either inferred or confirmed, ESA consultation with USFWS will be required to address effects on this species before any ground-disturbing activities can occur.

Mitigation Measure BIO-6b: Avoid and minimize impacts on California red-legged frog

If California red-legged frogs are found during protocol-level surveys or are assumed to be present onsite, the project applicant will implement the following measures prior to and during ground-disturbing activities associated with construction to avoid and minimize potential effects on California red-legged frog.

- Before construction begins, a qualified biologist will locate appropriate relocation areas and prepare a relocation plan for California red-legged frogs that may need to be moved prior to or during construction. The project applicant will submit this plan to USFWS for approval a minimum of 30 days prior to the start of construction.
- Prior to disturbance or filling of suitable aquatic breeding habitat for California red-legged frog, visual and dip-net surveys (non-protocol) will be conducted, under the discretion of USFWS, to determine if California red-legged frog adults, tadpoles, or egg masses are present. If any of these life stages are identified, they will be relocated to a USFWS-approved offsite location according to the relocation plan (described above). Relocation activities would constitute take under the ESA and must be authorized by USFWS under a Biological Opinion.
- Immediately prior to construction, a USFWS-approved biologist will conduct a preconstruction survey for California red-legged frog within areas proposed for ground disturbance. The biologist will carefully search all obvious potential hiding spots for California red-legged frogs, such as large downed woody debris, the perimeter of pond or

wetland habitat, and the riparian corridor associated with streams and drainages. Preliminary results of the preconstruction survey will be provided to the County and USFWS within 48 hours of completion.

- A USFWS-approved biologist will train all project staff regarding habitat sensitivity, identification of special-status species, and required practices before the start of ground-disturbing activities. The training will include the general measures that are being implemented to conserve this species as they relate to the project, the penalties for noncompliance, and the boundaries of the approved work area. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.
- A USFWS-approved biologist will monitor initial ground-disturbing activities (i.e., grading, vegetation removal). The USFWS-approved biologist will complete a daily log summarizing activities and environmental compliance. Resumes of all biologists that will survey or monitor for California red-legged frog will be submitted to USFWS for approval prior to the start of construction.
- If a California red-legged frog is encountered during preconstruction surveys or during construction, activities will cease and USFWS will be contacted immediately for direction on how to proceed. If the individual(s) cannot or do not move offsite on their own, USFWS or a USFWS-permitted biologist will trap and move the individuals in accordance with the relocation plan (described above).
- The USFWS-approved biologist will have the authority to halt construction activities if any of the project requirements or agency conditions are not being fulfilled. If the biologist has requested a stop work due to take of California red-legged frog, USFWS will be notified within 1 working day via email or telephone.
- Construction disturbances and other types of project-related disturbance to California red-legged frog will be minimized to the maximum extent practicable and confined to the designated project site.
- Potential habitat outside the construction area but within the project area (i.e., open space) will be delineated with high visibility flagging or fencing to prevent encroachment of construction personnel and equipment into these areas during project work activities. At no time will equipment or personnel be allowed to adversely affect areas outside the project site without authorization from USFWS.
- Because dusk and dawn are often the times when California red-legged frogs are most actively foraging and dispersing, all construction activities adjacent to potentially occupied habitat should cease 0.5 hour before sunset and should not begin prior to 0.5 hour before sunrise.
- To prevent inadvertent entrapment of California red-legged frogs during construction, all excavated, steep-walled holes or trenches more than 6 inches deep will be provided with one or more escape ramps constructed of earth fill or wooden planks and will be inspected by a qualified biologist prior to being filled.
- Work crews or an onsite biological monitor will inspect open trenches, pits, and under construction equipment and material left onsite in the morning and evening to look for amphibians that may have become trapped or are seeking refuge.

- No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) will be permitted at the project site to avoid harassment or killing or injuring of California red-legged frog.
- No monofilament plastic mesh or line will be used for erosion control.
- All vehicle parking will be restricted to previously determined areas or existing roads within the designated work area.
- All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers to avoid attracting predators. The trash containers will be secured and covered in the project area at the end of each working day.

Impact BIO-7: Potential mortality or disturbance of Pacific pond turtle within CEDHSP project area (less than significant with mitigation)

Pacific pond turtles have been documented within the CEDHSP project area in two large ponds along the southwestern boundary of the Serrano Westside planning area (Figure 3.3-1). Suitable aquatic and upland (overwintering, nesting) habitat for pond turtles would be removed by construction of the residential housing and the community park within the Serrano Westside planning area. Pacific pond turtles may be killed, injured, or disturbed by these activities. Potential direct impacts include could include mortality or injury by equipment, entrapment in open trenches or other project facilities, and removal or disturbance of aquatic or upland nesting habitat. Construction activities (such as grading and movement of heavy equipment) could result in the destruction of pond turtle nests containing eggs or young individuals if affected areas are being used for egg deposition. Loss of individual turtles, nesting sites, or eggs in the project area could diminish the local population and lower reproductive potential, which could contribute to the further decline of this species. This impact would be considered significant. Implementation of general protection measures described above—Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction—in addition to Mitigation Measure BIO-7 would reduce this impact. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on Pacific pond turtle and its 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 Pacific pond turtle.

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

The project applicant will implement the following measures to avoid and minimize impacts on Pacific pond turtles.

- The project applicant will retain a qualified wildlife biologist to conduct a preconstruction survey 2 weeks before and within 48 hours of disturbance in aquatic and riparian habitats. The survey objectives are to determine presence or absence of pond turtles in the construction work area and if necessary to allow time for successful trapping and relocation.
- If feasible, the surveys will be timed to coincide with the time of day and year when turtles are most likely to be active and visible (during the cooler part of the day 8:00 a.m.–12:00 p.m. during spring, summer, and late summer). Prior to conducting presence/absence surveys, the biologist will locate the microhabitats for turtle basking (logs, rocks, brush thickets) and determine a location to quietly observe turtles.
- Each survey will include a 30-minute wait time after arriving onsite to allow startled turtles to return to open basking areas. The survey will consist of a minimum 15-minute observation time per area where turtles could be observed.
- If turtles are observed during a survey and they cannot be avoided (i.e., pond will be filled), they will be either hand-captured or trapped and relocated outside the construction area to a CDFW-approved site. The relocation site will support suitable aquatic habitat and the biologist(s) performing the relocation will have a valid memorandum of understanding or scientific collecting permit from CDFW. Possible relocation sites include perennial ponds within the open space portion of the project area or Carson Creek downstream of the project area where pond turtles have been previously documented.
- Following relocation of pond turtles from the project area, the occupied habitat will be dewatered within 48 hours of relocation to minimize the potential for pond turtles to re-inhabit the site. A CDFW-approved biologist will monitor dewatering activities and will hand capture any turtles that remain and relocate them to the CDFW-approved relocation site.

Impact BIO-8: Potential mortality or disturbance of Blainville's horned lizard within CEDHSP project area (less than significant with mitigation)

Potential habitat (grassland and woodlands) for Blainville's horned lizard is present within the CEDHSP project area. Blainville's horned lizard is a California species of special concern, but it is not listed as endangered, candidate, or threatened by USFWS or CDFW. No horned lizards or sign of their presence (pellets/scat) were observed during 2012 surveys (ECORP Consulting 2013h), and overall there is a low potential for the species to occur onsite based on the lack of bare ground, dense grasses and thatch, lack of native ant colonies (preferred prey), and high disturbance from previous golf course activities in the Serrano Westside planning area. However, this does not preclude the potential that horned lizards may be present. If horned lizards are present within areas proposed for development, they could be killed, injured, or disturbed by construction activities. Additionally, horned lizards potentially occurring in adjacent open space areas would be exposed to increased predation by domestic animals such as cats and dogs. Existing extant populations of horned lizards in the Sierra foothills (including El Dorado County) are scattered and are becoming increasingly fragmented and threatened by encroaching development (Jennings and Hayes 1994:132). Loss of individual horned lizards could diminish the local population and lower reproductive potential, which could contribute to the further decline of this species both locally and regionally. This impact would be considered significant.

Implementation of general protection measures described above(Mitigation Measures BIO-1a, BIO-1b, and BIO-1c) would avoid temporary construction impacts on horned lizards by requiring

barriers to protect sensitive horned lizard habitat, as determined by the biological monitor prior to construction, environmental awareness training for construction employees, and periodic site visits during construction would reduce the construction impact to a less-than-significant level.

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 open space management plan (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 include installation and maintenance of interpretive signs designating these areas as open space for the protection of sensitive natural resources with restricted uses defined (i.e., offroad vehicle prohibited, pet/wildlife interaction education). Implementation of Mitigation Measure BIO-8 requires that the OSMP also include specific provisions requiring that domestic animals be on leash, pet and human food should not be left outside, and that trash containers are closed at all times. This would help reduce the potential for domestic animal predation. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on Blainville's horned lizard, 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 Blainville's horned lizard.

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

The County shall ensure the OSMP includes requirements to help reduce the potential for domestic pet predation on wildlife species. Specific actions should be developed by a qualified wildlife biologist. Such requirements could include, but would not be limited to, keeping pets on leash in open space and woodland areas, ensuring human and pet food and trash sources are not accessible to wildlife, and others as recommended by the wildlife biologist.

Impact BIO-9: Potential mortality or disturbance of nesting special-status and non–special-status birds within the CEDHSP project area (less than significant with mitigation)

Special-status birds that may nest in the oak and riparian woodland habitats in and adjacent to the CEDHSP project area include white-tailed kite, golden eagle, and Swainson's hawk. Burrowing owl and grasshopper sparrow may nest in ruderal areas or annual grassland in or adjacent to the project area. Loggerhead shrikes may nest in scattered shrubs and trees in more open portions of the construction area. Tricolored blackbirds may nest in blackberry brambles or riparian vegetation along drainages in the project area. The project area also supports other non–special-status bird species. Based on the 2012 breeding bird survey (ECORP Consulting 2013j), three active red-tailed hawk nests were observed within the CEDHSP project area (Figure 3.3-1).

Vegetation removal and other construction activities during the breeding season (generally February 1 through August 31) could result in the mortality or disturbance of nesting birds and raptors in and adjacent to the construction area. The removal of annual grassland and riparian and oak woodland would reduce the amount of available nesting habitat for special-status and non–special-status birds. Oak woodland mitigation would also remove suitable grassland habitat for ground-nesting birds. Planting activities during the breeding season within the areas proposed for open space protection could also disturb nesting birds.

Disturbances that result in the incidental mortality of adults, loss of fertile eggs or nestlings, or other events that lead to nest abandonment would be considered a significant impact and are prohibited under the MBTA and California Fish and Game Code Sections 3503 and 3503.5. Swainson's hawks are also listed under CESA, golden eagle is federally protected under the BGEPA, and white-tailed kite is considered a fully protected species under California Fish and Game Code Section 3511. There is one record of a nesting Swainson's hawk within 10 miles of the CEDHSP project area (California Department of Fish and Wildlife 2014); however, the current breeding range of Swainson's hawks does not extend east of that occurrence into the project area. Based on the absence of known nesting activity within 5 miles of the project area, lack of large expanse foraging areas within the project vicinity, and the existence of larger patches of high-value foraging habitat closer to recorded nest sites than to the project area, there is a very low potential for Swainson's hawks to nest or forage in the project area. Therefore, the loss of potential foraging habitat for Swainson's hawk in the project area is not considered a significant impact on Swainson's hawk.

Because white-tailed kite is fully protected, removal of trees with active nests and activities that may result in loss of white-tailed kites are prohibited. Removal of nests or suitable nesting habitat (e.g., trees, shrubs, ruderal areas, grassland) and construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Such losses could affect the local population of special-status and non–special-status species and would be considered a significant effect.

Implementation of general protection measures described above—Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on nesting birds by requiring barriers to protect active nests detected during preconstruction surveys, environmental awareness training for construction employees, and periodic site visits during construction—in addition to Mitigation Measures BIO-9a and BIO-9b would reduce this effect on special-status and non–special-status birds. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on nesting birds, and would not substantially reduce the number or restrict the range of listed avian species or cause populations to drop below self-sustaining levels. Therefore, the proposed project would have a less-than-significant impact on special-status and non–special-status birds.

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

To the maximum extent feasible, the project applicant will conduct all necessary vegetation (trees, shrubs, grasses) removal/trimming during the nonbreeding season for most birds and raptors (generally September 1–January 31). If vegetation removal cannot be removed in accordance with this timeframe, there is a high potential that birds and/or raptors will nest in the project area and require no-disturbance buffers. If vegetation removal or trimming will be conducted during the nesting season (February 1–August 31), preconstruction nesting bird surveys will be required and additional protective measures will be implemented (see Mitigation Measure BIO-9b).

Mitigation Measure BIO-9b: Conduct nesting surveys for special-status and non–special-status birds and implement protective measures during construction

The project applicant will retain a qualified wildlife biologist(s) to conduct preconstruction nesting bird surveys prior to the start of construction occurring between February 1 and August 31. The biologist(s) conducting the surveys will have knowledge of the relevant species to be surveyed. A minimum of three separate surveys will be conducted between February 1 and June 1 to account for different species that have different survey times. In addition, one survey will be conducted no more than 48 hours prior to initiating ground-disturbing activities. Surveys will include a search of all suitable nesting habitat (e.g., trees, shrubs, annual grassland, and emergent wetland vegetation) in the construction area. In addition, a 500-foot area around the project area will be surveyed for nesting raptors, and a 50-foot buffer area will be surveyed for other nesting birds. If no active nests are detected during these surveys, no additional measures are required. Surveys should be repeated if there is a lapse in construction of more than 10 days or if construction begins in a new area where suitable nesting habitat is present and has not been surveyed within the previous 10 days.

If active nests are found in the survey area, a minimum no-disturbance buffer for song birds and raptors will be established around the nest sites to avoid disturbance or destruction of the active nest until the end of the breeding season (approximately September 1) or until a qualified wildlife biologist determines that the young have fledged and moved out of the project area (date of fledging varies by species). The extent of the buffers will be determined by the biologists in coordination with USFWS and/or CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. If construction activities must encroach upon established buffers, additional protection measures (developed in coordination with USFWS and/or CDFW) may be necessary to avoid take and could include periodic nest monitoring, installation of visual screens, and restrictions on construction timing to allow birds to resume normal activities during certain portions of the day.

Impact BIO-10: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within the CEDHSP project area (less than significant with mitigation)

The proposed project would result in the loss of mature trees, which provide potential roosting habitat (cavities, crevices, furrowed bark, and foliage) for special-status bats (western red bat and pallid bat) and bats for which conservation actions are warranted (silver-haired bat; Western Bat

Working Group 2007). Silver-haired bat was potentially detected in both the Pedregal and Serrano Westside planning areas during bat acoustic surveys conducted in 2012 (Wyatt 2013). Western red bat and pallid bat were detected only in the Serrano Westside planning area. In addition, there is potential for Townsend's big-eared bat and pallid bat to occur within the proposed designated open space areas within the CEDHSP project area. Tree removal/trimming and noise or other construction activities could result in the injury, mortality, or disturbance of roosting bats if they are present in cavities, crevices, furrowed bark, or foliage of trees within or adjacent to construction areas. Mortality of tree-roosting bats during the maternity season or hibernation period that results from tree removal/trimming or other disturbances has the potential to affect a large number of bats and could substantially reduce the local populations of these species. This impact would be significant. Implementation of Mitigation Measures BIO-1a BIO-1b, BIO-1c, and BIO-1d to avoid temporary construction impacts on bats by requiring barriers to protect roosting habitat, environmental awareness training for construction employees, periodic site visits during construction, and minimizing disturbance to oak woodland habitat, in addition to Mitigation Measure 9a and Mitigation Measure BIO-10 to identify bat roosts and implement avoidance and minimization measures would lessen effects on western red bat, pallid bat, and other bat species. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on tree-roosting bats and their habitat, and would not substantially reduce the reduce the number or restrict the range of these species or cause populations to drop below self-sustaining levels. Therefore, the proposed project would have a less-than-significant impact on tree-roosting bats.

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

Prior to tree removal or trimming activities associated with construction, the project applicant will retain a qualified biologist to examine trees to be removed or trimmed for suitable bat roosting sites. High-quality habitat features (large tree cavities, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch, etc.) will be identified, and the area around these features will be searched for bats and bat sign (guano, culled insect parts, staining, etc.). Riparian and oak woodlands should be considered potential habitat for solitary foliage-roosting bat species. Specific survey methods for the site will be developed in coordination with CDFW.

If potential bat roosting sites are identified within or adjacent to construction areas, including tree removal/trimming, the project applicant will coordinate with CDFW to identify protective

measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures would include but are not limited to the following.

- If feasible, all tree removal will be conducted between September 15 and October 30, which corresponds to a time period when bats have not yet entered torpor or would be caring for nonvolant young. Potential roost trees will be removed in pieces rather than felled all at once.
- Active maternity roosts, whether solitary or colonial, will remain undisturbed until September 15 or only after a qualified biologist has determined the roost is no longer active.
- If a non-maternity roost tree is located within the construction area and tree removal or trimming must occur between October 30 and September 15, a qualified biologist (familiar with bats) will be present during tree trimming/removal activities. To minimize impacts on the bats, tree trimming/removal should occur in the late afternoon or evening when it is closer to the time that bats would normally arouse. Tree removal should begin with removal of limbs to create enough noise and vibration to allow bats time to arouse and leave the tree or as prescribed by CDFW biologists. The biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW. The biologist will prepare biological monitoring report that will be provided to the County and CDFW.

Impact BIO-11: Interfere with the movement of resident or migratory wildlife (less than significant with mitigation)

Undeveloped grassland and woodland areas within the CEDHSP project area provide potential breeding, foraging, and refuge habitat for many species of resident and migratory wildlife such as black-tailed deer, wild turkey, squirrels, raccoons, skunks, mice, and numerous birds. Based on the conceptual design of the proposed project and implementation of the IHMP, the proposed project would retain 85% of the existing oak woodlands (based on canopy), with most of that habitat occurring within designated open space areas (Figure 3.3-3). Because the proposed project is located within an area of existing development and is not adjacent to any designated important biological corridors or ecological preserves, no impact on migratory corridors for larger wildlife species would occur as a result of project development.

The western edge of the riparian habitat in the Serrano Westside planning area is adjacent and parallel to El Dorado Hills Boulevard, which creates some existing disturbance for wildlife in the riparian area. The eastern edge, however, currently borders annual grassland that is undeveloped except for a paved golf cart path that receives occasional use by maintenance staff and recreational users. This area provides a buffer for wildlife species that occupy the riparian habitat. After development of the CEDHSP area, this buffer would be converted to residential uses and the riparian habitat would be subject to encroachment by people and domesticated animals, which could cause increased disturbance to and mortality of wildlife in the open space riparian habitat. Similarly, proposed development within the Pedregal planning area would encroach upon and fragment existing oak woodland habitat in the southern portion of this area, also leading to increased encounters with people and pets. This impact is potentially significant.

Because large areas of oak woodland would remain intact after project construction, no long-term impact on wildlife use of the oak woodland habitat is anticipated. Further, the OSMP that would be prepared by the applicant (see Impact BIO-8) guides the conservation and protection of oak

woodland and wildlife uses within designated open space in the project area in perpetuity. The OSMP would include installation and maintenance of interpretive signs designating these areas as open space for the protection of sensitive natural resources with restricted uses defined (i.e., offroad vehicle prohibited, pet/wildlife interaction education). In addition to the OSMP requirements, implementation of the IHMP (as described under Impact BIO-1: Loss of oak woodland) would ensure that oak canopy affected by the proposed project will be replaced onsite at a 1:1 ratio. Replacement trees would be monitored and managed according to specifications outlined in the IHMP (Appendix F). Implementation of Mitigation Measure BIO-8 would ensure the OSMP includes requirements to help reduce the potential for domestic animal predation on wildlife.

Protection of open space lands under the OSMP, compensation for the loss of oak woodland habitat under the IHMP, and implementation of Mitigation Measures BIO-1d (avoid and minimize disturbance of oak woodland) and BIO-8 (OSMP requirements) would reduce indirect impacts on the movement of resident and migratory wildlife to a less-than-significant level. No additional mitigation is required. Because the proposed project would avoid and minimize impacts on resident and migratory wildlife and their habitat, it would not substantially reduce the habitat of a wildlife species, cause a wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, or reduce the number or restrict the range of a rare or endangered animal.

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

Impact BIO-12: Conflict with the County General Plan oak protection policies (less than significant)

County General Plan Policies 7.4.4.4 and 7.4.5.1 pertain to oak woodland that occurs in parts of the project area with proposed land use designations for residential, civic–limited commercial, and open space. As described under Impact BIO-1, existing oak woodland canopy in the project area is 27.7%. According to County General Plan Policy 7.4.4.4, this density requires an 85% retention of oak woodland. Project construction would remove up to 15% of the existing oak woodland, retaining 85%. In addition, compensatory oak plantings sufficient to replace oak canopy at a ratio of at least 1:1 would be installed as part of the oak mitigation plan included in the CEDHSP. Further description of the impact on oak woodland is included under Impact BIO-1. With implementation of the IHMP (Appendix F), the project would not conflict with the County General Plan oak canopy retention standards, and this impact would be less than significant. No additional mitigation is required.

In accordance with County General Plan Policy 7.4.5.1, focused tree surveys for landmark and heritage trees would be conducted for each project phase at the tentative map stage, and construction in residential lots would be adapted to avoid impacts on landmark and heritage trees, wherever feasible. If any landmark or heritage trees could not be avoided, the oak woodland replacement plantings described in the IHMP (Appendix F) would compensate for this loss and reduce this impact to a less-than-significant level. No additional mitigation is required. Because the proposed project would avoid, minimize, and compensate for impacts on oak trees, it would not

threaten to eliminate a plant community or reduce the number or restrict the range of a rare or endangered plant.

Impact BIO-13 Potential introduction and spread of invasive plant species (less than significant with mitigation)

Invasive plants are already present in the proposed project area. Invasive plants would be removed from the main drainage channel as part of the proposed riparian corridor enhancements, and native wetland plant species would be planted, which would help reduce invasive species in that location. However, construction activities could introduce new invasive plants to the project area or contribute to the spread of existing invasive plants to uninfested areas outside the project area. Invasive plants or their seeds may be dispersed by construction equipment if appropriate prevention measures are not implemented. The introduction or spread of invasive plants as a result of the project could have a significant effect on sensitive natural communities within and outside the project area by displacing native flora.

Introduction or spread of invasive plant species is of concern to CDFW. Therefore, this is a potentially significant impact. Implementation of Mitigation Measure BIO-13 would reduce this impact to a less-than-significant level. Because the proposed project would avoid the introduction and minimize the spread of invasive plants, it would not substantially reduce the habitat of a wildlife species or threaten to eliminate a plant or animal community.

Mitigation Measure BIO-13: Avoid the introduction and minimize spread of invasive plants

To avoid the introduction of new invasive 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 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.

Impacts on Biological Resources in the Offsite Infrastructure Improvement Areas

The impacts below were analyzed based on information available at the time of this writing for the proposed offsite infrastructure improvement areas shown in Figure 2-9. The analysis assumed a 250-foot study area radius around the footprint (alignment) of each proposed offsite improvement area.

Impact BIO-14: Potential loss of sensitive natural communities within the offsite infrastructure improvement areas (less than significant with mitigation)

Installation of infrastructure improvements within the proposed offsite areas has the potential to affect sensitive natural communities. Impacts on sensitive natural communities could include loss of oak woodland or oak tree canopy in the offsite infrastructure improvement areas (ECORP Consulting 2014f). Figure 3.3-1 shows the locations where oak canopy is present. Riparian woodland would be removed in the La Borgata and pedestrian crossings along the unnamed tributary to Carson Creek and in the potential connection to Silva Valley Parkway and the recycled water line expansion area along another unnamed tributary to Carson Creek.

Estimates of oak canopy impacts identified a maximum potential impact of 1.275 acres within the offsite infrastructure improvement areas (Table 3.3-6). These impacts would occur within the footprints of the proposed infrastructure improvements. Because oak trees occur within the riparian woodland in the potential connection to Silva Valley Parkway and the recycled water line expansion area, parts of the riparian habitat are included in the oak canopy impact calculations.

Table 3.3-6. Potential Permanent Direct Impacts on Oak Canopy within Offsite Infrastructure Improvement Areas

Offsite Infrastructure Improvement Area	Maximum Potential Impact Area (acres)
Pedregal North Water Line	0.126
Pedregal South Water Line	0.002
Park Drive Extension and Pedestrian Crossings	0.002
Potential connection to Silva Valley Parkway and the Recycled Water Line Expansion Area	1.144
Total	1.275

Impacts on oak canopy might occur as a result of other projects that could be constructed by others before CEDHSP development and that overlap with the Park Drive extension and pedestrian crossings, potential connection to Silva Valley Parkway, and the recycled water line expansion.

The types of impacts from construction would be similar to those described above under Impacts BIO-1 and BIO-2 and would result in significant effects on oak woodland canopy and riparian woodland, if it is not avoidable by construction. Implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d would reduce temporary construction impacts 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 canopy and riparian woodland. Implementation of Mitigation Measure BIO-2 would reduce direct impacts on riparian woodland to a less-than-significant level. Implementation of Mitigation Measure BIO-14 would reduce direct effects on oak canopy to a less-than-significant level. Because the proposed project would avoid, minimize, and compensate for impacts on oak woodland through implementation of the IHMP and impacts on riparian woodland, it would not threaten to eliminate a plant community.

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-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), 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.

Impact BIO-15: Potential loss of waters of the United States within the offsite infrastructure improvement areas (less than significant with mitigation)

Waters of the United States that are regulated by the USACE under CWA Section 404 occur in the offsite infrastructure improvement areas. Installation of infrastructure improvements within the proposed offsite areas has the potential to directly affect and fill wetlands and other waters as part of the project construction. Wetlands and other waters that are adjacent to the infrastructure improvement areas would be retained but could be indirectly affected by adjacent construction.

Based on the preliminary mapping of wetlands and other waters in the proposed offsite infrastructure improvement areas (see Figure 3.3-2), construction in these areas could have the following direct permanent impacts on waters of the United States of up to 1.405 acres.

- Loss of up to 0.036 acre of marsh in the proposed north pedestrian crossing and the US 50 pedestrian crossing.
- Loss of up to 0.419 acre of seasonal wetland in the potential connection to Silva Valley Parkway.
- Loss of up to 0.2643 acre of seasonal wetland swale in the potential connection to Silva Valley Parkway, and recycled water line expansion.
- Loss of up to 0.171 acre of seep in the potential connection to Silva Valley Parkway.
- Loss of up to 0.496 acre of perennial creek in the proposed north and south pedestrian crossings, Park Drive extension, US 50 pedestrian crossing, potential connection to Silva Valley Parkway, and recycled water line expansion.
- Loss of up to 0.032 acre of intermittent drainage or ephemeral drainage in the potential connection to Silva Valley Parkway, and recycled water line expansion.Loss of up to 0.008 acre of drainage ditch/roadside_ditch in the potential connection to Silva Valley Parkway.

Earth-moving activities in the construction footprint could result in indirect impacts on wetlands and other waters of the United States that are outside of the construction footprint due to erosion and sedimentation into the nonconstruction areas. To protect wetlands outside of the proposed development area, the current County standards for development would require a minimum setback of 50 feet from wetland edges, 50 feet from the edge of intermittent streams, and 100 feet from perennial streams. Actual setbacks for the CEDHSP area would be determined during the Section 404 permitting process in consultation with USACE.

Impacts on wetlands and other waters of the United States are regulated under CWA Sections 404 and 401 by the USACE and Regional Water Boards, and direct impacts on these resources would require permits from both agencies. Therefore, impacts on wetlands and other waters of the United States would be considered significant. However, in addition to implementing the measures required as part of the CWA permits, the project applicant would implement Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction; Mitigation Measure BIO-3a to avoid and minimize direct and indirect impacts on wetlands; and Mitigation Measure BIO-3b to compensate for direct impacts on wetlands at a minimal ratio of 1:1, or as required under the CWA permits. Implementation of the measures would reduce project impacts on wetlands to a less-than-significant level. Because the proposed project would avoid, minimize, and compensate for impacts on waters of the United States, it would not threaten to eliminate a plant community.

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

Impact BIO-16: Potential impacts on special-status plant species within the offsite infrastructure improvement areas (less than significant with mitigation)

Installation of infrastructure improvements within the proposed offsite areas has the potential to directly affect special-status plant species as part of the project construction. Any special-status plants that are adjacent to the infrastructure improvement areas would be retained but could be indirectly affected by adjacent construction.

Based on the preliminary assessment of special-status plant habitat in the proposed offsite infrastructure improvement areas, up to 11 species have potential to occur (see Table 3.3-3). Specific surveys of these areas have not been conducted to confirm the presence or absence of special-status plants. Direct and indirect impacts on special-status plants would be a significant effect. Implementation of Mitigation Measures BIO-16a and BIO-16b would reduce this impact to a less-than-significant level. In addition, depending on the approach undertaken as part of Mitigation

Measure BIO-20b, implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-1c would contribute to the avoidance of significant impacts on special-status plants. Because the proposed project would avoid, minimize, and compensate for impacts on special-status plants, it would not reduce the number or restrict the range of a rare or endangered plant.

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

The project applicant will employ a qualified botanist to survey the offsite infrastructure improvement areas, after final design of the areas is complete and prior to all construction activities, to document the presence of special-status plants before project implementation. The botanists will consult with the appropriate resource agency regarding special-status species survey methods during drought periods, if needed, but will primarily follow the CDFW botanical survey guidelines (California Department of Fish and Game 2009). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the reported blooming period. The guidelines additionally recommend visiting reference populations of special-status species that may occur in the study area. Therefore, as feasible, the surveys will include site visits of reference populations of special-status plant species with potential to occur in the project area in order to ensure that they are identifiable during the survey period. This is particularly important for any annual plant species that has a long-lived seedbank and is known to not germinate when conditions are not conducive (e.g., during a drought). To account for different special status–plant identification periods, one or more series of field surveys may be required in spring and summer.

If any special-status plants are identified during the surveys, the botanist will photograph and map locations of the plants, document the location and extent of the special-status plant population. Requirements for compensatory mitigation will be based on the results of these surveys and are discussed in Mitigation Measure BIO-16b.

Mitigation Measure BIO-16b: Avoid or compensate for substantial effects on special-status plants

If one or more special-status plants are identified in the offsite infrastructure improvement areas during preconstruction surveys conducted as part of Mitigation Measure BIO-15a, the project applicant will redesign or modify proposed project components of the project to avoid direct and indirect effects on special-status plants wherever feasible. If special-status plants can be avoided by redesigning projects, implementation of Mitigation Measures BIO-1a (barriers),

BIO-1b (awareness training), and BIO-1c (biological monitor) would avoid significant impacts on special-status plants.

If complete avoidance of special-status plants is not feasible, then, if required by the concerned public resource agency (as determined by the legal status of the plant in question), the project applicant will prepare a mitigation plan in consultation with the resource agency. The project applicant will compensate for the effects of the project on special-status plants by transplanting or seeding replacements within appropriate habitats remaining in onsite Open Space areas. The conservation area will be preserved and managed by the County or by a conservation organization for the life of the project. Detailed information will be provided to the agencies on the location and quality of the preservation area, the feasibility of protecting and managing the area in perpetuity, and the responsible parties. Other pertinent information also will be provided, to be determined through future coordination with the resource agencies.

Impact BIO-17: Potential mortality or disturbance of listed vernal pool branchiopods and their habitat within offsite infrastructure improvement areas (less than significant with mitigation)

Installation of infrastructure improvements within the proposed offsite areas has the potential to directly and indirectly affect suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Based on a preliminary habitat assessment for special-status wildlife in the proposed offsite infrastructure improvement areas, seasonal wetlands represent potential habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp (ECORP Consulting 2014d). Because of restricted property access at the time of the habitat assessment, focused surveys have not been conducted to document all suitable habitat within areas that would be directly or indirectly affected by infrastructure improvements, and no protocol-level surveys for federally listed branchiopods have been conducted within the offsite infrastructure improvement areas. Direct and indirect impacts on vernal pool branchiopod habitat could occur from construction associated with the potential connection to Silva Valley Parkway. USFWS typically considers construction within 250 feet of vernal pool branchiopod habitat to have potential to indirectly affect habitat unless more detailed information is provided to further refine the limits of any such effects.

Direct and indirect impacts on federally listed branchiopods and their habitat would be considered a significant impact. To avoid and minimize indirect effects on wetlands and potential habitat for federally listed branchiopods outside the construction area, the project applicant will implement Measures BIO-1a (install construction barriers), BIO-1b (conduct environmental awareness training), BIO-1c (retain a biological monitor), and BIO 3a (minimize impact on waters of the United States), as described above. In addition to these general protection measures, the project applicant will implement Mitigation Measures 17a and 17b, as applicable, to reduce potential impacts on vernal pool fairy shrimp and/or vernal pool tadpole shrimp. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on federally listed branchiopods and their habitat, and would not substantially reduce the number or restrict the range of these species or cause populations to drop below self-sustaining levels. Therefore, the proposed project would have a less-than-significant impact on federally listed branchiopods.

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-17a: Conduct a habitat assessment in the offsite infrastructure improvement areas for federally listed branchiopods

The project applicant will employ a qualified biologist to conduct a habitat assessment for federally listed branchiopods within the offsite infrastructure improvement areas after the limits of proposed disturbance have been identified. All seasonal pools, wetlands, and swales will be mapped within 250 feet of proposed construction areas identified for infrastructure improvements, including staging areas and access routes. Suitable habitat will be mapped and described sufficient to determine if these habitats could support vernal pool fairy shrimp and vernal pool tadpole shrimp.

If suitable habitat for vernal pool fairy shrimp and/or vernal pool tadpole shrimp is identified within 250 feet of proposed infrastructure improvements, the project applicant will implement Mitigation Measure Bio-17b.

Mitigation Measure BIO-17b: Avoid or compensate for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their habitat

If suitable habitat for vernal pool fairy shrimp and/or vernal pool tadpole shrimp is identified within proposed construction areas for infrastructure improvements or within 250 feet of proposed construction, the project applicant will redesign or modify proposed project components to avoid this habitat to the maximum extent feasible. If avoidance of direct and indirect impacts on this habitat is not feasible, the project applicant will either retain a USFWS-permitted biologist to conduct protocol-level branchiopod surveys to determine presence/absence of vernal pool fairy shrimp and vernal pool tadpole shrimp or they will assume presence of these species.

If the presence of vernal pool fairy shrimp and/or vernal pool tadpole shrimp is confirmed or inferred for the proposed project, the project applicant will compensate for direct and indirect effects on occupied or presumed occupied habitat for federally listed branchiopods by purchasing the appropriate mitigation credits from a USFWS-approved conservation area/mitigation bank. Minimum mitigation ratios will be 2:1 preservation and 1:1 creation for direct effects and 1:1 preservation for indirect effects (within 250-foot of ground disturbance), or as determined by USFWS during ESA Section 7 consultation.

If presence of vernal pool fairy shrimp or vernal pool tadpole shrimp is either inferred or confirmed, ESA consultation with USFWS will be required to address impacts on this species before any ground-disturbing activities can occur.

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, 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, 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 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.

Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction

Elderberry shrubs identified within the limits of disturbance for infrastructure improvements that cannot be avoided will be transplanted to a USFWS-approved conservation area. Transplanting and associated compensation will follow the guidance outlined in USFWS's *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999). These guidelines also identify ratios of elderberry seedlings and associated native vegetation to plant in conjunction with the transplanted shrub.

For shrubs not directly affected by construction but that occur within 100 feet of ground-disturbing activities, the project applicant will implement the following measures to minimize construction-related effects.

- Fence and flag all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by USFWS, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.
- Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.
- Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.
- Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

Impact BIO-19: Potential mortality or disturbance of California red-legged frog within offsite infrastructure improvement areas (less than significant with mitigation)

Potential breeding habitat (Carson Creek, tributaries, and instream pond) and potential foraging and dispersal habitat (annual grassland) for California red-legged frog is present within the proposed offsite infrastructure improvement areas. If California red-legged frogs are present in or adjacent to infrastructure improvement construction areas, impacts on this species would be similar to those described above under Impact BIO-6 and are considered potentially significant. Implementation of Mitigation Measures BIO-1a BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction, and if required by USFWS, Mitigation Measures BIO-6a and 6b, to avoid, minimize, and compensate for direct and indirect impacts on California red-legged frogs and their habitat would reduce this impact. With the implementation of these collective measures, the proposed project would avoid, minimize, and compensate for direct and indirect impacts on California red-legged frogs 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 California red-legged frog.

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

Impact BIO-20: Potential mortality or disturbance of Pacific pond turtle within offsite infrastructure improvement areas (less than significant with mitigation)

Suitable habitat for Pacific pond turtle is present within the offsite infrastructure improvement areas (ECORP Consulting 2014d). Construction activities associated with the potential connection to Silva Valley Parkway and the recycled water line expansion north of US 50 could result in impacts on the species' habitat. If pond turtles are present in or adjacent to infrastructure improvement construction areas, impacts on this species would be similar to those described above under Impact BIO-7 and are considered potentially significant. Implementation of Mitigation Measures BIO-1a BIO-1b, and BIO-1c, to avoid temporary construction impacts on wetlands by requiring barriers to protect sensitive areas, environmental awareness training for construction employees, and periodic site visits during construction, and BIO-7 to conduct preconstruction and exclude pond turtles from work area, would reduce this impact. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on Pacific pond turtle and its 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 Pacific pond turtle.

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

Impact BIO-21: Potential mortality or disturbance of Blainville's horned lizard within offsite infrastructure improvement areas (less than significant with mitigation)

Blainville's horned lizard has the potential to be present within offsite infrastructure improvement areas. Dirt roads and firebreaks near Silva Valley Parkway provide marginally suitable habitat for Blainville's horned lizard (ECORP Consulting 2014d). Construction activities such as grading, paving, and staging of equipment, associated with the potential connection to Silva Valley Parkway and the recycled water line expansion could directly affect Blainville's horned lizards. If Blainville's horned lizards are present in or adjacent to infrastructure improvement construction areas, impacts on this species would be similar to those described above under Impact BIO-7 and are considered potentially significant. Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on horned lizards by requiring barriers to protect sensitive Blainville's horned lizard habitat as determined by the biological monitor prior to construction, environmental awareness training for construction employees, and periodic site visits during construction would reduce these construction impacts. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on Blainville's horned lizard, 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 Blainville's horned lizard.

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

Impact BIO-22: Potential mortality or disturbance of nesting special-status and non–special-status birds within offsite infrastructure improvement areas (less than significant with mitigation)

Suitable nesting habitat for special-status (including white-tailed kite, golden eagle, Swainson's hawk, and western burrowing owl) and non–special-status birds may be directly and indirectly affected by construction associated with the offsite infrastructure improvement areas. If nesting special-status and non–special-status birds are present in or adjacent to infrastructure improvement construction areas, impacts on these species would be similar to those described above under Impact BIO-9 and are considered potentially significant. Implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-1c, to avoid temporary construction impacts on nesting birds by requiring barriers to protect areas active nests, environmental awareness training for construction employees, and periodic site visits during construction, in addition to Mitigation Measures BIO-9a and BIO-9b, which require conducting vegetation removal outside of the breeding season for birds and raptors, and nesting surveys for special-status and non-special status birds would reduce this effect on special-status and non–special-status birds. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on nesting birds, and would not substantially reduce the number or restrict the range of listed avian species or cause populations to drop below self-sustaining levels. Therefore, the proposed project would have a less-than significant impact on special-status and non–special-status birds.

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

Impact BIO-23: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within offsite infrastructure improvement areas (less than significant with mitigation)

Suitable habitat for colonial and solitary roosting bats is present within the infrastructure improvement areas. Bats could roost in trees, bridges, and buildings within these areas. If roosting bats are present in or adjacent to infrastructure improvement construction areas, impacts on these species would be similar to those described above under Impact BIO-10 and would be potentially significant. Implementation of Mitigation Measures BIO-1a BIO-1b, BIO-1c, and BIO1-d to avoid temporary construction impacts on bats by requiring barriers to protect roosting habitat, environmental awareness training for construction employees, periodic site visits during construction, and minimizing disturbance to oak woodland habitat, in addition to Mitigation Measure 9a and Mitigation Measure BIO-10 to identify bat roosts and implement avoidance and minimization measures would reduce this impact on western red bat, pallid bat, and other bat species. With the implementation of these collective measures, the proposed project would avoid and minimize impacts on tree-roosting bats and their habitat, and would not substantially reduce the reduce the number or restrict the range of these species or cause populations to drop below self-sustaining levels. Therefore, the proposed project would have a less-than significant impact on tree-roosting bats.

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

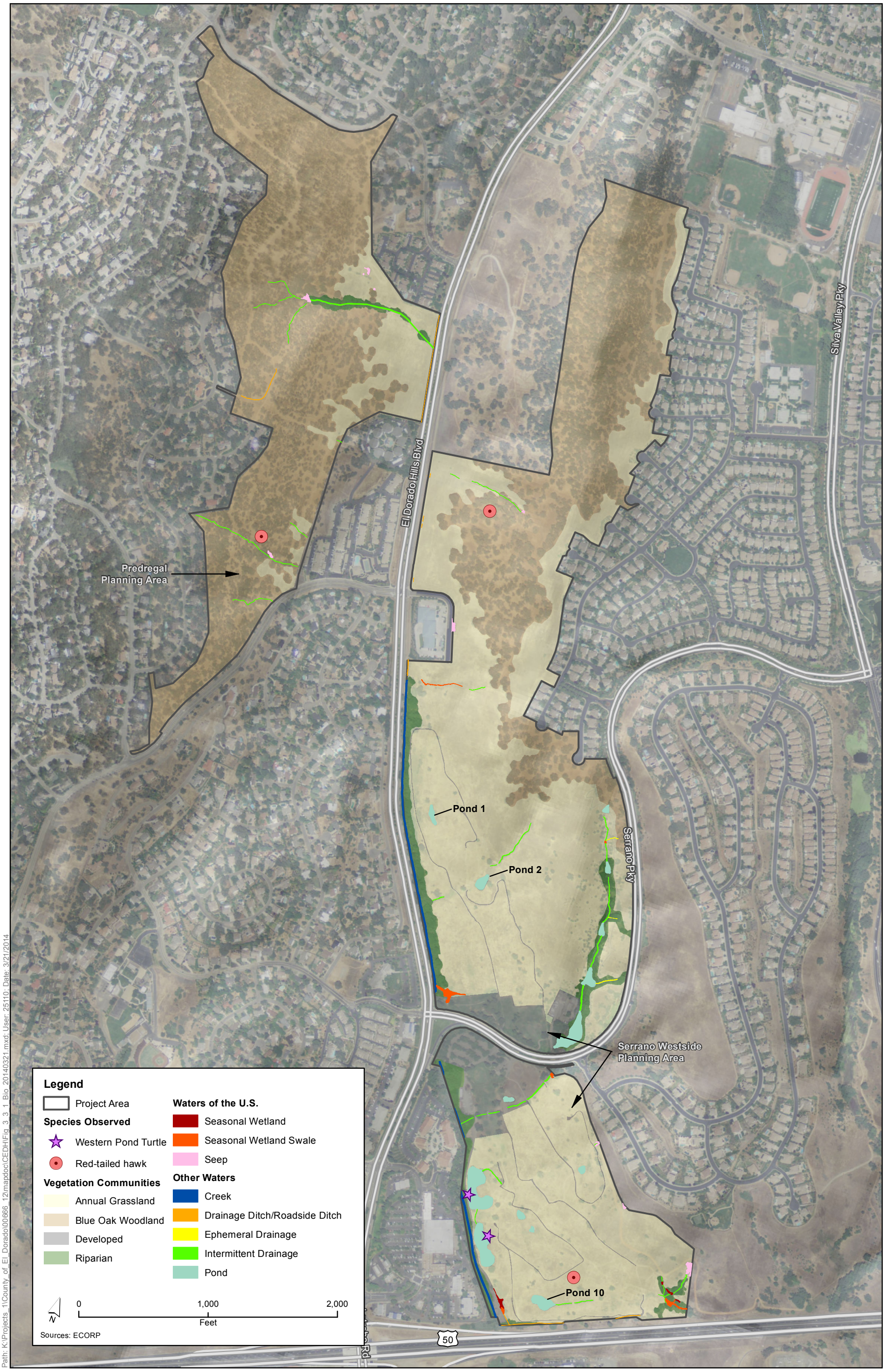


Figure 3.3-1
Biological Resources in the CEDHSP Project Area

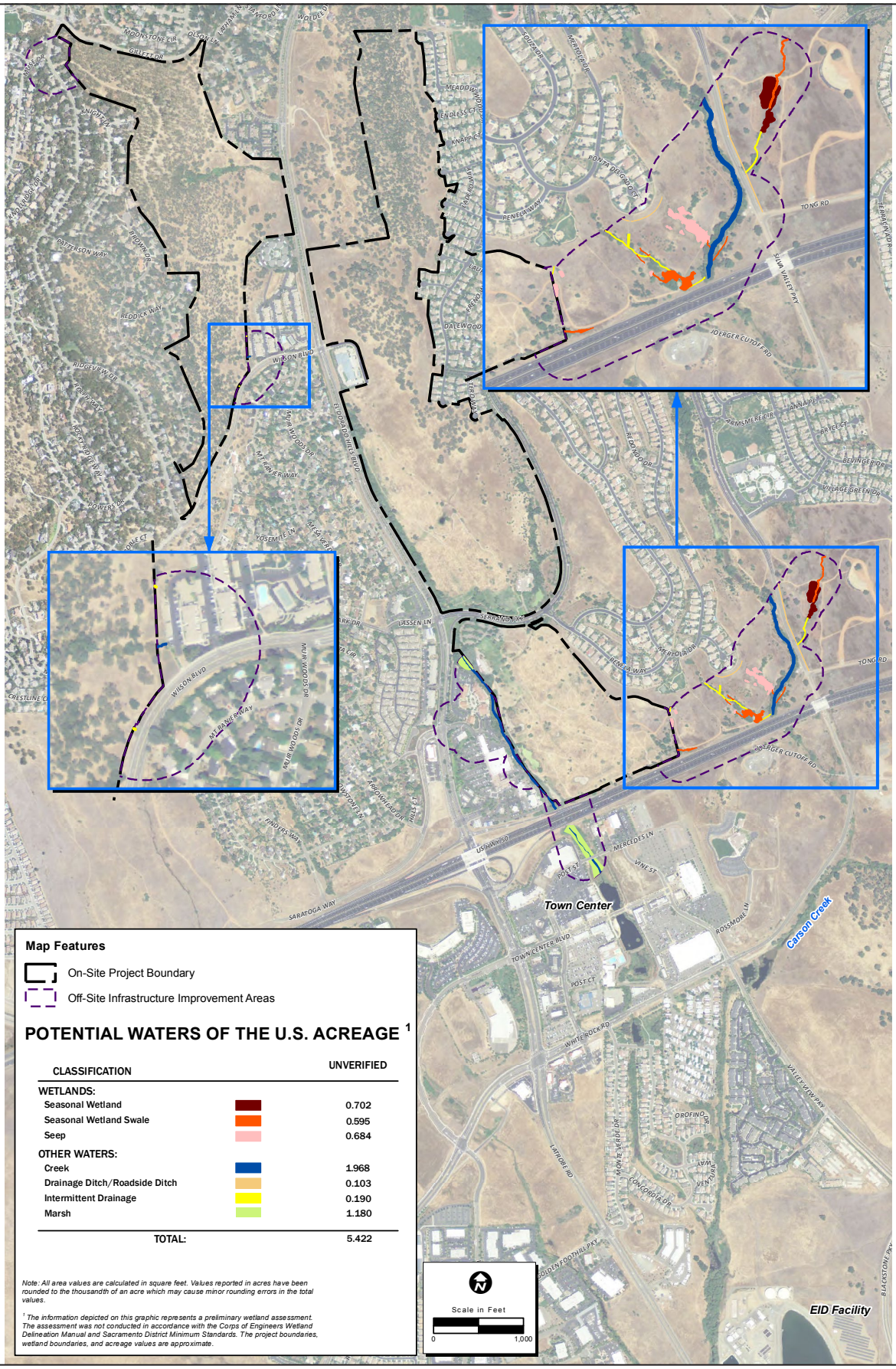


Figure 3.3-2
Potential Waters of the U.S. and Oak Canopy in the Off-Site Infrastructure Improvement Areas

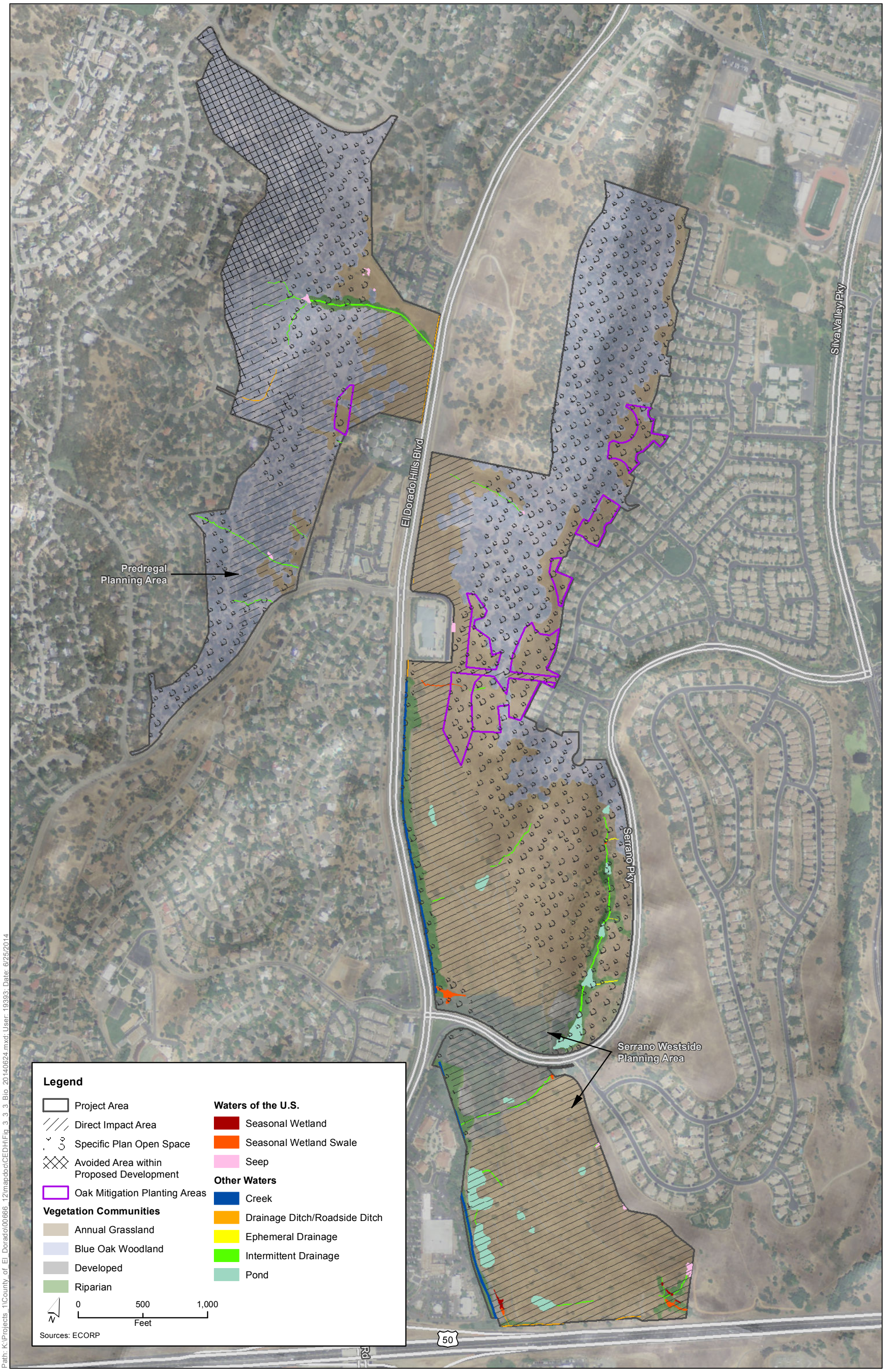


Figure 3.3-3
Impacts to Biological Resources in the CEDHSP Project Area

3.4 Cultural Resources

This section describes the regulatory and environmental setting for cultural resources. For the purposes of this section, *cultural resources* consist of historic-period and prehistoric archaeological sites, traditional cultural properties, and built environment resources.

Archaeological resources are the physical remains of past human activity that have been preserved in the ground but no longer take the form of a standing structure (e.g., a house or building) and can date to the prehistoric or historic period. Archaeological remains may occur in the same place as standing structures but are considered a distinct element (called a *component*) of the larger resource.

Traditional cultural properties consist of resources that are associated with the practices or beliefs of a living community and are (a) rooted in that community's history for at least 50 years, and (b) important in maintaining the continuing cultural identity of the community (Parker and King 1998:1).

Built environment resources consist of buildings, structures, objects, sites, or districts. Typically, built environment resources must be 50 years of age or older to qualify as cultural resources. Where these resources form a landscape unified by a coherent historical or design theme, they may qualify as a rural historic landscape (U.S. Department of the Interior 1999:1).

The information presented here and the analysis of impacts is based on the following studies.

- *Section 106 Compliance Summary Report for the Central El Dorado Hills Specific Plan, El Dorado County, California* (ECORP Consulting 2013a).
- *Cultural Resources Addendum for the Central El Dorado Hills Specific Plan Area: Cultural Resources Inventory for an 85-Acre Addition, El Dorado County, ECORP Project No. 2012-019* (ECORP Consulting 2014a).
- *Cultural Resources Addendum for the Central El Dorado Hills Specific Plan Area: Evaluation of Five Historic-Era Cultural Resources within the 85-Acre Addition, El Dorado County, ECORP Project No. 2012-019* (ECORP Consulting 2014b).
- *Test Program Results and Evaluation for Archaeological Sites in the Pedregal Project, El Dorado Hills, El Dorado County, California* (ECORP Consulting 2007 [Revised 2012]).
    - *Macrobotanical Analysis for Two Soil Samples from CA-ELD-1248, El Dorado County, California* (Popper 2006).
    - *Cultural Resource Assessment and Testing of the Ridgeview East Project, El Dorado Hills, California* (Peak & Associates 1992).
- *Due Diligence Cultural Resources Constraints Analysis for the Central El Dorado Hills Specific Plan Offsite Areas in El Dorado County (ECORP Project No. 2012-019)*. Letter report prepared for Kirk Bone, Serrano Associates, LLC (ECORP Consulting 2013b).

3.4.1 Existing Conditions

Regulatory Setting

Federal

National Historic Preservation Act

Archaeological and built environment resources (buildings and structures) are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [USC] 300101 et seq.) and its implementing regulations: Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800).

Prior to implementing an *undertaking* (e.g., issuing a federal permit), federal agencies (e.g., U.S. Army Corps of Engineers [USACE]) are required under Section 106 of NHPA to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (NRHP). NHPA Section 101(d)(6)(A) allows properties of traditional religious and cultural importance to a tribe to be determined eligible for inclusion in the NRHP. Under the NHPA, a find is significant if it meets the NRHP listing criteria under 36 CFR 60.4, as stated below.

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> a) that are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> b) that are associated with the lives of persons significant in our past, or
>
> c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d) that have yielded, or may be likely to yield, information important in prehistory or history.

Federal review of projects is normally referred to as the Section 106 process. The Section 106 process normally involves step-by-step procedures that are described in detail in the implementing regulations (36 CFR Part 800) and summarized here.

- Establish a federal undertaking.
- Delineate the Area of Potential Effects.
- Identify and evaluate historic properties in consultation with the SHPO and interested parties.
- Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP.
- Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify ACHP.
- Proceed with the project according to the conditions of the agreement.

State

The State of California implements NHPA through its statewide comprehensive cultural resource preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation (DPR), implements the policies of NHPA on a statewide level. OHP also maintains the California Historical Resources Inventory. SHPO is an appointed official who implements historic preservation programs within the State's jurisdiction.

California Environmental Quality Act

CEQA, as codified in Public Resource Code (PRC) Sections 21000 et seq. and implemented via the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.), is the principal statute governing the environmental review of projects in the state. In order to be considered a historical resource, a resource must be at least 50 years old. In addition, the State CEQA Guidelines define a *historical resource* as follows.

a. A resource listed in the California Register of Historical Resources (CRHR).

b. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g).

c. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The CRHR criteria are based on National Register of Historic Places (NRHP) criteria (PRC Section 5024.1[b]). Certain resources are determined by CEQA to be automatically included in the CRHR, including California properties formally eligible for or listed in the NRHP. To be eligible for listing in the CRHR as a historical resource, a prehistoric or historic-period resource must be significant at the local, state, and/or federal level under one or more of the following criteria.

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

    2. Is associated with the lives of persons important in our past.

    3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

    4. Has yielded, or may be likely to yield, information important in prehistory or history (14 CCR Section 4852[b]).

For a resource to be eligible for the CRHR, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet NRHP criteria may still be eligible for listing in the CRHR.

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important historical resources or unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the State CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section

21083.2 regarding unique archaeological resources. A *unique archaeological resource* is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2 [g]).

The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR Section 15064[c][4]).

Madera Oversight Coalition, Inc. v. County of Madera and Tesoro Viejo, Inc. (2011)

In the past, it was common practice for many CEQA practitioners to provide performance-based mitigation for cultural resources, stipulating that further evaluation and treatment of resources would be performed in the future. The 2011 decision from the *Madera Oversight Coalition, Inc. et al. v. County of Madera and Tesoro Viejo, LLC et al.* (2011 [199 Cal. App.4th 48, 81]) case determined this practice to be unacceptable under CEQA and required evaluation of cultural resources subject to CEQA to be performed at a level sufficient to characterize the resources prior to EIR certification (instead of waiting until preconstruction or construction stages of a project). Additionally, the case determined that if preservation in place, the preferred mitigation under CEQA (14 CCR Section 15126.4[b][3]), is not employed, the EIR should disclose why that is not feasible. Cultural resources evaluations in this EIR have been completed consistent with the *Madera Oversight* decision.

Discovery of Human Remains

California State Law, Section 7050.5 of the California Health and Safety Code (CHSC) states:

(a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code [PRC]. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the [PRC] or to any person authorized to implement Section 5097.98 of the [PRC].

(b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the [California] Government Code (CGC)], that the remains are not subject to the provisions of Section 27491 of the [CGC] or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the [PRC]. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

(c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the [Native American Heritage Commission (NAHC)] (California Health and Safety Code Section 7050.5).

Of particular note to cultural resources is subsection (c), requiring the coroner to contact NAHC within 24 hours if discovered human remains are determined to be Native American in origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants (MLDs), if possible, and recommendations for treatment of the remains. The MLDs will have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC Section 5097.99).

Senate Bill 18

California Senate Bill (SB) 18 (Burton, Chapter 905, Statutes of 2004) requires local governments to consult with California Native American tribes prior to making certain planning decisions and to provide notice to the tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of both general plans and specific plans. The principal objective of SB 18 is to preserve and protect cultural places of California Native Americans. SB 18 is unique in that it requires local government consultation with Native American tribes in early stages of land use planning, extends to both public and private lands. The California Civil Code was amended by SB 18 and now allows state-recognized California Native American tribes to acquire and hold conservation easements. The County's SB 18 consultation for this project is discussed below under *Native American Consultation* and documentation is presented in Appendix G.

Assembly Bill 52

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014) establishes a formal consultation process for California tribes as part of the CEQA and equates significant impacts on "tribal cultural resources" with significant environmental impacts (new PRC Section 21084.2). AB 52 defines a "California Native American Tribe" as a Native American tribe located in California that is on the contact list maintained by the NAHC. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource. AB 52 became law on January 1, 2015, but only applies to projects that have a notice of preparation or notice of negative declaration/mitigated negative declaration filed on or after July 1, 2015. The notice of preparation for the Central El Dorado Hills Specific Plan (CEDHSP) EIR was filed on February 20, 2013, and therefore this project is not subject to the requirements of AB 52.

Local

El Dorado County General Plan

To protect cultural resources, the Conservation and Open Space Element of the *El Dorado County General Plan* (County General Plan) (El Dorado County 2004) includes the following goal and policies to protect cultural resources. The full text of this goal 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 7.5, *Cultural Resources*, addresses preservation of the County's important resources through protection of cultural heritage, and includes implementing policies 7.5.1.3 and 7.5.1.6.

Environmental Setting

The following prehistoric, ethnographic, and historic contexts have been summarized from the report *Test Program Results and Evaluation for Archaeological Sites in the Pedregal Project, El Dorado Hills, El Dorado County, California* (ECORP Consulting 2012). Information regarding existing cultural resources is taken from this report and from the Section 106 Summary Report and addenda (ECORP Consulting 2013a, 2014a, 2014b).

Prehistoric Background

The project area is in the Sacramento Valley subregion of the Central Valley archaeological region. In this area, three patterns have been defined: (1) the Windmiller Pattern, from 2,500 BC to about 1,000 BC; (2) the Berkeley Pattern, from about 1,000 BC to AD 400; and (3) the Augustine Pattern, from AD 400 to the historic period.

The Windmiller Pattern (2500–1000 BC) shows evidence of a mixed economy of game procurement and use of wild plant foods. The archaeological record contains numerous projectile points with a wide range of faunal remains. Hunting was not limited to terrestrial animals, as is evidenced by fishing hooks and spears that have been found in association with the remains of sturgeon, salmon, and other fish. Plants were also used, as indicated by ground stone artifacts and clay balls that were used for boiling acorn mush. Settlement strategies during the Windmiller period reflect seasonal adaptations: habitation sites in the valley were occupied during the winter months, but populations moved into the foothills during the summer.

The Berkeley Pattern in the project area and the Sacramento–San Joaquin Rivers Delta (Delta) area to the south likely represent Miwok expansion eastward from the San Francisco Bay area. Southward expansion of the Wintuan and Maiduan speakers is indicated in the archaeological record in Phase I of the Augustine Pattern (AD 400–1400), by the appearance of Gunther barbed points, fishing spear points (harpoons), and flanged tubular pipes. The presence of bedrock mortars in the prehistoric sites within the project area indicates that the sites are affiliated with Phase 2 of the Augustine Pattern (AD 1400 to the historic period).

The Augustine Pattern is the archaeological record of a large, dense population, which engaged in intensive hunting, fishing, and gathering (especially of acorns). There was social stratification, as indicated by variability in grave goods; a highly developed exchange system; and elaborate ceremonialism. Technology included shaped mortars and pestles, bone awls, bone fishhooks and gorges, fishing spears, and use of the bow and arrow. Bedrock mortars were intensively used after AD 1400. Non-utilitarian artifacts include abalone ornaments, charmstones, stone pipes, decorated

bone ear tubes, and whistles. During Phase 2 of the Augustine Pattern (after AD 1400) there was a further proliferation of settlements, intensification of trade, and achievement of new levels of social and political complexity. Clamshell disk beads were used as a medium of exchange. Shell beads and ornaments were obtained from the San Francisco Bay area and obsidian from the eastern Sierra Nevada.

Ethnographic Background

The Nisenan occupied the project area at the time of Euro-American contact and spoke a Maiduan language. The Maiduan family of languages is part of the Penutian stock. Penutian speakers occupied the Central Valley, Central Sierra Nevada, and the San Francisco Bay area at the time of Euro-American contact. The Nisenan occupied the lower Feather River drainage, and the drainages of the Yuba, Bear, and American Rivers. The boundary with the Miwok to the south was near the Cosumnes River. The western boundary was the Sacramento River, and the eastern boundary was the crest of the Sierra Nevada.

The principal Nisenan villages and associated smaller settlements controlled resources within a territory containing between 20 and 500 residents. Families in each territory controlled specific oak groves and fishing sites. A headman lived in the principal village and arbitrated disputes, directed festivities, provided advice, and consulted with family leaders. His authority was limited, however, absent the support of the family leaders and the shamans.

In the Valley, principal villages were located on low natural rises along rivers and streams. In the project vicinity, villages were located along the American River, approximately 8 kilometers (approximately 5 miles) southeast of the project area at nearest approach. Valley villages had 5 to 50 houses that were dome-shaped and covered with earth, mats, and grass. Brush shelters were used in the summer and when people were away from the village. Major villages had semi-subterranean dance houses with post and beam construction.

Villages in the foothills were located on ridges and on flats along streams. Houses were conical and covered with brush bark and skins. Most villages had bedrock-milling stations. Other site types included seasonal camps, quarries, ceremonial grounds, fishing stations, trading sites, and cemeteries. Some people lived away from the main village.

The dead were cremated along with their property, their houses moved or destroyed, and the cremated bones and ashes buried in the cemetery of their birth village.

Acorns were an important part of the Nisenan diet. Large groups left the villages in the fall to gather acorns. While the women and children collected the acorns, the men hunted. Stored in granaries in the village, acorns were shelled, ground in a bedrock mortar, leached with water, and cooked by means of stone-boiling in watertight baskets. Other plant foods were roots, seeds, and berries. Deer, antelope, and rabbits were hunted by groups using drives. Rabbits were also trapped and snared. Rivers provided salmon, sturgeon, eels, and freshwater clams and mussels, and birds and grasshoppers were also captured and eaten.

Historical Background

Although the Spanish had made forays into the Central Valley since about 1769, it was not until 1808 that Captain Gabriel Moraga explored and named the Sacramento area. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley. California

became part of Mexico in 1821, when Mexico achieved its independence from Spain. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers.

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American Rivers in 1839 and petitioned the Mexican governor of Alta (Upper) California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. The town of Sacramento was laid out in the fall of 1848 and developed as a supply center for gold miners. Alta California was ceded to the United States by Mexico as a result of the Treaty of Guadalupe Hidalgo in 1848. California became a state in 1850 as a result of the major increase in population that resulted from the Gold Rush of 1849.

Towns and camps developed in the Sierra Nevada foothills to supply goods and services to the miners. In the project vicinity, these included the Mormon Tavern stage stop and the town of Clarksville, located south and southeast of the project area. The Mormon Tavern was constructed in 1849 as a stage stop on the Placerville Road, which ran between Sacramento and Placerville. From Placerville, the Carson Road continued on over the Sierra Nevada to Carson City, Nevada. Placerville became the El Dorado County seat in 1857. The Mormon Tavern stage stop became a remount station for the Central Overland Pony Express in 1860. Clarksville was located 0.5 mile east of Mormon Tavern on the Placerville Road and was originally known as Clarkson's Village. When a post office was established there in 1855, the name was changed to Clarksville. Early settlers in Clarksville included the Tong family, who operated a hotel and restaurant known as Railroad House beginning in 1855. By 1866, Clarksville had a population of several hundred, and the surrounding area had been settled by ranchers and dairy farmers.

Just north of Clarksville, Samuel Kyburz received a patent (deed for land acquired from the federal government) for an 80-acre homestead on the east half of the southeast quarter of Section 34 which includes the northern part of the present Pedregal property and the site CA-ELD-1254-H. In order to receive a patent for a homestead, it was necessary to build a house and live on the land for 5 years after filing for the homestead. Kyburz most likely filed for the homestead in 1868 and began building the house at CA-ELD-1254-H at that time. In 1869, he purchased a 40-acre parcel in Section 25 on Allegheny Creek from the Central Pacific Railroad. This parcel was located about 1.5 miles northeast of the homestead.

In 1865, the Placerville & Sacramento Valley Railroad Company completed a railroad line from Sacramento and Folsom to Shingle Springs via Latrobe, located south of Clarksville. The rail line bypassed Clarksville, greatly reducing the freight and traffic that formerly went through Clarksville on the Placerville Road on its way to the silver mines around Carson City. The completion of the transcontinental railroad line in 1869 via Auburn further reduced use of the Placerville Road through Clarksville. In the early twentieth century, US 50 went through Clarksville, but it was later rerouted around Clarksville. More recently, the development of El Dorado Hills to the west of Clarksville resulted in the closure of all commercial enterprises in Clarksville. Currently, only a few residences remain in Clarksville.

Chromium is a mineral that has historically been abundant in California's serpentine rock areas. The mineral chromite is an essential component used to strengthen steel and other metals and has been mined from California since the 1850s. Between 1869 and 1940, California was the leading supplier

of chromium for the United States' domestic supply (Department of Conservation 2000). Because chromium is used to strengthen steel, with the nation's entrance into World War I and World War II, heavy demand for chromium spiked during those times in order to supply the war efforts. To meet the demand, hundreds of chromium mines opened and were operated during World War I and World War II along major deposits (Department of Conservation 1984). El Dorado County has historically been the largest source of chromite of any Sierra Nevada county and by 1951, was the third largest source of the mineral in California (State of California, Division of Mines 1951). After the war, demand for the mineral significantly decreased and the subsequent low postwar prices caused most mines in the county to cease operations (State of California, Division of Mines 1951).

El Dorado Hills began as a residential suburb in 1962 and remained so until about 2000 when commercial development began. Currently, El Dorado Hills has a commercial area (Town Center) and a business park. El Dorado Hills is an unincorporated community. A proposal to incorporate was placed on the ballot in November 2005 but it did not pass.

Existing Cultural Resources

Efforts to locate cultural resources consisted of conducting records searches, consulting with NAHC and Native American representatives, and conducting archaeological surveys and studies.

Records Search

In July 2005, December 2006, May 2008, May 2012, and October and November 2013, ECORP conducted records searches at the North Central Information Center (NCIC), the repository of the California Historical Resources Information System responsible for the project area and a 0.5-mile radius around the project area and proposed offsite infrastructure improvement areas. The purpose of the records searches was to determine the extent of previous cultural resources studies and locations of previously recorded cultural resources within the search area.

Native American Consultation

In order to comply with SB 18 and Section 106 of the NHPA, consultation with Native Americans regarding the project has been ongoing since 2005. In September of that year, ECORP submitted a request to NAHC for a Sacred Lands File records search for the Pedregal property. The NAHC reply stated that the Sacred Lands File had no record of any Native American cultural resources within or adjacent to the property. Included in the reply was contact information for Native American individuals and organizations that may be able to provide information about unrecorded Native American resources on the Pedregal property and in the vicinity. In October 2005, ECORP sent letters to all contacts provided, requesting information on possible unrecorded Native American resources on the property and also inquiring as to whether or not they have any concerns regarding sacred sites or traditional cultural properties in or near the project area and vicinity. In 2006, ECORP telephoned each contact to solicit further comments. ECORP conducted a tour of the Pedregal property with Native American representatives, Randy Yonemura and Brian Padilla, in June 2007. In June 2009, ECORP submitted an updated request to the NAHC for a Sacred Lands File records search for the Pedregal property and in May 2008, ECORP initiated Native American outreach with a request to the NAHC for a Sacred Lands File records search for the Executive Golf Course (Serrano Westside planning area) property.

Due to the outdated nature of the consultation efforts detailed above, Native American consultation was reinitiated in 2012 in conjunction with the preparation of the EIR and Section 404 Clean Water

Act permit application. ECORP submitted a request to NAHC for a Sacred Lands File records search for entire project area (Pedregal and Serrano Westside) in April 2012. The NAHC reply stated that the Sacred Lands File had no record of any Native American cultural resources within or adjacent to the project area. Included in the reply was contact information for Native American individuals and organizations that may be able to provide information about unrecorded Native American resources in the project area and vicinity. In May 2012, ECORP sent letters to all contacts provided, requesting information on possible unrecorded Native American resources on the Pedregal and Serrano Westside planning area properties, and also inquiring as to whether or not they have any concerns regarding sacred sites or traditional cultural properties in the project area or vicinity. That same month, ECORP subsequently telephoned all contacts to ensure that the materials had been received and to solicit further comments.

On August 1 and 14, 2012, the United Auburn Indian Community and Shingle Springs Rancheria participated in a meeting with the project applicant during which project details and information on cultural resources in the project area were discussed. At the request of both tribes, field visits with representatives from the tribes, the project applicant, USACE, and the County were conducted in March and August 2013.

On November 5, 2013 ECORP contacted NAHC and requested a sacred lands search to encompass the potential offsite improvement areas.

See Appendix G for documentation of consultation with Native Americans under SB 18 and Section 106 of the NHPA.

Fieldwork

In 2006, ECORP conducted a cultural resources pedestrian survey of the Pedregal property. Parallel, 15-meter transects were used during the survey. The ground surface was examined for evidence of cultural deposits, and the ground surface was inspected for indications of subsurface deposits. All cultural resources encountered during the survey were recorded, photographed, and mapped using a handheld, survey-grade global positioning system (GPS) receiver.

Also in 2006, ECORP conducted test excavations of those resources identified on the Pedregal property in the 2006 survey. In 2012, ECORP conducted field verification and integrity inspections for the entire project area (Pedregal and Serrano Westside). This survey focused on relocating previously recorded resources, updating site boundaries, and inspecting for integrity.

In 2013, ECORP conducted a pedestrian survey of, and evaluations for sites in, an additional 85 acres of property in the Serrano Westside portion of the project area.

The exact location of offsite improvements is not known as the specific alignments have not yet been determined or designed. Therefore property access has not been obtained. The offsite improvement areas have not been surveyed for cultural resources as part of this project.

Findings

No built environment resources were identified within the project area as a result of pre-field research or the field surveys conducted in 2012.

Five archaeological resources are located within the Serrano Westside planning area and ten archaeological resources are located within the Pedregal planning area (Table 3.4-1). Within the

Pedregal planning area, three resources are individually significant and nine resources (including two of the three individually significant resources) are contributing elements to an archaeological district. None of the resources within the Serrano Westside planning area are recommended eligible for listing in state or federal registers.

The NCIC records searches show that prior to the cultural resources work conducted for the proposed project, nine previously recorded cultural resources were located within the project area. Of these, six were prehistoric sites, and three included both prehistoric and historic-period components. The sites with only a prehistoric component consisted of bedrock-milling features, one of which included pestles. The sites with both prehistoric and historic-period components consisted of a rock wall and a bedrock-milling feature, a rock wall and a bedrock-milling feature with associated artifacts, and a possible housepit, and a historic-era ranch site and a bedrock-milling feature.

Archaeological studies conducted in 2006 and 2012 resulted in some reorganization of site numbers and components on the Pedregal property. Two of the previously recorded resources (P-09-1664, CA-ELD-1255) were not relocated even after focused attempts to do so. One previously unrecorded bedrock-milling feature was recorded as new resource EC-06-80. The current site designations are reflected in Table 3.4-1. Archeological studies and evaluations conducted in 2014 resulted in the recording of four additional historic period sites and the update of one previously recorded resource on the Serrano Westside parcel. The previously recorded and newly recorded historic period sites within the Serrano Westside planning area were evaluated in February 2014.

The archaeological studies conducted for the current project area resulted in recommendations that the following resources be individually eligible for the CRHR and NRHP: P-09-1661, P-09-1663, and P-09-1667. These resources are Historical Resources (significant cultural resources) as defined by CEQA (CCR Title 14, Section 15064.5[a]).

In addition to the individual resources above, an archaeological district, entitled the Pedregal Archaeological District (PAD), has been defined. The PAD is in the central portion of the Pedregal property. The district consists of nine contributing elements. Using updated designators, these elements are: one bedrock-milling/habitation site (P-09-1661); one bedrock-milling site with pestles (CA-ELD-1250); and seven sites with only bedrock-milling features (P-09-1660, P-09-1662, P-09-1665, P-09-1666, P-09-5556, P-09-5557, P-09-5559). The PAD is recommended CRHR- and NRHP-eligible under the following CRHR and NRHP criteria: 1/A–association with Miwok habitation and resource procurement activities; 2/B–direct association with members of the Miwok and overall strong potential association with a federally recognized tribe; and 4/D–data potential for understanding the area's prehistory. The PAD is also a Historical Resource as defined by CEQA.

Seven previously recorded cultural resources may be located within the offsite improvement areas. These resources include the Mormon Hill Historic District and Mormon Tavern, as well as prospect pits, historic residence locations, roads, and cairns. All seven sites date to the historic period; one site contains a prehistoric component.

None of the archaeological resources within the project area meet the requirements for a *unique archaeological resource* under Section 21083.2.

Table 3.4-1. Known Cultural Resources Sites in the Onsite CEDHSP Area

Site Number	Description	Proposed Land Use Designation	Eligibility	Contributing Element to PAD	Direct Impact?
P-09-32	Rock wall	OS	No	No	No
P-09-1660 (CA-ELD-1247)	Bedrock-milling feature and associated lithic scatter	OS and VRL	No	Yes	Yes
P-09-1661 (CA-ELD-1248)	Bedrock-milling features and associated archaeological deposit	OS	CRHR NRHP	Yes	No
P-09-1662 (CA-ELD-1249)	Bedrock mortars	VRL	No	Yes	Yes
P-09-1663 (CA-ELD-1250)	Bedrock-milling feature and associated lithic scatter	VRL	CRHR NRHP	Yes	No
P-09-1664 (CA-ELD-1251)	Not relocated				
P-09-1665 (CA-ELD-1252)	Single bedrock mortar	OS	No	Yes	No
P-09-1666 (CA-ELD-1253)	Single bedrock mortar	VRL	No	Yes	Yes
P-09-1667 (CA-ELD-1254H)	Historic Kyburz home site including house foundation and stone walls	VRH	CRHR NRHP	No	No
P-09-5556 (EC-12-4000)	Single bedrock mortar	VRH	No	Yes	No
P-09-5557 (CA-ELD-3012, EC-06-79)	Bedrock-milling feature	OS	No	Yes	No
P-09-5559 (CA-ELD-3011, EC-06-80)	Single bedrock mortar	VRL	No	Yes	Yes
CA-ELD-1255	Not relocated				
EC-13-033	Hillside Mining	OS	No	No	No
EC-13-034	Prospect Pits	OS	No	No	No
EC-13-035	Joerger Chromium Mine	OS	No	No	No
EC-13-036	Walker Chromium Mine	OS	No	No	No

PAD = Pedregal Archaeological District.
OS = Open Space.
VRL = Village Residential – Low.
VRH = Village Residential – High.
CRHR = California Register of Historical Resources.
NRHP = National Register of Historic Places.

3.4.2 Environmental Impacts

Methods of Analysis

This Draft EIR analyzes whether the project would have the potential to adversely affect existing cultural resources. The identified resources have been examined for their significance and the potential for the development under the proposed project to result in impacts on their significance.

CEQA requires an assessment of a project's potential effects on significant historical resources (i.e., those that are listed or eligible for listing in the CRHR or in a local register or survey that meets the requirements of PRC 5020.1[k] and 5024.1[g]). This assessment entails the following steps.

- Identify potential historical resources.
- Evaluate the significance of identified historical resources.
- Evaluate the anticipated effects of a project on all significant historical resources.

Under CEQA, only effects on significant resources are considered potentially significant, so only those impacts require detailed analysis.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of an archaeological resource that is a historical resource as defined in Section 15064.5.
- Cause a substantial adverse change in the significance of a built environment resource that is a historical resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures

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 (less than significant with mitigation)

Archaeological resources P-09-1661, P-09-1663, P-09-1667, and the PAD (composed of nine contributing elements shown in Table 3.4-1) are within the project area and are eligible for listing in the NRHP and CRHR. P-09-1661 and P-09-1663 are both individually eligible and contributing elements of the PAD. P-09-1667 is individually eligible and not a contributing element of the PAD. P-09-1661, P-09-1665 and P-09-5557 will be located in areas designated for open space. P-09-1663, P-09-1667, and P-09-5556 are located within areas designated for residential development, but direct impacts on these resources will be avoided through project design by arranging building and associated parking areas to avoid these resources. The remaining four eligible resources (P-09-1660, P-09-1662, P-09-1666, and P-09-5559, all contributing elements of the PAD) are located within areas designated for residential development and will be directly affected by the project.

Preservation in place of these four elements will not be possible because of local topography, constraints for road construction and impacts on oak canopy.[1]

There would be no impacts on those resources located within open space; however, the project applicant has proposed to place a conservation easement of P-09-1661.

Impacts on the PAD would be significant as four contributing elements would be directly affected. P-09-1661, P-09-1665, and P-09-5557 are contributing elements to the PAD and are within open space (OS land use designation) and therefore will not be directly affected. P-09-1663 and P-09-5556 are contributing elements to the PAD located in areas designated for residential development, but direct impacts on these resources will be avoided through project design. Additionally, Mitigation Measure CUL-1a would reduce the impact on these resources during construction by requiring fencing, signage, and other avoidance measures during construction and after completion. Direct impacts on four contributing elements to the PAD (P-09-1660, P-09-1662, P-09-1666, and P-09-5559) would be considered significant impacts. Implementation of Mitigation Measure CUL-1a, which has been modeled from the recommendations in the Section 106 Compliance Report, and Mitigation Measure CUL-1b, would reduce impacts on the PAD to a less-than-significant level. Regardless of individual eligibility for listing on the CRHR or NRHP, all contributing elements to the PAD will be kept in open space to preserve the integrity of the district, if feasible. Where that is not feasible, implementation of Mitigation Measure CUL-1a will reduce impacts to less than significant by ensuring the appropriate treatment of the resources.

P-09-1667, an individually eligible resource, is located in an area that is designated for residential development, but direct impacts on the site will be avoided through project design. This resource would not be directly affected by the project. However, because the area is not designated open space, future impacts cannot be ruled out. The implementation of Mitigation Measure CUL-1c will ensure that future impacts are avoided and this impact is less than significant.

The potential for indirect effects to contributing elements to the PAD may result from the introduction of land uses that attract the public to the vicinity of archaeological resources can be considered indirect impacts on those resources. Though implementation of the project would result in more people in the area, the project area is already in a developed area used by a public that is generally aware of the cultural resources in this area and the proposed project would not substantially increase the potential for indirect impacts on these resources due to public access. Implementation of Mitigation Measure CUL-1a requires development and compliance with a Historic Properties Treatment Plan (HPTP), as required by CEDHSP Policy 5.22. This would include requirements for avoidance measures, reburying of excavated artifacts, fencing, and a data recovery plan for affected resources, would ensure that this impact would be less than significant.

Additionally, there is always the possibility that buried resources with no surface components are located within the project area. Construction of the project could result in impacts on buried cultural resources. If those resources are eligible for listing in the CRHR or the NRHP, disturbance or destruction would be a significant impact. Implementation of Mitigation Measure CUL-1d would reduce this impact to a less-than-significant level.

[1] Wilson Boulevard is steep and curvilinear, and when combined with the topography in the Pedregal area, the locations for the intersection with the planned subdivision road are limited. P-09-5559 is located within the area that will result in a reasonable amount of grading and will maintain the best line of sight for traffic safety. With this intersection location, the planned subdivision roads then follow the most level topography, resulting in impacts on the remaining three archaeological sites. Minimal grading and cut and fill also reduce impacts on oak canopy.

Because the proposed project would avoid and mitigate for individually eligible and contributing elements of the PAD, it would not eliminate an important example of California history or prehistory.

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 PAD, the project applicant will retain a qualified archaeologist to develop a site-specific HPTP that meets the requirements of Section 106 of the 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 by the County 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.

Mitigation Measure CUL-1b: Perform archaeological construction monitoring during ground-disturbing activities within 100 feet of known cultural resource sites

The project applicant will retain a qualified archaeologist to conduct construction monitoring during ground-disturbing construction activities within 100 feet of a significant cultural resource sites intended for preservation within the plan area or a known cultural resource site within the offsite improvement areas. The archaeologist will observe the ground-disturbing activities to ensure that no cultural material is present or disturbed during those activities. If potential cultural material is observed, all work within 100 feet of the find will cease and the archaeologist, and if the site is prehistoric or ethnographic in origin, a Native American representative, will assess the significance of the find. If the find is determined to be associated with the PAD, it will be treated in accordance with the HPTP. If the find is not associated with the PAD, Mitigation Measure CUL-1d will be implemented to address potential effects.

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.

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.

Mitigation Measure CUL-1d: Stop work in the event of discovery of previously unknown cultural resources.

If at any point during construction cultural resources, artifacts, midden, or any concentration of chipped or ground stone are encountered, construction will stop within 100 feet of the find until the find is assessed by a qualified archaeologist. The archaeologist will determine if the resource is associated with the PAD, in which case the HPTP described in Mitigation Measure CUL-1a will apply. If the resource is not associated with the PAD, it shall be evaluated for listing in the CRHR or NRHP or to determine whether it qualifies as a "unique archaeological resource" under CEQA. If the deposits are neither a historical nor unique archaeological resource, avoidance and mitigation is not necessary. If the find is determined to be significant and cannot be avoided by project design, mitigation measures will be developed in consultation with the SHPO, the County and other appropriate agencies. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4[b][3][C]) and standard archaeological field and laboratory methods and procedures and curation standards.

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.

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)

There are no built environment resources that are historical resources located in the project area. Therefore, there would be no impact. No mitigation is required.

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries (less than significant with mitigation)

No human remains are known to be located in or near the project area. However, the possibility always exists that unmarked burials may be unearthed during project construction. This impact would be significant, but would be reduced to a less-than-significant level by implementing Mitigation Measure CUL-3.

Mitigation Measure CUL-3: Perform construction monitoring during ground-disturbing activities and stop work if human remains are encountered

The project applicant will retain a qualified archaeologist to conduct construction monitoring during ground-disturbing construction activities within 100 feet of known prehistoric archaeological sites. The archaeologist will observe the ground-disturbing activities to ensure

that no human remains are present or disturbed during those activities. During any project excavation, regardless of the presence of an archaeological monitor, if human remains (or remains that are suspected to be human) are discovered all work shall cease in the vicinity of the find (a minimum of 100 feet) and the El Dorado County coroner will be notified immediately. If the coroner determines the remains to be Native American in origin, the coroner will be responsible for notifying the NAHC, which will appoint a MLD (PRC Section 5097.99). The archaeological consultant, project applicant, County, and MLD will make all reasonable efforts to develop an agreement for the dignified treatment of human remains and associated or unassociated funerary objects (CCR Title 14 Section 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recording, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The MLD will have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). If the MLD does not agree to the reburial method, the project shall follow PRC Section 5097.98(b), which states, "the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Impact CUL-4: Result in disturbance to or destruction of cultural resources as a result of offsite improvements (less than significant with mitigation)

ECORPs constraints analysis indicates that the area proposed for the potential connection to Silva Valley Parkway, and the recycled waterline expansion are highly sensitive for cultural resources. The Pedregal planning area water line connections, pedestrian crossings, and Park Drive extension locations are not considered highly sensitive for cultural resources. Construction of offsite improvements could result in disturbance to or destruction of known or unknown cultural resources. If those resources were listed in or eligible for listing in the CRHR or the NRHP, this would be a significant impact. Implementation of Mitigation Measures CUL-4, which requires preconstruction surveys of the offsite areas and evaluation and treatment of identified, eligible resources; CUL-1b, which requires construction monitoring within 100 feet of known cultural resources; CUL-1d, which provides for discovery of previously unrecorded or unknown resources; and CUL-3, which identifies actions that would be taken if human remains are discovered during construction, would reduce this impact to a less-than-significant level. Because the proposed project would avoid and mitigate, where required, impacts on resources that could be determined to be significant, it would not eliminate an important example of California history or prehistory.

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

When the exact locations and specific design of offsite improvements are identified (e.g., depth for underground utility lines and the Silva Valley Parkway connection alignment), the project applicant will retain a qualified cultural resources management provider to conduct studies to determine whether resources are located within the area that would be affected by the construction and operation of the improvements. These studies will include, as appropriate, a records search, archival research, contacting NAHC and interested parties, and pedestrian inventories. Recommendations made for avoidance and minimization will be considered by the County and implemented as required. These measures could include monitoring and presence/absence testing in sensitive areas, or training for construction personnel. Any resources that are located will be evaluated for eligibility for listing in the CRHR or NRHP. If resources found eligible cannot be avoided through project design, mitigation measures will be designed in consultation with the County, SHPO, and other appropriate agencies or parties. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4[b][3][C]) and standard archaeological field and laboratory methods and procedures, and curation standards.

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.

3.5 Geology, Soils, Minerals, and Paleontological Resources

This section identifies existing conditions and discusses the regulatory setting for geology and soils, minerals, and paleontological resources in the project area and analyzes the potential for the proposed project to affect these resources. Information presented in the discussion and subsequent analysis was primarily drawn from the following sources.

- *Preliminary Geotechnical Engineering Study for Pedregal Development (Formerly Ridgeview East), Wilson Boulevard, El Dorado Hills, California* (Youngdahl Consulting Group 2012a).
- *Preliminary Geotechnical Engineering Study for Serrano Westside Development, Serrano Parkway, El Dorado Hills, California* (Youngdahl Consulting Group 2012b).
- Regional geologic maps and fault maps prepared by the California Department of Conservation's California Geological Survey (formerly the Division of Mines and Geology) and the U.S. Geological Survey.
- Soils information made available by the Earth System Science Center at Pennsylvania State University, based on soils mapping by the Natural Resources Conservation Service (NRCS).
- Soils information from the *Soil Survey of El Dorado Area, California* (Rogers 1974).

Specific reference information is provided in the text.

3.5.1 Existing Conditions

Regulatory Setting

Geology and Soils

Federal

Clean Water Act 402/National Pollutant Discharge Elimination System

The Clean Water Act (CWA) is discussed in detail in Section 3.8, *Hydrology, Water Quality, and Water Resources*. However, because CWA Section 402 is directly relevant to excavation, additional information is provided below.

Section 402 mandates that certain types of construction activity comply with the requirements of the U.S. Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES) program. EPA has delegated to the State Water Resources Control Board (State Water Board) the authority for the NPDES program in California, where it is implemented by the state's nine Regional Water Quality Control Boards (Regional Water Boards). Construction activity disturbing 1 acre or more must obtain coverage under the state's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (see *Construction Activities Storm Water Construction General Permit*, below). General Construction Permit applicants are required to prepare a Notice of Intent (NOI) and a stormwater pollution prevention plan (SWPPP)

and implement and maintain best management practices (BMPs) to avoid adverse effects on receiving water quality as a result of construction activities, including earthwork.

Because the proposed project would result in the disturbance of an area greater than 1 acre, the project applicant would need to obtain coverage under the NPDES general construction permit and obtain a NPDES stormwater permit from the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

Additionally, the County is in the process of implementing requirements of the State Water Board's NPDES General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4) Order No. 2013-0001-DWQ (Order). The proposed project qualifies as a "Regulated Project" as defined in Section E.12 of the Order and therefore will be required to comply with the standards provided in the Order.

U.S. Geological Survey National Landslide Hazard Program

To fulfill the requirements of Public Law 106-113, the U.S. Geological Survey (USGS) created the National Landslide Hazards Program to reduce long-term losses from landslide hazards by improving understanding of the causes of ground failure and suggesting mitigation strategies. The Federal Emergency Management Agency (FEMA) is the responsible agency for the long-term management of natural hazards.

State

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code [PRC] 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are *sufficiently active* and *well-defined*. A fault is considered sufficiently active if one or more of its segments or strands show evidence of surface displacement during the Holocene time (defined for purposes of the Alquist-Priolo Act as referring to approximately the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Bryant and Hart 2007).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the State is charged with identifying and

mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites in Seismic Hazard Zones until appropriate site-specific geologic or geotechnical investigations have been carried out, and measures to reduce potential damage have been incorporated into the development plans. Geotechnical investigations conducted within Seismic Hazard Zones must incorporate standards specified by California Geological Survey Special Publication 117a, *Guidelines for Evaluating and Mitigating Seismic Hazards* (California Geological Survey 2008).

Construction Activities Storm Water Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ)

Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the General Construction Permit. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Coverage under the General Construction Permit is obtained by submitting permit registration documents to the State Water Board that include a risk level assessment and a site-specific SWPPP identifying an effective combination of erosion control, sediment control, and non-stormwater BMPs. The General Construction Permit requires that the SWPPP define a program of regular inspections of the BMPs and, in some cases, sampling of water quality parameters. The Central Valley Water Board administers the NPDES stormwater permit program in El Dorado County.

Municipal Separate Storm Sewer System Program

EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater. As part of the NPDES program, EPA initiated a program requiring that entities having MS4s apply to their local Regional Water Board for stormwater discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges. Phase II expanded the program to municipalities with populations less than 100,000 as well as small MS4s outside the urbanized areas that are designated by the permitting authority to obtain NPDES permit coverage for their stormwater discharges.

Generally, Phase I MS4s are covered by individual permits and Phase II MS4s are covered by a general permit. Each regulated MS4 is required to develop and implement a stormwater management program (SWMP) to reduce the contamination of stormwater runoff and prohibit illicit discharges. El Dorado County is a Phase II Small MS4 Traditional Renewal Permittee under MS4 Order No. 2013-0001-DWQ.

2013 California Building Standards Code

The State's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (24 California Code of Regulations). The CBSC is based on the IBC, which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous, more detailed or more stringent regulations. The CBSC requires that "classification of the soil at each building site will be determined when required by the building official" and that "the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the CBSC states that "the soil classification and design-bearing capacity will be shown on the (building) plans, unless the foundation conforms to specified requirements." The CBSC provides standards for various aspects of construction, including excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the project would be required to comply with all provisions of the CBSC.

Local

Geotechnical Investigations

Local jurisdictions typically regulate construction activities through a multistage permitting process that may require a site-specific geotechnical investigation. The purpose of the investigation is to provide a basis for the development of appropriate construction design. The site-specific geotechnical investigation is to be based on adequate test borings or excavations in the area where construction would occur and prepared by a civil engineer who is registered with the State.

El Dorado County's (County's) *Design and Improvement Standards Manual* (specifically, Volume III: Grading, Erosion, and Sediment Control, Section D: Grading Permit Application Submittal Requirements) describes when geotechnical and other similar reports are required. El Dorado County also requires investigation of the soils underlying proposed areas of grading in conformance with the mandates of the IBC and CSBC.

As part of tentative map approval, El Dorado County requires that areas having expansive clays and seasonably wet areas shall be identified by a geotechnical engineer. Such areas, if deemed to be potential construction hazards, shall be subject to further evaluation and identification to determine appropriate mitigation measures (El Dorado County Community Development Department 1998).

Grading, Erosion, and Sediment Control Ordinances

The County Grading, Erosion, and Sediment Control Ordinance (Grading Ordinance) (Chapter 110.14 of the County Code) establishes provisions for public safety and environmental protection associated with grading activities on private property. Section 110.14.090 of the Grading Ordinance, which has incorporated the recommended standards for drainage BMPs from the High Sierra Resource Conservation and Development Council BMP guidelines handbook, prohibits grading activities that would cause flooding where it would not otherwise occur or would aggravate existing flooding conditions. The Grading Ordinance also requires all drainage facilities, aside from those in subdivisions that are regulated by the County's Subdivision Ordinance, be approved by the County Department of Transportation. Pursuant to the ordinance, the design of the drainage facilities in the county must comply with the *County of El Dorado Drainage Manual* (Drainage Manual) (El Dorado County 1995).

El Dorado County Subdivision Ordinance

The County's Subdivision Ordinance (El Dorado County Code Title 120) requires the submission of drainage plans prior to the approval of tentative maps for proposed subdivision projects. The drainage plans must include an analysis of upstream, onsite, and downstream facilities and pertinent details, as well as details of any necessary offsite drainage facilities. The tentative map must include data on the location and size of proposed drainage structures. In addition, drainage culverts consistent with the drainage plan may be required in all existing drainage courses, including roads.

El Dorado County Design and Improvement Standards Manual (DISM)

The County's *Design and Improvement Standards Manual* was adopted in 1990 and provides required erosion and sediment control measures that are applicable to subdivisions, roadways, and other types of developments. Specifically, Volume III: Grading, Erosion and Sediment Control, describes the criteria for when an erosion and sediment control plan is required. When required, erosion and sediment control plans must comply with the adopted County SWMP (El Dorado County 2004a) and the NPDES MS4 Order.

El Dorado County Drainage Manual

The Drainage Manual provides standard procedures for future designs of drainage improvements. The Drainage Manual supersedes the stormwater drainage system design standards in the County's *Design Improvements Standards Manual*. The Drainage Manual requires that a hydrologic and hydraulic analysis be submitted for all proposed drainage facilities. The analysis must include an introduction/background, location map/description, catchment description/delineation, hydrologic analysis, hydraulic and structural analysis, risk assessment/impacts discussion, unusual or special conditions, conclusions, and technical appendices. This analysis is usually required on projects undergoing discretionary review. However, under the Building Code and Grading Ordinance, the County also reviews ministerial development, including required drainage plans, to ensure that appropriate runoff design and controls are in place.

El Dorado County General Plan

To protect public health and the environment from geologic and seismic hazards, the Public Health, Safety, and Noise Element of the *El Dorado County General Plan* (County General Plan) (El Dorado County 2004b) includes the following goal, objectives and policies. 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 6.3*, Geologic and Seismic Hazards,* addresses minimizing threats to life and property from seismic and geologic hazards through development regulations and building and site standards and on-going evaluation of seismic hazards and includes Objective 6.3.1, *Building and Site Standards*, and implementing policy 6.3.3.1; and Objective 6.3.2, *County-Wide Seismic Hazards*, and implementing policy 6.3.2.5.

In addition, the Conservation and Open Space Element includes the following relevant goal, objectives, and policies, the full text of which can be found in Appendix B.

- Goal 7.1*, Soil Conservation,* addresses conservation and protection of the County's soil resources and protection of natural drainage patterns and includes Objective 7.1.2, *Erosion/Sedimentation*,

and implementing policies 7.1.2.1 and 7.1.2.2; and Objective 7.3.4, *Drainage*, and implementing policies 7.3.4.1 and 7.3.4.2.

Compliance with El Dorado County Code of Ordinances Chapter 110.16, Uniform Building Code, would ensure the project would be consistent with County General Plan policies related to geology.

El Dorado County Code of Ordinances

The County has adopted the 2010 CBSC as the basis for the County Building Code (El Dorado County Code of Ordinances Section 110.16.010). The County's enforcement of its Building Code ensures the project would be consistent with the CBSC.

Minerals

Federal

No federal regulations related to mineral resources apply to the project because there are no federally owned lands in the project area.

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) (PRC 2710–2719) is the principal legislation addressing mineral resources in California. SMARA was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of SMARA is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that consideration is given to recreation, watershed, wildlife, aesthetic, and other related values.

SMARA provides for the evaluation of an area's mineral resources using a system of mineral resource zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data, and socioeconomic factors such as market conditions and urban development patterns. The MRZ classifications are defined as follows.

- MRZ-1—Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2—Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- MRZ-3—Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
    - MRZ-3a—Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRA-2 categories.
    - MRZ-3b—Areas containing inferred mineral deposits that may qualify as mineral resources. Land classified MRZ-3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work

could result in the reclassification of all or part of these areas into the MRZ-3a or MRA-2 categories.

- MRZ-4—Areas where available information is inadequate for assignment into any other MRZ.

SMARA governs the use and conservation of a wide variety of mineral resources. However, certain resources and activities are exempt from the provisions of SMARA. Subject to certain conditions, exempted activities include excavation and grading conducted for farming, onsite construction, or recovery from flooding or other natural disaster.

Local

The County Surface Mining and Reclamation Ordinance (Chapter 8.36 of the County Code) recognizes the SMARA MRZ designations and identifies requirements related to mining and mine reclamation. Additionally, the County has designated general plan land uses and zoning on sites with previous or potential mines. The project area is not identified as an Important Mineral Resource Area in the General Plan, and there is no mineral resources (-MR) overlay.

Paleontological Resources

Federal

No federal regulations related to paleontological resources apply to the proposed project because there are no federally owned lands in the project area. There is one National Natural Landmarks (NNL) Program site in El Dorado County, but it is at Lake Tahoe, outside the project area.

State

California Public Resources Code

Several sections of the PRC protect paleontological resources. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

Local

El Dorado County General Plan

To protect paleontological resources, the Conservation and Open Space Element of the *El Dorado County General Plan* (County General Plan) (El Dorado County 2004) includes the following goal and policies to protect cultural resources, which also address paleontological resources. The full text of the goal 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 7.5, *Cultural Resources*, addresses preservation of the County's important resources through protection of cultural heritage, and includes implementing policies 7.5.1.3 and 7.5.1.6.

Environmental Setting

Geology and Soils

Regional Geologic Framework

The project area is in the western portion of the Sierra Nevada geomorphic province, which is a linear, tilted fault block almost 400 miles long that extends from northern Butte County to the Mohave Desert. In stark contrast to its steep eastern slope, its western slope is gentle. This western slope is deeply incised by rivers and disappears beneath the sediments of the Central Valley. The upper elevation Sierra Nevada is comprised of massive granites shaped by glaciation, such as is seen in Yosemite. Lower in the Sierra Nevada is the northwest-trending Mother Lode, which is made up of metamorphic rock containing gold-bearing veins. The Sierra Nevada disappears to the north beneath the Cenozoic volcanic rock of the Cascade Ranges (California Geological Survey 2002:2).

Geologic Setting of Western El Dorado County

A north–northwest-trending belt of metamorphic rocks—the Western Sierra Nevada Metamorphic Belt—extending from Mariposa northward to Lake Almanor underlies the western slope of the Sierra Nevada, including western El Dorado County. This belt consists of accumulations of seafloor rocks and marine sedimentary and volcanic rocks (formed by crystallization of magma at or near the Earth's surface) of various types. These rocks have been buried and recrystallized at depth under elevated temperatures and pressures to produce the belt and range in age from about 160 to 300 million years old. Within the county, the belt is intruded by numerous small to moderately large bodies of igneous rock (the 165-million-year-old Pine Hill Intrusive Complex and the slightly younger granitic intrusions of the Sierra Nevada batholith and small dikes) (California Geological Survey 2000:4).

The structural framework of the Western Sierra Nevada Metamorphic Belt is dominated by a group of north–northwest-trending faults, also referred to as *fault zone*s, which mark the boundaries of different packages of rocks along the length of the belt. These packages of rocks, called *terranes*, are believed to have been emplaced along the western margin of the North American continent at various times when a convergent plate tectonic setting existed (when the oceanic plate was sliding under the continental plate). Throughout the metamorphic belt, including western El Dorado County, the faults are locally characterized by long bands and isolated lenses of serpentinite, schist containing the minerals talc and chlorite, quartz vein complexes, and highly sheared country rock. The faults cut across western El Dorado County from north to south and include segments of the Bear Mountains and Melones fault zones, a probable segment of the Calaveras-Shoo Fly Thrust, and several other unnamed structures (California Geological Survey 2000:4).

Project Area Topography

A majority of the project area encompasses a valley that slopes to the south and elevations range from 600 to 1,060 feet above mean sea level (MSL). The Pedregal planning area is primarily an uplands area, characterized by sloping terrain ranging in elevation between 740 and 1,060 feet above MSL and slopes ranging between 10 and over 30%. The Serrano Westside planning area is comprised of a valley floor and uplands area, with sloping terrain ranging in elevation from approximately 600 to 1,020 feet above MSL and slopes ranging between 0 and over 30%.

The terrain at the Pedregal planning area is heavily vegetated with seasonal grasses and trees and generally slopes toward the east at varying gradients with a maximum gradient of approximately 1½H:1V (Horizontal: Vertical) separating the project area into upper and lower areas. The existing dirt roadway is within the upper project area and generally has slopes of 3H:1V or flatter. The lower project area, located on the west side of the El Dorado Hills Boulevard, north of Copper Hill apartments, is generally void of trees and has a gradient of about 4H:1V toward El Dorado Hills Boulevard. A drainage swale is present along the south side of the project area and drains to a channel along Wilson Boulevard.

The terrain at the Serrano Westside planning area is heavily vegetated with seasonal grasses and occasional collections of trees and generally slopes toward the west at varying gradients with a maximum gradient of approximately 2H:1V. Occasional depressions and hills are present throughout the project area, which appear to have served as golf course obstacles such as water features, hills, and bunkers. The vegetation throughout the project area generally consists of seasonal tall grasses with sparse trees and riparian type plants near the water features.

Slopes, percentage of coverage, and acreage within the two planning areas are listed below in Table 3.5-1 and are shown in Figure 3.5-1.

Table 3.5-1. Project Area Slope Information

Percent Slope (%)	Percent Coverage (%)	Acreage (acre)
Pedregal Planning Area		
0–10	3.4	3.50
10–20	22.6	23.20
20–30	59.1	60.70
>30	14.9	15.30
Total	100	102.70
Serrano Westside Planning Area		
0–10	28.7	68.60
10–20	28.4	67.90
20–30	23.5	56.30
>30%	19.4	46.40
Total	100	239.20

Source: Serrano Associates, LLC 2012.

Consistent with County General Plan Policy 7.1.2.1, non-development areas have been established where the slope is steeper than 30%[1] (Serrano Associates, LLC 2012).

Project Area Geology

The project area has been mapped at a regional scale by a number of geologists (Jennings 1977; California Division of Mines and Geology 1984; California Geological Survey 2001, 2011; Wagner et al. 1981). According to these maps, there are four main geologic units in the project area: Quaternary alluvium, Copper Hill Volcanics, ultramafic bedrock, and metavolcanic rocks.

[1] The County General Plan Policy 7.1.2.1 is currently being amended to provide more flexibility and some exceptions to this policy than are currently in place (Pabalinas pers. comm.).

Metavolcanic rocks of the Copper Hill Volcanics underlie the entirety of the Pedregal planning area. The northern portion of the Serrano Westside planning area is underlain by ultramafic bedrock, while the remaining southern portion of the Serrano Westside planning area is underlain by metavolcanic rocks.

The description of these units below is from the California Geological Survey (2001) and Wagner et al. (1981). The locations of these units are shown in Figure 3.5-2.

- Copper Hill Volcanics (Jch): late to middle Jurassic; composed of metamorphosed mafic pyroclastic rocks and pillow lava with minor felsic porphyrite (Wagner et al. 1981).
- Ultramafic Rocks (um): Paleozoic to Mesozoic age; partly to completely serpentinized; locally includes gabbroic and other rocks; intrusive igneous rock formation.
- Metavolcanic (mv): likely Paleozoic age; metamorphosed mafic pyroclastic and flow rock; referred to as Foothill Melange Ophiolite Terrane.
- Quaternary Alluvium (Qal): alluvial or stream deposits of Quaternary age (either Pleistocene age [i.e., greater than 11,000 years old] or Holocene age [i.e., younger than 11,000 years old]) that occur within drainages.

Soils

Surface Soils

The soils in the project area have been mapped by the U.S. Department of Agriculture, Soil Conservation Service (now the NRCS) and are described in both the *Soil Survey of El Dorado, California* (Rogers 1974) and NRCS's online soil mapping tool, Web Soil Survey (U.S. Department of Agriculture, Natural Resources Conservation Service 2012). Soils in the project area are shown on Figure 3.5-3.

According to the soil survey, there are three individual soil map units that occupy the Pedregal planning area. These include the Argonaut gravelly loam, 2–15% slopes (which covers the very easternmost portion and roughly 2% of the project area); the Auburn very rocky silt loam, 2–30% slopes (which covers two pieces of both the eastern and western portions and roughly 25% of the project area); and the Auburn very rocky silt loam, 30–50% slopes (which covers the majority and roughly 73% of the project area).

There are four individual soil map units that occupy the Serrano Westside planning area. These include the Auburn silt loam, 2–30% slopes (which covers the majority and roughly 58% of the planning area); the Auburn very rocky silt loam, 30–50% slopes (which covers some smaller portions in the central and western portions and roughly 38% of the planning area); Placer diggings (which occur in a drainage area on the eastern portion of the planning area and covers roughly 0.5% of the planning area); and Rescue clay, clayey variant (which occurs on the most westernmost portion along a drainage and covers roughly 4% of the planning area).

Table 3.5-2 summarizes the soil characteristics for the project area.

Table 3.5-2. Detailed Soil Characteristics of the Project Area

Soil Map Unit	Shrink-Swell Potential	Erosion Hazard (Factor K)[a]	Runoff Rate
Argonaut gravelly loam, 2–15% slopes	High	0.20	Slow to medium
Auburn silt loam, 2–30% slopes	Low	0.49	Slow to medium
Auburn very rocky silt loam, 2–30% slopes	Low	0.49	Slow to medium
Auburn very rocky silt loam, 30–50% slopes	Low	0.49	Medium to rapid
Placer diggings	NA[b]	0.10	NA[b]
Rescue clay, clayey variant	High	0.20	Slow

Sources: Rogers 1974; U.S. Department of Agriculture, Natural Resources Conservation Service 2012.

[a] Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

[b] Properties too variable to be determined.

The Argonaut gravelly loam, 2–15% slopes soil map unit is moderately deep (30–34 inches to paralithic bedrock) and well-drained. Its parent material is residual materials weathered from andesite and/or materials weathered from metasedimentary rock. Typically, the surface layer is gravelly loam about 10 inches thick. The subsoil between 10 and 30 inches is clay. Weathered bedrock (typically metaandesite) occurs at depth below 30 inches (Natural Resources Conservation Service 2012).

The Auburn soils are relatively shallow (14–18 inches to lithic bedrock) and well-drained. Their parent material is Amphibolite schist. Typically, the surface layer in these soils is silt loam about 14 inches thick. Unweathered bedrock (typically metabasic rock) occurs at depth below 14 inches. (U.S. Department of Agriculture, Natural Resources Conservation Service 2012).

Placer diggings consists of areas of stony, cobbly, and gravelly material, commonly in the beds of drainages, or of areas that have been placer mined. The parent material alluvium derived from mixed sources. The depth of the soil material is variable, ranging from 6 inches to more than 5 feet. (Rogers 1974:29).

Rescue clay, clayey variant soils are relatively deep (48–52 inches to paralithic bedrock) and poorly drained. The parent material is alluvium derived from mixed sources over igneous rock. Typically, the surface layer is clay about 36 inches thick. The subsoil between 36 and 48 inches is clay loam. Weathered bedrock (typically basic igneous rock) occurs at depth below 48 inches. These soils occur in wet drainages and swales (U.S. Department of Agriculture, Natural Resources Conservation Service 2012).

According to the *Soil Survey of El Dorado, California* (Rogers 1974), the Argonaut gravelly loam, 2–15% slopes soil map unit and the Rescue clay, clayey variant soil map unit have high shrink-swell potentials. However, the materials encountered in Youngdahl Consulting Group's explorations were generally non-plastic (rock, sand, and non-plastic silt) (Youngdahl Consulting Group 2012a). The non-plastic materials are generally considered to be non-expansive.

Subsurface Conditions

Based on a subsurface exploration program conducted by Youngdahl Consulting Group (2012a), subsurface soil conditions in the Pedregal planning area were generally observed to be loose or soft to depths up to 3 feet and consisted of silty sand or sandy silt. The roadway alignment was observed to consist of cuts and fills which appear to have been constructed to make a drivable construction surface and are not considered engineered fill. A layer of clay soils was encountered within test pit TP-8 about 1 foot above the soil to bedrock contact. The bedrock at the Pedregal planning area was generally highly weathered near the soil to bedrock contact and graded to a moderately weathered condition with depth. Excavations into bedrock were capable of achieving depths between 4.5 and 7 feet with the exception of test pits TP-10 and TP-11 located in the lower area of the Pedregal planning area. Excavation depth at test pits TP-10 and TP-11 were terminated at a depth of 4 and 3 feet, respectively.

Based on a subsurface exploration program conducted by Youngdahl Consulting Group (2012b), subsurface soil conditions in the Serrano Westside planning area varied over the extent of the project area and included clays, silts, and sands, with an occasional manmade gravel drainage layer. The upper soil layers were generally observed to be loose or soft to depths up to 1.5 feet south of Serrano Parkway and up to 7 feet in areas north of Serrano Parkway. The surface soils at test pits TP-1, TP-7, TP-8, TP-9, TP-12, and TP-13 were observed to contain fill soils. Given the history of the project area, the location of fill soils identified should not be considered to be the sole location of potential fills. Silt and clay soils were encountered within 2 feet of the soil to bedrock contact with exception of test pits TP-1, TP-5, TP-7, TP-8, TP-13, and TP-14 which had sand above the bedrock contact. The sand layer at most of these exceptions may be a result of bedrock weathering because they have a silt or clay layer within 1.5 feet above the sand to bedrock contact.

The bedrock at the Serrano Westside planning area was generally encountered at 1.5–6 feet below the ground surface south of Serrano Parkway and 0.5–8 feet below the ground surface north of Serrano Parkway. The bedrock materials consisted of metavolcanic bedrock and talc-schist in a moderately weathered and fractured condition. Serpentinite was observed at the northeast corner of the Serrano Westside planning area south of Serrano Parkway and peridotite was observed north of the existing fire station. The underlying bedrock materials likely can be excavated to depths of several feet using dozers equipped with rippers. However, there may be locations that could require special construction methods such as blasting (Youngdahl Consulting Group 2012b).

Soil Corrosion Potential

Corrosivity testing suites consisting of soil pH, resistivity, sulfate, and chloride content tests were performed on selected soil samples collected by Youngdahl Consulting Group (2012a, 2012b). According to *California Department of Transportation Corrosion Guidelines Version 1.0*, September 2003, the test results appear to indicate a non-corrosive environment. According to the ACI 318-11 Table 4.2.1, the test results indicate the onsite soils have a negligible potential for sulfide attack of concrete. Accordingly, Type I/II Portland cement is appropriate for use in concrete construction.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified in several areas in the general vicinity of the project area. NOA is addressed in Section 3.2, *Air Quality*.

Seismicity and Faults

Primary Seismic Hazards

Surface Rupture and Faulting

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) is to regulate development near active faults to mitigate the hazard of surface rupture. Faults in an Alquist-Priolo Earthquake Fault Zone are typically active faults. As defined under the Alquist-Priolo Act, an *active fault*[2] is one that has had surface displacement within the Holocene epoch (the last 11,000 years); a *late Quaternary fault* is a fault that has undergone displacement during the past 700,000 years; a *Quaternary fault (age undifferentiated)* is one that has had surface displacement at some point during Quaternary time (the last 1.6 million years); and a *pre-Quaternary fault* is one that has had surface displacement before the Quaternary period.

The project area is not identified as being located in an Alquist-Priolo Earthquake Fault Zone (Bryant and Hart 2007). There is no evidence of recent (i.e., Holocene) faulting within the project area and no active faults are mapped to cut at or near the project area (California Geological Survey 2010; El Dorado County 2004c; U.S. Geological Survey 2010; Youngdahl Consulting Group 2012a, 2012b). Furthermore, review of aerial photographs does not indicate the presence of lineations or other features that would suggest the presence of recent faulting on or trending toward the project area. The nearest mapped active and early Quaternary faults pertinent to the project area are summarized in Table 3.5-3.

Table 3.5-3. Active/Early Quaternary Faults within a 100-Kilometer Radius of the Project Area[a]

Fault Name	Status	Distance/Direction
Dunnigan Hills Fault	Late Quaternary	76 km W
North Tahoe Fault	Active	96 km E
West Tahoe Fault	Active	88 km E
Bear Mountains Fault Zone–East	Late Quaternary	12 km E
Bear Mountains Fault Zone–West	Late Quaternary	0 km W[b]
Maidu Fault	Quaternary (age undifferentiated)	12 km NE
Melones Fault–West	Late Quaternary	18 km E
Melones Fault–East	Late Quaternary	20 km E

Source: Youngdahl Consulting Group 2012b.
km = kilometer.
W = west.
E = east.
NE = northeast.
[a] Distance and direction are from the Serrano Westside planning area.
[b] The Bear Mountains Fault Zone–West passes through the west side of the Serrano Westside planning area.

[2] Two types of active faults are recognized—active faults along which historic (last 200 years) displacement has occurred, and active faults exhibiting Holocene fault displacement (during past 11,700 years) without historic record.

A total of eight faults and/or fault zones were identified as potential seismic sources within a 100-kilometer (km) radius of the project area. Those expected to have the greatest impact due to their proximity to the project area are faults associated with the Foothills fault system (Bear Mountains Fault Zone–East, Bear Mountains Fault Zone–West, Maidu Fault, Melones Fault–West, and Melones Fault–East). The Foothills fault system is located along the western flank of the Sierra Nevada. Many areas of late Cenozoic faulting and some areas of Quaternary faulting have been identified along this system. The most recent event on the Foothills fault system was the 1975 Oroville earthquake (magnitude 5.6 on the Richter Magnitude Scale, described below under *Ground-Shaking Hazard*).

The closest Foothills system fault is the western branch of the Bear Mountain fault zone trending nearly north–south passing through the west side of the Serrano Westside planning area (Figure 3.5-4). The majority of the Bear Mountain fault zone (including the segment that runs through the Serrano Westside planning area) is considered pre-Quaternary, due to the lack of evidence supporting Quaternary displacement. The closest potentially active portion of the Bear Mountain fault zone is approximately 10 km to the northeast, a distance unlikely to affect the project area with respect to surface fault rupture. Consequently, the project area is not likely to be affected by surface fault rupture.

Ground-Shaking Hazard

The intensity of ground shaking that occurs as a result of an earthquake is partly related to the size of the earthquake, its distance from the subject location, and the response of the geologic materials in the area. As a rule, the greater the energy released from the fault rupture (the earthquake *magnitude*) and the closer the fault rupture (*epicenter*) to the site, the greater the intensity of ground shaking. Geologic and soil units comprising unconsolidated, clay-free sands and silts can reach unstable conditions during ground shaking, which can result in extensive damage to structures built on such soils (see *Liquefaction and Associated Hazards*). When various earthquake scenarios are considered, ground-shaking intensities will reflect both the effects of strong ground accelerations and the consequences of ground failure.

Earthquake magnitude is generally expressed in the Richter Magnitude Scale or as moment magnitude. The scale used in the Richter Magnitude Scale is logarithmic so that each successively higher Richter magnitude reflects an increase in the energy of an earthquake of about 31.5 times. Moment magnitude is the estimation of an earthquake magnitude by using seismic moment, which is a measure of an earthquake size utilizing rock rigidity, amount of slip, and area of rupture. Earthquake energy is most intense at the fault epicenter; the farther an area from an earthquake epicenter, the less likely that ground shaking will occur there.

Ground shaking is described using two methods: ground acceleration as a fraction of the acceleration of gravity, expressed in units of "g," and the Modified Mercalli scale, which is a more descriptive method involving 12 levels of intensity denoted by Roman numerals. Modified Mercalli intensities range from I (shaking that is not felt) to XII (total damage).

The project area is in a region of California characterized by low historical seismic activity and low ground-shaking hazard and the *El Dorado County Multi-Jurisdiction Hazard Mitigation Plan* (El Dorado County 2004c) shows the project area as occurring in a low severity zone for shaking intensity. Farther to the east and west, the ground-shaking hazard increases, coinciding with the increase in abundance of associated faults and fault complexes (California Geological Survey 2008). The most severe ground motion would be expected to occur if there were to be significant activity along the Foothills fault system (Fugro West 2008).

Secondary Seismic Hazards

Liquefaction and Associated Hazards

Liquefaction is a phenomenon in which the strength and stiffness of unconsolidated sediments are reduced by earthquake shaking or other rapid loading. Poorly consolidated, water-saturated fine sands and silts having low plasticity and, when located within 40 feet of the ground surface, are typically considered to be the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction. Geologic age also influences the potential for liquefaction. Sediments deposited within the most recent millennia are generally more susceptible to liquefaction than older Holocene sediments; Pleistocene sediments are even more resistant; and pre-Pleistocene sediments are generally immune to liquefaction (California Geological Survey 2008).

Two potential ground failure types associated with liquefaction in the region are lateral spreading and differential settlement (Association of Bay Area Governments 2001). Lateral spreading involves a layer of ground at the surface being carried on an underlying layer of liquefied material over a gently sloping surface toward a river channel or other open face. Differential settlement (also called ground settlement and, in extreme cases, ground collapse) occurs as soil compacts and consolidates after the ground shaking ceases, when the layers that liquefy are not of uniform thickness, which is a common problem when the liquefaction occurs in artificial fills. Settlement can range from 1 to 5%, depending on the cohesiveness of the sediments (Tokimatsu and Seed 1984).

Based on the geologic age of the earth materials, average relative density of the subsurface material, the relatively shallow depth to rock, the absence of a permanently elevated groundwater table, (see Section 3.8, *Hydrology, Water Quality, and Water Resources*), and low anticipated ground-shaking hazard for the project area, the potential for liquefaction, dynamic compaction, or seismically induced settlement or bearing loss is considered low.

Seismically Induced and Static Slope Failures

According to Youngdahl Consulting Group (2012a, 2012b), the existing slopes on the project area were observed to have adequate vegetation on the slope face, appropriate drainage away from the slope face, and no apparent tension cracks or slump blocks in the slope face or at the head of the slope. No other indications of slope instability such as seeps or springs were observed. Additionally, due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area, and the relatively shallow depth to rock, the potential for seismically induced slope instability is considered negligible.

Other Hazards

Several other geologic and seismic hazards (land subsidence, volcanic activity, tsunami, seiche, and mudflow) that could be experienced in the larger region are unlikely to affect the project area. These hazards are not likely to affect the proposed project and therefore are not discussed in this EIR. Radon and NOA are discussed in Section 3.2*, Air Quality*.

Minerals

The information in this section is based on California Geological Survey (2001), except where noted. El Dorado County contains and has produced a wide variety of mineral resources because of its diverse geology. These mineral resources include gold, limestone, crushed rock, sand and gravel,

chromite, copper, diamonds, mercury, slate, talc and soapstone, asbestos, clay, silica, tungsten, and other minerals in minor amounts.

Gold occurs within bedrock and as placer in river deposits (alluvium). Gold within bedrock is associated with hydrothermal deposits or metasomatic processes associated with contact metamorphism. These hard rock gold deposits form the Mother Lode and are associated with metamorphic rocks particularly in veins in contact with intrusive igneous rocks. There are no bedrock-associated gold deposits in the project area vicinity.

Placer gold is gold that has weathered out of the underlying bedrock and then been transported by streams or rivers. This transported gold (placer) may then be found within river deposits (alluvium) either within an active streambed or in river terraces. Extensive placer gold deposits associated with large Tertiary age rivers are found in El Dorado County to the north of, but not in close proximity to, the project area. The closest placer gold deposits to the project area are found in the narrow Deer Creek corridor beginning about 1.5 miles south of US 50 in Cameron Park. Placer mining also occurred in Carson Creek in El Dorado Hills. A minor amount of diamonds have been found in placer gold deposits in western El Dorado County but their bedrock origin has not been located.

Limestone is a marine sedimentary rock and occurs in linear bands or small linear outcrops throughout western El Dorado County. These marine rocks are associated with the terranes moved here by oceanic plates. This limestone has been mined for a wide variety of uses. There is no limestone in the project area; the closest limestone is found to the southeast and south of Cameron Park as well as in Marble Valley.

Chromite is a metal associated with ultramafic rocks or contact zones of intrusive igneous rocks. Historically El Dorado County ranks third in the state for chromite production, primarily from mines near Folsom Lake. There are two former chrome mines in the project area. These two mines (the Joerger Chromium Mine and the Walker Chromium Mine; see Section 3.4, *Cultural Resources*, Table 3.4-1 Known Cultural Resource Sites) are within an area designated as Open Space (OS) in the Central El Dorado Hills Specific Plan (CEDHSP). A third chrome mine (now closed) occurs to the immediate east and north of the project area boundary in the vicinity of the other two mines but outside the project area boundary. These mines are in ultramafic rocks and that ultramafic rock body extends into the project area. The mined deposits included small amounts of layered chromite and disseminated chromite in alternating rich and lean layers in serpentine. These mines were active in the early part of the 1900s and then briefly during World War II. They have not been active since. There are also three closed chromite mines on the west side of Cameron Park to the north of US 50 (California Geological Survey 2001). No chromite is currently produced in California (California Geological Survey 2014).

The exact location of offsite infrastructure improvements has not been determined; however, no mines or different mineral resources than noted above occur within those areas as identified in Figure 2-9.

Mercury, slate, talc, soapstone, asbestos, silica and tungsten occur in minor amounts and none occur within the vicinity of the project area. There are no crushed rock, sand, or gravel resources mapped in the project area and there are no local quarries or mines for these materials. Though copper was historically produced in El Dorado County, the closest historic copper mine is located approximately 1.5 miles south of US 50 south of Cameron Park (California Geological Survey 2001). No copper is currently produced in California (California Geological Survey 2014).

The project area is mapped as MRZ-1 for limestone and construction materials, indicating that there are no significant mineral resources present. It is mapped as MRZ-3a for volcanogenic processes, indicating that there are known mineral deposits that may qualify as mineral resources but require further exploration and analysis to be reclassified. The project area is mapped as MRZ-4 for gold deposits (hydrothermal), gold deposits (placer) and gold deposits (metasomatic). These classifications mean that the available information is inadequate for assignment to any other MRZ.

Paleontological Resources

Paleontological Sensitivity

Paleontological sensitivity is a qualitative assessment that takes into account the paleontological potential of the stratigraphic units present, the local geology and geomorphology, and any other local factors that may be germane to fossil preservation and potential yield. According to the Society of Vertebrate Paleontology (2010:2), paleontological sensitivity is based on two factors: (1) the potential for a geological unit to yield abundant or significant vertebrate fossils or to yield significant invertebrate, plant, or trace fossils; and (2) the potential importance of the data to contribute to further understanding of paleontology. Table 3.5-4 defines paleontological sensitivity ratings.

Table 3.5-4. Paleontological Sensitivity Ratings

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources…Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.
No	Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require neither protection nor impact mitigation measures relative to paleontological resources.

Source: Society of Vertebrate Paleontology 2010.

Paleontological Sensitivity of Potentially Affected Units

Although El Dorado County is well known for abundant fossils found at two limestone cave localities (Hawver Cave and Cool Cave) (University of California Museum of Paleontology 2013a), the three main geologic units in the project area are unlikely to contain paleontological resources. Quaternary alluvium may contain fossils. The description of these units below, as it relates to their paleontological sensitivity, is from the California Geological Survey (2001) and location of each unit is shown in Figure 3.5-2.

Copper Hill Volcanics

The Copper Hill Volcanics, which occurs primarily in the Pedregal planning area, is made up of pillow lava, lava flows, and pyroclastic rocks formed during the Jurassic Period. Pillow lava and lava generally have low paleontological sensitivity. Pyroclastic rocks may have the potential to contain fossils (e.g., when volcanic ash encases plants or animals); however, no fossils are known from the Copper Hill Volcanics (University of California Museum of Paleontology 2013a), and there are no records of fossils found in volcanic rock in El Dorado County (University of California Museum of Paleontology 2013a) or in the adjacent Placer and Amador Counties (University of California Museum of Paleontology 2013b, 2013c). The potential for this unit to contain fossils is therefore considered low.

Ultramafic Rocks

Ultramafic rocks of Paleozoic to Mesozoic age occur in the northern end of the Serrano Westside planning area. This unit is an intrusive igneous rock and, therefore, has no potential to contain fossils.

Metavolcanic

Metavolcanic rock of likely Paleozoic age occurs over much of the Serrano Westside planning area. This unit is a metamorphosed volcanic rock, and there are no records of fossils in the unit (University of California Museum of Paleontology 2013d). The paleontological sensitivity of this unit is therefore considered low.

Quaternary Alluvium

Alluvial, or stream, deposits of Quaternary age occur within drainages in the project area.

Alluvial deposits of Pleistocene age (i.e., greater than 11,000 years old, deposited during the early Quaternary) are considered to have high sensitivity for paleontological resources because California's Pleistocene nonmarine strata have yielded a wealth of stratigraphically important vertebrate fossils. There is at least one record of a mastodon fossils found in Quaternary alluvium (gravel) in El Dorado County (University of California Museum of Paleontology 2013a).

Alluvial deposits of early to middle Holocene age (i.e., 11,000 to 5,000 years old) may be considered sensitive for paleontological resources, while deposits that are of late Holocene age (i.e., less than 5,000 years old) are not considered sensitive for paleontological resources because of their young age. However, given the difficulty in distinguishing Pleistocene and Holocene deposits and the absence of detailed mapping of Quaternary deposits, all Quaternary alluvial deposits should be considered sensitive for paleontological resources.

3.5.2 Environmental Impacts

Methods of Analysis

Geology, Soils, and Seismicity

Impacts related to geology, soils, and seismicity were assessed based on technical reports prepared for the proposed project, other available data (maps, soil surveys), and professional judgment. This analysis focuses on the proposed project's potential to result in the risk of personal injury, loss of life, and damage to property as a result of existing geologic conditions within the project area.

The geology, soils, and seismicity impact analysis assumes that the project applicant would conform to the latest NPDES requirements, County and other plan policies, standards, and ordinances. The analysis also assumes that, per direction of El Dorado County, as noted in the *Regulatory Setting*, geotechnical analyses would be performed in the project area. Site-specific, design-level geotechnical investigations were performed to evaluate the potential for the presence of soft and/or loose soils, unstable slopes, surface fault rupture, ground shaking, liquefaction hazard, slope stability, and expansive soils. Additional site-specific analysis would occur prior to final design.

Minerals

For mineral resources, the proposed project's potential to affect access to mineral resources was evaluated by examining the project footprint in comparison to resource locations as mapped by the California Geological Survey (2001).

Paleontological Resources

To analyze paleontological resources, the primary source of information used was the paleontological database at the University of California, Berkeley. Effects on paleontological resources were analyzed qualitatively on a large-scale level, based on professional judgment and the Society of Vertebrate Paleontology (SVP) guidelines below.

SVP's *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* provides standard guidelines that are widely followed to analyze paleontological resources (Society of Vertebrate Paleontology 2010). These guidelines reflect the accepted standard of care for paleontological resources. The SVP guidelines identify two key phases in the process for protecting paleontological resources from project impacts.

- Assess the likelihood that the project area contains significant nonrenewable paleontological resources that could be directly or indirectly impacted, damaged, or destroyed as a result of the project.
- Formulate and implement measures to mitigate potential adverse impacts.

An important strength of SVP's approach to assessing potential impacts on paleontological resources is that the SVP guidelines provide some standardization in evaluating a project area's paleontological sensitivity. Table 3.5-5 summarizes SVP's recommended treatments to avoid adverse effects in each paleontological sensitivity category.

Table 3.5-5. Society of Vertebrate Paleontology's Recommended Treatment for Paleontological Resources

Sensitivity Category	Mitigation Treatment
High or Undetermined	• An intensive field survey and surface salvage prior to earth moving, if applicable. • Monitoring by a qualified paleontological resource monitor of excavations. • Salvage of unearthed fossil remains and/or traces (e.g., tracks, trails, burrows). • Screen washing to recover small specimens, if applicable. • Preliminary survey and surface salvage before construction begins. • Preparation of salvaged fossils to a point of being ready for curation (i.e., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate). • Identification, cataloging, curation, and provision for repository storage of prepared fossil specimens. • A final report of the finds and their significance.
Low or No	Rock units with low or no potential typically will not require impact mitigation measures to protect fossils.

Source: Society of Vertebrate Paleontology 2010.

Thresholds of Significance

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.

- 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.
- Result in substantial soil erosion or the loss of topsoil.
- 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.
- Result in fracturing and/or erosion from special construction methods that could result in unstable geologic or soil conditions
- Be located on expansive soil, as defined in Section 1803.5.3 of the 2013 CBSC, creating substantial risks to life or property.
- 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.
- 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.

- 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.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impacts and Mitigation Measures

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)

The project area is not identified as being within an Alquist-Priolo Fault Zone (Bryant and Hart 2007). There is no evidence of recent (i.e., Holocene) faulting within the project area and no active faults are mapped to cut at or near the project area (California Geological Survey 2010; El Dorado County 2004c; U.S. Geological Survey 2010; Youngdahl Consulting Group 2012a, 2012b). Furthermore, review of aerial photographs does not indicate the presence of lineations or other features that would suggest the presence of recent faulting on or trending towards the project area. Accordingly, the project area is not subject to surface rupture hazard. This impact would be less than significant.

The ground-shaking hazard in the project area is low. Nonetheless, a large earthquake on a nearby fault could cause minor ground shaking in the vicinity of the project area, potentially resulting in an increased risk of structural loss, injury, or death. Liquefaction and related hazards such as lateral spreading and differential settlement have the potential to compromise the structural integrity of proposed new facilities and cause injury to construction workers and residents. However, based on the geologic age of the earth materials, average relative density of the subsurface material, groundwater conditions, and anticipated ground-shaking hazard for the project site, the potential for liquefaction, dynamic compaction, or seismically induced settlement or bearing loss is considered less than significant.

In addition to the low hazard of surface fault rupture and ground shaking and related hazards, these impacts would be less than significant because the project applicant would be required to implement IBC and CBSC standards into the project design for applicable features to minimize the potential fault rupture and ground-shaking hazards on associated project features. Structures must be designed to meet the regulations and standards associated with the IBC and the CBSC. The geotechnical studies will be updated prior to construction activities and the seismic design parameters will be based on the building codes in effect at that time. This will ensure that these impacts will remain less than significant.

Due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area, and the relatively shallow depth to rock, the potential for seismically induced slope instability is considered negligible. This impact would be less than significant.

In brief, due to the absence of permanently elevated groundwater table, the relatively low seismicity of the area and the relatively shallow depth to rock, the potential for seismically induced damage

due to liquefaction, surface ruptures, and settlement is considered negligible. For the abovementioned reasons, mitigation (other than conformance to IBC and CBSC standards) for these potential hazards is not typically practiced in the geographic vicinity of the project area (Youngdahl Consulting Group 2012a, 2012b).

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil (less than significant)

Grading, excavation, removal of vegetation cover, and loading activities associated with construction could temporarily increase erosion, runoff, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at the construction sites and staging areas.

However, as required by Section 402 of the CWA, a SWPPP would be developed by a qualified engineer or erosion control specialist and implemented before construction. The SWPPP would be kept onsite during construction activity and made available upon request to representatives of the Central Valley Water Board. The SWPPP would identify pollutant sources that may affect the quality of stormwater associated with construction activity and identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. Therefore, the SWPPP would include a description of potential pollutants, the management of dredged sediments, and hazardous materials present on the site during construction (including vehicle and equipment fuels). The SWPPP also would include details of how the sediment and erosion control practices (i.e., BMPs) would be implemented. Implementation of the SWPPP would comply with state and federal water quality regulations.

In addition to the SWPPP, adherence to the NPDES MS4 Order and applicable El Dorado County Grading Ordinance, Subdivision Ordinance, Design and Improvement Standards Manual, and Drainage Manual would all minimize any effects from erosion, runoff, and sedimentation.

Finally, recommendations in Youngdahl Consulting Group's (2012a, 2012b) preliminary geotechnical engineering studies pertaining to general site preparation (including recommendations concerning site drainage controls, dust control, clearing and stripping, overexcavation and recompaction of existing fills/loose native soils, and exposed grade compaction considerations) would be implemented, further reducing impacts. Accordingly, this impact would be 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)

According to Youngdahl Consulting Group (2012a, 2012b), the existing slopes on the project area were observed to have adequate vegetation on the slope face, appropriate drainage away from the slope face, and no apparent tension cracks or slump blocks in the slope face or at the head of the slope. No other indications of slope instability such as seeps or springs were observed. Furthermore, recommendations in Youngdahl Consulting Group's 2012 preliminary geotechnical engineering studies pertaining to engineered fill material and placement, as well as slope configuration and grading, would be implemented, further reducing impacts. This impact would be 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 (less than significant with mitigation)

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 would 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. This would be a significant impact. In addition to complying with applicable state and federal agency blasting regulations,[3] implementation of Mitigation Measure GEO-4 would ensure that this impact would be less than 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

The project applicant's soil scientists or engineers will be responsible for conducting a final geotechnical evaluation of hard rock areas where blasting is being proposed prior to excavation/blasting activities. The final geotechnical evaluation shall specifically address the impacts of any special site preparation techniques on rock or soils present on or adjacent to the project area. Specific mitigation shall be developed prior to construction and implemented to minimize potential impacts on or adjacent to the project area from unstable geologic or soils conditions that could be caused by blasting. The project applicants will select one or more of these measures in consultation with a qualified engineer before excavation/blasting activities begin.

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)

The materials encountered in Youngdahl Consulting Group's explorations were generally non-plastic (rock, sand, and non-plastic silt). The non-plastic materials are generally considered to be non-expansive. Therefore, no special recommendations have been provided for expansive soil conditions in Youngdahl Consulting Group's 2012 preliminary geotechnical engineering studies (Youngdahl Consulting Group 2012a, 2012b). However, according to the *Soil Survey of El Dorado, California* (Rogers 1974), the Argonaut gravelly loam, 2–15% slopes soil map unit and the Rescue clay, clayey variant soil map unit have high shrink-swell potentials. Expansive soils have the potential to compromise the structural integrity of project features, which would be a significant impact. However, per County requirements, the project applicant's soil scientists or engineers will be responsible for conducting a final geotechnical evaluation of unconsolidated sediments of the project area to determine whether they are susceptible to shrink-swell behavior prior to grading

[3] The following is a partial list of agencies that have regulations pertaining to blasting: California Department of Industrial Relations, Occupational Safety and Health Division for use of explosives; the U.S. Department of Transportation and California Highway Patrol for transport of explosives; the U.S. Bureau of Alcohol, Tobacco, and Firearms for storage of explosives; conditions of a permit issued by the El Dorado County Sheriff's Office.

and construction activities. Subsurface borings at regular intervals within the project footprint or other methods determined by a geotechnical engineer are recommended. Based on subsurface conditions, the project applicant's soil scientists or engineers will design the specific project elements to accommodate the effects of expansive soils. If expansive soils are determined to be present at any location where project activities would occur, corrective actions will be taken. Corrective actions may include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground treatment processes, and direction of surface water and drainage away from foundation soils. The project applicants will select one or more of these measures in consultation with a qualified engineer before grading activities begin, ensuring that this impact would be 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)

The project would be connected to sewer lines of the local wastewater systems, not septic systems. Therefore, there would be no impact. No mitigation is required.

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)

Table 3.5-6 displays the MRZs identified by the California Geological Survey (2001). The project area is mapped as MRZ-1 for limestone and construction materials, indicating that there are no significant mineral resources present. It is mapped as MRZ-3a for volcanogenic processes, indicating that there are known mineral deposits that may qualify as mineral resources but require further exploration and analysis to be reclassified. The project area is mapped as MRZ-4 for gold deposits (hydrothermal), gold deposits (placer) and gold deposits (metasomatic). These classifications mean that the available information is inadequate for assignment to any other MRZ. Finally, there are no aggregate sources mapped in the project area.

There were two former chrome mines in the project area (within areas designated as OS) as well as another chrome mine near these two but outside the project area. All these mines were active in the early 1900s and then again during World War II but have been closed since then. Additionally there is little production of these minerals (e.g., copper, chromite) in the entire state, indicating minimal economic viability for these types of resources. With respect to gold, there is no known information that would suggest the project area has recently been under consideration for gold exploration or gold mining development that would cause a reconsideration of its MRZ classification. The current owners of the project area have not sought this MRZ reclassification. Consequently, there are few to no existing or potential resources that would be of value to the region or residents of the state, and the impact would be less than significant.

Table 3.5-6. Mineral Resources for the Project Area

Mines and Prospects	Limestone	Construction Materials	Gold Deposits (Hydrothermal)	Volcanogenic Processes	Gold Deposits (Placer)	Gold Deposits (Metasomatic)	Aggregate Resource Areas
None	MRZ-1	MRZ-1	MRZ-4	MRZ-3a	MRZ-4	MRZ-4	None

Source: California Geological Survey 2001:Plates 2–9.

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)

The County General Plan does not identify any locally important mineral resources. Also, the project area does not contain any mineral resources that have not been considered in the County General Plan (see discussion under Impact GEO-7). Since there are no locally important mineral resources or recovery sites identified in these plans there would be no impact.

Impact GEO-9: Directly or indirectly destroy a unique paleontological resource (less than significant with mitigation)

Geologic units with potential to contain paleontological resources include Quaternary alluvium (high sensitivity for paleontological resources) and the volcanic units (unknown to low sensitivity for paleontological resources). If fossils are present in the project area, they could be damaged during earth-disturbing construction activities, such as excavation for foundations, fills, and road work. Substantial damage to or destruction of significant paleontological resources as defined by the SVP (2010) would be a significant impact. Implementation of Mitigation Measures GEO-9a and GEO-9b, which require construction workers training to recognize paleontological resources and work stoppage if resources or caves are encountered, and evaluation of the find by a qualified professional would reduce this impact to a less-than-significant level.

Mitigation Measure GEO-9a: Educate construction personnel in recognizing fossil material

Prior to construction, the project applicant will ensure that all construction personnel receive training provided by a qualified professional paleontologist who is experienced in teaching non-specialists to ensure that construction personnel can recognize fossil materials in the event any are discovered during construction.

Mitigation Measure GEO-9b: Stop work if fossil remains are encountered during construction

If fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities, activities will stop immediately until a State-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The project applicant will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.

Impact GEO-10: Impacts on geological, mineral and paleontological resources resulting from offsite improvements (less than significant with mitigation)

Impacts on geological resources resulting from offsite improvements would be identical to those described above for the project area only. All relevant IBC and CBSC standards would be incorporated into offsite improvements project design for applicable features to minimize the potential fault rupture and ground-shaking hazards on associated project features. The most recent seismic design parameters at the time of construction would also be implemented. A SWPPP,

adherence to the applicable El Dorado County Grading Ordinance, Subdivision Ordinance, Design and Improvement Standards Manual, and Drainage Manual will all minimize any effects from erosion, runoff, and sedimentation. If special construction methods, such as blasting, are necessary, Mitigation Measure GEO-4 would be implemented.

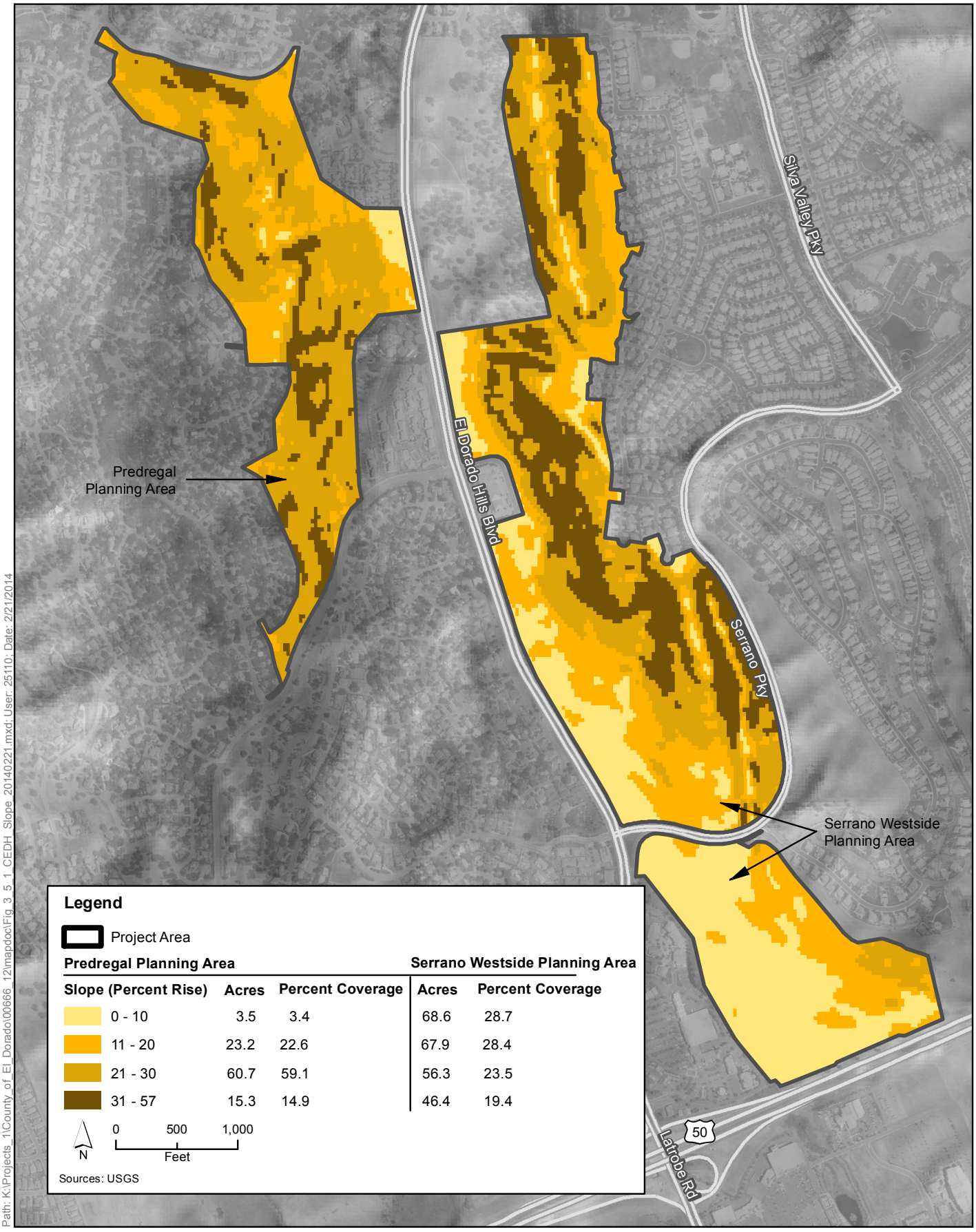
The MRZs within the offsite improvement areas are the same as within the main project area as listed in Table 3.5-6. There are no existing or former mines within the offsite improvement areas. Consequently, there would be no existing or potential resources that would be of value to the region or residents of the state, and the impact would be less than significant. Similarly, the County General Plan does not identify any locally important mineral resources within the offsite improvement areas. Because there are no locally important mineral resources or recovery sites identified for the offsite improvement areas in these plans there would be no impact.

If fossils are present in the offsite improvement areas, they could be damaged during earth-disturbing construction activities related to offsite improvements, such as grading, fills, and road work associated with the road extensions and grading and trenching associated with installation of water lines. Units with potential to contain paleontological resources in the offsite improvement areas include Quaternary alluvium (high sensitivity for paleontological resources) and the volcanic units (unknown to low sensitivity for paleontological resources). Substantial damage to or destruction of significant paleontological resources as defined by the SVP (2010) would be a significant impact. Implementation of Mitigation Measures GEO-9a and GEO-9b would reduce this impact to a less-than-significant level.

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



Path: K:\Projects_1\County_of_El_Dorado\00666_12\mapdoc\Fig_3_5_1_CEDH_Slope_20140221.mxd; User: 25110; Date: 2/21/2014

Figure 3.5-1
Central El Dorado Hills Slope

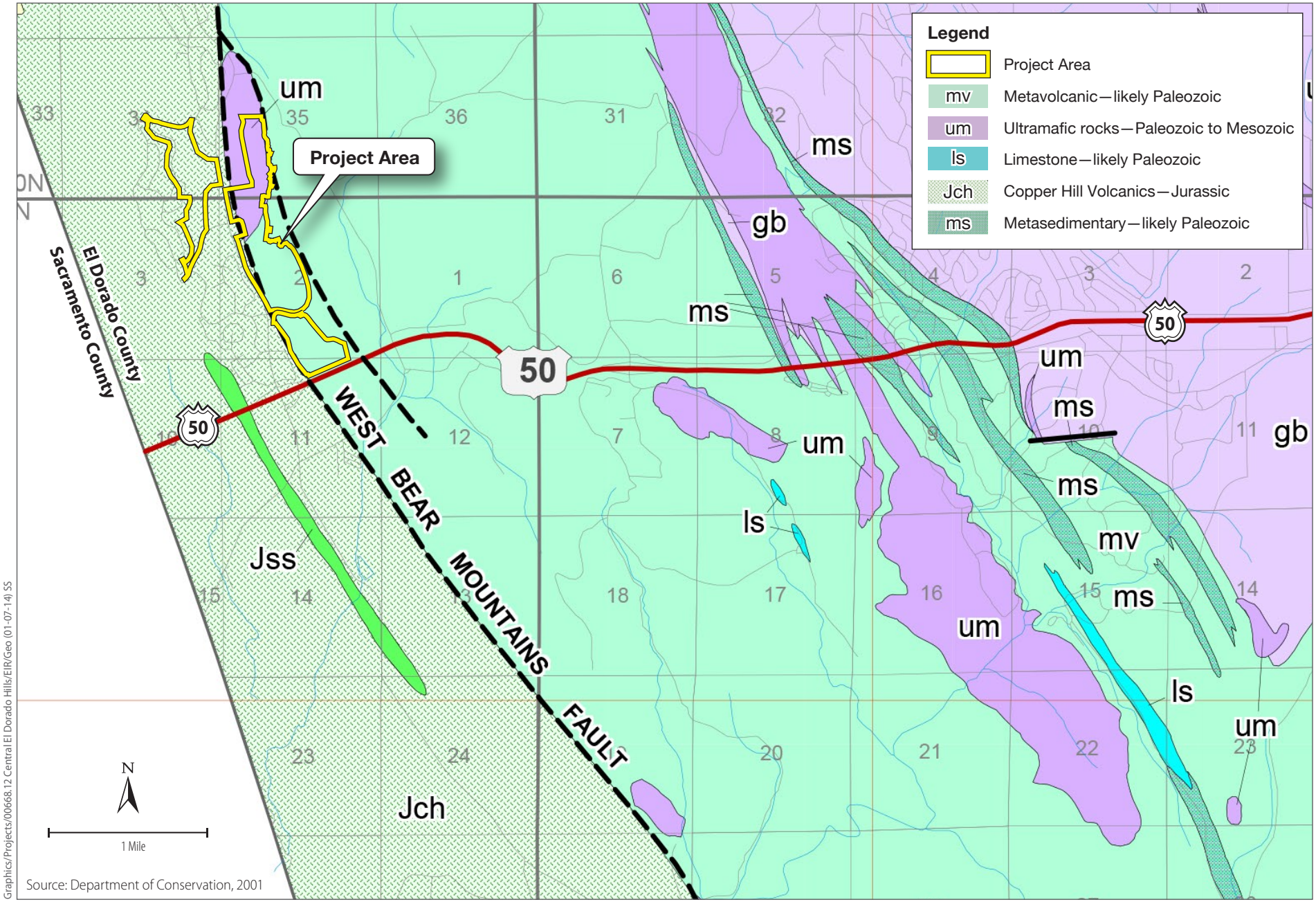


Figure 3.5-2
Geologic Map of the Project Area

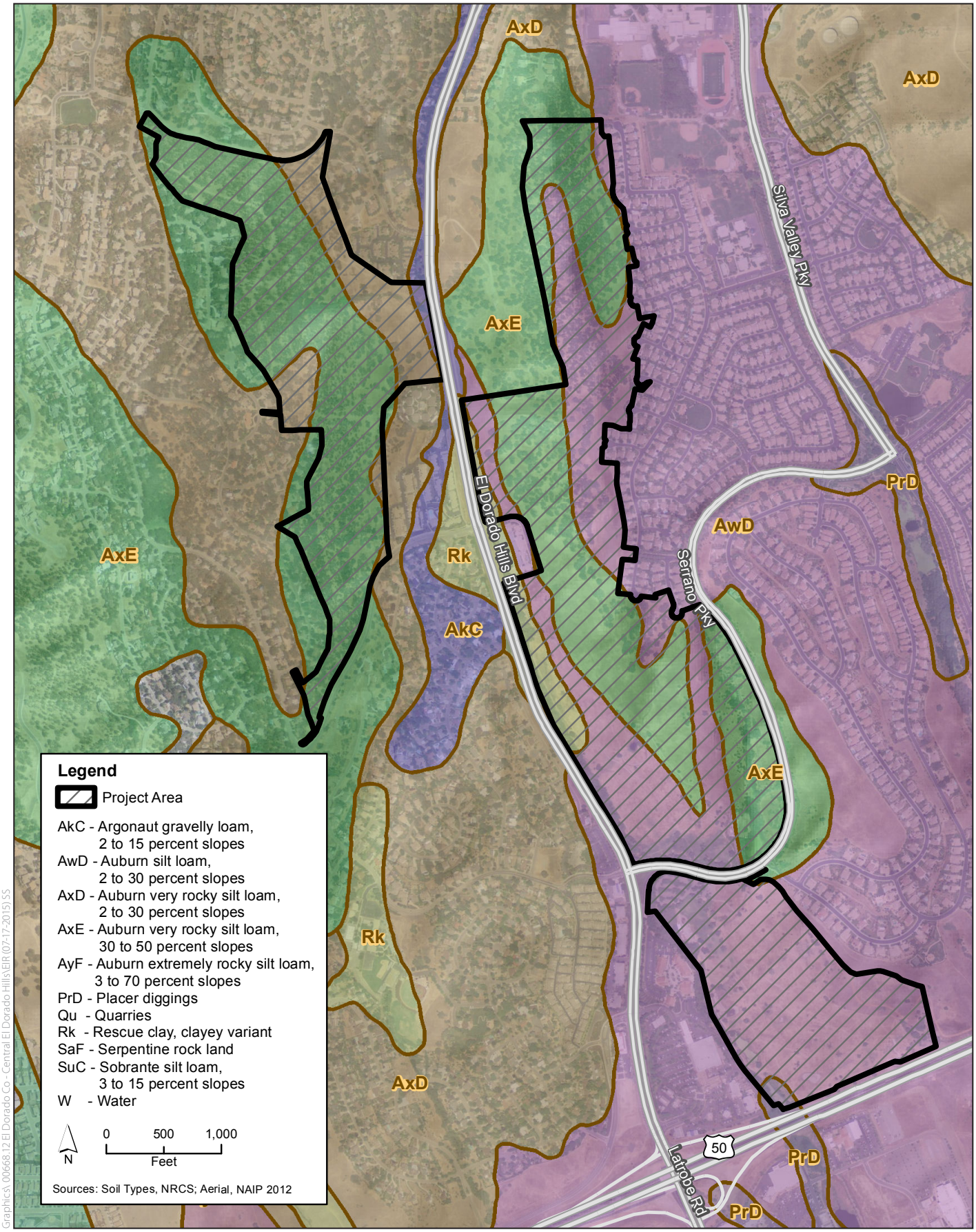


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Figure 3.5-3
Soils in the Project Area
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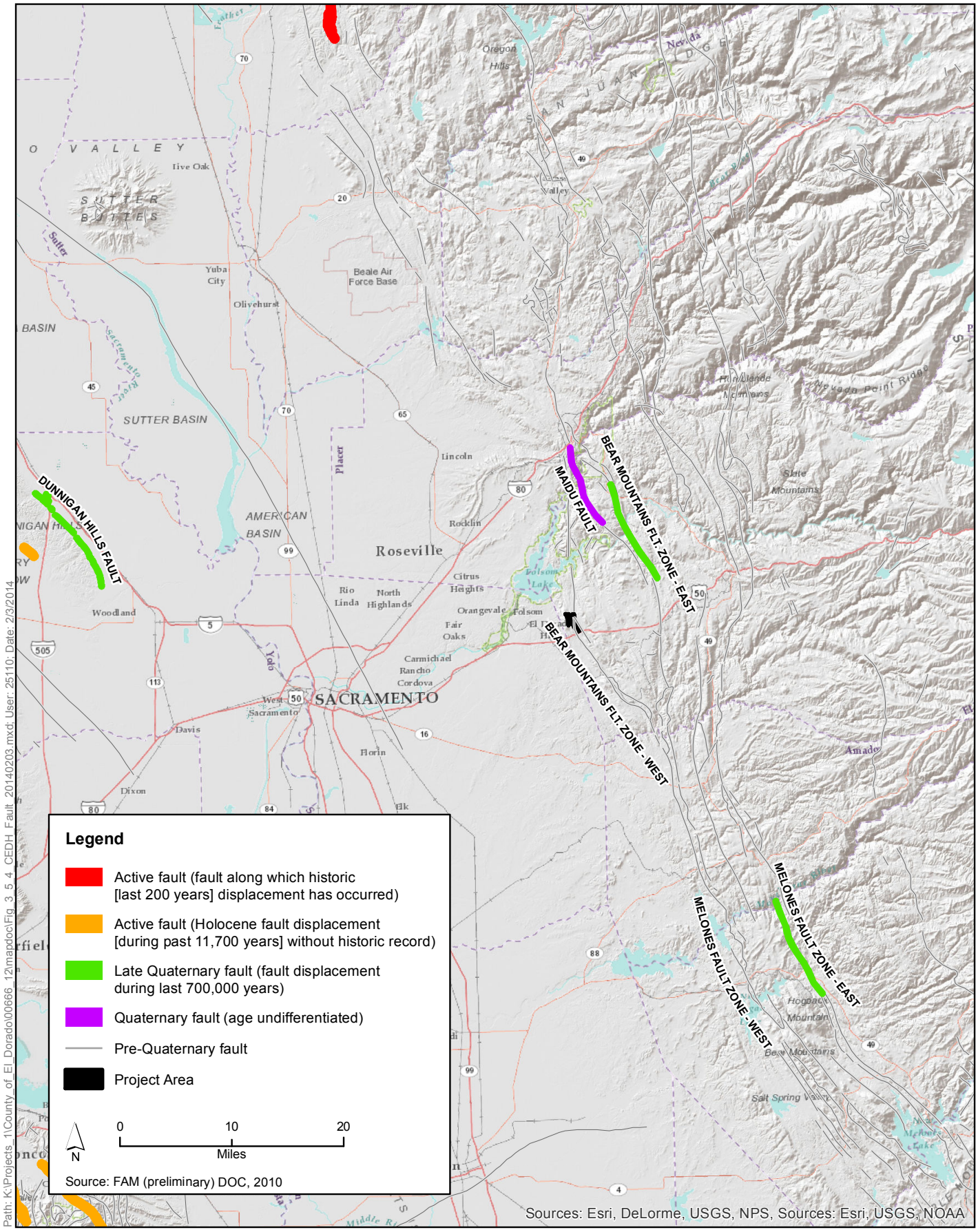

Path: K:\Projects_1\County_of_El_Dorado\00666_12\mapdoc\Fig_3_5_4_CEDH_Fault_20140203.mxd; User: 25110; Date: 2/3/2014

Figure 3.5-4
Faults in the Region

3.6 Greenhouse Gas Emissions

This section describes the environmental and regulatory setting for greenhouse gases (GHGs) and climate change. It also describes impacts on climate change that would result from implementation of the proposed Central El Dorado Hills Specific Plan (CEDHSP) (proposed project). Impacts related to other air quality parameters are described in Section 3.2, *Air Quality*.

3.6.1 Existing Conditions

Regulatory Setting

This section summarizes federal, state, and local regulations related to GHG emissions and climate change that are applicable to the CEDHSP.

Federal

Although there is currently no federal overarching law specifically related to climate change or the reduction of GHGs, the U.S. Environmental Protection Agency (EPA) is developing regulations under the federal Clean Air Act (CAA) that may be adopted pursuant to the EPA's authority under the CAA in the next 2 years. Foremost among recent developments have been the settlement agreements between the EPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in *Massachusetts v. EPA;* and the EPA's Endangerment Finding, Cause or Contribute Finding, and Mandatory Reporting Rule. Although periodically debated in Congress, there is no federal legislation concerning GHG emissions limitations. In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld the EPA's authority to regulate GHG emissions under the CAA.

State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, regulations, and legislation at the state level that are relevant to the CEDHSP are provided below.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009, 2012 Rule-Making)

Known as *Pavley I*, Assembly Bill (AB) 1493 (42 USC Sections 42823 and 7401 et seq.) standards are the nation'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 proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 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.

Senate Bills 1078/107 and Senate Bill 2 (2011)—Renewables Portfolio Standard

Senate Bills (SBs) 1078,[1] California's Renewables Portfolio Standard (RPS), obligates investor-owned utilities (IOUs), energy service providers (ESPs), and Community Choice Aggregations (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. The California Public Utilities Commission (CPUC) and California Energy Commission (CEC) are jointly responsible for implementing the program. Senate Bill 2 (2011)[2] set forth a longer range target of procuring 33% of retail sales by 2020.

Assembly Bill 32—California Global Warming Solutions Act (2006)

AB 32 (Health and Safety Code 38500 et seq.) codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since being adopted, ARB, CEC, CPUC, and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and Executive Order (EO) S-03-05.[3] The 2008 *Climate Change Scoping Plan* for AB 32 (2008 Scoping Plan) identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires ARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the 2008 Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state. The first update to the 2008 Scoping Plan was released in February 2014 and includes revised GHG reduction estimates based on updated statewide GHG inventories. The update also discusses the need for continued GHG reduction progress post-2020.

Executive Order S-01-07—Low Carbon Fuel Standard (2007)

EO S-01-07 mandates that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020 and that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California. The EO initiates a research and regulatory process at ARB. Based on an implementation plan developed by the CEC, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012). ARB appealed this ruling in 2012, and on September 18, 2013, a 9th U.S. Circuit Court of Appeals panel upheld the LCFS, ruling that the program does not violate the Commerce Clause and remanded the case to the Eastern District.

[1] Public Resources Code Sections 25620.1, 25740, 25470.5, 25741, 25742, 25743, 25744.5, 25746, 25751; and Public Utilities Code Sections 387, 399.11, 399.12, 399.13, 399.14, 399.15, 399.16, 635, and 2854.

[2] Fish and Game Code Section 705; Public Resources Code Sections 25519.5, 25740, 25740.5, 25741, 25741.5, 25742, 25746, 25747, and 25751; and Public Utilities Code Sections 399.11, 399.12, 399.13, 399.14, 399.15, 399.16, 399.17, 399.18, 399.19, 399.20, 399.26, 399.30, 399.31, 454.5, 910, 911, and 1005.1.

[3] EO S-03-05 establishes GHG emissions reduction targets for California state agencies, including an 80% reduction below 1990 levels by 2050.

Senate Bill 375—Sustainable Communities Strategy (2008)

SB 375[4] provides for a new planning process that coordinates land use planning, regional transportation plans (RTPs), and funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires that the RTPs developed by metropolitan planning organizations (MPOs) include a "sustainable communities strategy" (SCS). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. ARB released the regional targets in September 2010.

The Sacramento Area Council of Governments (SACOG) is the MPO for the Sacramento region, including the western slope of El Dorado County. SACOG adopted its SB 375–compliant *Metropolitan Transportation Plan/Sustainable Communities Strategy 2035* (MTP/SCS) in April 2012. SB 375 also includes provisions for streamlined CEQA review for certain types of mixed-use and transit priority projects that meet specific criteria established by SB 375. Per State CEQA Guidelines Section 15183.5, quantified plans, such as the MTP/SCS EIR, "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. Section 15183.5 also states:

> 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.

Environmental documents prepared for projects that are consistent with the MTP/SCS EIR are not required to reference, describe, or discuss the following in their GHG impact analysis.

1. Growth-inducing impacts.
2. A reduced-density alternative to address impacts on transportation or climate change of increased car and truck VMT induced by the project.
3. Any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

There are no areas within El Dorado County with sufficient transit service to qualify for transit priority project streamlining introduced under SB 375 (Sacramento Council of Governments 2012). However, mixed-use projects consistent with the MTP/SCS may qualify for CEQA streamlining and tier from the MTP/SCS EIR for their project-level GHG emissions analysis.

State CEQA Guidelines (2010)

The State CEQA Guidelines (Section 15064.4) require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

[4] California Government Code Sections 14522.1, 14522.2, 65080, 65080, 65080.01, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, and Public Resources Code Sections 2161.3, 21155, 21159.28.

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include the following, among others.

- Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision.
- Implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions.
- Offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions.
- Measures that sequester carbon dioxide (CO_2) or CO_2 equivalent (CO_2e) emissions.

Local

El Dorado County Air Quality Management District Draft Greenhouse Gas Emissions Thresholds

The El Dorado County Air Quality Management District (EDCAQMD) administers the California and federal Clean Air Acts according to guidelines set forth by state and federal agencies. Currently EDCAQMD has not adopted significance thresholds for GHGs in accordance with the State CEQA Guidelines. At present, the Sacramento Metropolitan Air Quality Management District (SMAQMD) along with a committee of EDCAQMD and other regional air districts[5] use guidance from the California Air Pollution Control Officers Association (CAPCOA) (2008) to develop draft threshold concepts for evaluating project-level GHG emissions (Huss pers. comm.). While SMAQMD formally adopted the GHG thresholds in October 2014, EDCAQMD still considers them draft, although air district staff recommends use of the thresholds in project-level CEQA GHG analyses. The goal of the thresholds is to capture at least 90% of GHG emissions from new stationary sources and land development projects. These thresholds are discussed further under Section 3.6.2, *Environmental Impacts*.

Environmental Setting

The unique chemical properties of GHGs enable them to become well-mixed within the atmosphere and transported over long distances. 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 following subsections provide background information on global climate change and principal GHGs associated with implementation of the CEDHSP. Potential impacts of climate change on the study area are also identified.

Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight that passes through the atmosphere. Some of the sunlight striking Earth is absorbed and converted to heat, which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted toward the surface by GHGs. Human activities that

[5] Air districts in the region include SMAQMD, EDCAQMD, Placer County Air Pollution Control District, Feather River Air Quality Management District, and the Yolo-Solano Air Quality Management District.

generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth (Center for Climate and Energy Solutions n.d.).

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a phenomenon commonly referred to as *global warming*. Higher global surface temperatures in turn result in changes to Earth's climate system, including increased ocean temperature and acidity, reduced sea ice, variable precipitation, and increased frequency and intensity of extreme weather events (Intergovernmental Panel on Climate Change 2007). Large-scale changes to Earth's system are collectively referred to as *climate change.*

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that the average global temperature will rise by 0.3–4.8° Celsius during the twenty-first century (Intergovernmental Panel on Climate Change 2013). Large increases in global temperatures could have substantial adverse effects on the natural and human environments on the planet and in California.

Greenhouse Gas Emissions and Reporting

The primary GHG emissions associated with the proposed project would be CO_2, methane (CH_4), and nitrous oxide (N_2O). CO_2 is the most important anthropogenic GHG and accounts for more than 75% of all GHG emissions caused by humans. The primary sources of anthropogenic CO_2 in the atmosphere include the burning of fossil fuels, gas flaring, cement production, and land use changes. CH_4 and N_2O are not as abundant as CO_2, but are significantly more powerful. Sources of CH_4 include growing rice, raising cattle, using natural gas, landfill outgassing, and mining coal. Sources of N_2O include agricultural processes, nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the global warming potential methodology defined in the IPCC reference documents. The IPCC defines the global warming potential of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of the CO_2e metric, which compares the gas in question to that of the same mass of CO_2 (CO_2 has a global warming potential of 1 by definition).

Table 3.6-1 lists the global warming potential of CO_2, CH_4, and N_2O, their lifetimes, and abundances in the atmosphere.

Table 3.6-1. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)	Current Atmospheric Abundance
CO_2	1	50–200	391 ppm
CH_4	28	9–15	1,871 ppb
N_2O	265	120	323 ppb

Source: Myhre et al. 2013.
CH_4 = methane.
CO_2 = carbon dioxide.
N_2O = nitrous oxide.
ppm = parts per million.
ppb = parts per billion.

Potential Effects of Climate Change in California and in the Project Area

Even with the efforts of municipalities throughout the state, a certain amount of climate change is inevitable due to existing and unavoidable future GHG emissions. With respect to the greater Sacramento area, including the project area, climate change effects are expected to result in the following.

- A hotter and drier climate, with average annual temperatures increasing by 3.7–6.5° Fahrenheit (F) in El Dorado County by 2090, relative to baseline conditions (1961–1990) (California Energy Commission 2014).
- More frequent and intense wildfires, with the area burned projected to increase by an estimated 58–69% in El Dorado County by 2050 (California Energy Commission 2014).
- Decreased winter snowpack with April snow water equivalences declining by 88–97% in El Dorado County by 2050, relative to baseline conditions (1961–1990) (California Energy Commission 2014).
- Changes in growing season conditions and species distribution (PRBO Conservation Science 2011).
- Increased heat and decreased air quality, with the result that public health will be placed at risk, and native plant and animal species may be lost (PRBO Conservation Science 2011).

3.6.2 Environmental Impacts

Methods of Analysis

GHG emissions associated with construction and operation of the proposed project were quantified using standard and accepted software tools, techniques, and emission factors. A summary of the methodology is provided below.

Construction

Construction of the proposed project would generate short-term emissions of CO_2, CH_4, and N_2O. Emissions would originate from mobile and stationary construction equipment exhaust, as well as employee vehicle and haul truck exhaust. Water consumption for dust control would also generate

indirect GHG emissions associated with water pumping and conveyance. Construction water demand for the proposed project is based on information provided in the Water Supply Assessment for the proposed project (Appendix K). Emissions generated by construction were estimated using CalEEMod (version 2013.2.2),[6] the Road Construction Emissions Model (RCEM) (version 7.1.5.1), and additional assumptions described in Section 3.2, *Air Quality*.

Operation

Operation of the proposed project would generate long-term emissions of CO_2, CH_4, and N_2O. Primary sources of emissions would include vehicle exhaust, energy usage, water consumption, waste and wastewater generation, and area sources. Operational GHG emissions were estimated using CalEEMod (version 2013.2.2) and additional assumptions described in Section 3.2, *Air Quality.*

Although open space is proposed for CEDHSP, the land use characteristics are similar to existing conditions. Furthermore, no substantial changes in land cover are expected to result from the proposed project that would alter carbon sequestration rates associated with various land cover types.[7] Therefore, CO_2 sequestration effects associated with changes in vegetation coverage and tree plantings/removal are not evaluated as part of this analysis.

Thresholds of Significance

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.

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The State CEQA Guidelines provide guidance to lead agencies for determining the significance of project-level GHG emissions. Section 15064.4(b) provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider all of the following.

- The extent to which the project may increase or reduce GHG emissions as compared with existing conditions.
- Whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

CEQA authorizes 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

[6] The global warming potentials recommended by the IPCC and ARB have been revised since release of CalEEMod, version 2013.2.2. Accordingly, CO_2e emissions were quantified based on the global warming potentials summarized in Table 3.6-1 and the CO_2, CH_4, and N_2O outputs from CalEEMod. Accordingly, the total CO_2e outputs reported by CalEEMod were not used in this analysis.

[7] *Carbon sequestration* refers to the process of removal and long-term storage of atmospheric CO_2. Vegetation removes atmospheric CO_2 during respiration and stores the gas as a chemical compound in its tissues.

"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" (CEQA Guidelines Section 15183.5). "Tiering" from an approved program-level GHG reduction document is recommended by the EDCAQMD as the preferred method to address GHG emissions in project-level CEQA documents (Baughman pers. comm. A).

El Dorado County does not have an adopted CAP or similar program-level GHG reduction document. However, 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" off the MTP/SCS EIR for CEQA purposes. 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. Consistent with guidance provided by EDCAQMD (Baughman pers. comm. B), emissions were evaluated based on the Sacramento Area Regional Draft GHG Thresholds (regional draft GHG thresholds).The proposed regional draft GHG thresholds include the following project categories and emission levels.

- **Stationary source projects**: 10,000 direct metric tons of CO_2e per year.
- **Operation of a land development project**: 1,100 metric tons CO_2e per year.
- **Construction of a project**: 1,100 metric tons CO_2e per year.

Land development projects with emissions exceeding the operational threshold must mitigate to 1,100 metric tons CO_2e or demonstrate a 21.7% reduction from a projected no action taken (NAT) scenario[8] to show consistency with AB 32 reduction goals. The 21.7% reduction was derived by the air district threshold working group from ARB's recalculated 2020 business-as-usual (BAU) GHG forecast of 545 million metric tons CO_2e[9] and the statewide GHG reduction target of 427 million metric tons CO_2e.[10] Projects that reduce GHG emissions below 1,100 metric tons or by 21.7%, relative to the NAT scenario, would result in a less-than-significant impact on global climate change.

Because the CEDHSP does not include any stationary sources, the 10,000 metric ton CO_2e threshold does not apply to the proposed project. Accordingly, the regional draft land development threshold of 1,100 metric tons CO_2e was used as the criterion to determine whether construction and operational source emissions would be significant under CEQA. Emissions in excess of this threshold

[8] 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. CEDHSP policies that would reduce project-level GHG emissions (e.g., renewable energy development) are likewise excluded.

[9] Forecast does not include emissions benefits (i.e., reductions) from Pavley or the RPS.

[10] AB 32 required ARB to adopt a Scoping Plan to describe the approach California will take to reduce greenhouse gases 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 draft GHG thresholds may be revised to reflect ARB's February 2014 analysis, but nothing formal has been released by the air district.

are considered significant and must be mitigated below 1,100 metric tons or reduced by 21.7%, relative to the NAT scenario.

The regional draft GHG thresholds currently propose evaluating construction and operational emissions separately, where annual construction emissions are compared to the draft 1,100 metric ton CO_2e emissions threshold and operational emissions are evaluated for reductions achieved relative to the NAT if they are in excess of the draft 1,100 metric ton CO_2e emissions threshold. However, consultation with EDCAQMD staff indicates that if construction emissions exceed the regional draft annual 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. A). This approach provides a means to assess whether annual operational emissions savings that are achieved through project-level design and/or mitigation features are sufficient to reduce annual operational and amortized construction emissions by 21.7%, relative to the NAT. A project that achieves an annual reduction of 21.7%, relative to the NAT scenario, would result in a less-than-significant impact on global climate change.

As discussed above, the regional draft GHG thresholds have not been formally adopted by the EDCAQMD Board. However, the thresholds are consistent with AB 32 and thus can be used as a benchmark to evaluate the significance of project-level GHG emissions (see *Citizens for Responsible Equitable Environmental Development (CREED) v. City of Chula Vista* [July 2011, 197 Cal.App.4th 327]). It is also important to note that the mitigation target is based on the state's 2020 reduction goal,[11] whereas buildout of the proposed project would not occur until 2035. It is reasonably foreseeable that as California approaches the AB 32 milestone for 2020, future targets will be developed. However, no formal policy beyond 2020 has been adopted that is applicable to the proposed project.

Impacts and Mitigation Measures

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (less than significant)

Construction

Construction of the proposed project would generate direct emissions of CO_2, CH_4, and N_2O from mobile and stationary construction equipment exhaust, as well as employee vehicle and haul truck exhaust. Indirect emissions would also be generated by electricity used to pump and convey water to the project site for dust control. Estimated construction emissions associated with the proposed project are summarized in Table 3.6-2. The emissions analysis does not account for CEDHSP policies that may reduce construction-related GHG emissions, as described further below. Refer to Appendix C for model outputs and detailed assumptions.

[11] The statewide 2020 GHG reduction target of achieving 1990 emissions levels by 2020 is outlined in AB 32.

Table 3.6-2. Estimated Construction GHG Emissions (metric tons per year)

Construction Year	CO_2	CH_4	N_2O	Other	CO_2e
2016	745	0.20	<0.01	0.00	751
2017	831	0.16	0.01	1.42	837
2018	941	0.27	<0.01	0.00	948
2019	1,024	0.26	<0.01	0.12	1,031
2020	525	0.09	<0.01	0.00	527
2021	384	0.08	<0.01	0.27	386
2022	577	0.14	<0.01	0.00	581
2023	576	0.14	<0.01	0.00	580
2024	355	0.08	<0.01	0.00	357
2025	309	0.07	<0.01	0.00	311
2026	0	0.00	0.00	0.00	0
2027	215	0.07	<0.01	0.00	217
2028	392	0.11	<0.01	0.00	395
2029	666	0.09	<0.01	0.00	670
2030	564	0.02	<0.01	1.55	565
Total construction emissions	8,103	1.77	0.02	3.36	8,157
Maximum annual emissions (2019)	1,024	0.27	0.01	1.55	1,031
Regional draft GHG threshold	–	–	–		1,100

Source: CalEEMod version 2013.2.2 and RCEM version 7.1.5.1(based on ICF modeling).

As shown in Table 3.6-2, construction of the CEDHSP would generate 8,157 metric tons of CO_2e during the construction period. This is equivalent to adding about 1,700 typical passenger vehicles per year to the road during construction (U.S. Environmental Protection Agency 2014). The highest annual emissions would occur in 2019 and are estimated at 1,031 metric tons CO_2e. Accordingly, while total emissions over the 15-year construction period would exceed 8,000 metric tons, annual emissions would not violate the regional annual draft threshold of 1,100 metric tons CO_2e per year. Moreover, the proposed CEDHSP includes the following policies that would help reduce construction-related GHG emissions.

- Policy 8.24 requires a 20% reduction in cement use in residential foundations, which would reduce embodied energy associated with construction.
- Policy 8.25 requires cement and concrete be made with recycled products, which would conserve virgin materials and may reduce manufacturing energy.
- Policy 8.27 requires use of sustainably-sourced, regional, bio-based, and reused materials, which may reduce hauling requirements and transportation mileage.
- Policy 8.28 requires a construction waste management plan to increase recycling and divert landfilled waste, which would reduce methane emissions from waste decomposition.
- Policy 8.29 requires a minimum of 65% of the non-hazardous construction waste generated be recycled or salvaged for reuse, which would reduce methane emissions from waste decomposition.

- Policy 8.30 requires topsoil displaced during grading be placed in a designated area for future reuse, which may reduce hauling requirements and transportation mileage.

Given that construction emissions would not exceed the regional draft threshold of 1,100 metric tons CO_2e per year, and it is anticipated reductions could be achieved by implementing the policies identified above, an analysis of amortized construction emissions over the life of the project is not required (Baughman pers. comm. A). This impact would be less than significant.

Operation[12]

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 at full project build-out in 2035 are summarized in Table 3.6-3. See Appendix C for model outputs and detailed assumptions.

Table 3.6-3. Estimated 2035 Operational GHG Emissions (metric tons per year)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	441	0.2	<0.1	454
Energy use	344	<0.1	<0.1	346
Mobile	1,535	<0.1	<0.1	1,536
Waste generation	24	1.4	<0.1	64
Water consumption	17	0.4	<0.1	31
Subtotal	2,362	2.1	<0.1	2,431
Serrano Westside Planning Area				
Area sources	1,248	0.7	0.1	1,288
Energy use	1,397	0.1	<0.1	1,407
Mobile	6,383	0.2	<0.1	6,388
Waste generation	136	8.0	<0.1	360
Water consumption	81	1.6	<0.1	138
Subtotal	9,246	10.7	0.1	9,580
Total operation[a]	11,607	12.8	0.2	12,012
Regional draft GHG threshold	–	–	–	1,100 or 21.7% from NAT

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.
NAT = no action taken.
[a] Values may not add due to rounding.

[12] Unlike the criteria pollutant analysis included in Section 3.2, *Air Quality*, the GHG assessment does not evaluate combined construction and operational emissions, consistent with the regional draft GHG guidance.

Estimated annual emissions are 12,012 metric tons CO_2e per year, which exceeds the regional draft GHG threshold for total project operations of 1,100 metric tons CO_2e per year. To result in a less-than-significant impact related to climate change, the CEDHSP must reduce annual emissions by approximately 10,912 metric tons to fall below the regional draft GHG threshold of 1,100 metric tons CO_2e or must reduce annual emissions by 21.7%, relative to the NAT scenario. This EIR evaluates the latter condition, which is the proposed project's ability to reduce emissions by 21.7% from the NAT scenario.

As noted above, the NAT scenario does not include emissions benefits achieved by applicable state climate change regulations, including improvements to the Title 24 standards, RPS, Pavley, or LCFS. These regulations would contribute further to project-level GHG reductions. For example, the RPS requires electric utility companies to increase their procurement of renewable resources by 2020. Renewable energy resources (e.g., solar), do not emit GHGs and can replace traditional fossil fuel–derived energy sources (e.g., natural gas) in some instances. Generating energy through renewable resources would result in fewer GHG emissions than if the state had not required the RPS. The NAT scenario also does not include policies outlined in the CEDHSP Sustainability Element that would likewise contribute to operational GHG reductions. Estimating emissions under the NAT scenario enables an analysis of project-level emissions against the state's AB 32 GHG reduction target.

Consistent with guidance provided by the SMAQMD (Huss pers. comm.), operational emissions at full build-out in 2035 under the NAT scenario were quantified using CalEEMod. The emissions estimate is presented in Table 3.6-4. See Appendix C for model outputs and detailed assumptions.

Operational emissions under the NAT scenario are 15,718 metric tons CO_2e per year. As expected, these emissions are higher than those shown in Table 3.6-3 because they do not include reductions achieved by applicable state climate change legislation (e.g., RPS). Consistent with the regional draft GHG threshold, emissions (Table 3.6-3) must be reduced by 21.7%, relative to the NAT scenario (Table 3.6-4), to result in a less-than-significant impact on global climate change. Achieving this target would avoid the generation of about 3,411 metric tons CO_2e per year[13] and would ensure the proposed project is consistent with the state's current climate change policy objectives outlined in AB 32.

[13] Operational GHG emissions under the NAT scenario are 15,718 metric tons CO_2e per year; a 21.7% reduction equates to 3,411 metric tons CO_2e (15,718* 0.217).

Table 3.6-4. Estimated 2035 Operational GHG Emissions under the NAT Scenario (metric tons per year)[a]

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	441	0.2	<0.1	454
Energy use	412	<0.1	<0.1	414
Mobile	2,182	<0.1	<0.1	2,183
Waste generation	24	1.4	<0.1	64
Water consumption	22	0.4	<0.1	36
Subtotal	3,080	2.1	<0.1	3,151
Serrano Westside Planning Area				
Area sources	1,248	0.7	0.1	1,288
Energy use	1,672	0.1	0.0	1,682
Mobile	9,072	0.2	<0.1	9,077
Waste generation	136	8.0	0.0	360
Water consumption	104	1.6	0.0	161
Subtotal	12,232	10.7	0.1	12,567
Total operation[b]	15,312	12.8	0.2	15,718

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.
[a] The NAT scenario does not include any applicable state regulations designed to reduce GHG emissions, including improvements to the Title 24 standards, RPS, LCFS, or Pavley Rules. CEDHSP policies that would reduce project-level GHG emissions (e.g., renewable energy development) are likewise excluded.
[b] Values may not add due to rounding.

The CEDHSP includes several mandatory policies that would reduce GHG emissions. Emissions benefits associated with the following CEDHSP policies were quantified using CalEEMod.

- Policy 8.11, Title 24 standards
- Policy 8.16, Energy efficient appliances
- Policy 8.36, Residential indoor water use
- Policy 8.50, Natural gas hearths
- Policy 8.51, Wood-burning fireplaces

Additional policies included in the CEDHSP would be implemented to reduce water use. These policies were not quantified using CalEEMod, however, because Policy 3.36, Residential indoor water use, is an overarching water measure. This measure cannot be combined with additional water measures in CalEEMod, because double-counting of GHG emissions reductions would occur. Thus, the following CEDHSP policies would result in GHG reductions but were not quantified, as the overlap in GHG reductions between these policies and Policy 8.36 cannot be accurately quantified.

- Policy 8.40, Reclaimed water
- Policy 8.46, Turf reduction
- Policy 8.43, Smart irrigation controls

Estimated GHG emissions with implementation of quantified CEDHSP policies are summarized in Table 3.6-5. The table also includes emissions benefits associated with mixed-use design as discussed in the transportation impact analysis study (Appendix L),[14] as well as state policies designed to reduce GHG emissions (RPS, Pavley, LCFS, and Title 24).

Table 3.6-5. Estimated 2035 Operational GHG Emissions with Implementation of State Measures to Reduce GHG Emissions and Quantified CEDHSP Policies (metric tons per year)

Source	CO_2	CH_4	N_2O	CO_2e
Pedregal Planning Area				
Area sources	219	<0.1	<0.1	220
Energy use	313	<0.1	<0.1	315
Mobile	1,535	<0.1	<0.1	1,536
Waste generation	24	1.4	<0.1	64
Water consumption	14	0.3	<0.1	25
Subtotal	2,105	1.8	<0.1	2,160
Serrano Westside Planning Area				
Area sources	610	<0.1	<0.1	614
Energy use	1,263	0.1	<0.1	1,272
Mobile	6,071	0.2	<0.1	6,076
Waste generation	136	8.0	<0.1	360
Water consumption	68	1.3	0.0	114
Subtotal	8,149	9.6	0.1	8,435
Total operation[a]	10,253	11.4	0.1	10,595
Percent reduction from NAT (relative to 15,718 metric tons CO_2e from Table 3.6-4)				33%
Regional draft threshold (percent reduction from NAT scenario)				21.7%

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.
[a] Values may not add due to rounding.

As shown in Table 3.6-5, implementation of CEDHSP policies that are quantifiable would reduce operational GHG emissions by 33%, relative to the NAT scenario. Table 3.6-6 summarizes additional mandatory CEDHSP policies that would contribute to GHG reductions. While reductions directly attributable to implementation of these policies cannot currently be quantified with CalEEMod, potential reductions have been evaluated using SMAQMD's (2010) *Recommended Guidelines for Land*

[14] 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.

Use Emissions Reductions (Reduction Guide).[15] The Reduction Guide provides pre-quantified GHG reduction potentials that are likely to be achieved by emissions reduction strategies. Where appropriate, the pre-quantified reductions are listed in Table 3.6-6 to provide an approximation of the potential GHG reductions that may be achieved by incorporation of the CEDHSP policies into the project's design.

Table 3.6-6. Mandatory CEDHSP Policies and Associated Greenhouse Gas Reduction Potentials

Policy	Description	Reduction Points	SMAQMD Measure #
Policy 8.2	Short- and long-term bicycle parking	1.875	1, 2, 3
Policy 8.14	Energy efficient glazing	1	31
Policy 8.19	Third-party inspection	–[b]	–
Policy 8.22	Solar hot water heating	–[c]	–
Total reduction points		2.875	

Source: Sacramento Metropolitan Air Quality Management District 2010.
SMAQMD = Sacramento Metropolitan Air Quality Management District.
LED = light-emitting diode.
[a] The reduction points for this policy were calculated by adding the reduction points for measure #1 (bike parking at non-residential projects), measure #2 (end of trip facilities at non-residential projects) and measure #3 (bike parking at multi-unit residential), because Policy 8.2 requires bike parking and support facilities at Civic-Limited Commercial, Village Park, Village Residential - Medium, and Village Residential – High.
[b] Not reported by SMAQMD or CAPCOA. Reductions would vary depending on the individual.
[c] Not quantified since policy only requires systems "where applicable."

The mandatory CEDHSP policies identified in Table 3.6-6 have the potential to reduce operational energy emissions by an additional 2.875%. When combined with the quantified CEDHSP policies and applicable state regulations, total annual GHG emissions associated with the CEDHSP may be reduced 34% (see Table 3.6-7), relative to the NAT scenario. This exceeds the regional draft GHG threshold of 21.7% reduction below the NAT requirement by approximately 11%. Additional reductions may be achieved by voluntary policies that encourage renewable energy, alternative transportation, and passive heating and cooling. These strategies were not quantified because the exact number of installed systems and affected structures are currently unknown.

[15] 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).

Table 3.6-7. Estimated 2035 Operational GHG Emissions with Implementation of Applicable State Measures and Mandatory CEDHSP Policies (metric tons per year)

Source	CO_2	CH_4	N_2O	CO_2e
Total NAT operation (see Table 3.6-4)	15,312	12.8	0.2	15,718
Reductions achieved by quantified CEDHSP and state policies	-5,059	-1.4	-0.1	-5,123
Estimated SMAQMD reduction points (1%)[a]	-159	<-0.1	<-0.1	-159
Total annual emissions	10,095	11.4	0.1	10,436
Percent reduction from NAT (relative to 15,718 metric tons CO_2e from Table 3.6-4)				34%
Regional draft GHG threshold (percent reduction from NAT scenario)				21.7%

Source: CalEEMod version2013.2.2 (based on ICF modeling).
CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalents.
NAT = no action taken.
CEDHSP = Central El Dorado Hills Specific Plan.
SMAQMD = Sacramento Metropolitan Air Quality District.
GHG = greenhouse gas.

[a] Applies a 2.875% reduction to operational energy emissions after implementation of the quantified CEDHSP policies and state regulations (see Table 3.6-5 and Table 3.6-6) (Sacramento Metropolitan Air Quality Management District 2010).

As discussed above, the regional draft GHG threshold is based on the state's 2020 AB 32 reduction goal, whereas buildout of the CEDHSP and the quantified emissions reductions presented in Table 3.6-7 are for 2035. It is reasonably foreseeable the state will adopt future objectives once the 2020 milestone is reached. However, no formal policy applicable to the project for 2035 has been adopted.[16] While GHG reductions needed to achieve consistency with future state climate change regulations in 2035 may be higher than 21.7%, activities associated with the CEDHSP, when combined with existing state actions, are forecasted to reduce emissions by about 34%, relative to the NAT scenario (Table 3.6-7). Moreover, the CEDHSP policies are consistent with the trajectory of state climate change legislation and provide a framework to reduce emissions consistent with future climate change objectives. Accordingly, this impact would be less than significant.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (less than significant)

Assembly Bill 32

AB 32 codifies the state's GHG emissions reduction targets for 2020. The ARB adopted the 2008 Scoping Plan as a framework for achieving AB 32. The 2008 Scoping Plan outlines 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.

[16] EO S-03-05 establishes a 2050 GHG emissions reduction targets for California State agencies, which is not directly applicable to the project.

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, as well as statewide goals to improve energy efficiency, reduce building energy consumption, and increase renewable energy generation. Operational GHG reductions achieved by mandatory CEDHSP policies, when combined with existing state actions, would reduce emissions by 34% (see Table 3.6-7) relative to the NAT scenario. Estimating emissions under the NAT scenario enables an analysis of project-level emissions against the regional draft GHG target, which is based on the state's 2020 AB 32 reduction goal (see Impact GHG-1). Accordingly, GHG emissions associated with the CEDHSP would not conflict with AB 32.

Metropolitan Transportation Plan and Sustainable Communities Strategy

Environmental quality and sustainability is one of six MTP principles addressed in the SACOG's MTP/SCS, which was adopted by SACOG on April 19, 2012. The MTP/SCS provides a long-range framework to minimize transportation impacts on the environment, improve regional air quality, protect natural resources, and reduce GHG emissions. The MTP/SCS is consistent with SB 375, which requires SACOG to adopt an SCS that outlines policies to reduce per capita GHG emissions from passenger vehicles. The SCS policies include a mix of strategies that target smart growth, mixed-used design, alternative transportation, transit, mobility and access, network expansion, and transportation investment.

Implementation of the SCS is intended improve the efficiency of the transportation system and achieve a variety of housing types throughout the SACOG region that meet market demands in a balanced and sustainable manner. 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 plug-in electric vehicles (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.

Conclusion

Based on the above analysis, the CEDHSP is consistent with AB 32 and SACOG's MTP/SCS. Therefore, this impact would be less than significant.

Impact GHG-3: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment as a result of offsite improvements (less than significant)

GHG emissions associated with construction of offsite improvements were included in the analysis of project emissions (Table 3.6-2). Because GHG emissions would not exceed thresholds, the component attributable to offsite infrastructure improvements would also not exceed thresholds and therefore would not have a significant effect. Operational activities that would generate emissions, such as delivery of water from new pipelines and use of water, or vehicle use on offsite roadway connections, are associated with the land uses in the CEDHSP and were included in the project operational analysis (Table 3.6-4 through Table 3.6-6). The GHG reductions associated with the CEDHSP and state policies, quantified in Table 3.6-7, are applicable to the offsite improvements.

For example, the recycled water line would play a role in reducing the carbon intensity of water consumption in the plan area, consistent with CEDHSP Policy 8.40, Reclaimed Water. Water delivered to the project through the Pedregal water line would result in GHG emissions, but water use in the plan area would be reduced through Policy 8.46, Turf reduction, and Policy 8.43, Smart irrigation controls. State measures (i.e., Pavley Clean Car Standards and the Low Carbon Fuel Standard) would reduce transportation emissions from vehicles using the new offsite roadways.

Therefore, construction and operation of the offsite improvements would not result in GHG emissions that would have a significant impact on the environment.

3.7 Hazards and Hazardous Materials

This section describes existing conditions and the regulatory setting related to hazards and hazardous materials and analyzes potential impacts that could result from implementation of the proposed project.

A *hazardous material* is a substance or combination of substances that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a potential hazard to human health or the environment when handled improperly. *Hazardous waste* is waste that is dangerous or potentially harmful to human health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes (U.S. Environmental Protection Agency 2012).

3.7.1 Existing Conditions

Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as *Superfund*, is a federal act establishing a national trust for hazardous waste-related industries to be able to fund and coordinate large cleanup activities for hazardous waste spills and accidents and to clean up older abandoned waste sites. Amended in 1986, the act establishes two primary actions: (1) to coordinate short-term removal of hazardous materials; and (2) to coordinate and manage the long-term removal of hazardous materials identified on the Environmental Protection Agency's (EPA's) National Priorities List (NPL). The NPL is a record of known or threatened releases of hazardous substances, pollutants, or contaminants. A national database and management system, known as the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), is used by U.S. Environmental Protection Agency (EPA) to track activities at hazardous waste sites considered for cleanup under CERCLA. CERCLA also maintains provisions and guidelines dealing with closed and abandoned waste sites and tracks amounts of liquid and solid media treated at sites on the NPL or sites that are under consideration for the NPL.

Occupational Safety and Health Standards

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the work place. The Division of Occupational Safety and Health (OSHA) is the agency responsible for assuring worker safety in the workplace.

OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. The site safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Hazardous Materials Transportation Act (49 Code of Federal Regulations 171, Subchapter C)

The U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), and the Federal Railroad Administration are the three entities that regulate the transport of hazardous materials at the federal level. The Hazardous Materials Transportation Act governs the transportation of hazardous materials. These regulations are promulgated by the USDOT and enforced by EPA.

Resource Conservation and Recovery Act of 1976 (42 United States Code Sections 6901–6987)

The Resource Conservation and Recovery Act of 1976 (RCRA), including the Hazardous and Solid Waste Amendments of 1984 (HSWA), protects human health and the environment, and imposes regulations on hazardous waste generators, transporters, and operators of treatment, storage, and disposal facilities (TSDFs). The HSWA also requires EPA to establish a comprehensive regulatory program for underground storage tanks. The corresponding regulations in 40 Code of Federal Regulations (CFR) 260–299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

Toxic Release Inventory

The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and the Pollution Prevention Act of 1990 established a publicly available database that has information on toxic chemical releases and other waste management activities called the Toxic Release Inventory (TRI). It is available to the public to review. The TRI is updated annually and lists chemical releases by industry groups and federal facilities managed by EPA.

State

Asbestos Regulations

Title 8 California Code of Regulations (CCR) Section 1529 regulates asbestos exposure in all construction work and defines permissible exposure limits and work practices. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of materials exceeds 1%, virtually all requirements of the standard become effective. With respect to potential worker exposure, notification, and registration requirements, the California Division of Occupational Safety and Health (Cal/OSHA) defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (8 CCR 341.6).

Hazardous Materials Release Response Plans and Inventory Act

The Hazardous Materials Release Response Plans and Inventory Act (also known as the Business Plan Act) requires a business using hazardous materials to prepare a Business Plan describing the facility, inventory, emergency response plans, and training programs. The owner or operator of any business that has specified amounts of liquid and solid hazardous materials, compressed gases, extremely hazardous substances, underground storage sites on site, or generates or treats hazardous waste, is required to develop and submit a Business Plan to the local Certified Unified Program Agency (CUPA), which, for the proposed project, is the Hazardous Materials Division of El Dorado County Department of Environmental Management.

Hazardous Waste Control Act

The state equivalent of RCRA is the Hazardous Waste Control Act (HWCA). HWCA created the State Hazardous Waste Management Program, which is similar to the RCRA program but generally more stringent. HWCA establishes requirements for the proper management of hazardous substances and wastes with regard to criteria for: (1) identification and classification of hazardous wastes; (2) generation and transportation of hazardous wastes; (3) design and permitting of facilities that recycle, treat, store, and dispose of hazardous wastes; (4) treatment standards; (5) operation of facilities; (6) staff training; (7) closure of facilities; and (8) liability requirements.

Emergency Services Act

Under the California Emergency Services Act, the State developed an emergency response plan to coordinate emergency services provided by all governmental agencies. The plan is administered by the California Office of Emergency Services (OES). OES coordinates the responses of other agencies, including EPA, the Federal Emergency Management Agency (FEMA), the California Highway Patrol (CHP), water quality control boards, air quality management districts, and county disaster response offices. Local emergency response teams, including fire, police, and sheriff's departments, provide most of the services to protect public health.

California Health and Safety Codes

The California Environmental Protection Agency (Cal-EPA) has been granted primary responsibility by EPA for administering and enforcing hazardous materials management plans within California. Cal-EPA defines a hazardous material more generally than EPA as a material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released (26 CCR 25501).

State regulations include detailed planning and management requirements to ensure that hazardous materials are properly handled, stored, and disposed of to reduce human health risks. In particular, the State has acted to regulate the transfer and disposal of hazardous waste. Hazardous waste haulers are required to comply with regulations that establish numerous standards, including criteria for handling, documenting, and labeling the shipment of hazardous waste (26 CCR 25160 et seq.).

California Public Resources Code – State Responsibility Area

The California Public Resources Code (PRC) requires the designation of State Responsibility Areas (SRAs), which are identified based on cover, beneficial water uses, probable erosion damage and fire risks, and hazards. The financial responsibility of preventing and suppressing fires in the SRA is primarily the responsibility of the state. Fire protection in areas outside the SRA are the responsibilities of local or federal jurisdictions and are referred to as local responsibility areas and federal responsibility areas, respectively. El Dorado County includes SRAs and local responsibility areas.

Cortese List

Cal-EPA maintains the Hazardous Wastes and Substances Site (Cortese) List, a planning document used by state and local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The list must be updated at least once per year, per Government Code Section 65962.5. The California Department of Toxic

Substances Control (DTSC), State Water Board, and California Department of Resources Recycling and Recovery all contribute to the site listings.

Very High Fire Hazard Severity Zones

Government Code Section 51178 requires the Department of Forestry and Fire Protection (CAL FIRE) to identify very high fire hazard severity zones in the state. Government Code Section 51179 requires a local agency to designate, by ordinance, very high fire hazard severity zones in its jurisdiction.

Municipal Separate Storm Sewer System Program

EPA defines a municipal separate storm sewer system (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater. As part of the NPDES program, EPA initiated a program requiring that entities having MS4s apply to their local Regional Water Board for stormwater discharge permits. Regulated MS4s are required to develop and implement a stormwater management program (SWMP) to reduce the contamination of stormwater runoff and prohibit illicit discharges. El Dorado County is a Phase II Small MS4 Traditional Renewal Permittee under MS4 Order No. 2013-0001-DWQ.

Local

El Dorado County General Plan

To ensure provision of adequate public human health and safety services in the county, the Public Health, Safety, and Noise Element of the *El Dorado County General Plan* (County General Plan) (El Dorado County 2009) includes the following goals and policies. The full text of these goals 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 5.7, *Emergency Services*, addresses provision of adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services, and includes implementing policy 5.7.1.1.
- Goal 6.2, *Fire Hazards*, addresses protection of life and property through minimization of fire hazards and risks in wildland and developed areas and includes implementing policies 6.2.2.1, 6.2.2.2, 6.2.3.1, 6.2.3.2, 6.2.3.4, 6.2.4.1, and 6.2.4.2.
- Goal 6.6, *Management of Hazardous Materials*, requires measures to reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials, and includes implementing policy 6.6.1.2

El Dorado County Airport Land Use Compatibility Plan

The *El Dorado County Airport Land Use Compatibility Plan* (Mead & Hunt 2012) presents policies and maps specific to Cameron Airpark Airport, Georgetown Airport, and Placerville Airport to maintain safe operating conditions for the airports. The project area is not within the planning areas for these airports.

Hazardous Materials Ordinance of 1990

The Hazardous Materials Ordinance (County Code Chapter 8.38) regulates the handling, storage, use, transport, processing, or disposal of hazardous materials. This ordinance requires reporting of the use of hazardous materials. It also requires disclosure of accidental release of hazardous materials, as well as preventive and mitigative efforts for impacts of hazardous materials. The ordinance is enforced locally by trained staff of fire protection districts and the Solid Waste & Hazardous Materials Division of the El Dorado County Environmental Management Department (EMD).

El Dorado County Air Quality Management District

El Dorado County Air Quality Management District (AQMD) administers the state and federal Clean Air Acts in accordance with state and federal guidelines. The AQMD regulates air quality through its district rules and permit authority. It also participates in planning review of discretionary project applications and provides recommendations. Rule 223 regulates fugitive dust, including that potentially containing naturally occurring asbestos (NOA), which is described in more detail in Section 3.2, *Air Quality*.

Solid Waste Management Ordinance (1994)

The Solid Waste Management Ordinance (County Code Chapter 8.42) prohibits the disposal, depositing, or otherwise disposing of any hazardous or biomedical waste onto land, into soil, rock, air, or water or at unauthorized disposal sites, transfer stations, resource recovery facilities, transformation facilities, buy-back centers, drop-off recycling centers, or any container to be collected and ultimately deposited, unless otherwise approved by the County. Penalties may be assessed on acts of illegal disposal.

El Dorado County Solid Waste Management Plan

EMD developed the *Solid Waste Management Plan* to provide residents, businesses, and facility operators with a coordinated plan to meet the County's future solid waste program, infrastructure, and capacity requirements. Goals include minimizing waste generation, such as household hazardous waste, and reducing improper disposal of hazardous waste.

El Dorado County Fire Hazard Ordinance

Chapter 8.08 of the El Dorado County Code, also known as the County Fire Hazard Ordinance, requires defensible space as described by the PRC, including the incorporation and maintenance of a 30-foot fire break or clearing around structures. The Fire Hazard Ordinance is applicable to all developments in the county, including all discretionary and ministerial developments.

El Dorado County Hazardous Waste Management Plan

The *El Dorado County Hazardous Waste Management Plan* (CHWMP) recommends goals, objectives, policies, and programs for hazardous waste management and facility needs and siting. Specific programs recommended by the CHWMP include a Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program (CIMP), a Hazardous Materials Release Response Plan and Inventory, hazardous waste inspections, hazardous waste programs for small businesses and for households, and a hazardous materials and hazardous waste data information system.

El Dorado County Hazardous Materials Area Plan

The *El Dorado County Hazardous Materials Area Plan*, last updated in 2009, establishes the policies, responsibilities, and procedures required to protect the health and safety of El Dorado County's citizens, the environment, and public and private property from the effects of hazardous materials emergency incidents.

Region IV Local Emergency Planning Committee Hazardous Materials Emergency Plan

The Local Emergency Planning Committee (LEPC) regions, which include 11 inland counties: Alpine, Amador, Calaveras, El Dorado, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Tuolumne, and Yolo, were designated as emergency planning districts. These counties are required to prepare hazardous materials emergency plans pursuant to the Superfund Amendments and Reauthorization Act (SARA), Title III (Emergency Planning and Community Right to Know) (Title 42, USC Section 110003[a]). These plans include the identity, location, and emergency contacts for facilities that handle threshold quantities of extremely hazardous substances. The plans also contain chemical release response procedures, public protective action notification information, County emergency coordinators, and plans for exercising the hazardous materials emergency plan.

Environmental Setting

The project area consists of 341 acres of designated residential, commercial, and open space land uses within the community of El Dorado Hills. Currently the project site is undeveloped land and the former El Dorado Hills Executive Golf Course. Hazardous materials are not currently used on the project site.

Various commercial, institutional, and residential land uses adjoin the project site and these uses may generate, transport, store, treat, or dispose of hazardous waste. These uses include gas stations, schools, grocery stores, and a fire station. A Raley's supermarket, Shell service station and the El Dorado Hills Fire Department are located within 1 mile of the project site (U.S. Environmental Protection Agency 2013b). Most fuels, lubricants, solvents, and paints used by these commercial, institutional, and residential land uses are considered hazardous materials.

Historic Uses of Property

The project area is mostly undeveloped, however it is an infill property surrounded by existing residential and non-residential development. Previous uses of the project area include a municipal golf course and open space. The former El Dorado Hills Executive Golf Course was constructed in the early 1960s and remained operational for over 40 years within the Serrano Westside planning area. Since its closing in 2007, the area has been used as passive recreational and open space. Despite attempts to develop the property in the late-1990s and 2000, the Pedregal planning area has remained vacant and undeveloped (Serrano Associates, LLC. 2015).

Hazardous Material Release Sites

There are a number of federal and state databases that provide information regarding the facilities or sites identified as meeting the Cortese List requirements and which list the past and present businesses that have had or are currently experiencing a hazardous materials release within the general vicinity of the project area. These include CERCLIS, DTSC's Envirostor, El Dorado County Hazardous Waste and Substances Sites List, Geotracker (the leaking underground storage tank

[LUST] database), the TRI, the List of Active Cease and Desist Orders and Cleanup and Abatement Orders, and EnviroMapper.

There are no CERCLA sites within El Dorado County (U.S. Environmental Protection Agency 2013a). There are no sites in the project area listed on Geotracker (State Water Resources Control Board 2015). There are no sites in the project site listed on the List of Hazardous Waste and Substances sites from the DTSC Envirostor database (California Department of Toxic Substances Control 2015). There are no sites in El Dorado County listed on the list of solid waste disposal sites identified by the State Water Board with waste constituents above hazardous waste levels outside the waste management unit (California Environmental Protection Agency 2012a). One site is listed on the List of Active Cease and Desist Orders and Cleanup and Abatement Orders in El Dorado County, but it is not near the project area (California Environmental Protection Agency 2012b). There are no identified sites for El Dorado County on the TRI (U.S. Environmental Protection Agency 2013b).

EPA maintains the EnviroMapper for the Envirofacts website, which compiles EPA environmental data and identifies environmental activities related to waste and land. Eleven facilities within approximately three miles of the project site, but not in the project area, report to EPA about hazardous waste and land (U.S. Environmental Protection Agency 2013c). Examples of these include CVS Pharmacy, El Dorado Target, Chevron service station, and Raley's.

Business Hazardous Waste Collection

Businesses classified as Conditionally Exempt Small Quantity Generators (CESQG) are required to ship their hazardous wastes to the El Dorado Disposal Materials Recovery Facility in Diamond Springs for proper disposal. There are no CESQGs within the project site (U.S. Environmental Protection Agency 2013c).

Transportation of Hazardous Materials

The project is located adjacent to US 50 US 50 is a major east-west transportation corridor that serves all types of traffic, including vehicles and trucks containing hazardous materials and waste. Hazardous materials can be a liquid, a solid, or a gas. Examples include explosives, flammables, corrosives, radioactive materials, and poisons.

Airport-Related Hazards

Cameron Airpark, a public-use airport, is more than 4 miles east of the project area. The airport is owned and operated through a special district. It is used by local residents and visitors as well as military and other government agencies for training flights, search and rescue missions, and fire suppression support. The project area is not within the influence area of this airport (Mead & Hunt 2012). The closest private airstrip is Akin Airport located approximately 11 miles east of the project area.

Asbestos-Related Hazards

Asbestos is of particular concern in El Dorado County because the local geography contains serpentinite and ultramafic rock. The project site contains metavolcanic, serpentinite, and ultramafic rocks containing trace amounts (less than 0.25%) of naturally occurring asbestos (NOA) identified as actinolite. Trace amounts were found in 4 of 11 samples in the Pedregal planning area, while 6 of 14 samples contained trace levels of actinolite asbestos in the Serrano Westside planning

area. Typically, dust from these types of soils can be released into the air when disturbed and, therefore, additional information regarding NOA and potential impacts are discussed in Impact AQ-4 in Section 3.2, *Air Quality*.

Fire-Related Hazards

The long, hot, dry summers in El Dorado County, combined with inadequate clearance between structures and vegetation, flammable vegetation, and steep topography, result in conditions conducive for wildfires.

Topography is a central factor when considering the fire hazard of an area. As slopes increase, fires spread faster and can create a *chimney effect*, in which drafts of hot air and gases blow upward from steep ravines, resulting in sudden flashes of fire. Steep terrain also restricts accessibility to wildland fires by fire suppression crews and allows fires to spread into additional areas. Because of these physical conditions, CAL FIRE has designated the project area as having moderate and high fire hazard risks. 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 in a SRA (California Department of Forestry and Fire Protection 2007). In designated SRAs, CAL FIRE has financial responsibility for wildland fire protection (Serrano Associates, LLC 2015).

The project site consists of sloping terrain ranging from 10 to 30% gradients (Serrano Associates, LLC 2015). Vegetative characteristics in the western portion of El Dorado County surrounding the project area mainly consist of light grasslands, which burn easily. Half of the Serrano Westside planning area consists of the former El Dorado Hills Executive Golf Course that was closed in 2007, the majority of which is not actively mowed or irrigated. The remaining half of the planning area consists of mostly oak savannah and annual grasslands. The Pedregal planning area consists of approximately 100 acres of steep terrain, which is the remainder of the Ridgeview East subdivision. This area has remained vacant and undeveloped. Since both of these areas are relatively undeveloped, have generally steep slopes and vegetation, they present a wildfire risk to the surrounding land uses (e.g., commercial uses and residents).

Natural Disaster-Related Hazards

Hazards specifically associated with earthquakes, soil stability, and other geologic conditions are discussed in Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*. Hazards specifically associated with flooding, mudflow, and other hydrologic conditions are discussed in Section 3.8, *Hydrology, Water Quality, and Water Resources*.

Proximity to Schools

State CEQA Guidelines Section 15186 requires consideration of projects within 0.25 mile of a school to ensure that potential health impacts resulting from exposure to hazardous materials, wastes, and substances are evaluated. The project site is south and southwest of Oak Ridge High School and Silva Valley Elementary School. The project site is more than 0.25 mile from these schools. The project site is within 2 miles of Jackson Elementary School and Lakeview Elementary School, and within approximately 1 mile of William Brooks Elementary School and Oak Meadow Elementary School.

Emergency Response and Evacuations

The *El Dorado County Multi-Hazard Functional Emergency Operations Plan* provides coordinated disaster response and programs to assist the public in emergency preparedness and response procedures (El Dorado County 2004:125) El Dorado County has not identified specific roads as emergency evacuation routes, but encourages residents to learn their local roads in preparation of an emergency (Cathey pers. comm.).

3.7.2 Environmental Impacts

Methods of Analysis

The baseline for hazards and hazardous materials includes the hazards and hazardous materials that currently exist in the area and which are identified in the County General Plan and other sources cited in *Environmental Setting*. This section provides a qualitative discussion of the potential risks involving hazards and hazardous materials as a result of the proposed project.

Thresholds of Significance

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.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- 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 create a significant hazard to the public or the environment.
- Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area.
- Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- 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.

Impacts and Mitigation Measures

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)

Construction and operation of residential and commercial uses that use hazardous materials could result in the transport, use, or disposal of hazardous materials. Construction would require use of heavy construction equipment (e.g., excavators, backhoes, grading machines, asphalt machines), the operation and maintenance of which would involve the use and handling of hazardous materials, including diesel fuel, gasoline, lubricants, and solvents. These hazardous materials would be used and stored within the area designated for the construction site. Diesel fuel would be used to power the equipment and would be present in the fuel tanks of the individual pieces of equipment and potentially in larger quantity storage tanks used to refuel the equipment. Additionally, during construction of residential or commercial buildings, small quantities of lubricants and solvents would be stored in the support area for maintenance of construction equipment. The quantities of hazardous materials could exceed regulatory thresholds and thus require transport, handling, storage and disposal in accordance with federal, state, or local regulations, to minimize the potential for release of hazardous materials into the environment. Therefore, the use and presence is not anticipated to cause a significant hazard to the public or environment.

The Civic–Limited Commercial land use designation identified in the Central El Dorado Hills Specific Plan (CEDHSP) provides for municipal, civic, and public services such as a fire station, sheriff substation, or a public park, as well as for professional and administrative office space (Serrano Associates, LLC 2015). Small business and government facilities such as these may be classified as small quantity generators of hazardous waste depending on the nature of their businesses. The operation of facilities that could be developed on lands designated for Civic–Limited Commercial use could result in the transport, use, or disposal of hazardous waste within the project area. However, there is a low potential for these materials to cause a significant hazard to the public or environment because all new businesses would be required to comply with the regulations, standards, requirements, and guidelines, established by federal and state law and overseen by agencies as described in *Regulatory Setting* above. El Dorado County, along with federal and state regulatory agencies, require all businesses that handle moderate amounts of hazardous materials to submit business plans and emergency management plans. Furthermore, EMD conducts inspections of all businesses to confirm their business and emergency management plans are adequate and to ensure proper storage of hazardous materials. Therefore the proposed project would not be expected to cause a significant hazard to the public or environment.

Residential land uses could also result in the transport, use, or disposal of hazardous materials. Hazardous wastes generated by residential uses are referred to as *household hazardous waste*. Households often discard many common items such as paints, stains, oven cleaner, motor oil, and pesticides, as well as batteries, thermostats, lamps, televisions, and computer monitors that contain hazardous constituents. The county collected approximately 930 tons of household hazardous waste through its various collection programs in 2012, with 180,938 households participating (California Department of Resources Recycling and Recovery 2013). The proposed development under the CEDHSP would generate approximately 20,000 to 27,000[1] pounds of household hazardous waste

[1] The average U.S. household generates 20 pounds of household hazardous waste each year (U.S. Environmental Protection Agency 2011). The average El Dorado County household generated 27 pounds of household hazardous waste in 2012 (California Department of Resources Recycling and Recovery 2013).

each year. Household hazardous waste is exempt from reporting and the County currently has, and would continue to have, local programs and regulations to provide opportunities for disposal of household hazardous waste (e.g., *El Dorado County Solid Waste Management Plan*). Therefore, it is not anticipated that the generation of household hazardous waste or the disposal of it as a result of the residential development would result in a significant hazard to the public or environment.

The proposed project would place residences near the US 50 corridor and possible hazardous materials being transported along the corridor. However, the project would not increase the likelihood of hazardous spills or accidents on the highway. Nor would the project affect the type or amount of hazardous materials or the frequency of hazardous materials shipping. Therefore, this impact would be less than significant.

Given the low likelihood that hazardous materials would create a significant hazard to the public or environment through the routine transport, use, or disposal of materials during construction and operation of the proposed project; the oversight by the appropriate federal, state, and local agencies; and compliance with applicable regulations regarding hazardous materials; the risk to the public and environment from the routine transport, use, or disposal of hazardous materials is considered low. Therefore, this impact would be 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)

Construction equipment that would be used to build the proposed project has the potential to release oils, greases, solvents, and other finishing materials through accidental spills. Spill or upset of these materials would have the potential to affect surrounding land uses. However, the consequences of construction-related spills are not as great as other accidental spills and releases because the amount of hazardous material released during a construction-related spill is small, as the volume in any single piece of construction equipment is generally less than 50 gallons, and fuel trucks are limited to 10,000 gallons or less. Construction-related spills of hazardous materials are not uncommon, but the enforcement of construction and demolition standards, including a SWPPP and BMPs by appropriate local and state agencies (i.e., fire departments) would minimize the potential for an accidental release of petroleum products and/or hazardous materials during construction. Federal, state, and local controls have been enacted, and are enforced, to reduce the effects of potential hazardous materials spills during construction of program facilities. Therefore, it is not anticipated that use of hazardous materials during construction would result in a reasonably foreseeable upset or accident conditions that would cause significant hazard to the public or environment.

Construction would involve grading and disruption of the existing soil and geology on the project site. While NOA does exist in El Dorado County, only trace amounts were found at the project site (Serrano Associates, LLC 2015). If NOA is found, it would be handled, and disposed of, in compliance with best management practices (BMPs) and requirements identified in applicable regulations (e.g., ARB's *Asbestos Airborne Toxic Control Measure for Surfacing Applications* and *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*). Therefore, it is not anticipated that the transport off the site of soil that may contain NOA or disposal of soil containing NOA away from the site would result in a significant hazard to the public or environment. Further discussion about NOA and its airborne form can be found in Section 3.2, *Air Quality*.

A site visit of the project area was conducted on June 7, 2013. No obvious issues of concern such as soil staining, abandoned structures, stressed vegetation, or unmarked containers, were identified. None of the databases reviewed (i.e., Geotracker and Envirostor) identified hazardous materials releases occurring on the project site. Historic uses of the project area indicate a low potential for the excavation of any hazardous materials or contaminated soil that would expose workers or the public to a significant hazard.

There would be limited potential for a reasonably foreseeable upset or accident under construction and operation due to the quantity and type of hazardous materials used; therefore, it is not anticipated that a significant hazard to the public or the environment would occur. This impact would be 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)

Oak Ridge High School, Silva Valley Elementary School, Oak Meadow Elementary School, and William Brooks Elementary School are north, northeast, east, and west of the project site, respectively. These four schools are located more than 0.25 mile away from the project site. There are no proposed schools in the school districts near the project site—the El Dorado Union High School District (SchoolWorks 2012) or the Buckeye Union Elementary School district (Buckeye Union School District 2013). The proposed project would not include any operations that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. There would be no impact. However, a potential hazardous emission that could affect schools would be NOA during construction activities. The reader is referred to Impact AQ-4d in Section 3.2, *Air Quality*, for additional information and analysis of potential NOA impacts.

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)

No hazardous materials sites included on a list compiled pursuant to Government Code Section 65962.5 are present within the project area. Therefore, there would be 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)

Cameron Airpark Airport, the nearest airport to the project site, is more than 2 miles east of the project site. The project site is not within the Cameron Airpark Airport Land Use Compatibility Plan influence area. Therefore, there would be 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)

The closest private airstrip is Akin Airport located approximately 11 miles east of the project area. The proposed project is not located within the vicinity of a private airstrip and therefore would not result in a safety hazard for people residing or working in the project area (AirNav 2013). There would be no impact.

Impact HAZ-7: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (less than significant)

El Dorado County has not identified specific roads as emergency evacuation routes but encourages residents to learn their local roads in preparation for an emergency (Cathey pers. comm.). Development of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan because the development would allow for appropriately sized streets and would be infill to existing undeveloped land and the former El Dorado Hills Executive Golf Course. Therefore, impacts would be 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)

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 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.

Impact HAZ-9: Create a significant hazard to the public or the environment as a result of offsite improvements (less than significant with mitigation)

Hazardous materials impacts on the public or the environment resulting from offsite improvements would be similar to those described above for the project area. Offsite improvements, as described in Chapter 2, *Project Description*, include the extensions of and connections to existing roadways; extensions of water and recycled water lines; and pedestrian access connections and overcrossings. Construction and operation of these offsite improvements could result in the transport, use, or disposal of hazardous materials.

Construction of offsite improvements is anticipated to involve grading and disruption of the existing soil and geology on the project site. While NOA does exist in El Dorado County, only trace amounts have been identified on the project site. As required by Mitigation Measure AQ-4, soil would be routinely inspected during construction. If naturally occurring asbestos is found, the soil would be handled and disposed of in compliance with the BMPs and requirements identified in applicable regulations (e.g., California Air Resources Board's (ARB's) *Asbestos Airborne Toxic Control Measure for Surfacing Applications* and *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*). Construction would also require heavy construction equipment (e.g., excavators, backhoes, grading machines, asphalt machines), the operation and maintenance of which would involve the use and handling of hazardous materials, including diesel fuel, gasoline, lubricants, and solvents. The quantities of hazardous materials could exceed regulatory thresholds and, thus, require transport, handling, storage, and disposal in accordance with applicable federal, state, or local regulations, as described above in the Regulatory Setting to minimize the potential for release of hazardous materials into the environment. Construction equipment that would be used to build the proposed project has the potential to release oils, greases, solvents, and other materials through accidental spills. Construction-related spills of hazardous materials are not uncommon, but the enforcement of construction and demolition standards, including a SWPPP and BMPs by appropriate local and state agencies (i.e., fire departments) would minimize the potential for an accidental release of petroleum products and/or hazardous materials during construction. It is not anticipated that use of hazardous materials during construction would result in a reasonably foreseeable upset or accident conditions that would cause significant hazard to the public or environment. Therefore, construction of the offsite improvements would not result in a significant hazard to the public or environment.

Operation and maintenance of the additional roadways and utility lines could allow for the transport, use, or disposal of hazardous materials. However, all maintenance and hazardous waste handlers are required to comply with BMPs, as described above, which would reduce impacts to a less-than-significant level.

Mitigation Measure AQ-4: Submit and implement an asbestos dust mitigation plan and perform naturally occurring asbestos evaluations during site grading as necessary

3.8 Hydrology, Water Quality, and Water Resources

This section identifies existing conditions; describes the regulatory setting for hydrology, water quality, and water resources in the project area; and analyzes the potential for the proposed project to affect these resources. Information presented in the discussion and used for the subsequent analysis was drawn primarily from the following sources.

- *Central El Dorado Hills Specific Plan Drainage Analysis* (Appendix I)
- *Additional Analysis of Drainage Facilities Downstream of Westside Development* (Appendix I)
- *Application for Clean Water Act Section 404 Individual Permit for Central El Dorado Hills Specific Plan, El Dorado County, California* (ECORP Consulting 2014a).
- *Preliminary Wetland Assessment for Central El Dorado Hills Specific Plan, Off-Site Infrastructure Improvement Areas, El Dorado County, California* (ECORP Consulting 2014b).
- *El Dorado County General Plan* (County General Plan) (El Dorado County 2004a).
- *County of El Dorado Drainage Manual* (El Dorado County 1995).
- *Cooperative Climatological Data Summaries, NOAA Cooperative Stations—Temperature and Precipitation* (Western Regional Climate Center 2014).
- *Western El Dorado County Storm Water Management Plan* (El Dorado County 2004b).
- *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region* (Fourth Edition) (Central Valley Regional Water Quality Control Board 2011).

3.8.1 Existing Conditions

Regulatory Setting

Federal

Clean Water Act

The federal Clean Water Act (CWA) of 1972 provides for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The CWA emphasizes technology-based (end-of-pipe) control strategies and requires discharge permits to allow use of public resources for waste discharge. The CWA also limits the amount of pollutants that may be discharged and requires wastewater to be treated with the best treatment technology economically achievable regardless of receiving water conditions. The control of pollutant discharges is established through National Pollutant Discharge Elimination System (NPDES) permits that contain effluent limitations and standards. The U.S. Environmental Protection Agency (EPA) has delegated responsibility for implementation of portions of the CWA, such as Sections 303, 401, and 402 (discussed below), to the State Water Resources Control Board (State Water Board) and the associated nine Regional Water Quality Control Boards (Regional Water Boards). The proposed project site is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

Section 303(d) and Total Maximum Daily Loads

The State of California adopts water quality standards to protect beneficial uses of waters of the state as required by Section 303(d) of the CWA and the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act). Section 303(d) of the CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see the discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water quality–impaired segments is generated by the State Water Board. These stream or river segments are impaired by the presence of pollutants such as sediment and are more sensitive to disturbance because of this impairment.

In addition to the impaired water body list required by CWA Section 303(d), CWA section 305(b) requires states to develop a report assessing statewide surface water quality. Both CWA requirements are being addressed through the development of a 303(d)/305(b) integrated report, which will address both an update to the 303(d) list and a 305(b) assessment of statewide water quality. The State Water Board developed California's statewide *2010 Integrated Report* based on the integrated reports from each of the nine Regional Water Boards. The *2010 Integrated Report* was approved by the State Water Board on August 4, 2010, and approved by EPA on November 12, 2010, and the *2012 Integrated Report* with 303(d) listings is currently under development.

No impaired water bodies are near the project site or would be affected by the proposed project.

Section 401—Water Quality Certification

Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct an activity that may result in a discharge of a pollutant obtain a Water Quality Certification (or waiver). A Water Quality Certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States. Water Quality Certifications are issued by one of the nine geographically separated Regional Water Boards in California. Under the CWA, the Regional Water Board must issue or waive a Section 401 Water Quality Certification for a project to be permitted under CWA Section 404.

As described in Chapter 2, Section 2.4, *Required Approvals*, the project applicant would be required to obtain a Water Quality Certification for proposed project construction activities that will affect waterways.

Section 402—National Pollutant Discharge Elimination System

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402[p]). EPA has granted the State of California (the State Water Board and Regional Water Boards) primacy in administering and enforcing the provisions of CWA and NPDES. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

NPDES General Permit for Construction Activities

The *General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ)* (Construction General Permit) regulates stormwater discharges for

construction activities (CWA Section 402). Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP).

The permit program is risk-based, wherein a project's risk is based on the project's potential to cause sedimentation and the risk of such sedimentation on the receiving waters. A project's risk determines its water quality control requirements, ranging from Risk Level 1, which consists of only narrative effluent standards, implementation of best management practices (BMPs), and visual monitoring, to Risk Level 3, which consists of numeric effluent limitations, additional sediment control measures, and receiving water monitoring. Additional requirements include compliance with post-construction standards focusing on low impact development (LID), preparation of rain event action plans, increased reporting requirements, and specific certification requirements for certain project personnel.

As described in Chapter 2, Section 2.4, *Required Approvals*, the project applicant would be required to obtain a Construction General Permit for the proposed project because total land disturbance would be greater than 1 acre.

BMPs included in the SWPPP may include measures such as the following.

a. Providing permeable surfaces where feasible.
b. Retaining and treating stormwater onsite using catch basins and filtering wet basins.
c. Minimizing the contact of construction materials, equipment, and maintenance supplies with stormwater.
d. Reducing erosion through soil stabilization, watering for dust control, installing perimeter silt fences, placing rice straw bales, and installing sediment basins. In order to minimize potential impacts on wildlife, no monofilament plastic mesh or line will be used for erosion control.
e. Maintaining water quality by using infiltration systems, detention systems, retention systems, constructed wetland systems, filtration systems, biofiltration/bioretention systems, grass buffer strips, ponding areas, organic mulch layers, planting soil beds, sand beds, and vegetated systems such as swales and grass filter strips that are designed to convey and treat either fallow flow (swales) or sheetflow (filter strips) runoff.

In addition, a procedure for spill prevention and control is typically developed to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities. If a spill should occur during construction that causes a release of a hazardous material, including oil and radioactive materials, the proper agencies are typically notified and an Emergency Release Follow-up Notice Reporting Form is submitted no more than 30 days following the release.

NPDES General Municipal Stormwater Permit

CWA Section 402 mandates programmatic permits for municipalities to address stormwater discharges, which are regulated under the *NPDES General Permit for Municipal Separate Storm Sewer Systems* (MS4) (MS4 Permit). Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities disturbing an area of 5 acres or more. Phase II (Small MS4) regulations require that stormwater management plans be developed by

municipalities with populations smaller than 100,000 and construction activities disturbing 1 or more acres of land area.

The State Water Board is advancing Low Impact Development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including among other things the use of vegetated swales and retention basins and minimizing impermeable surfaces, to manage stormwater to maintain a site's predevelopment runoff rates and volumes.

The project is located entirely within El Dorado County (County), and therefore would be subject to the requirements of the *Waste Discharge Requirements (WDRs) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems General Permit No. CAS000004 (Order No. 2013-0001-DWQ)* (Small MS4 Permit) with the State Water Board, most recently issued on February 5, 2013. Additionally, the County has a stormwater management plan for western El Dorado County (El Dorado County 2004b).

Section E.12 of the Small MS4 Permit is the "Post-Construction Stormwater Management Program." The proposed project qualifies as a "Regulated Project" as defined in Section E.12.c of the Order and therefore will be required to comply with the standards provided in the Order. Before approving any tentative map, the County (as permittee) will be responsible for ensuring the proposed project site design includes measures required under Sections E.12.a (Site Design Measures), E.12.d (Source Control Measures), E.12.e (LID Design Standards), and E.12.f (Hydromodification Measures). Other sections of E.12 address the County's responsibilities for documenting compliance with the MS4 Permit.

Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters

CWA Section 402 also includes WDRs for dewatering activities. While small amounts of construction-related dewatering are covered under the Construction General Permit, the Central Valley Water Board has regulations specific to dewatering activities that typically involve reporting and monitoring requirements.

If dewatering is required as part of the proposed project, then the project applicant will need to comply with the Central Valley Water Board dewatering requirements. Coverage under the Construction General Permit typically covers uncontaminated dewatering activities, which are considered in the permit to be authorized non–stormwater discharges. As part of the Construction General Permit, all dewatering discharges are required to be filtered or treated, using appropriate technology, from sedimentation basins. Authorized non–stormwater dewatering discharges may require a permit because some Regional Water Boards have adopted General Permits for dewatering discharges. The Central Valley Water Board has adopted a NPDES Low Threat Discharge and Dewatering General Permit. Therefore, the project applicant or the project applicant's contractor would also need to obtain coverage under the NPDES Low Threat Discharge and Dewatering permit, which will require the dewatering discharge to be treated prior to discharge to any local water way.

If dewatering activities lead to discharges to the storm drain system or other water bodies, water treatment measures may be designed and implemented as necessary so that water quality objectives are met prior to discharge to waters of the state. As a performance standard, these measures will be selected to achieve the maximum removal contaminant found in the groundwater and will represent the best available technology (BAT) that is economically feasible. Implemented measures may include using infiltration areas and retaining dewatering effluent until particulate

matter has settled before the water is discharged. The contractor should perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained; the contractor will also conduct observations of the water (e.g., check for odors, discoloration, or an oily sheen on groundwater). Other pre-discharge sampling and reporting activities required by the Central Valley Water Board is typically conducted, if necessary. The final selection of water quality control measures would be subject to review by the Central Valley Water Board, if necessary. If the groundwater is found to not meet water quality standards and treatment measures are not effective, the water may need to be hauled offsite for treatment and disposal at an appropriate waste treatment facility.

Section 404—Dredge/Fill Permitting

The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of the CWA and specifically under Section 404 (Discharges of Dredge or Fill Material) of the CWA. Section 404 of the CWA regulates placement of fill materials into the waters of the United States. Section 404 permits are administered by U.S. Army Corps of Engineers (USACE).

As described in Section 2.4, *Required Approvals*, the project applicant would be required to obtain a Section 404 permit for proposed project construction activities that will affect waterways. The project applicant applied for a Section 404 permit in March 2014.

National Flood Insurance Program

In response to increasing costs of disaster relief, Congress passed the National Flood Insurance Act (NFIP) of 1968 and the Flood Disaster Protection Act of 1973. The purpose of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. The Federal Emergency Management Agency (FEMA) administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues flood insurance rate maps (FIRMs) for communities participating in the NFIP. A FIRM is the official map of a community prepared by FEMA to delineate both the special flood hazard areas and the flood risk premium zones applicable to the community.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act authorizes the state to implement the provisions of the CWA and establishes a regulatory program to protect the water quality of the state and the beneficial uses of state waters.

The act requires projects that are discharging, or proposing to discharge, wastes that could affect the quality of the state's water to file a report of waste discharge (RWD) with the appropriate Regional Water Board. The Porter-Cologne Act also requires that State Water Board or a Regional Water Board adopt basin plans for the protection of water quality. Basin plans are updated and reviewed every 3 years and provide the technical basis for determining WDRs, taking enforcement actions, and evaluating clean water grant proposals. A basin plan must include the following sections (Central Valley Regional Water Quality Control Board 2011).

- A statement of beneficial water uses that the Regional Water Board will protect.

- Water quality objectives needed to protect the designated beneficial water uses.
- Strategies and time schedules for achieving the water quality objectives.

As noted above, the proposed project lies within the jurisdiction of the Central Valley Water Board. The Central Valley Water Board is responsible for the protection of beneficial uses of water resources in the Central Valley Region. The *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region* (Fourth Edition) was last updated in 2011 (Central Valley Water Board Basin Plan; Central Valley Regional Water Quality Control Board 2011).

The State Water Board is proposing an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Together they are collectively termed as the "Trash Amendments." The State Water Board also prepared a Staff Report/Substitute Environmental Document (SED) to meet CEQA compliance requirements. The Trash Amendments will require the implementation of a consistent statewide approach for reducing environmental issues associated with trash in state waters and will be incorporated into all NPDES Permitting programs including Phase I and Phase II MS4s, Construction General Permits, and Industrial General Permits well as WDRs and waivers to WDRs. NPDES Permittees will be required to commit to one of two Tracks to achieve compliance with the Trash Amendments. Page 12 of the SED says, "Any new development within the MS4 permittee's jurisdiction must be built to immediately comply with Track 1 or Track 2." On December 31, 2014 the State Water Board released a Notice of Revised Documents stating the proposed Final Trash Amendments were available online for review. On February 12, 2015 the State Water Board released a Notice of Public Meeting scheduled for April 7, 2015 to consider oral comments and the adoption of the proposed Final Trash Amendments.

Regional Water Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. Consequently, the specific water quality objectives developed for particular water segments are based on the designated use. The Central Valley Water Board Basin Plan specifies region-wide and water body–specific beneficial uses and has set numeric and narrative water quality objectives for several substances and parameters for numerous surface waters in its region. Specific objectives for concentrations of chemical constituents are applied to bodies of water based on their designated beneficial uses (Central Valley Regional Water Quality Control Board 2011). In addition, the State Water Board identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If it is determined that waters of the state are impaired for one or more constituents and the standards cannot be met through point source or non-point source point controls (NPDES permits or WDRs), the CWA requires the establishment of TMDLs.

California Fish and Game Code Section 1602 Streambed Alteration Agreement

Under Chapter 6 of the California Fish and Game Code, California Department of Fish and Wildlife (CDFW) is responsible for the protection and conservation of the state's fish and wildlife resources. Section 1602 et seq. of the code defines the responsibilities of CDFW and requires that public and private applicants obtain an agreement to "divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by the CDFW in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or will use material from the streambeds designated by the department." A streambed alteration agreement is

required under Section 1602 of the California Fish and Game Code for all activities that involve temporary or permanent activities within state jurisdictional waters.

As described in Chapter 2, Section 2.4, *Required Approvals*, the project applicant would be required to obtain a Streambed Alteration Agreement for proposed project construction activities that will affect waterways.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Edmund G. Brown, Jr. signed historic legislation to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The three bills—SB 1168 (Pavley), SB 1319 (Pavley), and AB 1739 (Dickinson)—together make up the Sustainable Groundwater Management Act. The bills would establish phased requirements for high- and medium-priority basins to adopt groundwater sustainability plans, depending on whether or not a basin is in critical overdraft. The act would require adoption of groundwater sustainability plans by January 31, 2020, for all high or medium-priority basins in overdraft condition and by January 31, 2022, for all other high- and medium-priority basins unless legally adjudicated or otherwise managed sustainably. These bills do not apply to this project because western El Dorado County has no groundwater basins.

Local

Grading, Erosion, and Sediment Control Ordinances

The County Grading, Erosion, and Sediment Control Ordinance (Grading Ordinance) (Chapter 110.14 of the County Code) establishes provisions for public safety and environmental protection associated with grading activities on private property. Section 110.14.090 of the Grading Ordinance, which has incorporated the recommended standards for drainage BMPs from the High Sierra Resource Conservation and Development Council's BMP handbook, prohibits grading activities that would cause flooding where it would not otherwise occur or would aggravate existing flooding conditions. The Grading Ordinance also requires all drainage facilities, aside from those in subdivisions that are regulated by the County's Subdivision Ordinance, be approved by the County Transportation Division. Pursuant to the ordinance, the design of the drainage facilities in the county must comply with the *County of El Dorado Drainage Manual* (Drainage Manual) (El Dorado County 1995).

El Dorado County Subdivision Ordinance

The County's Subdivision Ordinance (El Dorado County Code Title 120) requires drainage plans to be submitted prior to the approval of tentative maps for proposed subdivision projects. The drainage plans must include an analysis of upstream, onsite, and downstream facilities and pertinent details, as well as details of any necessary offsite drainage facilities. The tentative map must include data on the location and size of proposed drainage structures. In addition, drainage culverts consistent with the drainage plan may be required in all existing drainage courses, including roads.

County of El Dorado Design and Improvement Standards Manual

The County's *Design and Improvement Standards Manual* was adopted in 1990 and identifies required erosion and sediment control measures that are applicable to subdivisions, roadways, and

other types of developments. Specifically, *Volume III: Grading, Erosion and Sediment Control* describes the criteria for determining whether an erosion and sediment control plan is required. When required, an erosion and sediment control plan must comply with the adopted *Western El Dorado County Stormwater Management Plan* (County SWMP) (El Dorado County 2004b).

County of El Dorado Drainage Manual

The Drainage Manual (1995) provides standard procedures for future designs of drainage improvements. The Drainage Manual supersedes the stormwater drainage system design standards in the County's *Design Improvements Standards Manual*. The Drainage Manual requires that a hydrologic and hydraulic analysis be submitted for all proposed drainage facilities. The analysis must include an introduction/background, location map/description, catchment description/delineation, hydrologic analysis, hydraulic and structural analysis, risk assessment/impacts discussion, unusual or special conditions, conclusions, and technical appendices. This analysis is usually required on projects undergoing discretionary review. However, under the Building Code and Grading Ordinance, the County also reviews ministerial development, including required drainage plans, to ensure that appropriate runoff design and controls are in place.

The final analysis would include an introduction/background, location map/description, catchment description/delineation, hydrologic analysis, hydraulic and structural analysis, risk assessment/impacts discussion, unusual or special conditions, conclusions, and technical appendices. The analysis would address the following topics.

- A calculation of pre-development runoff conditions and post-development runoff scenarios using appropriate engineering methods. This analysis would evaluate potential changes to runoff through specific design criteria, and account for increased surface runoff.
- An assessment of existing drainage facilities within the project area, and an inventory of necessary upgrades, replacements, redesigns, and/or rehabilitation, including the sizing of onsite stormwater detention features and pump stations.
- A description of the proposed maintenance program for the onsite drainage system.
- Standards for drainage systems to be installed on a project- or parcel-specific basis.
- Proposed design measures to ensure structures are not located within 100-year floodplain areas.

Drainage systems must be designed on a site-specific basis in accordance with the findings of the studies and County requirements. As a performance standard, measures to be implemented would provide for no net increase in peak stormwater discharge relative to current conditions to ensure that 100-year flooding and its potential impacts are maintained at or below current levels and that people and structures are not exposed to additional flood risk.

Stormwater Management Plan and Stormwater Quality Ordinance

The County SWMP was adopted by the County in 2004 as a means of compliance with the then-applicable Small MS4 Permit. In May 2015, the County adopted a County-Wide Storm Water Ordinance (Ordinance No. 5022) to ensure compliance with the new Small MS4 permit requirements in the entire unincorporated County. Chapter 8.79 of the County Code contains the stormwater regulations, which establishes the County's authority to implement and enforce the

Stormwater Management Plan and to ensure compliance with state and federal stormwater laws and regulations. It also sets forth requirements that development projects incorporate BMPs to control the volume, rate, and potential pollutant loading of stormwater runoff. As provided by Section 8.79.150.G, the required BMPs may be contained in any land use entitlement, conditions of approval, grading plans, improvement plans, or any construction or building-related permit to be issued relative to such development. The requirements became effective in June 2015.

Flood Damage Prevention Ordinance (1986)

To regulate development within the 100-year floodplain, the County has enacted a floodplain ordinance that is compatible with FEMA guidelines and applied in conjunction with the County's Zoning Ordinance. Under the Flood Damage Prevention Ordinance, development within the 100-year floodplain may occur; however, certain engineering and zoning standards apply to reduce injury, prevent loss of life, reduce structural damage caused by flooding, and reduce public expenditures for additional flood control structures. Development within the floodway is also prevented unless no increase in flood elevation would result from the development.

Multi-Hazard Functional Emergency Operations Plan (1993)

The County's *Multi-Hazard Functional Emergency Operations Plan* (Emergency Operations Plan) contains dam failure plans for those dams that qualify for mapping. The individual dam facility plans located at the County Department of Emergency Services include a description of the dams, direction of flood waters, responsibilities and actions of individual jurisdictions, and evacuation plans. The Emergency Operations Plan also contains response plans for floods resulting from periods of high rainfall or rapid snowmelt, which can cause flooding in the 100-year floodplain.

El Dorado County General Plan

The County General Plan Public Health, Safety, and Noise Element and Conservation and Open Space Element (El Dorado County 2004a) include the relevant goals, objectives, and policies 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.

Public Health, Safety, and Noise Element

- Goal 6.4, *Flood Hazards*, includes Objective 6.4.1, *Development Regulations*, which seeks to minimize loss of life and property by regulating development, and implementing policies 6.4.1.2, 6.4.1.3, 6.4.1.4, and 6.4.1.5 and Objective 6.4.2, *Dam Failure and Inundation*, and implementing policy 6.4.2.2.

Conservation and Open Space Element

- Goal 7.1, *Soil Conservation*, includes Objective 7.1.2, *Erosion/Sedimentation*, and implementing policies 7.1.2.1 and 7.1.2.2.
- Goal 7.3, *Water Quality and Quantity*, includes Objective 7.3.1, *Water Resource Protection*, and implementing policies 7.3.1.1, 7.3.1.2, and 7.1.3.3, Objective 7.3.2, *Water Quality*, and implementing policies 7.3.2.1, 7.3.2.2, 7.3.2.3, and 7.3.2.5, Objective 7.3.3, *Wetlands*, and implementing policies, 7.3.3.1, and 7.3.3.4, and Objective 7.3.4, *Drainage*, and implementing policies 7.3.4.1 and 7.3.4.2.

Environmental Setting

Climate and Topography

Although the project area is located in the western portion of the Sierra Nevada geomorphic province, the project area's climate is similar to that of the Sacramento Valley. In general, the project area has a typical Mediterranean climate with hot, dry summers and cool, wet winters. Average high temperatures during the summer range from 90 to 100 degrees Fahrenheit in the Sacramento Valley. During winter, average low temperatures in the Sacramento Valley range between the low 40s and 50s (National Oceanic and Atmospheric Administration 2010).

The Sacramento Valley and the immediate foothills to its east have mild winters with low annual precipitation. Precipitation usually takes place from October through May, and virtually no precipitation occurs from June to September. The average annual precipitation in the city of Sacramento is 18 inches; average annual precipitation in the EI Dorado Hills area is approximately 26 inches (Western Regional Climate Center 2014).

A majority of the project area encompasses a valley that slopes to the south, and elevations range from 600 to 1,060 feet above mean sea level (msl). The Pedregal planning area is primarily an uplands area characterized by sloping terrain ranging in elevation from 740 to 1,060 feet above msl with slopes ranging from 10% to over 30%. The Serrano Westside planning area comprises a valley floor and uplands area, with sloping terrain ranging in elevation from approximately 600 to 1,020 feet above msl and slopes ranging from 0% to over 30%.

Surface Water

Hydrology

The proposed project is within two hydrologic regions: the Sacramento River Hydrologic Region and the San Joaquin River Hydrologic Region. The Sacramento River Hydrologic Region encompasses an area of approximately 17.4 million acres (27,200 square miles) and contains all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake and Napa Counties (California Department of Water Resources 2003a). Most of northern California is located in the Sacramento River Hydrologic Region, which encompasses several watersheds of various sizes. The San Joaquin River Hydrologic Region covers approximately 9.7million acres (15,200 square miles) and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus Counties; most of Merced and Amador Counties; and parts of Alpine, Fresno, Alameda, Contra Costa, Sacramento, El Dorado, and San Benito Counties (California Department of Water Resources 2003a).

According to the U.S. Geological Survey, the project area is within the Lower American (USGS Hydrologic Unit Code [HUC] #18020111), South Fork American (HUC #18020129), and Upper Cosumnes (HUC # 18040013) watersheds (United States Geological Survey 1978).

The project area includes seasonal wetlands, seasonal wetland swales, seeps, a creek, drainage/roadside ditches, an ephemeral drainage, intermittent drainages, and ponds (ECORP Consulting 2005a, 2005b, 2009a, 2009b, 2014a, 2014b, 2014c). Most of the streambeds in the project area are incised to bedrock or naturally armored by large amounts of rock. Because of this, the streams are not downcutting or laterally eroding and in most cases are stable (Jones & Stokes Associates 1988).

Carson Creek, a tributary to Deer Creek and ultimately the Cosumnes River, and New York Creek, a tributary to Folsom Lake, and ultimately the American River, are the largest named creeks in the vicinity of the project area; however, they are located outside of the project area boundary to the south and north, respectively.

Onsite Project Area

Drainage and Stormwater Runoff

The project area is in a small valley that slopes to the south between two low ridges. The Serrano Westside planning area slopes west toward El Dorado Hills Boulevard, and the Pedregal planning area slopes east toward El Dorado Hills Boulevard. The Serrano Westside and Pedregal planning areas are undeveloped and vegetated. Surface soils are characterized by low to rapid runoff rates (see Table 3.5-2 in Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*). Rapid runoff rates are associated with steeper areas, where shallow bedrock is present.

There are numerous small drainage features throughout the Serrano Westside planning area. These include an unnamed tributary to Carson Creek that flows parallel to the western boundary. The creek is perennial, flowing year-round, fed from surface runoff and storm drains along El Dorado Hills Boulevard. There are also several ponds, intermittent and ephemeral drainages, and low-lying seasonal swales. There are constructed drainage ditches throughout the planning area to help facilitate drainage. In the northern half of the Serrano Westside planning area, there is a 6-foot-deep constructed channel that runs parallel to the western boundary, which differs from the unnamed tributary. This feature receives water from roadway runoff as well as sheet flow during storm events. It ends at a large concrete box culvert where it connects to the creek. A system of drains and culverts were used on the former golf course to control natural and irrigated runoff and direct it into the unnamed tributary. There are also several seeps in the Serrano Westside planning area, and water flow from the seeps is through natural groundwater discharge (ECORP 2014d).

In the Pedregal planning area, there are two seeps, several intermittent drainages, a constructed ditch near the western boundary, and a constructed channel (roadside ditch) along the eastern boundary (along El Dorado Hills Boulevard). Runoff from rainfall during storm events flows into the drainages, which flow during storm events and certain times of the year when groundwater discharge may provide water for flows. The roadside ditch receives water from roadway runoff, sheet flow from the planning area, and the intermittent drainages (ECORP 2014d).

Figure 3.8-1 shows the location of the main drainage feature in the project site. Both planning area areas drain to a channel (drainage swale) that parallels El Dorado Hills Boulevard. North of Wilson Boulevard, the channel is on the west side of El Dorado Hills Boulevard, and the Pedregal planning area drains to that segment. The channel passes through culverts under El Dorado Hills Boulevard south of Fire Station #85 and continues south on the east side of El Dorado Hills Boulevard. South of Serrano Parkway, the channel continues south along the east (or back) side of the Raley's and La Borgata commercial and retail development, where it discharges through a double 6-foot by 7-foot concrete box culvert under U.S. Highway 50 (US 50). The drainage analysis noted the box culvert crossing under US 50 attenuates[1] the amount of flow that can pass under the freeway (Appendix I).

South of US 50, the drainage channel continues through nature preserves and ponds, referred to as Town Center Lake, that are part of the Town Center East amenities, eventually discharging to Carson

[1] The diameter (capacity) of the culverts "meters" the rate of flow through the culverts.

Creek. The stormwater flows through the pond system are controlled by a combination of arch culverts, a weir, and box culverts, which provide adequate attenuation and storage under existing conditions (Watermark 2015).

Wetlands and Waters of the U.S.

Studies prepared by ECORP Consulting, Inc. in 2005 (2005a, 2005b), 2009 (2009a, 2009b), and 2014 (2014b, 2014c) identified a total of 5.720 acres of waters of the United States that meet the criteria for USACE jurisdiction (ECORP Consulting 2014a:Figure 3; also see Figure 3.3-1 in Section 3.3, *Biological Resources*). In July 2009 and June 2011, USACE concurred with the amount and location of wetlands and other water bodies in the project area (the former golf course area in the Serrano Westside planning area, and the entirety of the Pedregal planning area). As of March 2014, the remainder of the wetlands remained unverified (i.e., the 85-acre addendum area and the offsite improvements areas) (ECORP Consulting 2014b).

Refer to Section 3.3, *Biological Resources*, for a full description of each water body in the project area.

Offsite Improvements

A total of approximately 7.602 acres of potential wetlands and other waters of the United States were mapped within the offsite improvements areas. Water features consist of seasonal wetlands, seasonal wetland swales, seeps, marsh, creeks, ditches, ephemeral drainages, intermittent drainages, and a pond (ECORP Consulting 2014a).

Refer to Section 3.3, *Biological Resources*, for a full description of each water body in the project area.

Water Quality

No current water quality information specific to surface flows in the project area is available. However, the water draining from the project area is likely to be of fairly high quality, although the past grazing activity on the land probably has increased temperature, sediment, and nutrient levels above pristine conditions (Jones & Stokes Associates 1988). Contaminants from urban runoff from developed upslope areas may also influence local water quality conditions, the extent to which is undocumented.

Three of six soil map units (which cover a majority of the project area) are moderately to highly susceptible to sheet and rill erosion by water.

The Basin Plan for the Sacramento River San Joaquin River Basins describes beneficial uses for waters within the project vicinity, as shown in Table 3.8-1, respectively. Table 3.8-2 shows 303(d) listed impairments for Carson Creek, Deer Creek, the Cosumnes River, Folsom Lake and the American River based on the 2010 California Integrated Report (California State Water Resources Control Board 2011).

Table 3.8-1. Designated Beneficial Uses for Surface Water Bodies within the Project Vicinity

Water Body	Designated Beneficial Uses
Deer Creek	Municipal and Domestic Supply; irrigation; stock water; water contact recreation; noncontact water recreation; warm and cold freshwater habitat; cold fish migration; warm and cold fish spawning; wildlife habitat.
Cosumnes River (sources to the Delta)	Municipal and Domestic Supply; irrigation; stock water; water contact recreation; noncontact water recreation; warm and cold freshwater habitat; warm and cold fish migration; warm and cold fish spawning; wildlife habitat.
Folsom Lake	Municipal and Domestic Supply; irrigation; industrial service supply;[a] water contact recreation; noncontact water recreation; warm and cold freshwater habitat; warm fish spawning; wildlife habitat.
American River (Folsom Dam to Sacramento River)	Municipal and Domestic Supply; irrigation; industrial service supply; hydropower; water contact recreation; noncontact water recreation; warm and cold freshwater habitat; cold fish migration; warm and cold fish spawning; wildlife habitat.

Source: San Francisco Bay Regional Water Quality Control Board 2006.

[a] Potential beneficial use.

Urban non-point source pollution includes heavy metals, pesticides, bacteria, organics (oil and grease), dirt, and nutrients. Urban runoff from vehicles on bridges can be discharged into streams during construction activities, rain events, vehicle accidents, and through normal wear and tear. No onsite impaired water bodies would be directly affected by the proposed project.

Table 3.8-2. 303(d) Listed Impaired Waters with Potential to be Affected by the Project

Water Body	Pollutant Stressors	Potential Sources	TMDL Completion Date
Carson Creek (from WWTP to Deer Creek)	Aluminum	Unknown	Est. 2019
	Manganese	Unknown	Est. 2021
Deer Creek (Sacramento County)	Iron	Unknown	Est. 2019
Cosumnes River, Upper (above Michigan Bar)	Invasive Species	Unknown	Est. 2019
Folsom Lake	Mercury	Resource Extraction	Est. 2019
American River, Lower (Nimbus Dam to confluence with Sacramento River)	PCBs	Unknown	Est. 2021

Source: State Water Resources Control Board 2011.

Est. = Estimated.
TMDL = total maximum daily load.
PCBs = Polychlorinated biphenyls.
WWTP = wastewater treatment plant.

Groundwater

Regional Hydrogeology

The project area overlies the South American Subbasin and Cosumnes River Subbasin.

The South American Subbasin (Basin Number 5-21.65) has a total surface area of 248,000 acres (388 square miles). It is bounded on the east by the Sierra Nevada, on the west by the Sacramento River, on the north by the American River, and on the south by the Cosumnes River and Mokelumne Rivers. These perennial rivers generally create a groundwater divide in the shallow subsurface. It is clear that there is interaction between groundwater of adjacent subbasins at greater depths (California Department of Water Resources 2003b).Based on available information from Olmstead and Davis (1961 as cited in California Department of Water Resources 2003b), the California Department of Water Resources (DWR) calculated groundwater storage capacity in the subbasin at 4,816,000 acre-feet (California Department of Water Resources 2003b).

The Cosumnes Subbasin (Basin Number 5-22.16) has a total surface area of 281,000 acres (439 square miles). It is defined by the areal extent of unconsolidated to semi-consolidated sedimentary deposits that are bounded on the north and west by the Cosumnes River, on the south by the Mokelumne River, and on the east by consolidated bedrock of the Sierra Nevada Mountains (California Department of Water Resources 2003c).Groundwater storage capacity is estimated to be on the order of 6,000,000 acre feet (af) based on data from DWR (1967 as cited in California Department of Water Resources 2003c) and DWR (1974 as cited in California Department of Water Resources 2003c).

El Dorado County Hydrogeology

The majority of all water produced in El Dorado County wells comes from underground zones of hard crystalline or metamorphic rock within which there are fractures that provide natural storage for groundwater (El Dorado County Environmental Management Department 2004). The fractures do not form a connected system and vary in size and character. Therefore, with the exception of a small basin at South Lake Tahoe, there is no groundwater basin in El Dorado County.

Historical data on groundwater levels is quite limited. The water levels in water wells in the county are not routinely tested, are not reported to the County, and there is no comprehensive database on groundwater levels. However, DWR periodically tests groundwater wells for pollution or contaminants. One of the outputs of this testing includes depth to groundwater. The Center for Economic Development (CED) at the California State University, Chico compiled well depth data in the County with consistent measurements between 1999 and 2010, and corrected for wells not measured in any particular year. Average groundwater depths from 1999 to 2010 are shown in Table 3.8-3 below. Overall, El Dorado County experienced little groundwater change during this 10-year period. Depths fluctuated between 22 and 30 feet deep, with an increasing long-term trend. Between 1999 and 2010, water table depths increased an average of 3.2% per year with a net change of approximately 8 feet (California State University, Chico 2011).

Table 3.8-3. Average Water Table Depths in El Dorado County (1999–2010)

Year	Average Depth to Groundwater (feet)
1999	26.39
2000	29.40
2001	33.71
2002	32.48
2003	31.36
2004	31.80
2005	30.58
2006	28.25
2007	30.89
2008	32.30
2009	31.20

Source: California State University, Chico 2011.

Despite relatively mild fluctuations in groundwater well depths between 1999 and 2010, data between 2010 and 2014 indicate that fluctuations can be greater. A recent Public Update by DWR states that the greatest concentration of recently deepened wells is in the fractured bedrock foothill areas of Nevada, Placer, and El Dorado counties (California Department of Water Resources 2014). Between years 2010 and 2014, El Dorado County deepened 41 domestic wells in fractured bedrock (California Department of Water Resources 2014) compared to much fewer cases (ranging from 1 to 17) in most other counties. Findings of this analysis support a conclusion that water wells in areas of fractured bedrock are more vulnerable to water shortages than wells in groundwater basins during times of drought (California Department of Water Resources 2014). In addition, fracture width generally decreases with depth (State Water Resources Control Board 2005), indicating even more limited supplies than porous or alluvial aquifer systems at greater depths because of diminished recharge, movement and storage capacity (El Dorado County 2003). As such, long-term reliability of groundwater cannot be estimated with the same level of confidence as a porous or alluvial aquifer (El Dorado County 2003).

In addition to water levels, water quality can affect groundwater supplies. During 2003 and 2004, and as part of a small pilot study in 2001, a Voluntary Domestic Well Assessment Project sampled 398 private domestic wells in the County. Of the domestic wells sampled, approximately 30% (119 wells; some wells detected multiple chemicals) would not pass state primary drinking water standards for public water systems. This statistic demonstrates that private domestic wells are vulnerable to contamination that may affect public health. The most common reasons for primary maximum contaminant level (MCL) exceedance were positive detection of coliform (total coliform present in 111 domestic wells and fecal coliform present in 14 domestic wells), followed by arsenic (15 domestic wells) and nitrate (7 domestic wells) (State Water Resources Control Board 2005). According to the 2004 County General Plan Draft EIR, major sources of potential groundwater pollution include septic tanks or septic leach fields, underground fuel tanks, spillage of hazardous materials or commercial waste, and infiltration of agricultural byproducts, including fertilizer and livestock waste (El Dorado County 2003).

Persistent drought and climate change will continue to affect the reliability of the County's groundwater supplies. The combination of rising temperatures, a smaller snowpack, and more

frequent and potentially longer droughts could reduce the availability of both surface and groundwater supplies, as more water runs off or evaporates and less infiltrates into the ground. Reduced infiltration could reduce the reliability of groundwater wells drilled in fractured rock (El Dorado County Water Agency 2014).

Project Area Hydrogeology

The principal groundwater aquifers under the project area are found within fractured bedrock. The fractures are developed by stress in the rock resulting from the cooling and contraction following regional metamorphism and from folding and faulting. These fractures are generally steep and oriented vertically, and they develop a foliation to the rock; as such, groundwater flow is affected by the direction of the foliation. Most water-bearing fractures are wider and develop more water in the upper 200–300 feet of rock.

Based on field exploration by Youngdahl Consulting Group (2012a, 2012b), groundwater conditions were not observed at excavated test pit locations. The researchers note that in the foothill regions, many factors (e.g., proximity to bedrock, fractures in the bedrock, topographic elevations, and proximity to surface water) lead to variation in the subsurface water conditions. Continued exposure to subsurface water may be evidenced by black staining on fractures, clay deposits, and surface markings indicating previous seepage. Based on Youngdahl Consulting Group's experience in the area, water may be perched on less weathered rock and/or be present in the fractures and seams of the weathered rock beneath the sites at different times of the year (Youngdahl Consulting Group 2012a:2-3, 2012b:2-3). There are several seeps throughout the project area. Surface water flow from the seeps is the result of natural groundwater discharge (ECORP 2014d).

Regional Groundwater Quality

Groundwater contained in the water-bearing deposits underlying most of Sacramento County is of excellent mineral quality for irrigation and domestic use (California Department of Water Resources 1974 as cited in California Department of Water Resources 2003c). Within the subbasin, calcium-magnesium and calcium-sodium bicarbonate water types are most common (California Department of Water Resources 1974; Sorenson 1981 as cited in California Department of Water Resources 2003c).

The project area has been historically used for domestic cattle grazing. This prior use presumably has a limited potential for impact on groundwater quality; however, nitrate introduction may have occurred.

Groundwater Recharge

Recharge to a groundwater basin occurs primarily due to precipitation, applied water, and streamflow. Groundwater recharge primarily occurs along stream channels, where sand and gravel deposits occur to sufficient depth that adequate quantities of surface water can infiltrate into the underlying aquifer. The project area is underlain primarily by bedrock. Groundwater tends to occur as seeps through natural discharge. As such, groundwater recharge potential is limited.

Flooding

FIRMs prepared by FEMA were reviewed to identify the locations of 100-year floodplains. None of the project area is located on FEMA-designated 100-year floodplains (i.e., areas with a 1% chance of flooding in any given year; Figure 3.8-2). None of the areas immediately downstream of the project

area on Carson Creek is within a FEMA-designated flood zone. Further south of the project area, however, portions of the Cosumnes River/Deer Creek floodplain lie within in a FEMA-Zone A 100-year floodplain.

The site-specific drainage analysis prepared by Watermark Engineering (2014) for the proposed project (Appendix I) estimated water surface elevations under existing conditions for the drainage channels and identified the extent of the water surface elevation during the 100-year event along the channel, which is shown in Figure 3.8-3.

As shown in Figure 3.8-3, there are some small flood-prone areas north of Serrano Parkway on the east side of El Dorado Hills Boulevard and north of US 50 in the southwest part of former El Dorado Hills Executive Golf Course. The flood-prone areas are an existing condition that occurs only during 100-year storm events because the existing culverts at Serrano Parkway and US 50 attenuate the flows, as noted above. As a result of this attenuation, stormwater temporarily backs up behind the culverts (i.e., the upstream side), which causes localized flooding until water levels subside.

Upstream dam failure and/or levee failure and ensuing inundation does not pose a risk to the project area, because there are no major water bodies upstream of the project area. All larger impoundments in El Dorado County are north of US 50, associated with the South Fork American River and its tributaries (El Dorado County 2004c).

3.8.2 Environmental Impacts

Methods of Analysis

Impacts related to hydrology, water quality, and water resources were assessed based on technical reports prepared for the proposed project, other available data (e.g., maps, soil surveys), and professional judgment. Potential impacts resulting from implementing the proposed project were analyzed by comparing existing conditions, as described in *Environmental Setting*, to conditions during construction and/or operation of the project. The analysis assesses the direct, indirect, short-term, and long-term impacts related to surface hydrology, flood hazards, groundwater recharge, and surface and groundwater quality as described below.

- **Surface Water Hydrology:** The surface water hydrology impact analysis considered potential changes in the physical characteristics of water bodies, impervious surfaces, and drainage patterns throughout the project area as a result of project implementation. The quantified data, conclusions, and recommendations presented in the site-specific drainage analysis (Appendix I) were incorporated into the analysis of changes in peak flow runoff. The purpose of the study was to estimate 100-year peak flows for existing and developed conditions; determine the limits of 100-year flooding along the channel; provide a floodway analysis along portions of the channel where development would encroach onto the flood-prone areas; determine storage requirements for the Pedregal planning area to attenuate 100-year flows to approximate existing-conditions flows; and present conceptual water quality facilities for the development.
- **Flood Hazards:** The impact analysis for flood risk considered FEMA NFIP maps to determine whether the project area overlaps with existing designated 100-year floodplains. The analysis also incorporates the quantified results presented in the drainage analysis (Appendix I) pertaining to runoff volumes and water surface elevations.

- **Groundwater Recharge:** Impacts on groundwater recharge were assessed qualitatively by comparing existing sources of recharge versus recharge capabilities following project implementation (Youngdahl Consulting Group 2012a, 2012b).
- **Surface and Groundwater Quality:** Impacts of the proposed project on surface water and groundwater quality were qualitatively analyzed using existing information on existing water quality conditions (i.e., 303[d] listed water bodies) and the site-specific drainage analysis for post-construction water quality (Appendix I). These conditions were then compared to conditions under the proposed project for potential project-related sources of water contaminants generated or inadvertently released during project construction (e.g., sediments, fuel, oil, concrete) and project operation (urban runoff). The potential for water quality objectives to be exceeded and beneficial uses to be compromised as a result of the proposed project was also considered.

Thresholds of Significance

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.

- Violate any water quality standards or WDRs.
- 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).
- 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.
- 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.
- 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.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area, as mapped on a federal flood hazard boundary map, FIRM, or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows.
- 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.
- Contribute to inundation by seiche, tsunami, or mudflow.

Impacts and Mitigation Measures

Impact WQ-1: Violate any water quality standards or waste discharge requirements during construction (less than significant)

Construction-related earth-disturbing activities would introduce the potential for increased erosion, runoff, and sedimentation, with subsequent effects on water quality and storm drain capacity. During site grading, trenching, and other construction activities, areas of bare soil are exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of the impacts is dependent on soil erosion potential, type of construction practice, extent of disturbed area, timing of precipitation events, and topography and proximity to drainage channels. In addition, construction equipment and activities would have the potential to leak hazardous materials, such as oil and gasoline, and potentially affect surface water or groundwater quality. Improper use or accidental spills of fuels, oils, and other construction-related hazardous materials such as pipe sealant, solvents, and paints could also pose a threat to the water quality of local water bodies. These potential leaks or spills, if not contained, would be considered a significant impact on groundwater and surface water quality. If precautions are not taken to contain or capture sediments and/or accidental hazardous spills, construction activities could produce substantial pollutants in stormwater runoff could adversely affect existing surface water quality.

Construction of bridge crossings near and within water bodies may result in discharges of metals and other contaminants in sediment. In-water construction activities would directly disturb sediment along the river bed and result in a temporary increase in turbidity in the immediate area and potentially downstream. Concrete, vehicle, and other fluids may be easily released into the creek during construction as well. These discharges may have adverse impacts on beneficial uses.

However, because the project would disturb more than 1 acre of land, a SWPPP with an associated pre-determined Risk Level would be required as part of compliance with the NPDES Construction General Permit. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. The SWPPP would identify specific construction best management practices (BMPs), which include temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas within the project area, and leak and spill protection for heavy equipment and hazardous materials use, among others

Central El Dorado Hills Specific Plan (CEDHSP) Policy 5.5 requires the use of construction BMPs as well as compliance with permits and regulations that are applicable to construction activity. In addition to compliance with the latest NPDES and other water quality requirements (i.e., Construction General Permit, Small MS4 Permit, WDRs for dewatering), the proposed project would also be required to comply with the County's Stormwater Quality Ordinance No. 5022, as noted in the *Regulatory Setting* above.

Construction dewatering in areas of shallow groundwater may be required during excavation. In the event groundwater is encountered during construction, dewatering would be conducted locally, and according to methods described in the *Regulatory Setting* above. In areas where groundwater is

shallow or perched and there is potential to affect riparian habitat, features would be installed using the vibration method,[2] which minimizes subsurface disruption.

Therefore, potential water quality impacts, such as violations of water quality objectives or WDRs from construction activities, would be less than significant. No mitigation is required.

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)

Water for the commercial and residential uses in the project would be provided by the El Dorado Irrigation District (EID). No groundwater would be used. Therefore, the project would not deplete groundwater supplies.

Project components such as roads and houses would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy and silty soils (which comprise a majority of the project area) have higher infiltration rates and can contribute to significant amounts of groundwater recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff. The amount of new pavement and the extent to which it affects infiltration depends on the site-specific soil type.

However, the project area is underlain by bedrock, and groundwater discharges to the surface as seeps, rather than as recharge. Therefore the net change in groundwater recharge potential would be limited. In addition, the project would not construct or utilize groundwater resources and the proposed project is located in an area generally surrounded by suburban areas with existing highways, streets, roads, and houses in which many of the surfaces are already paved or impervious. As such, extensive storm drainage systems present in these areas currently intercept rainfall and runoff waters, thus limiting the amount of groundwater recharge that occurs. Furthermore, based on field exploration by Youngdahl Consulting Group (2012a, 2012b), groundwater conditions were not observed at excavated test pit locations. Finally, as per the CEDHSP, the proposed project would preserve a little less than half of its associated acreage (169 acres) in open space, thereby protecting valuable natural resources (including oak woodlands, intermittent tributaries, wetlands, and steep hillsides) that contribute to groundwater recharge (Serrano Associates, LLC 2015). This impact would be less than significant. No mitigation is required.

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)

The proposed project would directly affect the perennial creek, intermittent drainage, and drainage ditch/roadside ditch through placement of fill (0.39 acre, 0.236 acre, and 0.077 acre, respectively; see Impact BIO-4 in Section 3.3, *Biological Resources*). This could affect drainage patterns. Site preparation activities such as grading and excavation to construct building pads and roadways would alter the overall existing overland flow drainage patterns in the Serrano Westside and

[2] Different than standard pumping techniques and cut-off wall installation, the vibration method uses a stainless steel vibrating device and a vibrating screen to remove water from the soil via vibration and gravity.

Pedregal planning areas. Alterations in the natural landscape and drainages could increase the potential for changes in water flow in onsite and offsite drainages, creeks, and streams that could, in turn, affect erosion and/or the amount of sediment in the watercourse ("hydromodification"). Construction activities also contribute this potential effect because they would leave areas of exposed soil that could be subject to wind or water erosion, and stormwater runoff could potentially transport sediment-laden runoff to local drainages. Increased sediment loads have the potential to degrade water quality and/or reduce the capacity of drainages to convey water. This potential is increased when earth-moving activities and development footprints are close to riparian areas and drainages. The County requires a minimum setback of 100 feet from all perennial streams and 50 feet from intermittent streams (General Plan Policy 7.3.3.4). Actual setbacks for the CEDHSP area would be determined during the Section 404 permitting process in consultation with USACE (see Impacts BIO-2 and BIO-4). The proposed riparian corridor enhancements along the main drainage channel (unnamed tributary to Carson Creek) could help reduce erosion potential through the inclusion of new wetland plantings and regrading the open space area adjoining the creek to facilitate the enhancements.

The CEDHSP also includes policies specifically directed to protecting natural drainage courses and riparian zones. CEDSHP Policy 5.2 requires that natural drainage courses shall be avoided and incorporated into the overall storm drainage system design, except where road, trail, or utility crossings would preclude this. Under CEDHSP Policy 5.3, trails located within open space areas or corridors must be designed to include soil erosion control measures to minimize sedimentation of nearby creeks and maintain the natural state of drainage courses.

Project components such as houses and roadways would create new impervious surfaces. This would alter drainage patterns on the site compared to existing conditions, but it would also reduce the amount of soil that could be exposed to erosion. Stormwater runoff from developed surfaces would be conveyed to the project's storm drain system that would be designed in accordance with the Small MS4 permit Section E.12.f hydromodification requirements. This would ensure the proposed project's effect on drainage patterns would not cause or exacerbate the rate of sedimentation or siltation in a manner that would adversely affect the function of natural onsite or offsite drainages, streams, or creeks.

This impact would be less than significant. No mitigation is required.

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)

Project components such as roads and houses would alter surface drainage patterns as a result of adding impermeable surfaces and directly altering flow patterns which could yield increased amounts of stormwater runoff. Proposed project activities that convert permeable surfaces or install permanent structures would require stormwater drainage management measures to avoid onsite or offsite flooding impacts.

The County Drainage Manual (El Dorado County 1995) requires that a hydrologic and hydraulic analysis be submitted for all proposed drainage facilities. In addition, under General Plan Policy 6.4.1.2, the County is required to identify and delineate flood-prone study areas discovered during the completion of the master drainage studies or plans. A drainage analysis was prepared for the project (Appendix I) that identified the potential flooding hazard impacts of the proposed project

due to project-generated stormwater runoff. The County's existing Small MS4 permit Section E.12 requires development projects to control the volume, rate, and duration of runoff to minimize hydromodification effects, which would reduce the potential for downstream flooding. In addition, CEDHSP Policy 7.5 requires that the project prevent the increase in potential flood hazard or damage to surrounding properties.

The proposed project is estimated to increase stormwater volumes by 33.8 acre-feet for the 100-year storm, 26.6 acre-feet for the 10-year storm, and 18.9 acre-feet for the 2-year storm (Appendix I).[3] Stormwater runoff from the Serrano Westside and Pedregal planning areas would flow to the drainage channel that parallels El Dorado Hills Boulevard. South of Serrano Parkway, the channel continues south along the east (or back) side of the Raley's and La Borgata commercial and retail development, where it discharges through a double box culvert under US 50 to ponds in the Town Center East commercial development.

The existing culverts at Serrano Parkway and US 50 would accommodate 100-year storm flows from the Serrano Westside planning area, and no improvements to the culverts or new detention or retention basins would be required for the Serrano Westside planning area to manage peak flow rates to minimize flooding (Appendix I). Approximately 25,000 cubic feet of storage would be needed to attenuate the peak flow from the Pedregal planning area. A 0.6-acre detention basin with a bottom dimension of 50 feet wide by 100 feet long, with 5 to 1 side slopes, and about 5 feet deep, would provide the needed storage with approximately 1 foot of freeboard. The location of the proposed detention basin, which is shown in Figure 3.8-1, would be at the southeast corner of the proposed Village Residential – High (VRH) land use area, adjacent to El Dorado Hills Boulevard. As directed by CEDHSP Policy 7.4 and as required by the County's subdivision ordinance, the proposed stormwater basin must be reviewed and approved by the County prior to the first tentative subdivision map.

All the stormwater runoff from the project area would flow to the pond system in the Town Center East development. It has been determined the pond system would provide the necessary attenuation to accommodate project flows in addition to flows from development north of US 50 and from Town Center East. The flows entering Carson Creek would remain at or below pre-development levels (Appendix I) such that there would be no increased offsite, downstream flood hazard risk as a result of the proposed project.

As noted above, during the 100-year storm event, stormwater temporarily backs up behind the Serrano Parkway and US 50 culverts. This causes localized areas of flooding, which are shown in Figure 3.8-3. This is a temporary condition that occurs without the project only in large storms. The proposed project's stormwater flows would slightly increase the flood-prone area at Serrano Parkway and north of US 50 in the Serrano Westside planning area by increasing the water surface elevation. However, this increase would not be a substantial increase in flooding potential compared to existing conditions. The culverts would continue to attenuate the flow, and each flood-prone area would continue to provide temporary storage of stormwater (similar to how a detention basin functions) until the water surface elevations and peak flow rates downstream of each culvert returns to normal flow conditions for a 100-year storm. As such, the proposed project would not cause or exacerbate onsite or offsite flooding compared to existing conditions.

[3] In the drainage analysis (Appendix I), storm drain peak flows, volumes, and drainage facility capacity were evaluated for the 100-year storm.

With the incorporation of the strategies described above, and adherence to the requirements of the County Drainage Manual, Small MS4 permit, and Stormwater Quality Ordinance No. 5022, the proposed project would not cause onsite or offsite flooding. Impacts would be less than significant, and no mitigation is required.

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)

Storm Drainage System Capacity

Project components such as roadways, building rooftops, and hardscaping would result in an increase in stormwater runoff as a result of new impervious surfaces. As noted in Impact WQ-4, the project's drainage analysis (Appendix I) shows that existing culverts at Serrano Parkway and US 50 would be sufficient to attenuate 100-year storm flows from the Serrano Westside planning area, and that a detention basin would be needed within the Pedregal planning area to attenuate post-development flows (see discussion under Impact WQ-4). This would ensure the capacity of existing stormwater drainage systems north of US 50 would not be exceeded. As noted in Impact WQ-4, it has been determined the pond system in the Town Center East development would provide the necessary attenuation to accommodate project flows in addition to other flows. Storm drainage system capacity impacts would be less than significant.

Post-Construction Stormwater Runoff Water Quality

Upon completion of the project, components such as roads and houses would create new impervious surfaces. This condition would result in an incremental reduction in the amount of natural soil surfaces available for infiltration of rainfall and runoff, potentially generating additional runoff during storm events. In addition, the increase in impervious surfaces, along with the increase in surface water runoff, could increase the nonpoint-source discharge of pollutants. Anticipated runoff contaminants include sediment, pesticides, oil and grease, nutrients, metals, bacteria, and trash. Contributions of these contaminants to stormwater and non–stormwater runoff could degrade the quality of receiving waters. During the dry season, vehicles and other urban activities release contaminants onto the impervious surfaces, where they can accumulate until the first storm event. During this initial storm event, or first flush, the concentrated pollutants would be transported in runoff to stormwater drainage systems. Contaminated runoff waters could flow into the stormwater drainage systems that discharge into Carson Creek and ultimately could degrade the water quality of the creek or the Cosumnes River.

The County's Small MS4 Permit Section E.12, County SWMP (El Dorado County 2004b), the County Drainage Manual (El Dorado County 1995), and Stormwater Quality Ordinance No. 5022 require the proposed project to manage hydro-modification and avoid adverse water quality impacts on onsite drainages, including the unnamed tributary to Carson Creek (main drainage channel), which ultimately flows to the Cosumnes River. To accomplish this, the proposed project's drainage system would be designed so the post-development runoff would not detrimentally exceed pre-development runoff rates, durations, and volumes from the project area (Serrano Associates, LLC 2015). CEDHSP policies 7.6 and 7.7 require treatment of urban runoff in accordance with County standards and the use of BMPs. Source control BMPs could include conserving natural areas, protecting slopes and channels, and minimizing impervious areas. Treatment control BMPs may include use of vegetated swales and buffers, detention basins, wet ponds, or constructed wetlands,

infiltration basins, and other measures. For example, two water quality ponds, one upstream of Serrano Parkway and one east of the Raley's Shopping Complex, would provide water quality treatment for the urban runoff and minor attenuation of stormwater runoff. Alternatively, a single larger pond could be utilized east of the Raley's and La Borgata shopping area. These ponds would be incorporated into the developed areas in the Serrano Westside planning area (i.e., they would not be located in the main drainage channel, unless the riparian enhancement project includes water quality ponds to supplement the main drainage channel). Water quality pond sizing and locations would be refined when more detailed site plans have been developed (Appendix I). As part of the riparian corridor enhancements along the drainage channel, the open space area adjoining the channel would be regraded to incorporate wetland enhancement and water quality features.

CEDHSP policies 7.8 and 8.48 require that the project incorporate LID design strategies. Consistent with these policies and the requirements of the Small MS4 Permit, the proposed project would include LID methods consistent with the current edition of the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, or comparable guidelines into site design. LID technology incorporates site design and stormwater management to maintain the site's pre-development runoff rates and volumes. Examples of LID measures include sidewalk storage, vegetated swales, buffers and strips, tree preservation, permeable pavers, and impervious surface reduction and disconnection. Selection and implementation of these measures would occur on a project-by-project basis and would be placed throughout the planning areas. The specific LID measures would depend on project size and stormwater treatment needs. Success criteria and performance standards would be developed and provided to the County as part of grading/improvement plans. The County will be responsible for ensuring the proposed source and treatment control BMPs conform to the requirements of the Small MS4 Permit Section E.12 and Stormwater Quality Ordinance No. 5022 prior to issuance of grading and building permits. In addition, under CEDHSP Policy 8.49, limiting the use of pesticides, herbicides, and similar products in landscape maintenance, along with integrated pest management (IPM) techniques will be encouraged through homeowner education and as part of maintenance of publicly accessible areas.

Implementation of the County's requirements for stormwater quality would ensure compliance with the Central Valley Water Board Basin Plan, which specifies water quality objectives and beneficial use requirements. Water quality impacts during project occupancy would be less than significant. No mitigation is required.

Impact WQ-6: Otherwise substantially degrade water quality (less than significant with mitigation)

In addition to urban runoff, one other potential impact on water quality is the discharge of dredged or fill material into waters of the United States. These impacts could affect beneficial uses of the wetlands, such as riparian and wildlife habitat. As described in Section 3.3, *Biological Resources*, the project would result in a maximum of unavoidable permanent onsite impacts (fill) to 2.941 acres of waters, including wetlands (0.328 acres) and other waters (2.613 acres) in the project area, and a maximum of approximately 1.405~~930~~ acres of waters including wetlands in the offsite improvement areas. At a minimum, the project would compensate for loss of wetlands and other waters at a minimum 1:1 ratio or as permitted by USACE, resulting in equal wetlands than currently exist within the project area and benefiting wildlife in the vicinity of the project area. Construction requiring removal of wetlands would be subject to USACE jurisdiction under Section 404 of the CWA, and CDFW and the Central Valley Water Board jurisdiction under California Department of Fish and Game Code 1602 and CWA Sections 401 and 402. Wetland loss and/or removal without avoidance,

minimization, or compensation would constitute a significant impact. Implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-3a, BIO-3b, and BIO-4 would reduce potential water quality impacts on wetlands and other waters to a less-than-significant level.

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

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)

The project area does not include 100-year flood hazard areas, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (Figure 3.8-2). However, modeling conducted using XP-SWMM (Appendix I) identified two small flood-prone areas in the Serrano Westside planning area, one just north of Serrano Parkway on the east side of El Dorado Hills Boulevard, and the other north of US 50 on the southwest side of the former El Dorado Hills Executive Golf Course (Figure 3.8-3). Although XP-SWMM is approved by FEMA for use to update or complete Flood Insurance Studies, the results have not been approved or delineated by FEMA. The flood-prone areas are an existing condition that occurs only during the 100-year storm and is the result of temporary backwater conditions behind the culverts at Serrano Parkway and at US 50, as described above. The flood-prone area north of Serrano Parkway covers a small portion of areas proposed for open space[4] and residential uses. The flood-prone area north of US 50 covers a small portion of the areas proposed for the Village Park and residential uses. The County will require that the finished grade for any residential lot situated in the flood-prone area be elevated. The drainage analysis (Appendix I) recommended a minimum of 2 feet above the computed water levels identified in the drainage analysis, and at the Serrano Parkway location, the finished grade should be a minimum of 2 feet above the minimum road elevation of Serrano Parkway. The specific elevation for each lot will be determined in accordance with the County's Flood Damage Protection Ordinance as part of the tentative map approvals and issuance of grading permits. Accordingly, because the proposed project would not place housing within a 100-year flood hazard area, impacts would be less than significant. No mitigation is required.

[4] A 1.2-acre neighborhood park would be within the open space.

Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect floodflows (less than significant)

The project area does not include FEMA-designated 100-year floodplains (Figure 3.8-2), but there are two flood-prone areas that occur during 100-year storms (Figure 3.8-3). The County will require that residential building pads in the flood-prone areas be elevated—the drainage analysis (Appendix I) recommended a minimum of 2 feet above the computed water levels identified in the drainage analysis, and at the Serrano Parkway location, the finished grade should be a minimum of 2 feet above the minimum road elevation of Serrano Parkway. The specific elevation for each lot will be determined in accordance with the County's Flood Damage Protection Ordinance as part of the tentative map approvals and issuance of grading permits. No houses or structures would be placed in the flood-prone areas, and the neighborhood park within the open space would not contain any structures of sufficient size to impede or redirect flood flows. Accordingly, impacts would be less than significant. No mitigation is required.

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)

Upstream dam failure and/or levee failure and ensuing inundation does not pose a risk to the project area, because there are no major water bodies upstream of the project area. All larger impoundments in El Dorado County are north of US 50 and associated with the South Fork American River and its tributaries (El Dorado County 2004c). Accordingly, there would be no impact. No mitigation is required.

Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow (no impact)

The project area is at not at risk due to inundation from a tsunami or seiche due to its distance from the ocean or other water bodies. There are no ground stability issues with the site that would expose the project to a mudflow hazards. Accordingly, there would be no impact. No mitigation is required.

Impact WQ-11: Impacts on hydrology and water quality resulting from offsite improvements (less than significant with mitigation)

Construction impacts on water resources resulting from offsite improvements would be similar to those described above for onsite impacts. The projects would be required to implement applicable water quality protection (i.e., Construction General Permit, Small MS4 Permit, WDRs for dewatering). Groundwater depletion or interference with groundwater recharge would be less than significant because the improvements would generally be linear features and would not include large areas of impervious surfaces. Per the County Drainage Manual, a hydrologic and hydraulic analysis would be submitted with designs for the offsite roadway improvements. Those improvements would incorporate storm drainage features to ensure runoff can be accommodated in the drainage system without causing or exacerbating flooding. Proper measures to maintain water quality after construction would be required (i.e., source and treatment control measures contained in the County SWMP [El Dorado County 2004b], the County Drainage Manual [El Dorado County 1995], Section E.12 of the Small MS4 permit, and the Stormwater Quality Control Ordinance No. 5022).

There are no 100-year floodplains in the offsite improvement areas and upstream dam failure and/or levee failure and ensuing inundation does not pose a risk to the offsite improvement areas, because there are no major water bodies upstream. The offsite improvement areas are not at risk

due to inundation from a tsunami or seiche due to their distance from the ocean or other water bodies, and there are no ground stability issues that would expose the offsite improvement areas to mudflow hazards.

As discussed under Impact WQ-6, Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-3a, BIO-3b, and BIO-4 would reduce construction impacts on wetlands and other waters to a less-than-significant level.

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

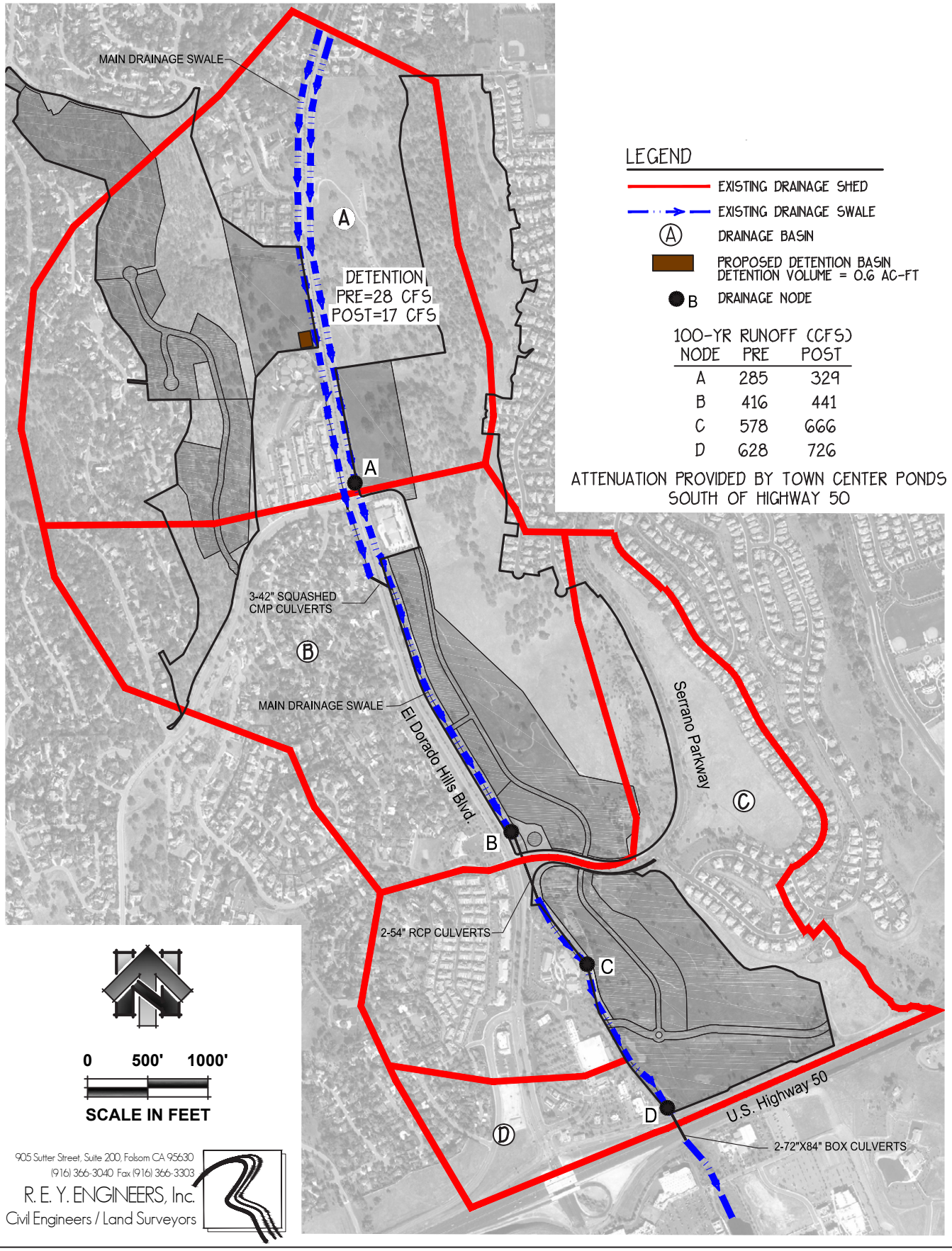

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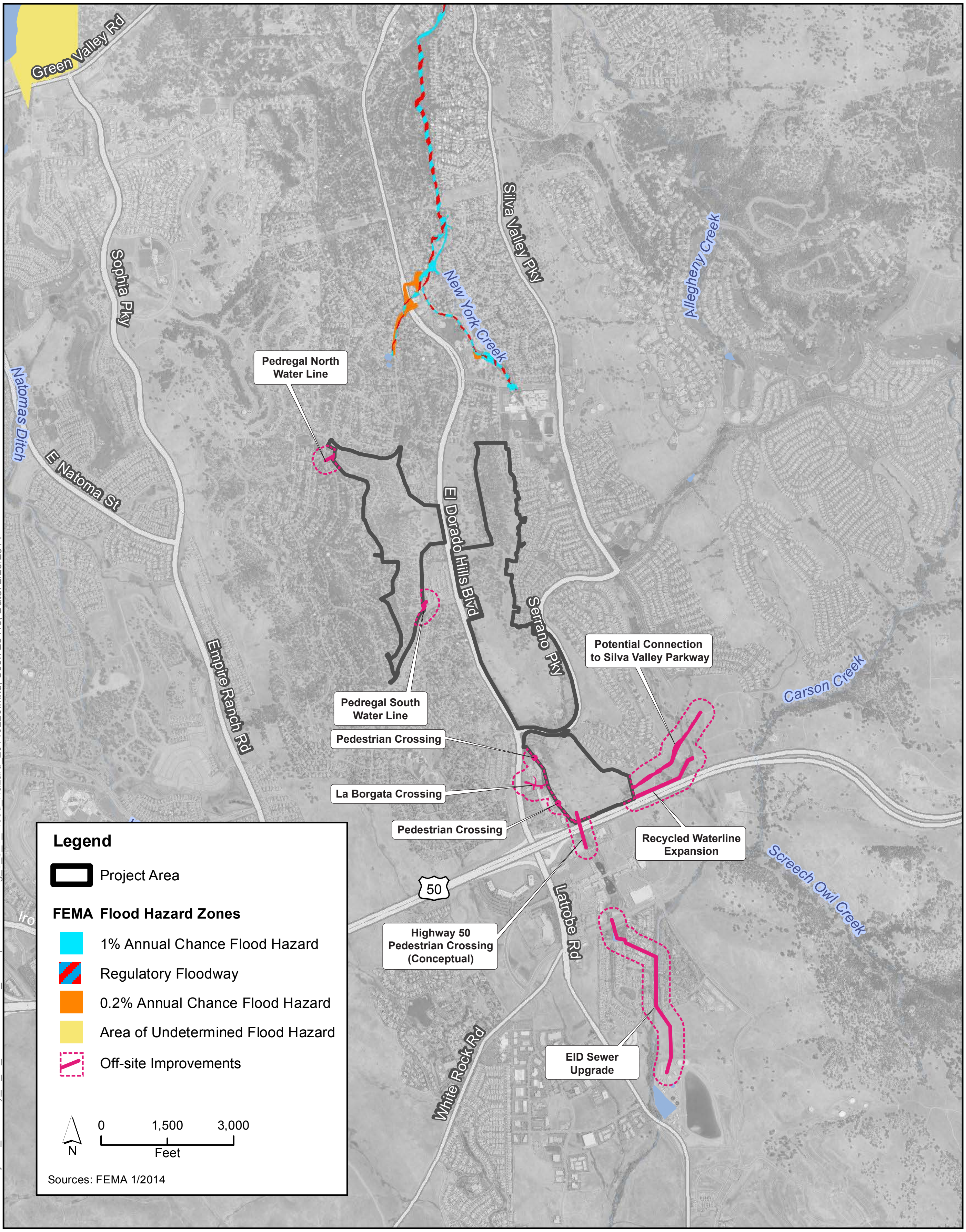
Figure 3.8-1
Central El Dorado Hills Specific Plan - Existing Drainage Features



Path: K:\Projects_1\County_of_El_Dorado\00666_12\mapdoc\CEDH\Fig_3_8_1_Flood_Hazard_20140226.mxd; User: 25110; Date: 2/26/2014

Figure 3.8-2
FEMA Flood Hazard Zones
in the Vicinity of Central El Dorado Hills

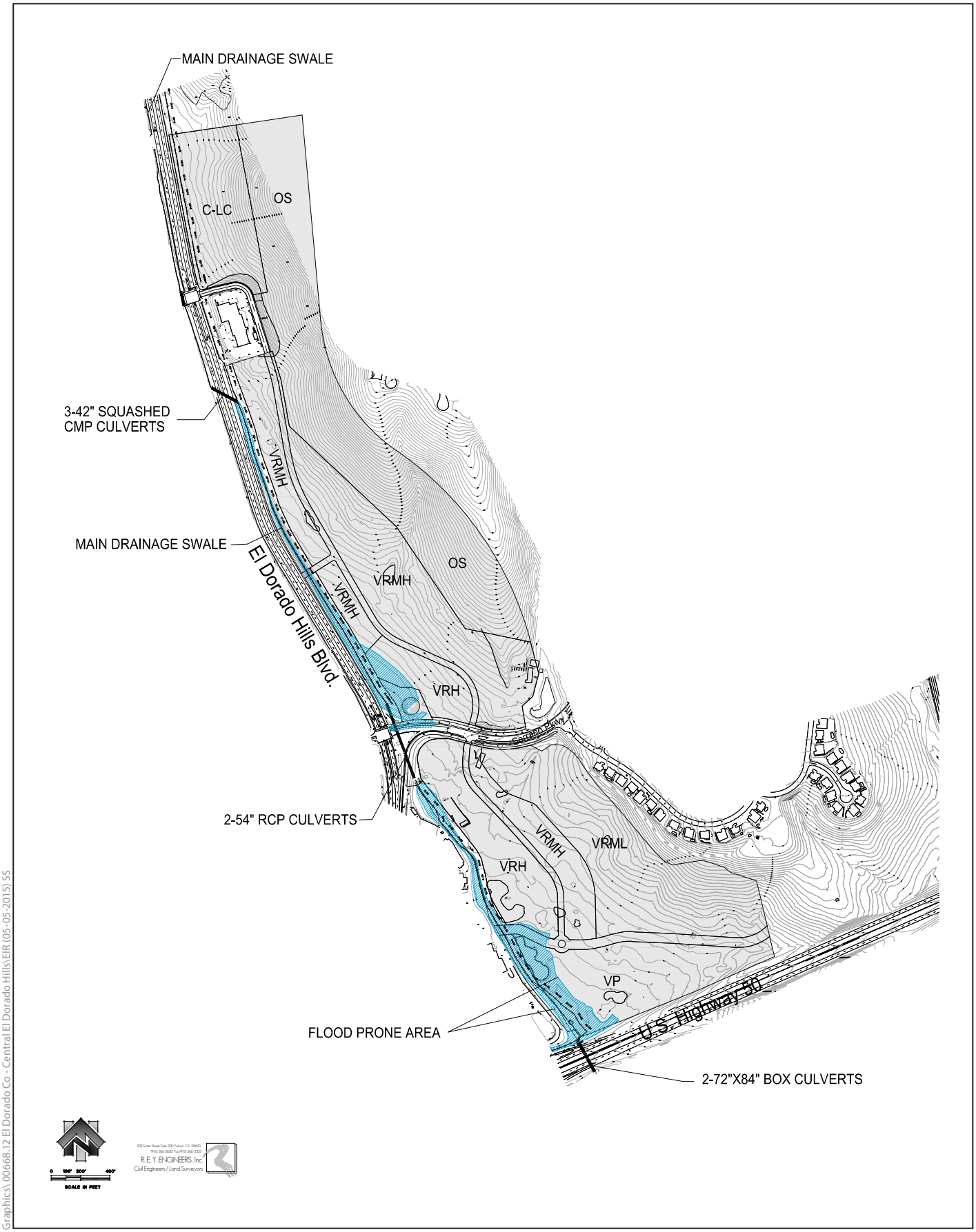


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Figure 3.8-3
Central El Dorado Hills Specific Plan - Flood-prone Area

3.9 Land Use Planning and Agricultural Resources

This section describes the regulatory and environmental setting, as well as identified impacts and mitigation measures, for land use planning and agricultural resources.

The information presented here and the analysis of impacts is based on research and analysis performed by ICF International and the following.

- *El Dorado County General Plan* (El Dorado County 2004a).
- *El Dorado County General Plan Final EIR* (El Dorado County 2004b).
- *El Dorado Hills Specific Plan* (El Dorado County Community Development Department 1988).
- *Draft Central El Dorado Hills Specific Plan* (Serrano Associates, LLC 2015).

3.9.1 Existing Conditions

Regulatory Setting

State

California Planning Law – General Plans

State law requires El Dorado County (County) (as well as all other cities and counties in the state) to "adopt a comprehensive, long-term general plan for the physical development of the county" (Government Code Section 65300). The general plan is considered to be the County's "constitution," containing development and conservation policies that will guide its long-term development. State law mandates that the general plan address land use, housing, circulation, open space, conservation, noise, and public safety, as well as any other issues that may be of interest to the county. The land use element of the general plan identifies the allowable types, density, and intensity of land uses through its list of residential, commercial, agricultural, industrial, and other land use designations. The land use diagram (map) identifies the locations of these existing and future land uses, as well as the communities within which they will be located.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) is a non-regulatory program of the California Department of Conservation that inventories the state's important farmlands and tracks the conversion of farmland to other land uses. The FMMP publishes reports of mapped farmland and conversions every 2 years. The FMMP categorizes farmland on the basis of its soil quality, the availability of irrigation water, current use, and slope, among other criteria. The categories of farmland identified in the FMMP are listed below. The FMMP considers all of these categories, except Grazing Land, to be Important Farmland.

- Prime Farmland. Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- Unique Farmland. Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

The FMMP also identifies nonagricultural lands.

- Urban and Built-Up Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
- Other Land. Land not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

FMMP data is helpful in analyzing whether agricultural conversion is occurring within the county, and at what rate.

California Land Conservation Act of 1965 (Williamson Act) and Farmland Security Zone Act

The California Land Conservation Act of 1965 (Government Code Section 51200, et seq.), also known as the Williamson Act, protects farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. Under the Williamson Act, landowners contract with the county (or city) in which their property is located, promising to maintain the land in agriculture or a compatible use for a minimum period of 10 years. In return, the property tax on the land is based on its productive value rather than its assessed value.

According to the El Dorado County Assessor's records, no portions of the project site are covered by Williamson Act contracts (El Dorado County 2015).

In El Dorado County, forest and timberland are important resources, and several state programs that support these resources are relevant to the county. However, no timber or forest lands occur on the project site, so these programs are not relevant and are not discussed here.

Local

El Dorado County 2004 General Plan

The *El Dorado County General Plan* (County General Plan) and Zoning Ordinance regulate land uses in the unincorporated areas of the county.

Land use within lands under County jurisdiction is subject to regulation under the County General Plan and the Zoning Ordinance. The adopted County General Plan states the following.

> It is the explicit intent of the Plan, through the appropriate application of these planning concept areas, to: (1) foster a rural quality of life; (2) sustain a quality environment; (3) develop a strong diversified, sustainable local economy; (4) plan land use patterns which will determine the level of public services appropriate to the character, economy, and environment of each region; and (5) accommodate the County's fair share of the regional growth projections while encouraging those activities that comprise the basis for the County's customs, culture, and economic stability.

Most unincorporated areas of the county fall within areas designated as Community Regions under the County General Plan, where growth will be directed and facilitated; Rural Centers, where growth and commercial activities under the County General Plan will be directed to serve the larger Rural Regions; and Rural Regions, where the County General Plan calls for resource-based activities to be located, and which, under the County General Plan, are to be enhanced while accommodating reasonable growth. The project site lies within the established Community Region of El Dorado Hills.

General Plan policies that are relevant to the proposed project are listed in Appendix B. The importance of agriculture and forestry to the county is reflected in the County General Plan's Agriculture and Forestry Element. Through this element, the County has adopted extensive policies relating to the conservation, management, and utilization of the county's agricultural and forest lands "as fundamental components of the County's rural character and way of life."

No commercial agriculture, timberland, or forest land occurs on the project site or in the vicinity, and no lands within the project site are designated or zoned for agriculture, timberland, or forest land.

El Dorado County Community and Specific Plans

The project site lies within the established Community Region of El Dorado Hills and, as described in more detail in Chapter 2, *Project Description*, the land within the El Dorado Hills community is governed by different specific plans such as the Promontory Specific Plan, the Valley View Specific Plan, and the El Dorado Hills Specific Plan (EDHSP) (El Dorado County Community Development Department 1988).

The proposed project includes two planning areas, as shown in Figure 2-2. The Serrano Westside planning area is east of the El Dorado Hills Boulevard and Serrano Parkway intersection. The Pedregal planning area is west of El Dorado Hills Boulevard between Wilson Way and Olson Lane, adjacent to the Ridgeview subdivision. The proposed project also includes Serrano Village D-1, Lots C and D, which have been incorporated into the Serrano Westside planning area as open space uses.

The specific project proposals regarding changes to the existing EDHSP and adopted land use designations are described in detail in Chapter 2, *Project Description*.

El Dorado County Zoning Ordinance

While the County General Plan establishes policies to guide the County's land use decision making, the Zoning Ordinance (County Code of Ordinances, Title 130) consists of enforceable regulations on the use of county land. The unincorporated area is broken into various residential, commercial, industrial, agricultural, and other "zones," with the standards and regulations applicable to each particular type of zone described in the Zoning Ordinance. Zoning maps illustrate how the zoning districts are distributed throughout the county.

Senate Bill 375 and the Sustainable Communities Strategy

In 2008, California passed the Sustainable Communities and Climate Protection Act, Senate Bill (SB) 375. SB 375 requires each region of the state with a metropolitan planning organization (MPO) to develop a Sustainable Communities Strategy (SCS) as part of the Metropolitan Transportation Plan (MTP) as part of its regional transportation plan which identifies policies and strategies to reduce per capita greenhouse gas (GHG) emissions from passenger vehicles and light trucks. The SCS is intended to encourage an integrated approach to land use and transportation planning that not only reduces vehicle travel, but accommodates an adequate supply of housing, reduces impacts on sensitive habitat and farmland, increases resource use efficiency, and promotes a thriving regional economy.

The SCS is similar to the Sacramento Area Council of Government's (SACOG's) already adopted Blueprint, which implements smart growth principles, mixed-use development, and more transit choices as an alternative to low-density development. The adopted MTP/SCS is identified by SACOG as "the Sacramento region's first MTP/SCS adopted under Senate Bill 375 (SB 375) and the second plan to link a regional growth pattern and smart land use principles to the transportation system."

The MTP/SCS contains the following key features, as described in the document (Sacramento Area Council of Governments 2012).

- An absolute reduction in the amount of heavy congestion typical residents will experience in their daily lives.
- Significant increases in the productivity of the transit system, with more riders and a higher percentage of total costs coming from user fares.
- Greater levels of investment in a truly multi-modal transportation system, including complete streets, bicycle, and pedestrian facilities.
- Better integration of future land use patterns, transportation investments, and air quality impacts, including higher levels of development near current and future transit corridors and CEQA incentives for residential and residential mixed-use projects that produce transportation and air quality benefits.
- The first phase of implementing the findings from the ongoing Rural-Urban Connections Strategy.
- Providing the foundation for the next Regional Housing Needs Plan.
- Reductions in per capita passenger vehicle GHG emissions that exceed the minimum targets established for the SACOG region by the ARB.

Pursuant to SB 375, streamlined CEQA review and analysis is available to residential or mixed-use residential projects that are consistent with an adopted SCS. SB 375 requires consistency with the SCS to be determined by the CEQA lead agency. SB 375 provides several CEQA reform provisions including streamlined review and analysis of residential or mixed-use projects consistent with the SCS. In addition, an EIR prepared for this type of project is not required to reference, describe, or discuss any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network (Public Resources Code [PRC] Section 21159.28 [a]; Gov. Code, Section 65080[b][2][I]).

California Land Conservation Act of 1965 (Williamson Act)

Although the state Department of Conservation coordinates and monitors implementation of the Williamson Act, the County establishes the criteria for participation and administers the program. Subdivision of land under Williamson Act contract is limited by the state and the County, and the Zoning Ordinance requires adjacent lands to incorporate a 200-foot setback to prevent encroachment of incompatible adjacent uses.

According to the County Assessor's records, no portions of the project site are covered by Williamson Act contracts (El Dorado County 2015).

Existing General Plan Land Use Designations and Zoning

Table 3.9-1 presents existing land use designations and zoning for the project site.

Table 3.9-1. Existing Land Use Designations and Zoning

Assessor's Parcel No.	Area (acres)	Land Use	Zoning
Serrano Westside Planning Area			
121-160-05	98	OS & C	RF
121-040-20	64	AP	R1-PD
121-040-29	15	AP	R1-PD
121-040-31	57	AP	OS
121-040-24 (portion)	5	AP	OS
Subtotal	239		
Pedregal Planning Area			
120-050-01	75	HDR	R1
120-050-05	27	HDR & MFR	R1 & R2-DC
Subtotal	102		
Total	341		

General Plan Land Use

OS	=	Open Space.
C	=	Commercial.
AP	=	Adopted Plan.
HDR	=	High-Density Residential.
MFR	=	Multifamily Residential.

Zoning

RF	=	Recreational Facilities.
R1-PD	=	Single-Family Residential-Planned Development.
OS	=	Open Space.
R1	=	Single-Family Residential.
R2-DC	=	Limited Multifamily Residential-Design Control.

Serrano Westside Planning Area

The Serrano Westside planning area is approximately 239 acres. The land use designations, as identified in the County General Plan (2004a), are Open Space (OS), Commercial (C), and Adopted Plan (AP) associated with the EDHSP. The OS land use designation can be used to designate public lands under governmental title (County, State Parks, etc.), where no development other than that specifically needed for government-related open spaces is desired. It may also be used on private lands to maintain natural features within clustered development where a general plan amendment is processed. The C land use designation provides a full range of commercial retail, office, and service uses to the residents, businesses, and visitors of El Dorado County. Mixed-use development of commercial lands within Community Regions and Rural Centers, which each combine commercial and residential uses, can be permitted. The AP land use designation recognizes areas for which specific land use plans have been prepared and adopted (e.g., EDHSP). These plans are accepted and incorporated by this reference, and the respective land use map associated with each such plan is adopted by the County as the general plan map for the area. Much of the existing zoning of the Serrano Westside planning area is Recreational Facilities (RF), Single-Family Residential-Planned Development (R1-PD), and OS. The proposed plan allows for 763 dwelling units, 15 acres of Village Park, 11 acres of recreational or civic use, and 130 acres of natural open space (including a 1.2-acre neighborhood park [see Chapter 2, Table 2-2]).

Village D-1, Lots C and D

Lot C is approximately 64 acres and Lot D is approximately 15 acres. Currently, the zoning of Lots C and D is R1-PD, with the exception of approximately 5.7 acres of Lots C and D, which are zoned OS and are within the EDHSP.

Pedregal Planning Area

The Pedregal planning area is approximately 102 acres. The land use designations, as identified by the County General Plan (2004a), are High-Density Residential (HDR) and Multifamily Residential (MFR). The HDR land use designation identifies those areas suitable for intensive single-family residential development at densities from one to five dwelling units per acre (du/ac). Allowable residential structure types include single-family attached. The MFR land use designation identifies those areas suitable for high-density, multifamily structures such as apartments or condominiums, single-family attached dwelling units, and multiplexes. Mobile home parks, as well as existing and proposed manufactured home parks, are also permitted. The existing zoning of this area is Single-Family Residential (R1) and Limited Multifamily Residential (R2-DC). The proposed land use plan allows for 237 dwelling units and 39 acres of natural open space.

Environmental Setting

Project Site

The lands in the project site are all vacant or undeveloped lands. Existing land uses in the Serrano Westside planning area include the former El Dorado Hills Executive Golf Course, now maintained vacant land, and undeveloped oak savannah and annual grasslands currently designated for residential and open space. The majority of the former golf course is not actively mowed or irrigated; however, small portions around the driving range and 18th green are currently mowed and irrigated. Lots C and D of Village D-1 are comprised of undeveloped vacant land (but entitled for

development) with a diverse mix of native (e.g., oak trees) and nonnative vegetation (e.g., grasses). The Pedregal planning area consists of undeveloped oak savannah lands.

As shown on Figure 3.9-1, no Important Farmland exists on the project site. A small portion of the site is designated by the FMMP as Grazing Land but is not used for agriculture. All other lands are designated as Urban or Other Lands. Table 3.9-2 presents the FMMP designations for the project site and project vicinity.

Table 3.9-2. Farmland Mapping and Monitoring Program (FMMP) Designations

FMMP Farmland Type	Acres
Urban and Built-Up Land	132
Grazing Land	73
Other Land	136
Total	341

Project Vicinity

The lands that make up the project site are largely surrounded by existing urban development and are a mix of undeveloped lands approved for residential development and open space and park lands. The Serrano Westside planning area lies 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 is the 45-acre Bowmen's Archery Range, a public park, and two schools (Oak Ridge High School and Silva Valley Elementary School). The Serrano Westside planning area is immediately north of U.S. Highway 50 (US 50) and less than 2 miles south of Folsom Lake.

The Pedregal planning area is immediately adjacent to low-density residential uses (the existing Ridgeview neighborhood) to the west and three existing multifamily projects (the Copper Hill Apartments, Sterling Ranch Apartments, and El Dorado Village Apartments) along El Dorado Hills Boulevard to the east (Figure 2-3). Pedregal is less than 1 mile north of US 50 and less than 2 miles south of Folsom Lake.

3.9.2 Environmental Impacts

This section examines the proposed project, describes the methods used to determine its impacts on land use planning and agriculture, lists the criteria used to conclude whether an impact would be significant and, if applicable, includes specific mitigation measures to reduce those impacts.

Methods of Analysis

Land use analysis was based on research by ICF International, including review of relevant planning documents and available information regarding existing and planned land uses on the project site and in the vicinity. Information on agricultural and timber resources was obtained from the FMMP and from review of County General Plan and zoning designations, as well as a project site visit and review of the project vicinity using aerial photographs.

According to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. A policy inconsistency is considered to be a significant adverse environmental impact when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse physical impact. Any such associated physical impacts are discussed in this Draft EIR under specific topical sections such as noise, air quality, and transportation and circulation, as appropriate.

Thresholds of Significance

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.

- Physically divide an established community.
- 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.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- 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.
- Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.
- 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]).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- 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.

Impacts and Mitigation Measures

Impact LU-1: Physically divide an established community (less than significant)

No existing development occurs on the project site. Adjoining land uses consist of urban residential, retail, and commercial uses. The proposed project would rearrange the types of planned land uses on the project site, consolidating open space uses into a larger area near the existing Archery Range and consolidating urban uses adjacent to the existing urban uses and El Dorado Hills Boulevard. Connectivity between existing, adjacent urban uses would be enhanced by the proposed pedestrian crossings from the Serrano Westside planning area to the existing Raley's and La Borgata shopping and commercial complex and by the proposed trail system and bicycle lane improvements. The potential Silva Valley Parkway extension, if developed, would provide additional access to the Serrano development (see Impact TRA-7 in Section 3.14, *Traffic and Circulation*). The alignment would be through undeveloped land and would not divide any land uses at that location. The impact would be less than significant. No mitigation is required.

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)

CEQA Guidelines Section 15126 requires an EIR to identify any inconsistency between the proposed project and applicable general plans, specific plans, and regional plans. The following identifies the plans that are relevant to the proposed project and presents consistency considerations.

El Dorado County General Plan

As discussed in Sections 2.1.2 and 2.3.1 of this Draft EIR, the proposed project includes amendments to the County General Plan land use designations and zoning amendments, because proposed land uses are not consistent with the specific adopted land use designations for the project site. Overall, the concentrations of development within the El Dorado Hills Community Region are consistent with the County General Plan goals of focusing development within Community Regions, and the proposed project generally conforms to the vision of the General Plan. Policies of the County General Plan relevant to the project are presented in Appendix B.

Determination of consistency of the project with the County General Plan as a whole would be made by the County during the approval process. It should be noted that 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.

This Draft EIR evaluates the environmental effects of the proposed project in light of policies that pertain to environmental impacts. Appendix B provides a policy-by-policy analysis. In addition, the technical sections of this Draft EIR identify specific policies that guide the determination of environmental impact significance (e.g., noise levels and traffic). Generally, the proposed project is consistent with these policies, as indicated in Appendix B. However, as discussed in Section 3.10, *Noise* (Impacts NOI-1a and NOI-4), construction of the proposed project could result in noise levels that may not be fully mitigable to standards established in General Plan Table 6-3 ("Maximum Allowable Noise Exposure for Construction Noise in Community Regions and Adopted Plan Areas"). These impacts are fully analyzed in Impacts NOI-1a and NOI-4 in Section 3.10, *Noise*, and mitigation measures have been identified to reduce impacts to the extent feasible. Therefore, while the proposed project would conflict with this one policy, it would be generally consistent with the goals and policies of the General Plan, and this impact would be less than significant.

El Dorado Hills Specific Plan

The proposed project includes amendments to the EDHSP that would change the designation of lands now designated for open space in the EDHSP to urban development (approximately 6 acres) and change the designation of undeveloped lands now designated for development in the EDHSP to open space (approximately 50 acres). The stated purpose of the open space designation in the EDHSP was to preserve areas of visual or environmental significance in natural open space. The overall amount of land preserved in open space would not be reduced as a result of the proposed project. Further, Central El Dorado Hills Specific Plan (CEDHSP) Policy 5.31 requires the applicant to prepare an Open Space Management Plan (OSMP), which must be reviewed and approved by the

County prior to the approval of the first small lot tentative map. Open space would also be protected through CEDHSP Policies 5.26 through 5.30.

To the extent that conversion of these open space areas to urban uses could result in significant impacts on biological resources, these impacts are addressed in Section 3.3, *Biological Resources*. Implementation of mitigation measures identified in that section would ensure that impacts on biological resources at these locations would be reduced to a less-than-significant level.

Metropolitan Transportation Plan/Sustainable Communities Strategy

The proposed project is consistent with the MTP/SCS. The determination of consistency is appended to this document (Appendix H). The consistency determination found that the proposed project meets the definition of a Residential or Mixed-Use Residential Project pursuant to PRC Section 21159.28(d). It is also consistent with the General Land Use Designation, Density and Intensity in MTP/SCS. Therefore, there is no impact.

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (no impact)

No habitat conservation plan or natural community conservation plan covers the project site. There would be no impact. No mitigation is required.

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)

No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance occurs on the project site. There would be no impact. No mitigation is required.

Impact LU-5: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract (no impact)

No agricultural zoning exists on the project site, and none of the site is covered by a Williamson Act contract. There would be no impact. No mitigation is required.

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)

No forest land or timberland exists on the project site. There would be no impact. No mitigation is required.

Impact LU-7: Result in the loss of forest land or conversion of forest land to non-forest use (no impact)

No forest land exists on the project site or vicinity. There would be no impact. No mitigation is required.

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)

No farmland or forest land exists on the project site or vicinity. There would be no impact. No mitigation is required.

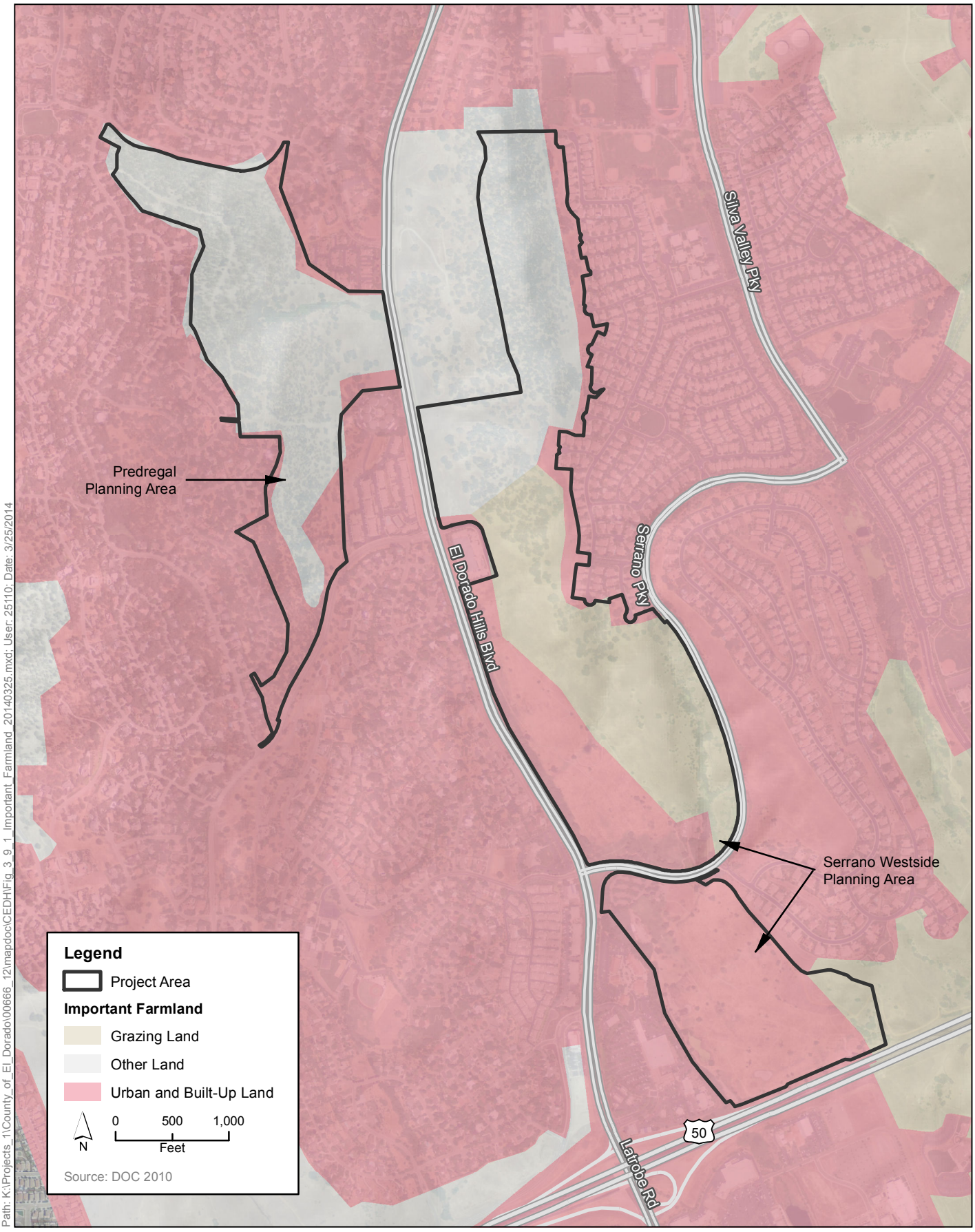

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Figure 3.9-1
Important Farmland

3.10 Noise and Vibration

This section describes the regulatory and environmental setting for noise in El Dorado County as it pertains to the project. It also describes the noise impacts that would result from implementation of the project and provides mitigation for significant impacts.

3.10.1 Noise Terminology

Noise

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called *A-weighting*, written as *dBA* and referred to as *A-weighted decibels*. Table 3.10-1 defines sound measurements and other terminology used in this chapter, and Table 3.10-2 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level, if sound levels increase or decrease, respectively.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such. These measurements are defined in Table 3.10-1.

For a point source such as a stationary compressor or construction equipment, sound attenuates (lessens in intensity) based on geometry at a rate of 6 dB per doubling of distance. For a line source, such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (California Department of Transportation 2013). Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as

pavement. The increased attenuation is typically in the range of 1–2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Table 3.10-1. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dBC)	The sound pressure level in decibels as measured using the C-weighting filter network. The C-weighting is very close to an unweighted or *flat* response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A- and C-weighted level gives an indication of low frequency content.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded *xx* % of a specific time period. L_{10} is the sound level exceeded 10% of the time. L_{90} is the sound level exceeded 90% of the time. L_{90} is often considered to be representative of the background noise level in a given area.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Table 3.10-2. Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock band
Jet flyover at 1,000 feet		
	—100—	
Gas lawnmower at 3 feet		
	—90—	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	—80—	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	—70—	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	—60—	
		Large business office
Quiet urban daytime	—50—	Dishwasher in next room
Quiet urban nighttime	—40—	Theater, large conference room (background)
Quiet suburban nighttime		
	—30—	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	—20—	
		Broadcast/recording studio
	—10—	
	—0—	

Source: California Department of Transportation 2013.
dBA = A-weighted decibel.

Blast Noise and Vibration

Blasting may be required as part of the proposed project. The two primary environmental effects of blasting are groundborne vibration and airblast. The following subsections discuss each of these effects and the standards commonly used to assess the impacts of blasting.

Ground Vibration

Blasting and operation of heavy construction equipment, particularly pile driving equipment and other impact devices (e.g., pavement breakers), create seismic waves that radiate along the surface of and downward into the ground. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Variations in geology and distance result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes decrease with increasing distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they cause rock and soil particles to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (PPV).

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil or rock conditions through which the vibration is traveling. The following equation is used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2006). PPV_{ref} is the reference PPV at 25 feet from Table 3.10-3.

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Table 3.10-3 summarizes typical vibration levels generated by construction equipment at the reference distance of 25 feet and other distances as determined using the attenuation equation above.

Table 3.10-3. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Pile driver (sonic/vibratory)	0.734	0.2595	0.1413	0.0918	0.0396
Hoe ram[a] or large bulldozer	0.089	0.0315	0.0171	0.0111	0.0048
Loaded trucks	0.076	0.0269	0.0146	0.0095	0.0041
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0019
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0002

Source: Federal Transit Administration 2006.
PPV = peak particle velocity.
[a] Representative of rock ripper.

Tables 3.10-4 and 3.10-5 summarize guidelines developed by the California Department of Transportation (Caltrans) for damage and annoyance potential from transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include: impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (California Department of Transportation 2004).

Table 3.10-4. Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2004.

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity.

Table 3.10-5. Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2004.

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity.

Airblast

Energy released in an explosion creates an air overpressure (commonly called an *airblast*) in the form of a propagating wave. If the receiver is close enough to the blast, the overpressure can be felt as a pressure front as the airblast passes. The accompanying booming sound lasts for a few seconds. The explosive charges used in mining and mass grading are typically contained in the ground, resulting in an airblast with frequency content below about 250 cycles per second (or 250 Hz).

Because an airblast lasts for only a few seconds, use of L_{eq} (a measure of sound level averaged over a specified period of time) to describe blast noise is inappropriate. Airblast is properly measured and described as a linear peak air overpressure (i.e., an increase above atmospheric pressure) in pounds per square inch (psi). Modern blast monitoring equipment is also capable of measuring peak overpressure data in terms of unweighted dB. Decibels, as used to describe airblast, should not be confused with or compared to dBA, which are commonly used to describe relatively steady-state noise levels. An airblast with a peak overpressure of 130 dB can be described as being mildly

unpleasant, whereas exposure to jet aircraft noise at a level of 130 dBA would be painful and deafening.

Human Response to Ground Vibration and Airblast

Human response to blast vibration and airblast is difficult to quantify. Vibration and airblast can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does blast frequency. Blast events are relatively short, typically several seconds for sequentially delayed blasts. Generally, as blast duration and vibration frequency increase, the potential for adverse human response increases. Studies have shown that a few blasts of longer duration will produce a less adverse human response than short blasts that occur more often.

Table 3.10-6 summarizes the average human response to vibration and airblast that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, the sound level required for the responses indicated are increased considerably.

Table 3.10-6. Human Response to Airblast and Ground Vibration from Blasting

Response	Ground Vibration Range ppv (inches per second)	Airblast Range (dB)
Barely to distinctly perceptible	0.02–0.10	50–70
Distinctly perceptible to strongly perceptible	0.10–0.50	70–90
Strongly perceptible to mildly unpleasant	0.50–1.00	90–120
Mildly unpleasant to distinctly unpleasant	1.00–2.00	120–140
Distinctly unpleasant to intolerable	2.00–10.00	140–170

Source: California Department of Transportation 2013.
dB = decibel.

Ground Vibration and Airblast Criteria

USBM Report of Investigations 8507 (U.S. Bureau of Mines 1980b) contains blasting-level criteria that can be appropriately applied to keep ground vibration well below levels that might cause damage to neighboring structures. At low-vibration frequencies, velocities of ground vibration are restricted to .05 inches per second. As vibration frequency increases, higher velocities are allowed up to a maximum of 2.00 inches per second.

Conventional noise criteria (for steady-state noise sources) and limits established for repetitive impulsive noise (such as for gun-firing ranges) do not apply to air overpressures from blasting. U.S. Bureau of Mines (USBM) *Report of Investigations 8485* (U.S. Bureau of Mines 1980a) and the regulations issued more recently by the U.S. Office of Surface Mining and Reclamation Enforcement specify a maximum safe overpressure of 0.013 psi (133 dB) for impulsive airblast when recording is accomplished with equipment having a frequency range of response of at least 2–200 Hz.

3.10.2 Existing Conditions

Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Generally, the federal government sets noise standards for transportation-related noise sources closely linked to interstate commerce. These sources include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to the project. The state government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify general principles intended to guide and influence development plans. State and local noise policies and regulations applicable to the project are described below.

State

California Code

Part 2, Title 24 of the California Code of Regulations, "California Noise Insulation Standards," establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under this regulation, interior noise levels attributable to exterior noise sources cannot exceed 45 L_{dn} in any habitable room.

Local

El Dorado County General Plan

Policies and standards for noise exposures at noise sensitive land uses during construction are outlined in the 2004 *El Dorado County General Plan* (County General Plan) Public Health, Safety, and Noise Element (amended in December 2014). The policies relevant to this project are listed below. The full text of these 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 6.5, *Acceptable Noise Levels*, includes Objective 6.5.1, *Protection of Noise Sensitive Development*, and implementing policies 6.5.1.1, and 6.5.1.2, which address standards for environmental review, 6.5.1.3, 6.5.1.5, 6.5.1.6, 6.5.1.8 which address siting, site planning and project design, 6.5.1.7, 6.5.1.9, 6.5.1.10, 6.5.1.12, and 6.5.1.13, which address impacts and mitigation, and 6.5.1.11, which addresses construction noise.

The construction noise standards outlined in the County General Plan Table 6-3 are summarized in Table 3.10-7 below.

Table 3.10-7. Maximum Allowable Noise Exposure for Construction Noise in Community Regions and Adopted Plan Areas

		Noise Level (dB)	
Land Use Designation	Time Period	L_{eq}	L_{max}
All Residential (MFR, HDR, MDR)	7 a.m.–7 p.m.	55	75
	7 p.m.–10 p.m.	50	65
	10 p.m.–7 a.m.	45	60
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 a.m.–7 p.m.	70	90
	7 p.m.–7 a.m.	65	75
Industrial (I)	Any Time	80	90

Source: El Dorado County 2014, Table 6-3.

MFR = multifamily residential.
HDR = high-density residential.
MDR = medium-density residential.
C = commercial.
TR = tourist recreational.
PF = public facilities.
I = industrial.
dB = decibel.
L_{eq} = equivalent sound level.
L_{max} = maximum sound level.

Operational noise standards that would be applicable to the project are outlined in County General Plan Tables 6-1 and 6-2 for transportation and non-transportation noise sources, respectively. These tables are presented in this document as Tables 3.10-8 and 3.10-9.

Table 3.10-8. Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[a] L_{dn}/CNEL, dB	Interior Spaces L_{dn}/CNEL, dB	Interior Spaces L_{eq}, dB[b]
Residential	60[c]	45	–
Transient lodging	60[c]	45	–
Hospitals, nursing homes	60[c]	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls, schools	60[c]	–	40
Office buildings	–	–	45
Libraries, museums	–	–	45
Playgrounds, neighborhood parks	70	–	–

Source: El Dorado County 2014, Table 6-1.

dB = decibel.
CNEL = community noise equivalent level.
L_{dn} = day-night level.
L_{eq} = equivalent sound level.

[a] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L_{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

[b] As determined for a typical worst-case hour during periods of use.

[c] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Table 3.10-9. Maximum Allowable Noise Exposure for Non-Transportation Noise Sources

	Daytime 7 a.m.–7 p.m.		Evening 7 p.m.–10 p.m.		Night 10 p.m.–7 a.m.	
Land Use	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Source: El Dorado County 2014, Table 6-2.

Notes: Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all affected property owners and approved by the County.

For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land use, etc.

dB = decibel.
L_{eq} = equivalent sound level.

El Dorado County Ordinance Code

Chapter 9.16, Noise, of the El Dorado County Ordinance Code, defines and prohibits "loud and raucous noise." Pursuant to the code, the production of loud and raucous noise that unreasonably interferes with the peace and quiet of private property is prohibited.

Environmental Setting

This section describes existing land uses and the existing noise conditions in the project vicinity.

Surrounding Land Uses

Locations where people reside or where the presence of noise could adversely affect the use of the land are generally considered sensitive land uses. Typical sensitive receptors include residents, school children, hospital patients, and the elderly.

While the project area itself consists of undeveloped land and a golf course that is no longer in operation (the former El Dorado Hills Executive Golf Course), it is surrounded by sensitive land uses that are primarily residential. The majority of the residential land uses surrounding the project area are single-family residences. In addition, the Copper Hill Apartments and Sterling Ranch Apartment Homes are adjacent to the western portion of the project area, along El Dorado Hills Boulevard. The project area also contains the following sensitive land uses.

- Educational and child care land uses, including William Brooks Elementary School, Oak Meadow Elementary School, Silva Valley Elementary School, Oak Ridge High School, Rolling Hills Middle School, and El Dorado Hills Kindercare.
- Religious facilities, including Lake Hills Covenant Church, Cornerstone Christian Church, St Stephan's Lutheran Church, and Capital Korean Presbyterian.
- Parks and outdoor space, including Peter Bertelsen Memorial Park, Allan Lindsey Park, Village Green Park, Ridgeview Park, Kalithea Park, and Parkview Heights Park.

Other land uses types in the project vicinity include commercial land uses, including the El Dorado Hills Village Center Shopping Center, Raley's Supermarket, Nugget Supermarket, and a Mercedes car dealership.

Existing Noise Environment

Short-Term Noise Monitoring

In order to characterize the existing noise environment in the project study area, short-term measurements of 15 minutes in duration were conducted in the vicinity of the project area. ICF International selected the noise monitoring sites to document existing ambient noise levels at representative locations in the project area where new noise-sensitive land uses would be located.

Short-term monitoring was conducted on Thursday January 9, 2014, and Friday, February 21, 2014 using a Larson-Davis Model 812 Precision Type 1 sound level meter (serial number 0239). The meter was positioned on a tripod at a microphone height of 1.5 meters (5 feet) above the ground. Sound levels and audible noise sources were recorded on field data sheets at each position. The short-term measurement positions are the positions indicated as ST-1 through ST-7 in Figure 3.10-1.

Measurements were conducted at seven locations throughout the project area on 2 days: January 9, 2014, and February 21, 2014. Local traffic noise was the dominant noise source observed during the measurement periods. Measured L_{eq} noise levels for the measurement periods at each site ranged from 38.5–69.9 dBA. Temperature, wind speed, and humidity were recorded manually during the short-term monitoring session using a Kestrel 3000 portable weather station. On January 9, skies were overcast in the morning during measurements at sites ST-2 and ST-4 and clear in the afternoon during measurements at sites ST-1, ST-3, ST-6, and ST-7. Temperatures were in the range of 55–61° F, with relative humidity in the range of 61–75%. Relative humidity values were at the higher end of the range in the mornings and the lower end of the range in the afternoons. On February 21, the sky was clear during the measurement at ST-5. The temperature was around 70° F, with relative humidity around 43%. Wind speeds were less than 2 miles per hour on both measurement days. Table 3.10-10 summarizes the short-term sound level measurements.

Table 3.10-10. Summary of Short-Term Sound Level Measurements, January 9, 2014, and February 21, 2014

Receivers	Location	Time	Duration (minutes)	Measured Sound Level dBA L_{eq}
ST-1	Gillette Drive, 400 feet south from Olson Lane	13:07	15	45.3
ST-2	Reddick Way, end of cul-de-sac	16:28	15	40.9
ST-3	El Dorado Hills Blvd, between Olson Lane and Wilson Blvd	11:58	15	69.9
ST-4	Wilson Blvd, 700 feet west of Muir Woods Court	15:44	15	62.6
ST-5	Van Cortland Court, end of cul-de-sac	10:20	15	38.5
ST-6	Parking lot, 300 feet south of Serrano Pkwy, 350 east of El Dorado Hills Blvd	09:44	15	54.2
ST-7	Playground, 350 feet south of Mertola Drive	14:58	15	51.3

Note: All measurements were taken on 1/09/14 except ST-5, which was taken on 2/21/14. Measurements were conducted by ICF International staff. See Figure 3.10-1 for measurement locations.

dBA = A-weighted decibel.
L_{eq} = equivalent sound level.

Traffic Noise Modeling

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). Based on 24-hour traffic patterns on both surface roads and U.S. Highway 50 (US 50), it was determined that L_{dn} values from traffic are within 1 dB of peak hour L_{eq} values. Accordingly, reported L_{dn} values are based directly on the calculated peak hour L_{eq} values. Table 3.10-11 presents L_{dn} values at 50 feet from the roadway center, along with the distances to the 60 L_{dn} contour line for all roadway segments in the project area. The contour line was calculated based on an attenuation rate of 4.5 dBA per doubling of distance, which is appropriate for line source traffic and project site conditions. Table 3.10-11 also shows the 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.

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	71.3	283	1.5
	Harvard to Wilson	72.4	336	1.5
	Wilson to Serrano	72.9	361	1.5
	Serrano to US 50	72.7	349	1.5
Latrobe Road	US 50 to Town Center	74.3	448	1.5
	Town Center to White Rock Road	72.4	334	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
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	172	1.5
	Vine Street to US 50	70.5	252	1.5
Silva Valley Pkwy	Green Valley to Glenwood Way	65.9	124	1.5
	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	169	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	48	5
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	104	3
US 50	West of Latrobe/El Dorado Hills	82.3	1,523	1.5
	Between EDH and Bass Lake	81.2	1,291	1.5
	Between Bass Lake and Cambridge	80.7	1,202	1.5
	East of Cambridge	80.7	1,202	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.

Mather Field Aircraft Operations Overflight Noise

Mather Airport is located approximately 13 miles to the southwest of the project area. The project site is on the arrival flight path for the airport, which results in low-level arriving flights traversing over the project area, but the project site is not within the 60 dB CNEL contour for airport operations. Noise level data were determined as part of the Mather Airport Master Plan planning process for use in aircraft noise modeling and included eight locations in eastern Sacramento County and four locations in western El Dorado County along flight paths. There were two locations in El Dorado Hills. The closest to the project site was at Oak Ridge High School, which is located along the northeast edge of the project site. Table 3.10-12 summarizes the noise data at this location. The results of the measurements indicate that aircraft noise levels (L_{max} in Table 3.10-12) can be distinctly audible.

Table 3.10-12. Summary of Measured Aircraft and Community Noise Levels in the Project Area

Noise Source	CNEL	L_{eq}	Range of L_{max} Values
Community[a]	51	50	58–85
Aircraft	46[b]	41	59–75
Total	52	50	NA

Source: Sacramento County 2014.

CNEL = community noise equivalent level.

L_{eq} = equivalent sound level.

L_{max} = maximum sound level.

[a] The Community noise levels represent the ambient noise levels that were measured at the Oak Ridge High School site.

[b] The aircraft CNEL is a calculated value to provide a representation of airport activity for an annual-average day for use in aircraft noise models. It is not a measured value. The L_{max} values are measured noise levels.

The 2004 General Plan EIR (El Dorado County 2014) stated that new development under the County General Plan could be subject to aircraft noise and that development within El Dorado Hills is an area that is already considered to be affected by single event levels, or SELs, because of aircraft overflights associated with the operation of Mather Airport in Sacramento County. The General Plan EIR concluded this impact would be significant and unavoidable.

3.10.3 Environmental Impacts

Methods of Analysis

Short-term noise-level measurements were taken inside the project area and immediately adjacent to the project area at representative locations where new noise-sensitive land uses would be located to document existing ambient noise levels (Table 3.10-10 and Figure 3.10-1). Traffic noise in the project area vicinity was modeled using P.M. peak-hour traffic volumes from the project's transportation impact assessment (Appendix L) and the FHWA Traffic Noise Model (Federal Highway Administration 2011).

Noise levels associated with project-related construction activities were evaluated by summing the noise levels of the three loudest pieces of equipment that would operate on the project site (paving equipment, grader, and scraper). The noise level for each of the loudest equipment types was determined using standard construction equipment data from FHWA. The resulting noise levels were then compared to the significance thresholds.

Vibration from construction equipment was evaluated using methods recommended by Caltrans (California Department of Transportation 2013) and the Federal Transit Administration (Federal Transit Administration 2006) using source levels and criteria in Tables 3.10-3, 3.10-4, and 3.10-5.

Airblast and vibration generated by blasting was evaluated using methods recommended by Caltrans (California Department of Transportation 2013) and criteria specified by USBM.

Noise from stationary sources includes noise generated by residential activity and civic–limited commercial and other non-residential uses. This would be primarily limited to noise generated by heating, ventilation, and air conditioning (HVAC). Specific details on HVAC equipment to be used have not been determined. However, information on typical equipment has been used to evaluate potential impacts.

Active sports fields at the Village Park could also be a source of noise. Specific details on the type of activities and where they would be located have not been determined. Information on typical active park uses were used to assess impacts.

Aircraft overflight noise has been evaluated based on existing information in the County General Plan EIR (El Dorado County 2014) and data developed for the Mather Airport Master Plan.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 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.
- Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels.

Impacts and Mitigation Measures

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)

Construction of the project would require the equipment shown in Table 3.10-13. For each equipment type in Table 3.10-13, the corresponding acoustical usage factor (the percentage of time the equipment is typically in operation) and L_{max} value at 50 feet are also presented. Construction would occur between the hours of 7 a.m. and 7 p.m., Monday through Friday, and between 8 a.m. and 5 p.m. on weekends and federally recognized holidays.

Table 3.10-13. Typical Construction Noise Emission Levels

Equipment	Acoustical Use Factor	L_{max} at 50 Feet	L_{eq} at 50 Feet	Impact Device?
Air compressor	40%	78	74	No
Backhoe	40%	78	74	No
Concrete mixer truck	40%	79	75	No
Crane	16%	81	73	No
Dozer	40%	82	78	No
Excavator	40%	81	77	No
Generator set	50%	81	78	No
Grader[a]	40%	85	81	No
Loader	40%	79	75	No
Paver	50%	77	74	No
Paving equipment	20%	90	83	No
Plate compactor	20%	83	76	No
Pump	50%	81	78	No
Roller	20%	80	73	No
Scraper	40%	84	80	No
Tractor	40%	84	80	No
Truck	40%	75	71	No
Welder	40%	74	70	No

Source: Federal Highway Administration 2006.
L_{eq} = equivalent sound level.
L_{max} = maximum sound level.
[a] Representative of rock ripper.

As discussed in *Methods of Analysis*, a reasonable worst-case estimate of noise levels resulting from construction of the project was evaluated by summing the noise levels of the three loudest pieces of equipment that would likely operate at the same time (paving equipment, grader, and scraper) using the standard construction equipment data shown in Table 3.10-13. The combined maximum noise level (L_{max}) and combined average noise level (L_{eq}) were determined to be 92 dBA and 86 dBA at 50 feet, respectively. This represents a conservative scenario as it assumes that the three loudest equipment pieces would be operating in the same location simultaneously, which would be an unlikely event.

Table 3.10-14 shows the estimated sound levels from construction activities as a function of distance, based on calculated point-source attenuation over "soft" (i.e., acoustically absorptive) ground.

Table 3.10-14. Calculated Construction Noise Levels

Distance between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0.0	92	86
100	-6	-1.5	84	79
240	***-14***	***-3.4***	***75***	69
300	-16	-3.9	72	67
400	-18	-4.5	69	64
500	-20	-5.0	67	61
600	-22	-5.4	65	59
700	-23	-5.7	63	58
800	-24	-6.0	62	56
900	***-25***	***-6.3***	61	***55***
1,000	-26	-6.5	59	54
1,200	-28	-6.9	57	52
1,400	-29	-7.2	56	50
1,600	-30	-7.5	54	49
1,800	-31	-7.8	53	47
2,000	-32	-8.0	52	46
2,500	-34	-8.5	49	44
3,000	-36	-8.9	47	42

Note: Numbers in bold italic indicate construction noise from the project would exceed the County General Plan thresholds for equivalent sound level (L_{eq}) and maximum sound level (L_{max}) (Table 3.10-7) for daytime hours at receptors within 900 feet and 240 feet of construction.
dB = decibel.
dBA = A-weighted decibel.

Comparing the noise levels in Table 3.10-14 to the County General Plan non-transportation noise standards for residential land uses shows that construction noise would exceed the L_{eq} and L_{max} thresholds (55 dB and 75 dB, respectively) for daytime hours at existing offsite receptors within 900 feet and 240 feet of the construction equipment, respectively (shown in bold italic in Table 3.10-14). Consequently, sensitive land uses within 900 feet of the project area could be exposed to noise levels that exceed the County's standards (County General Plan Policy 6.5.1.11, Table 6-3). Such sensitive land uses include the existing residences located adjacent to the boundary of the Pedregal planning area and residences adjacent to new development areas to be located along the west and southern portions of the Serrano Westside planning area. Because the proposed project would be phased over several years, there is the potential for construction to occur next to newly occupied residences in the Central El Dorado Hills Specific Plan (CEDHSP). Construction could be as close as 50 to 100 feet to the new residences, which could experience even greater noise levels than those identified for existing offsite receptors. Thus, this impact would be significant.

Implementing noise-reducing construction practices, as specified in Mitigation Measure NOI-1a, would reduce noise levels affecting surrounding existing sensitive land uses, including residences constructed as part of the project that have the potential to be affected by subsequent construction activities, by limiting construction hours to the daytime hours to prevent the exceedance of the more stringent nighttime noise standards. In addition, locating equipment away from sensitive land uses, requiring sound control devices on equipment, utilizing noise-reducing enclosures and other practices would be expected to reduce the noise affecting sensitive land uses by 5 to 10 dB. Depending on the distance between construction and the receptor, this could reduce noise to levels below the County daytime noise standards, but may not be feasible at all locations. Given this and the fact that construction would occur over several years in close proximity to existing and new residences, the construction noise impact is considered to be significant and unavoidable.

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.

Measures that can be used to limit noise include, but are not limited to, those listed below.

- 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.
- Locating equipment as far as feasible from noise sensitive uses.
- 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.
- Not idling inactive construction equipment for prolonged periods (i.e., more than 2 minutes).
- Prohibiting gasoline or diesel engines from having unmuffled exhaust.
- Scheduling construction activities and material hauling that may affect traffic flow to off-peak hours and using routes that would affect the fewest number of people.
- Using noise-reducing enclosures around noise-generating equipment (minimum 15 dB insertion loss).
- Constructing temporary barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain, structures) to block sound transmission.

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. 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	71.8	307
	Harvard to Wilson	72.9	365
	Wilson to Serrano	74.2	443
	Serrano to US 50	73.6	404
Latrobe Road	US 50 to Town Center	74.5	465
	Town Center to White Rock Road	72.6	345
	White Rock to Golden Foothill Pkwy	71.6	296
	Golden Foothill Pkwy to Sun Ridge Meadow Road	69.2	206
	Sun Ridge Meadow Road to S. Shingle Road	64.4	98
White Rock Road	Scott Road to Four Seasons Drive	70.3	243
	Four Seasons Drive to Latrobe Road	71.1	274
	Latrobe Road to Vine Street	68.1	173
	Vine Street to US 50	70.5	252
Silva Valley Pkwy	Green Valley to Glenwood Way	65.9	124
	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	170
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	67.9	169
	Silva Valley to Villagio Drive	69.4	211
	Villagio Drive to Bass Lake Road	64.4	99
Saratoga Way	EDH to Arrowhead	59.8	49
Wilson Blvd	EDH Blvd to Ridgeview Drive	62.7	76
Olson Lane/Gillette Drive	EDH Blvd to Gillette	57.0	32
Harvard Way	EDH Blvd to Silva Valley Pkwy	64.9	107
US 50	West of Latrobe/El Dorado Hills	82.4	1,569
	Between EDH and Bass Lake	81.2	1,302
	Between Bass Lake and Cambridge	80.8	1,213
	East of Cambridge	80.8	1,214

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 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.

The data in Table 3.10-15 indicate that proposed residences within about 450 feet of El Dorado Hills Boulevard and within about 1,500 feet of US 50 could be exposed to exterior traffic noise that exceeds the County's compatibility standard of 60 L_{dn}. 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 340 feet of US 50. 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}.

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). 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 the tentative map 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. This measure is applicable to new and

existing sensitive land uses that would experience noise that exceeds the County's compatibility standard or are otherwise affected by project-generated noise.

- Construction of solid noise barriers and/or landscaped earthen berms between noise sources and receivers. The specific locations and heights of barriers shall be determined by a qualified acoustical consultant when the locations of residences and noise sources are finalized and prior to tentative map approval. Figure 3.10-2 shows potential locations for noise barriers required to mitigate roadway noise. The barriers shall be of sufficient height and composition to reduce noise levels at the closest sensitive receptor to levels required by County standards (General Plan Table 6-1).
- Installation of enclosures around noise-generating mechanical equipment at the civic–limited commercial land use sufficient to reduce noise levels to meet County standards for stationary noise sources.
- Provide maximum setbacks or barriers on lots facing the Village Park to maximum attenuation of noise over distance.
- Installation of noise-reducing treatment in new buildings.
    - High-performance, sound-rated double glazed windows.
    - Sound-rated doors.
    - Sound-rated exterior wall constructions.
    - Special acoustical details for vents.
    - Acoustical caulking at all exterior façade penetrations.
    - Sound-rated roof ceiling constructions.
    - Adequate mechanical ventilation so that windows and doors may be kept closed at the discretion of the building occupants to control environmental noise intrusion.
- In conjunction with Mitigation Measure NOI-1c, the County shall ensure the site plan submitted by the El Dorado Hills CSD for the Village Park locates all playground features at the Village Park outside the 70 L_{dn} noise contour of US 50.

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)

Noise from non-transportation sources would include onsite noise generated by residences and civic–limited commercial uses and would be primarily limited to HVAC and other minor building noise. 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.

The 15-acre Village Park may include sports fields for baseball, softball, and soccer, along with playground equipment. These activities would be a source of noise that could affect new residential uses proposed as part of the project directly north of the Village Park. The extent to which noise from these activities could affect adjacent uses would depend on many factors, including the

proximity of the active uses to the residences, the type and number of active uses, and the time of day that active uses would occur. These specific details have not yet been determined. Analysis of active park uses conducted for similar projects indicates that active ball field use produces a sound level of about 60 dBA-L_{eq} at 100 feet and an active soccer field produces a sound level of about 69 dBA-L_{eq} 100 feet (City of Modesto 2004). This indicates that active park uses could result in noise that exceeds the County's daytime and evening non-transportation noise standards of 55 dBA-L_{eq} and 50 dBA-L_{eq}, respectively.

The noise impacts associated with the exposure of new and existing residences to non-transportation sources of noise would, therefore, be significant. However, Mitigation Measure NOI-1b includes a variety of potential treatments that can be employed to reduce noise. These treatments include, but are not limited to, setbacks and use of noise-reducing treatment in new buildings within the CEDHSP. 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 and to ensure that potential noise impacts would be addressed through design.

The El Dorado Hills CSD would construct and operate the proposed Village Park. The CSD will be required to submit an application to the County for a Planned Development permit. The County would review the site plan and noise study to ensure the park can be operated in a manner that is consistent with County policies and standards and would condition the park project, as necessary, to ensure compliance. Implementation of Mitigation Measures NOI-1b and NOI-1c would reduce impacts to a less-than-significant level.

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

Prior to issuing a Planned Development permit to the El Dorado Hills CSD to construct and operate the proposed Village Park, the County shall require the CSD's proposed site plan for the park places the loudest outdoor activity noise sources as far as practical from residential uses in the Serrano Westside planning area, and that all playground features at the Village Park are located outside the 70 L_{dn} noise contour of US 50. The plan shall be accompanied by a noise study prepared by a qualified acoustical consultant that identifies physical and administrative measures that will be used to reduce noise levels. The County shall condition the park project to implement EIR Mitigation Measure NOI-1a to reduce construction noise and to adhere to County Code of Ordinances Chapter 9.16, Noise, which prohibits the production of loud and raucous noise that unreasonably interferes with the peace and quiet of private property. The County may also condition the park project, if deemed necessary, to include other restrictions such as limiting the use of amplified sound systems to certain hours.

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

Construction Equipment

Construction of the project would not require impact devices or other equipment that is typically associated with substantial vibrational impacts. The project may require the use of a rock ripper to

remove rock. A rock ripper consists of a knife-shaped tip mounted on a hydraulic arm, which is typically mounted on a bulldozer. The bulldozer drags the tip through the ground to break up rock. This is not a traditional impact device, such as pile driver or hoe ram, but it could generate some degree of ground vibration. Specific data on the vibration generated by a rock ripper is not available, but vibration is expected to be similar to or less than the vibration generated by a hoe ram.

As presented in Table 3.10-3, PPV values at 25 feet would be distinctly perceptible for the equipment that is not impact equipment. At 50 feet from the source, the PPV values fall below the barely perceptible threshold for the non-impact equipment. It is possible that construction equipment would be required within 25 feet of surrounding land uses; as a result, those land uses may be able to distinctly perceive vibrational impacts from construction. However, any perception of vibrational impacts would not be categorized as excessive. Further, most construction activity would likely occur at a distance greater than 50 feet from surrounding land uses, so vibrational impacts would be barely perceptible according to the Caltrans guidelines. Consequently, this impact would be less than significant. No mitigation is required.

Blasting

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. To provide a general indication of the potential for airblast and vibration impacts from blasting, airblast and vibration levels have been estimated using methods recommended in the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (California Department of Transportation 2013) assuming a 100-pound charge and average normal confinement of the charge.

Table 3.10-16 presents estimated airblast and ground-vibration values as a function of distance based on these assumptions.

Table 3.10-16. Estimated Airblast and Ground-Vibration Levels

Distance (feet)	Peak Particle Velocity under Average Normal Confinement (inches/second)	Probable Peak Air Overpressure (dB)
100	2.5	146
250	0.58	137
500	0.19	130
750	0.10	125
1,000	0.063	122
1,250	0.044	120
1,500	0.033	118
2,000	0.021	116

Source: California Department of Transportation 2004.
dB = decibel.

The results in Table 3.10-16 indicate that ground vibration from a 100-pound charge could exceed the USBM standard for potential damage of 0.5 inches/second within about 275 feet of the blast and that airblast could exceed the 130 dB USBM standard at locations within about 500 feet of a blast. Because existing residences and other structures not associated with the project, and new residences constructed as part of the project while construction is still occurring are and will be located within 500 feet of the potential blasting sites, the data in Table 3.10-16 indicate that airblast and ground-vibration impacts could be significant.

Implementation of Mitigation Measure NOI-2 would reduce this impact to a less-than-significant level.

Mitigation Measure NOI-2: 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.

- The contractor shall use current state-of-the-art technology to keep blast-related vibration at offsite residential, other occupied structures and well sites as low as possible, consistent with blasting safety. In no instance shall blast vibration, measured on the ground adjacent to a residential or other occupied structure or well site be allowed to exceed the frequency-dependent limits specified in the Alternative Blasting Level Criteria contained in USBM *Report of Investigations 8507*.
- The project contractor shall use current state-of-the-art technology to keep airblast at offsite residential and other occupied structures as low as possible. In no instance shall airblast, measured at a residence or other occupied structure, be allowed to exceed the 0.013-psi (133-dB) limit recommended in USBM *Report of Investigations 8485*.
- The project contractor shall monitor and record airblast and vibration for blasts within 1,000 feet of residences and other occupied structures to verify that measured levels are within the recommended limits at those locations. The contractor shall use blasting seismographs containing three channels that record in three mutually perpendicular axes and which have a fourth channel for recording airblast. The frequency response of the instrumentation shall be from 2 to 250 Hz, with a minimum sampling rate of 1,000 samples per second per channel. The recorded data must be such that the frequency of the vibrations can be determined readily. If blasting is found to exceed specified levels, blasting shall cease, and alternative blasting or excavation methods shall be employed that result in the specified levels not being exceeded.
- Airblast and vibration monitoring shall take place at the nearest offsite residential or other occupied structure. If vibration levels are expected to be lower than those required to trigger the seismograph at that location, or if permission cannot be obtained to record at that location, recording shall be accomplished at some closer site in line with the structure. Specific locations and distances where airblast and vibration are measured shall be documented in detail along with measured airblast and vibration amplitudes.
- 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.

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

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 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	71.3	71.8	0.5
	Harvard to Wilson	72.4	72.9	0.5
	Wilson to Serrano	72.9	74.2	1.3
	Serrano to US 50	72.7	73.6	0.9
Latrobe Road	US 50 to Town Center	74.3	74.5	0.2
	Town Center to White Rock Road	72.4	72.6	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
	Four Seasons Drive to Latrobe Road	70.9	71.1	0.2
	Latrobe Road to Vine Street	68.0	68.1	0.1
	Vine Street to US 50	70.5	70.5	0.0
Silva Valley Pkwy	Green Valley to Glenwood Way	65.9	65.9	0.0
	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	68.0	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	59.8	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	64.9	0.1

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)
US 50	West of Latrobe/El Dorado Hills	82.3	82.4	0.1
	Between EDH and Bass Lake	81.2	81.2	0.0
	Between Bass Lake and Cambridge	80.7	80.8	0.1
	East of Cambridge	80.7	80.8	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.

Non-Transportation Noise

As discussed under Impact NOI-1c, HVAC equipment and noise from active play fields could be a source of noise that could affect adjacent land uses. These sources of noise could potentially result in a substantial permanent increase in noise at nearby existing residences. Therefore, this impact is considered to be significant. Implementation of Mitigation Measures NOI-1b and NOI-1c would reduce this impact to a less-than-significant level.

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

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)

As discussed in Impact NOI-1a, construction of the project would result in an increase in ambient noise levels that could be substantial in the vicinity of the construction equipment. This increase would be temporary, ending when construction is completed. However, noise from construction equipment would temporarily exceed the County's noise standards within 900 feet of the construction equipment. This impact would be significant.

Implementation of Mitigation Measure NOI-1a would reduce the temporary and short-term increase in ambient noise levels by requiring noise-reducing construction practices such as locating equipment away from sensitive land uses, requiring sound control devices on equipment, utilizing noise-reducing enclosures and other practices. This would be expected to reduce the noise affecting sensitive land uses by 5 to 10 dB. Depending on the distance between construction and the receptor, this could reduce noise to levels below the County daytime noise standards, but may not be achievable at all locations. As such, the construction noise impact would be significant and unavoidable.

Mitigation Measure NOI-1a: Employ noise-reducing construction practices

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)

The project area is not located within an airport land use plan area, or where such a plan has not been adopted, or within 2 miles of an airport or a private airstrip.

However, the project site, including the surrounding El Dorado Hills area, is exposed to single-noise events from cargo aircraft landing at Mather Airport, approximately 13 miles southwest of the site. The 2004 General Plan EIR states that new development under the County General Plan could be subject to aircraft noise and that development within El Dorado Hills is an area that is already considered to be affected by single event levels, or SELs, because of aircraft overflights associated with the operation of Mather Airport in Sacramento County. The 2004 General Plan EIR concluded that this impact would be significant and unavoidable because, as the 2004 General Plan EIR states, "exposure of noise-sensitive receptors to aircraft noise levels, including SELs, could still occur." Implementation of Mitigation Measure NOI-1b, which requires that new residential units in the proposed project include noise-reducing treatment, would help reduce interior noise levels, but noise from cargo aircraft arrivals could still be clearly audible, especially during nighttime hours. It is recommended that the potential for cargo aircraft noise associated with Mather Airport operations be disclosed to buyers for each lot (Mitigation Measure NOI-1d). However, even with mitigation, noise from SELs could still affect residents in the proposed project. Accordingly, this impact is considered to be 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

The County shall 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.

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)

The project area is not located in the vicinity of a private airstrip and would not expose people to excessive airport noise. There would be no impact. No mitigation is required.

Impact NOI-7: Result in noise impacts due to activities associated with project offsite improvements (less than significant with mitigation)

Development of the project would require a number of infrastructure improvements at offsite locations, including improvements to water lines, overcrossings, and roadways, which could result in impacts related to both construction and operation of the project.

Construction

The construction noise impacts associated with these offsite improvements would likely be similar to the impacts within the project area. Similar construction equipment would be utilized for the construction activities in the project area and in the offsite locations, resulting in comparable noise levels. It is unlikely that pile driving or other substantial ground-impact activities would be included in the offsite construction activities, so vibrational impacts would be minimal. Further, the offsite improvements would not result in any new land uses, so there would be no new sensitive land uses that could be affected by the construction noise impacts. Existing sensitive land uses could be located within a distance of the construction activity where noise could exceed County standards. Implementation of construction practices described in Mitigation Measure NOI-1a would reduce construction noise at the offsite locations. It may not be feasible to reduce noise to levels below the County daytime noise standards at all sensitive land uses surrounding the offsite improvements locations. However, unlike the proposed project, construction of offsite improvements would occur over a much shorter period of time and noise impacts would be temporary. As such, with the implementation of Mitigation Measure NOI-1a, the construction noise impact is considered to be less than significant for the offsite improvements.

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 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 dB (see Table 5-4 in Section 5.2.2, *Analysis of Potential 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.

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

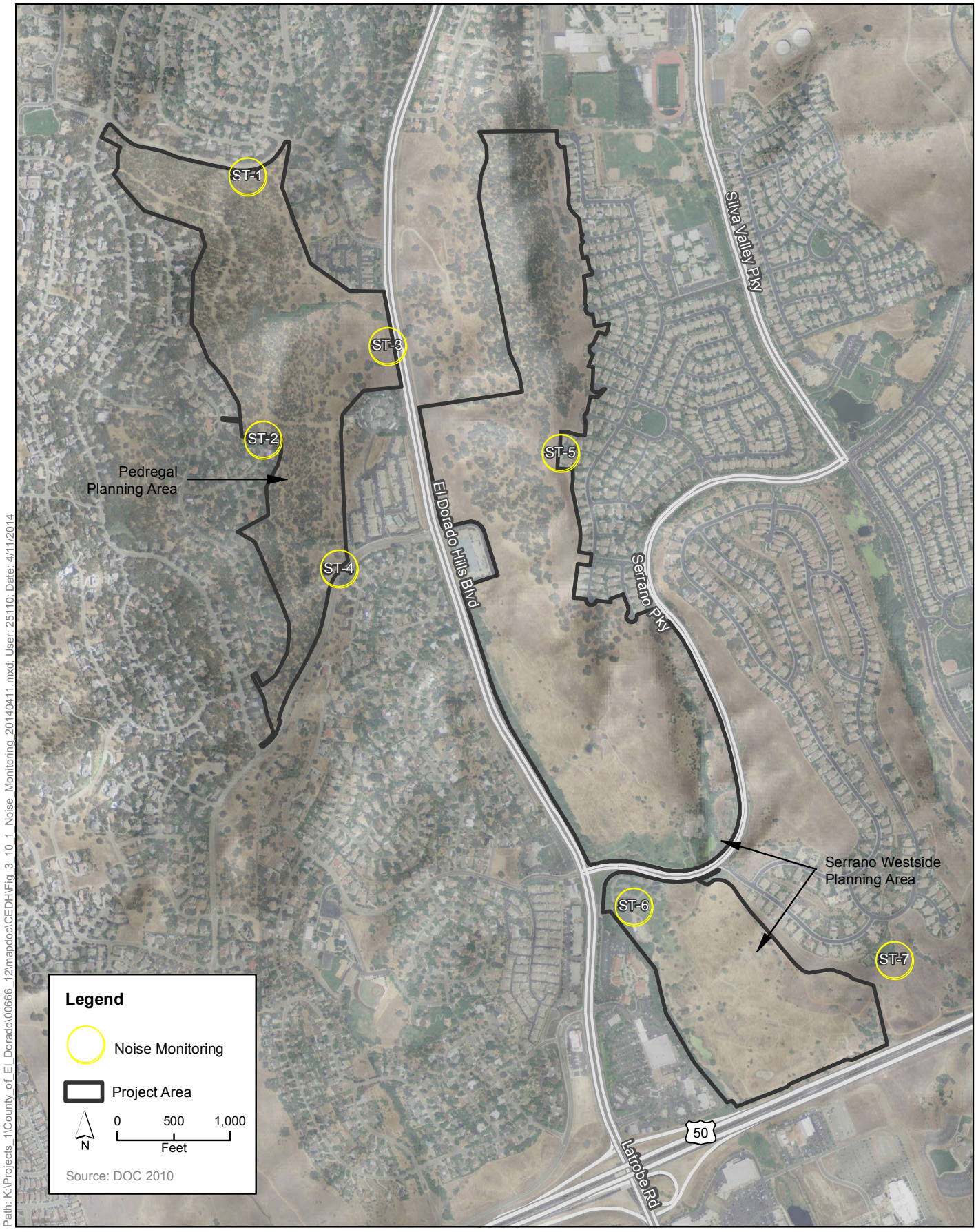

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Figure 3.10-1
Noise Monitoring Locations in the Project Area

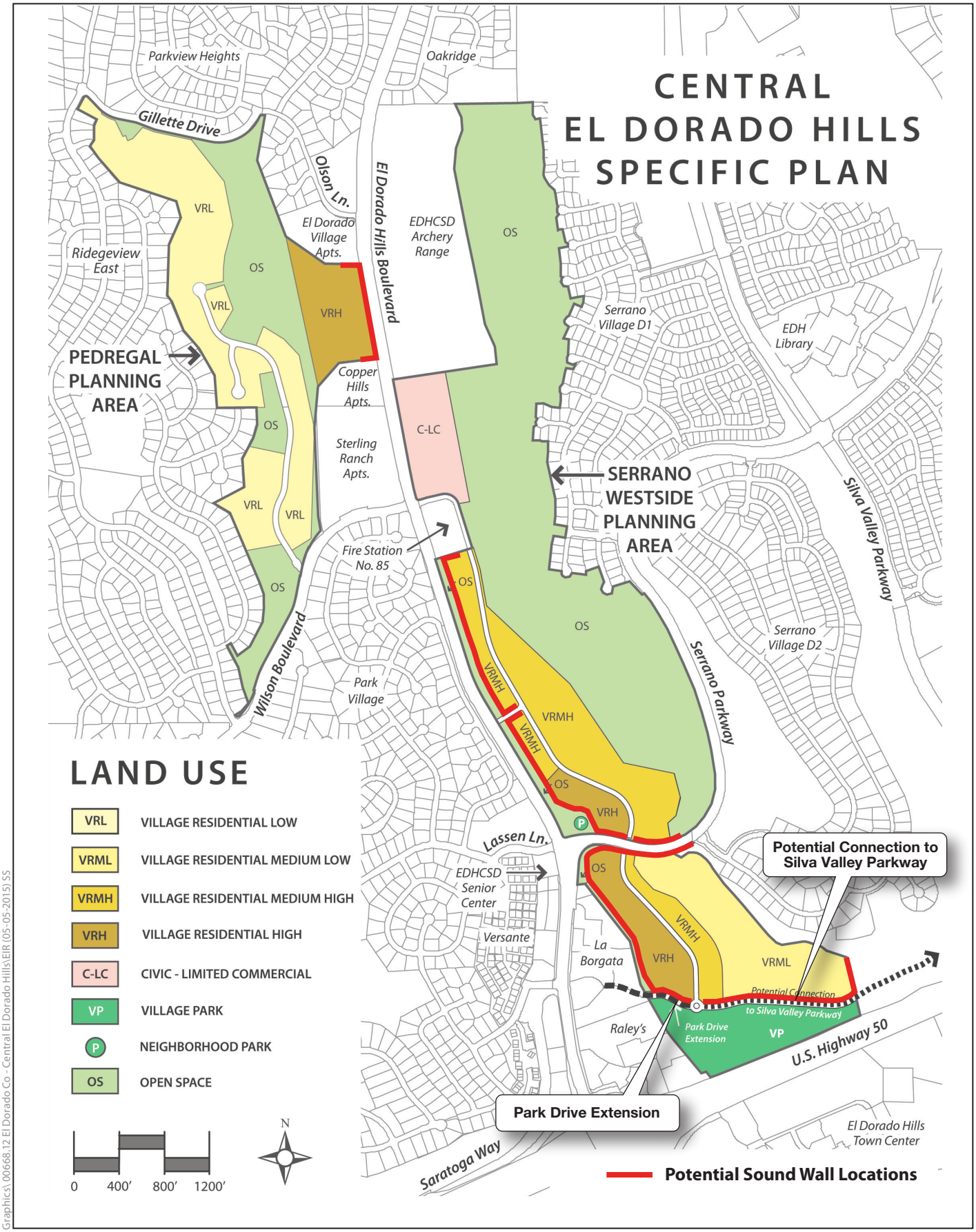

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Figure 3.10-2
Potential Sound Wall Locations

3.11 Population and Housing

This section describes the regulatory and environmental setting for population and housing in El Dorado County as it pertains to the proposed Central El Dorado Hills Specific Plan (CEDHSP) (proposed project). It also describes impacts on population and housing that would result from implementation of the proposed project.

3.11.1 Existing Conditions

Regulatory Setting

Population and housing patterns and development in El Dorado County are guided by state housing element law (Government Code Sections 65580–65590), the Sacramento Area Council of Governments' (SACOG) *2013–2021 Regional Housing Needs Plan* (RHNP), and the *El Dorado County General Plan* (County General Plan), particularly the 2013–2021 Housing Element. Applicable state and local population and housing regulations and policies related to the proposed project are described below.

State

At the state level, the California Department of Housing and Community Development (HCD) administers population and housing policy and laws, including the review of local general plan housing elements. State housing element law (Government Code Sections 65580–65590) requires HCD to determine the relative share of existing and projected housing needs for each county in California. HCD uses California Department of Finance (DOF) population projections and historic growth trends to estimate the relative share of California's projected population growth that would occur in each county. Where there is a regional council of governments (COG), HCD provides the regional housing need information to the COG. For El Dorado County, HCD provides this information to SACOG, of which El Dorado County is a member. SACOG, in turn, assigns a share of the identified regional housing need to each of its member counties and cities through its Regional Housing Needs Allocation (RHNA) and RHNP process.

Local

Regional Housing Needs Allocation and Regional Housing Needs Plan

The State of California requires every county and city to plan for and accommodate its fair share of regional growth through the RHNA process. As part of the RHNA process, HCD issues a Regional Housing Needs Determination, which includes an overall housing needs number, as well as a breakdown of the number of units required in four household income categories, every 8 years. The distribution of the county's overall allocation into four income categories, defined by state law, is intended to facilitate the equitable distribution of lower income households throughout the county's communities.

Using this information, SACOG must develop a RHNP and administer the RHNA process in its six-county region, including El Dorado County, the five other member counties (Placer, Sacramento,

Sutter, Yolo, and Yuba), and their respective cities. HCD's intent, through implementation of the RHNA process, is to promote the following objectives.

- Increase the housing supply and the mix of housing types, tenure and affordability in all cities and counties within the region in an equitable manner.
- Promote infill development and socioeconomic equity, the protection of environmental and agricultural resources, and the encouragement of efficient development patterns.
- Promote an improved intraregional relationship between jobs and housing.

The RHNA, part of SACOG's 2013–2021 RHNP, establishes the total number of housing units and expected growth that each member city and county must plan for within the 8-year planning period of its general plan housing element. The SACOG 2013–2021 RHNP, adopted on September 20, 2012, formally allocates to SACOG cities and counties their fair share of the region's projected housing needs. SACOG's total housing allocation for the current planning period of January 1, 2013 through October 31, 2021 is 104,970 dwelling units (Sacramento Area Council of Governments 2012a).

El Dorado County General Plan

The County General Plan Economic Development Element and 2013–2012 Housing Element include the following relevant goals, objectives, and policies. 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.

Economic Development Element

- Goal 10-1, Cooperation, which includes Objective 10.1.9, *Jobs-Housing Relationship*, which addresses monitoring the jobs-housing balance within the county with a focus on creation of employment opportunities and associated policies 10.1.9.1, 10.1.9.2, and 10.1.9.3.

2013–2021 Housing Element

State housing element law, enacted in 1969, mandates that local governments in California adopt housing elements as part of their general plans and submit draft and adopted elements to HCD for review of compliance with state law. The County General Plan 2013–2021 Housing Element, reviewed and approved by HCD in November, 2013, guides the County's decisions related to unincorporated El Dorado County's housing needs through October, 2021. The 2013–2021 Housing Element contains the following relevant goals and policies; the text of which can be found in Appendix B.

- Goal HO-1, addresses provision of housing to meet the needs of existing and future residents in all income categories, and includes implementing policy HO-1.1.
- Goal HO-2, addresses provision of quality residential environments for all income levels.
- Goal HO-4, addresses meeting the housing needs of special groups of county residents.

Environmental Setting

This section provides a description of the existing conditions related to population and housing within El Dorado County and the project area.

Population

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% 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 3.11-1. El Dorado County Population Growth 1990–2010

Year	Countywide Population	Percent Change		Unincorporated Area Population	Percent Change	
		Incremental	Cumulative		Incremental	Cumulative
1990	125,995	–	–	96,054	–	
2000	156,299	24	24	123,080	28	28
2010	181,058	16	44	149,266	21	55

Sources: California Department of Finance 2013a; El Dorado County 2013.

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

Year	Estimated El Dorado County Population	Percent Change	
		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

Source: California Department of Finance 2013b; BAE Urban Economics 2013.

Housing

Countywide

Countywide, DOF estimates indicate that there were 88,159 occupied housing units in 2010, and a vacancy rate of 20.3%. The high countywide vacancy rate, averaged across cities and the unincorporated area, reflects the high number of seasonal vacation housing in the city of South Lake Tahoe, where the 2010 vacancy rate was 40.9% (California Department of Finance 2013a). According to DOF, in 2010, there were a total of 68,531 dwelling units in the unincorporated area of the county, of which 59,867 were single-family detached units, 792 were single-family attached units, 1,597 were multifamily structures with two to four units, 2,928 were multifamily structures

with five or more units, and 3,347 were mobile homes (California Department of Finance 2013b). A total of 57,176 dwelling units were estimated to be occupied in the unincorporated area in 2010, reflecting a vacancy rate of 16.6%.

West Slope

In 2013, the County updated its residential growth projections for use in the County's Travel Demand Model (TDM), which is a land use planning tool to project the amount and distribution of growth for the west slope of El Dorado County[1] through the year 2035 (BAE Urban Economics 2013). The BAE Urban Economics study reported in 2010, there were 59,668 existing housing units, with 54,904 occupied, and a vacancy rate of 7.98%, which is approximately one-half the unincorporated area rate. For 2015, it is projected there would be 62,803 housing units, and for 2035, the study estimated that there would be 77,077 housing units, leaving a difference of approximately 14,300 housing units to be built between 2015 and the 2035 planning horizon. Actual new units in any given year would vary from projections because of economic fluctuations and other factors; however, the overall growth rate is assumed to apply over the planning horizon. Based on a continuation of the County's historic west slope growth trend over the 2010 to 2035 time period yields an annual average growth rate of 1.03% (BAE Urban Economics 2013).

Most of El Dorado County's recent growth, both residential and commercial, has taken place in the vicinity of El Dorado Hills, which is presently characterized by primarily low-density residential and commercial development (El Dorado County 2013).

Average Household Size

Average household size is determined by dividing the total number of occupied housing units by the population. The County General Plan 2013–2021 Housing Element indicates that in 2010, the average household size countywide was 2.55 people, and that the average household size in the unincorporated area of El Dorado County was 2.59 people per unit. However, the County has determined that data from the El Dorado Hills census and the 2009–2013 American Community Survey provide factors that are more appropriate indicators of average household size within the El Dorado Hills Community Region where the CEDHSP is located. These factors are as follows: 3.06 people per unit for single-family low-density residential, 2.61 people per unit for single-family medium-density residential, and 2.49 people per unit for multi-family residential.

Population and Housing—Central El Dorado Hills Specific Plan Area

Although surrounded by a mix of office, retail, and residential uses, as well as civic uses such as the El Dorado Hills Fire Station and two schools, the two planning areas in the project area (Serrano Westside planning area and Pedregal planning area) are primarily undeveloped, with no existing residential or commercial uses.

Regional Housing Needs Allocation

On September 20, 2012, the SACOG Board unanimously approved the 2013–2021 RHNP, and the 2013–2021 RHNP Allocation of Units to Local Governments was finalized on November 28, 2012 (Sacramento Area Council of Governments 2012b). Table 3.11-3 shows unincorporated El Dorado County's RHNA by income level through 2021. The total RHNA for unincorporated El Dorado County

[1] Excluding the City of Placerville.

is 3,948, which is divided among four defined income groups[2] (Sacramento Area Council of Governments 2012b). As shown in Table 3.11-3, unincorporated El Dorado County's greatest housing need is in the above-moderate income category.

Table 3.11-3. Unincorporated El Dorado County Regional Housing Needs Allocation for 2013–2021

Income Group	Units	Percent of Total
Very-Low	954	24.2
Low	669	16.9
Moderate	734	18.6
Above-Moderate	1,591	40.3
Total	3,948	100

Source: Sacramento Area Council of Governments 2012b.

3.11.2 Environmental Impacts

Methods of Analysis

The analysis of the proposed project's impacts on population and housing was conducted using a review of the most current population and housing statistics and projections available for El Dorado County, with data specific to unincorporated El Dorado County when obtainable. These statistics include U.S. Census data, SACOG's 2013–2020 RHNP projections, the County General Plan 2013–2021 Housing Element data, and DOF's estimates and projections. The following factors were used to estimate population:, 3.06 people per single-family low-density residential unit, 2.61 people per single-family medium-density residential unit, and 2.49 people per multi-family residential unit. Information regarding jobs/housing balance is based on the MTP/SCS consistency analysis provided in Appendix H.

Thresholds of Significance

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.

- 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).
- Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displace a substantial number of people, necessitating the construction of replacement housing elsewhere.

[2] Very low income = less than 50% of median family income (MFI). Low income = 50 to 80% of MFI. Moderate income = 80 to 120% of MFI. Above moderate income = above 120% of MFI.

Impacts and Mitigation Measures

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)

The CEDHSP would develop 134 acres with up to 1,000 residential units, including single-family detached units, townhomes, condominiums, and apartments. These housing units would be divided between the CEDHSP's two planning areas, the Serrano Westside planning area and the Pedregal planning area, with 763 dwelling units proposed for the Serrano Westside planning area and 237 units for the Pedregal planning area. The total projected population as a result of the proposed project is 2,618, as shown in Table 3.11-4.

Table 3.11-4. Project Population Resulting from CEDHSP

Land Use Designation	Average People per Unit	Number of Units	Projected Residents (rounded)
VRL	3.06	37	113
VRM-L	3.06	123	376
VRM-H	2.61	310	809
VRH	2.49	530	1,320
Total		1,000	2,618

As described in Chapter 2, *Project Description*, existing entitlements and adopted land uses for the project site allow up to 759 total dwelling units, with 135 allocated to the Serrano Westside planning area and 624 allocated to the Pedregal planning area. However, in order to be feasible in the Pedregal planning area due to slope and oak canopy development restrictions, only 33 low-density residential dwelling units in the Pedregal planning area would be possible in addition to the 144 multi-family units allowed under the existing County General Plan land use designation. Thus, the proposed project would provide for 668 more housing units than what could feasibly developed on the project site under existing entitlements and approved land uses. Based on the El Dorado Hills Community region's average household size of 3.06 people per low-density unit and 2.49 for multi-family, the proposed project would be expected to increase the county's population by approximately 1,745[3] more residents than anticipated under the existing entitlements and approved land uses.

As noted above in Table 3.11-2, El Dorado County's population is anticipated to increase by over 20,000 between the years 2010 and 2020, and by over 67,000 between 2010 and 2035. An additional 1,745 residents would not constitute substantial population growth. Additionally, development of the project site with up to 1,000 housing units could meet up to 25% of the county's regional housing need allocation (3,948 units) (Table 3.11-3) between 2013 and 2021. Impacts would be less than significant.

[3] The allocation of units in the Pedregal planning area under existing land use and zoning is 33 single-family residential and 144 multi-family residential units. The entitled allocation of units in the Serrano Westside planning area is 135 single-family residential units. The population under existing land use and entitlements would be: 168 low-density single-family units*3.06 + 144 multi-family units*2.49 = 873 (rounded). Project population (2,618) – current entitlements/approved use (873) = 1,745.

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.

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.

Development of the project area would require offsite infrastructure improvements, including new potable water lines, a recycled water line extension, extension of a public roadway, and development of additional pedestrian facilities. The offsite infrastructure would be sized to facilitate infill development in the established Community Region of El Dorado Hills, an area designated for higher-intensity land uses by the County General Plan and surrounded by existing developed uses. Consequently, the proposed infrastructure would have a less-than-significant indirect impact on population growth. No mitigation is required.

Impact POP-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (no impact)

The project area currently contains no housing units. Accordingly, development of the project as proposed would not displace any existing housing units or necessitate the construction of replacement housing elsewhere. Instead, development under the proposed project would result in the creation of up to 1,000 additional housing units on a largely undeveloped site presently surrounded by existing residential and commercial uses. As the proposed project would displace no housing units, there would be no impact on existing housing units. No mitigation is required.

Impact POP-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere (no impact)

The project site currently contains no residences. Consequently, the proposed project would not displace any people or necessitate the construction of replacement housing elsewhere. There would be no impact. No mitigation is required.

3.12 Public Services and Utilities

This section describes the regulatory setting and environmental setting for public services (fire and police protection, schools, and libraries) and public utilities (water, wastewater, stormwater, solid waste, energy), and analyzes potential impacts that could result from implementation of the proposed project. Potential impacts related to parks and recreation facilities are evaluated in Section 3.13, *Recreation*.

3.12.1 Existing Conditions

Regulatory Setting

Federal

There are no federal requirements for public services. Below are relevant federal regulations, plans, and policies for utilities.

Clean Water Act

Federal environmental regulations based on the Clean Water Act (CWA) have evolved to require the control of pollutants from Municipal Separate Storm Sewer Systems (MS4s), construction sites, and industrial activities. Discharges from these sources were brought under the National Pollutant Discharge Elimination System (NPDES) permit process by the 1987 CWA amendments and subsequent 1990 and 1999 promulgation of stormwater regulations by Environmental Protection Agency (EPA). In California, EPA has delegated the administration of the federal NPDES program to the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards).

Energy Policy Act of 2005

The Energy Policy Act of 2005 (EP Act) was intended to establish a comprehensive, long-term energy policy and is implemented by the U.S. Department of Energy (USDOE). The EP Act addresses energy production in the U.S., including oil, gas, coal, and alternative forms of energy and energy efficiency and tax incentives. Energy efficiency and tax incentive programs include credits for the construction of new energy efficient homes, production or purchase of energy efficient appliances, and loan guarantees for entities that develop or use innovative technologies that avoid the production of greenhouse gases.

Safe Drinking Water Act

The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The act was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The act authorizes EPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water. EPA, states, and water providers then work together to make sure that these standards are met.

State

Senate Bill 610 (Chapter 643, Statutes of 2001)

Pursuant to California Water Code Section 10910, since 2001, cities and counties acting as lead agencies under CEQA must request water purveyors to prepare water supply assessments for certain projects (as defined in Water Code Section 10912 and State CEQA Guidelines Section 15155) subject to CEQA. Projects under SB 610 are defined under Water Code Section 10912(a) as meeting specific criteria, including, but not limited to, proposed residential development of more than 500 dwelling units; proposed commercial, shopping center, or industrial use of certain sizes; or a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project. The primary issue for the water supply assessment is to determine whether the projected supply for the next 20 years—based on normal, single dry, and multiple dry water years—will meet the demand projected for the project plus the existing and planned future uses, including agricultural and manufacturing uses.

California Environmental Quality Act and Case Law

Because of SB 610, CEQA documents must disclose whether a qualifying project's (as defined in Water Code Section 10912 and State CEQA Guidelines Section 15155) projected demand for water is anticipated to exceed existing and planned supplies. Water supply assessment requirements have been refined as a result of CEQA case law. In particular, the California Supreme Court stated in *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412 *(Rancho)* that an adequate water supply analysis should contain the following elements.

- An identification of the water sources needed for full buildout.
- An assessment of the environmental impacts associated with providing water for the project.
- Where there are both short-term and long-term supplies needed, an analysis of long-term supplies and their impacts in at least a programmatic level of detail.
- An assessment of the extent to which identified water sources are "certain" or "likely" to be available.
- When "some uncertainty" exists with respect to the availability of such supplies, the identification of possible alternative water sources and analysis of the environmental impacts of curtailing planned development due to inadequate supplies.

Regarding the last element listed above, the California Supreme Court explained that future water supplies identified and analyzed in an EIR must be reasonably likely to prove available and that, when a full analysis of future water supplies for a project leaves "some uncertainty" regarding the availability of the identified future supplies, the EIR must discuss possible replacement or alternative supply sources. In addition, the EIR must discuss the environmental effects of resorting to those alternative supply sources; it is not sufficient to simply state that future development will not go forward in the absence of a sufficient water supply. If uncertainties inherent in long-term planning make it impossible to identify the future water sources with certainty, an EIR may satisfy CEQA if it includes an acknowledgement of the degree of uncertainty involved, and discloses: (1) the reasonably foreseeable water supply alternatives and their significant environmental effects, and (2) mitigation measures to minimize each adverse impact (*Rancho* at 434).

The *Rancho* opinion outlined the following general principles governing the analysis of water supply issues in EIRs.

- An adequate environmental impact analysis for a long-range development plan cannot be limited to the water supply for the first stage of development. It must consider supplies necessary for the entire development.
- Future water supplies identified and analyzed in an EIR must be reasonably likely to prove available. Speculative sources and unrealistic paper allocation do not provide an adequate basis for decision making under CEQA.
- When, despite a full analysis, "it is impossible to confidently determine that anticipated future water sources will be available," CEQA requires some discussion of possible replacement or alternative supply sources, and of the environmental consequences of resorting to those sources (*Rancho* at 432).
- An EIR for a land use plan need not demonstrate that the water supply for the project is assured through enforceable agreements with a provider and built or approved treatment and delivery facilities. To interpret CEQA as requiring firm assurances of future water supplies at early stages of the planning process would be inconsistent with the water supply statutes, which call for an assured supply only at the end of the approval process (*Rancho* at 432).
- The "ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project" (*Rancho* at 434).

A water supply assessment (WSA) has been prepared for the Central El Dorado Hills Specific Plan (CEDHSP) that meets the SB 610 and CEQA case law requirements (Appendix K) and is summarized below under *Water Supply, Demand and Conservation*.

California Environmental Quality Act Appendix F Energy Conservation

CEQA Guidelines Appendix F, *Energy Conservation*, requires EIRs to include a discussion of potential energy impacts and energy conservation measures. Appendix F places "particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy," and that significant energy impacts should be "considered in an EIR to the extent relevant and applicable to the project."

Senate Bill (SB) 1389, Chapter 568, Statutes of 2002

The California Energy Commission (CEC) is responsible for, among other things, forecasting future energy needs for the state and developing renewable energy resources and alternative renewable energy technologies for buildings, industry, and transportation. SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report is also intended to provide policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The *2013 Integrated Energy*

Policy Report, the most recent report required under SB 1389, was released to the public in February 2013.[1]

Assembly Bill 2188, Muratsuchi, 2014

AB 2188 requires local governments to adopt an administrative ordinance that creates a streamlined permitting process for small rooftop solar system installations (single-family or duplex family dwellings) on or before September 30, 2015. It also limits the number of inspections that may be required.

Assembly Bill 2076, Reducing Dependence on Petroleum

The CEC and Air Resources Board (ARB) are directed by Assembly Bill (AB) 2076 (passed in 2000) to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal is to reduce petroleum demand to 15% less than 2003 demand by 2020.

California Green Building Standards Code and Title 24

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CALGreen [California Code of Regulations, Title 24, Part 11]). CALGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure.

CALGreen requires the installation of energy- and water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. The CALGreen Code requires residential and nonresidential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use in the building by 20%. The 20% water savings can be achieved by: (1) installing plumbing fixtures and fittings that meet the 20% reduced flow rate specified in the CALGreen Code, or (2) demonstrating a 20% reduction in water use from the building "water use baseline."

CALGreen also requires that newly constructed buildings develop a waste management plan (WMP) and divert at least 50% of the construction materials generated during project construction (California Green Building Standards Code [CALGreen] Sections 4.408 and 5.408).

The California Energy Commission recently adopted changes to the 2013 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in CALGreen Part 11. The 2013 Building Energy Efficiency Standards are 25% more efficient than previous standards for residential construction. Part 11 also establishes voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), 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.

[1] The CEC is currently in the process of preparing the 2014 Integrated Energy Policy Report. The Scoping Order for the 2014 Integrated Energy Policy Report Update was issued in April 2014 and the final report is scheduled for adoption in February 2015.

California Model Water Efficient Landscape Ordinance

In 2006, the Water Conservation in Landscaping Act was enacted, which required the Department of Water Resources to update the Model Water Efficient Landscape Ordinance (MWELO). In fall of 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required that a retail water supplier adopt the provisions of the MWELO by January 1, 2010 or enact its own provisions equal to or more restrictive than the MWELO provisions. The Department of Water Resources adopted a revised MWELO on July 15, 2015 in compliance with Governor Brown's Executive Order B-29-15. The County will have until December 1, 2015 to adopt the ordinance or its own equivalent ordinance.

The provisions of the MWELO, as revised in 2015, apply to new construction with a landscape area 500 square feet or more. The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency. Finally, MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then assign a unique valve for each hydrozone (low, medium, high water use). The design of landscape irrigation systems is anticipated to better match the needs of grouped plant-types and thus result in more efficient outdoor irrigation. Water-saving improvements over the prior MWELO include more efficient irrigation requirements, incentives for graywater use, and limits on the portion of landscapes that can be planted with high water use plants.

Senate Bill x7-7 (Chapter 4, Statutes of 2009)

Senate Bill (SB) x7-7, the Water Conservation Act of 2009, requires the state to achieve a 20% reduction in urban per capita water use by December 31, 2020. The responsibility for this conservation falls to local water agencies, which must increase water use efficiency through promotion of water conservation standards that are consistent with the California Urban Water Conservation Council's (CUWCC's) Best Management Practices (BMPs). Each urban retail water supplier is also required to develop urban water use targets and an interim urban water use target by July 1, 2011, based on the alternative methods set out in the 2009 act. The agencies must meet those targets by the 2020 deadline.

El Dorado Irrigation District (EID) is a signatory to the Memorandum of Understanding (MOU) that commits CUWCC members to implementation of the BMPs.

Senate Bill 375—Sustainable Communities Strategy

SB 375 was adopted with a goal of reducing greenhouse gas (GHG) emissions from cars and light trucks. Each metropolitan planning organization (MPO) across California is required to develop a sustainable communities strategy (SCS) as part of their regional transportation plan (RTP) to meet the region's GHG emissions reduction target. SACOG adopted the MTP/SCS for the Sacramento region, including El Dorado County, on April 19, 2012. Please refer to Section 3.6, *Greenhouse Gases*, for additional information on SB 375.

State Water Resources Control Board and Central Valley Regional Water Quality Control Board Permitting Authority and Basin Plan

The State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards) have broad authority over water quality control and permitting in California. The State Water Board delegates regional authority for planning, permitting, and enforcement to the Regional Water Boards including the Central Valley Regional

Water Quality Control Board (Central Valley Water Board), which has jurisdiction over El Dorado Hills. The State Water Board and Regional Water Boards issue and enforce permits for wastewater treatment plants (WWTPs), including waste discharge permits. The Central Valley Water Board also is responsible for implementing and updating the Basin Plan for improving and protecting water quality in the water bodies under its jurisdiction, including the streams into which EID's WWTPs discharge. The State and Regional Water Boards implement the Clean Water Act and the Porter-Cologne Water Quality Control Act, both of which are discussed in Section 3.8, *Hydrology, Water Quality and Water Resources*. The boards regulate water quality, but not supply.

The State Water Board has issued statewide general NPDES stormwater permits for designated types of construction and industrial activities and has adopted a statewide permit applicable to all small municipalities, including El Dorado Hills (see Section 3.8, *Hydrology, Water Quality and Water Resources*).

The SWRCB is proposing an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Together they are collectively termed as the *Trash Amendments*. The State Water Board also prepared a Staff Report/Substitute Environmental Document (SED) to meet CEQA compliance requirements. The Trash Amendments will require the implementation of a consistent statewide approach for reducing environmental issues associated with trash in state waters and will be incorporated into all NPDES Permitting programs including Phase I and Phase II MS4s, Construction General Permits, and Industrial General Permits well as Waste Discharge Requirements (WDRs) and waivers to WDRs. NPDES Permittees will be required to commit to one of two tracks to achieve compliance with the Trash Amendments. Page 12 of the SED says: "**Any new development within the MS4 permittee's jurisdiction must be built to immediately comply with Track 1 or Track 2."

On December 31, 2014 the State Water Board released a Notice of Revised Documents stating the proposed Final Trash Amendments were available online for review. On February 12, 2015, the State Water Board released a Notice of Public Meeting scheduled for April 7, 2015, to consider the adoption of the proposed Final Trash Amendments.

Official Trash Amendment documents and contact information can be accessed on the State Water Board's website: http://www.swrcb.ca.gov/water_issues/programs/trash_control/documentation.shtml.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Edmund G. Brown, Jr. signed legislation to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The three bills – SB 1168 (Pavley), SB 1319 (Pavley), and AB 1739 (Dickinson) – together make up the Sustainable Groundwater Management Act. The bills would establish phased requirements for high- and medium-priority basins to adopt groundwater sustainability plans, depending on whether or not a basin is in critical overdraft. The act would require adoption of groundwater sustainability plans by January 31, 2020, for all high- and medium-priority basins unless legally adjudicated or otherwise managed sustainably.

These bills do not apply to this project because western El Dorado County has no groundwater basins.

Subdivision Map Act

The state Subdivision Map Act grants the power to local jurisdictions to impose drainage improvements or drainage fees and assessments. Local jurisdictions may require the provision of drainage facilities, proper grading and erosion control, dedication of land for drainage easements, or payment of fees needed for the construction of drainage improvements. Typically, the local requirements are specified by local ordinances or plans.

Waste Management Act

The California Integrated Waste Management Act (AB 939) became law in 1990 and mandated that every county and city in California divert 25% of its waste from landfills by 1995 and 50% by 2000 or face fines. The act is administered by the California Department of Resources Recycling and Recovery (formerly the California Integrated Waste Management Board) and requires that each city and county prepare an Integrated Waste Management Plan (IWMP). The IWMP must include Source Reduction and Recycling elements and a Household Hazardous Waste element.

Leroy Green School Facilities Act

Senate Bill (SB) 50 (Leroy Green School Facilities Act), was approved by the voters in November 1998. SB 50 established a comprehensive program for funding school facilities based on 50% funding from the state and 50% funding from local districts, while limiting the obligation of developers to mitigate the impact of projects on school facilities. California Government Code 65995 et seq. establishes the statutory criteria for assessing construction fees. This section also states that the payment of school mitigation impact fees authorized by SB 50 is deemed to provide "full and complete mitigation of impacts" from the development of real property on school facilities.

Local

El Dorado County General Plan

The *El Dorado County General Plan* (County General Plan) contains goals, objectives, and policies related to services critical to the County's future growth and development (El Dorado County 2004). The following are relevant goals, objectives, and policies. 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.

Housing Element

- Goal HO-5, *Energy Conservation*, seeks to increase the efficiency of energy and water use in new and existing homes, and includes policy HO-5.1.

Public Services and Utilities Element

- Goal 5.1, *Provision of Public Services*, including Objective 5.1.2, *Concurrency*, which addresses the County's cooperation with service and utility providers and associated policies, 5.1.2.1, and 5.1.2.2, which includes minimum levels of service (Table 5.1 of General Plan).
- Goal 5.2, *Water Supply*, which addresses the development or acquisition of water supply and includes Objective 5.2.1, *County-Wide Water Resource Program*, and implementing policies, 5.2.1.2, 5.2.1.3, 5.2.1.4, 5.2.1.6, 5.2.1.9, 5.2.1.11, and 5.2.1.12.

- Goal 5.3, *Wastewater Collection and Treatment*, which addresses provision of wastewater infrastructure, and includes Objective 5.3.1, *Wastewater Capacity*, and implementing policies 5.3.1.1 and 5.3.1.7.
- Goal 5.4, *Storm Drainage*, including Objective 5.4.1, *Drainage and Flood Management Program*, and implementing policies, 5.4.1.1 and 5.4.1.2.
- Goal 5.5, *Solid Waste*, including Objective, 5.5.2, *Recycling, Transformation, and Disposal Facilities*, and implementing policy 5.5.2.1.
- Goal 5.6, *Gas, Electric, and Other Utilities Services*, including Objective 5.6.1, *Provide Utility Services*, and implementing policies, 5.6.1.1 and 5.6.1.2, and Objective 5.6.2, *Encourage Energy Efficient Development*, and implementing policy 5.6.2.1 and 5.6.2.2.
- Goal 5.7, *Emergency Services*, including Objective 5.7.1, *Fire Protection (Community Regions)*, and implementing policy 5.7.1.1, Objective 5.7.3, *Law Enforcement*, and implementing policy 5.7.3.1, and Objective 5.7.4, *Medical Emergency Services*, and implementing policies 5.7.4.1 and 5.7.4.2.
- Goal 5.8, *Schools*, includes Objective 5.8.1, *School Capacity*, and implementing policy 5.8.1.1.
- Goal 5.9, *Libraries and Cultural Facilities*, addresses providing a quality County library system and other cultural facilities consistent with the needs of current and future residents.

Conservation and Open Space Element

- Goal 7.3, *Water Quality and Quantity*, including Objective 7.3.5, *Water Conservation*, and implementing policies, 7.3.5.1,, 7.3.5.4, and 7.3.5.5.

The County General Plan also identifies a program to implement the goals identified above and the objectives and policies under each of the goals. The implementation program identifies that the County will establish a means, either through formal agreement or identification of formal contacts, for various County agencies and departments to communicate with non-County public service and utility providers (e.g., water providers, wastewater treatment providers) regarding the planning for the provision of services and its relationship to the County General Plan and the County's long-range or capital improvement plans.

El Dorado Irrigation District Integrated Water Resources Master Plan

EID's Integrated Water Resources Master Plan (IWRMP), adopted in 2013, considers potable water and recycled water resources for the EID service area. The IWRMP addresses the maintenance of EID's existing water and recycled water facilities and the development of future water resource infrastructure. In order to serve the existing and anticipated development within EID's service area, the IWRMP contains the following relevant objectives.

> Develop a reliable, long-term water resources program which considers existing water supply, future demand, hydroelectric power generation, and environmental and economic constraints.
>
> Define the long-term role of recycled water within the District's water resources portfolio.
>
> Identify and implement approaches to address future constraints, which may impact the District's service to its customers.
>
> Develop integrated and prioritized water, wastewater, and recycled water system capital improvements that are consistent with the District's long-term goals and objectives.

The IWRMP considers key water supply issues facing EID's service area, including reliability, infrastructure constraints, competing water resource needs, and the future role of recycled water. The IWRMP identifies existing and projected water demands and the water supplies and distribution systems that serve them, proposes and evaluates alternative future water supply solutions, and recommends a specific water resources plan to maximize water supply availability and reliability.

El Dorado Hills Fire Department Five Year Plan 2013–2018

The El Dorado Hills Fire Department *Five Year Plan for 2013–2018* (Five Year Plan), adopted in October 2013, serves as a projection for the department's growth over the next 5 years. The Five Year Plan identifies historical and projected residential and commercial development in the El Dorado Hills Fire Department's service area, including the location, total projected units, and population associated with residential development and the square footage and location of anticipated commercial development. The Five Year Plan summarizes annual incidents and calls for service from 2007 to the present and projects the anticipated number of calls annually through 2017. The plan identifies existing staffing and uses that, along with the development data, to predict future department staffing needs. In addition, the Five Year Plan describes existing and proposed facilities and apparatus, including a proposed 21-acre training facility in the El Dorado Hills Business Park and the rebuilding of Station 84 (El Dorado Hills Fire Department 2013).

The Five Year Plan includes maps showing driving times from each of the fire district's existing stations and the proposed Business Park Station to the district's more populated areas. The maps do not reflect total response time, which includes reporting the emergency and call processing (El Dorado Hills Fire Department 2013). Driving times depicted on the maps range from 4.5 to 6.5 minutes (El Dorado Hills Fire Department 2013).

The Five Year Plan describes existing and future department revenues and their sources, including property taxes and development fees. The plan notes a decrease in property tax revenues over the past 5 years due to the economic downturn and associated lack of development, and indicates an expected increase beginning in the 2013–2014 fiscal year (El Dorado Hills Fire Department 2013). The department imposes development fees on all new development to ensure the development pays its share of capital costs associated with adequate facilities and equipment to mitigate its impacts and to ensure maintenance of the level of service provided to existing residents within its jurisdiction. The department has historically imposed development fees on a per-dwelling unit basis, converted to a per-square foot fee for industrial and commercial development (El Dorado Hills Fire Department 2013). The Five Year Plan reflects a new fee structure, consistent with that used by the Sacramento Metropolitan Fire District and based on input from the other El Dorado County fire districts, which is based on square footage for both commercial and residential applications (El Dorado Hill Fire Department 2013). While the department indicates that a development impact fee of $1.29 per square foot is justified, its Board of Directors elected to assess development at a rate of $1.16 per square foot and recover the remainder from its general reserve funds, reserving the option to adjust the fee upward or downward in the future based on its annual review (El Dorado Hills Fire Department 2013).

El Dorado Union High School District 2014 Master Plan

The *El Dorado Union High School District 2014 Master Plan* (2014 Master Plan), adopted in March2014, is intended to guide the district in managing, upgrading, and modernizing its school facilities for the next 10 years. The 2014 Master Plan presents the district's 10-year enrollment

history, current and projected enrollment and capacity for each of its schools, and an assessment of existing school facilities' adequacy and projected needs. The plan presents projected facility needs, makes recommendations and outlines potential and projected district revenues and their sources.

Facility needs considered in the 2014 Master Plan fall into several categories, including growth, modernization, support facilities, program needs, and building and grounds upgrades. These needs are driven by a variety of factors, including student population and facility aging. The 2014 Master Plan defines growth needs as those that arise due to an increased student population associated with projected new developments that generate more students than can be accommodated in existing facilities. Modernization needs are associated with the aging of existing facilities, which state standards suggest should be modernized at 25 years of age, or 20 years for portable structures. Support facility needs refer to the ability of non-classroom areas such as libraries, kitchens, gymnasiums, restrooms, and site acreage to serve the number of students at a school. Program needs are those caused by educational program changes, and building and grounds upgrades reflect activities such as improving access for people with disabilities, roof replacement, upgrades to electrical, plumbing, heating and air conditioning systems, and fire and safety upgrades. The 2014 Master Plan indicates a variety of needs district-wide, but no needs at Oak Ridge High School, the closest high school to the project site (SchoolWorks 2014).

The 2014 Master Plan contains the following relevant strategic planning goal.

> Develop and implement Facilities Master Plan designed to maximize local and state funding sources to maintain, upgrade, and modernize facilities and technology across the District.

El Dorado Union High School District utilizes several sources of revenues, including two local sources, developer fees and community facilities district special taxes, to pay for its facilities. The district collects developer fees on commercial/industrial projects, senior housing projects, and residential additions consisting of more than 500 square feet. Use of these funds is limited to growth-related capital facility projects and related expenses. These fees are collected one time, concurrent with County building permit issuance for such projects. In addition, the district receives 38% of special taxes collected in the El Dorado Schools Financing Authority Community Facilities District (CFD) #1, which was established in the El Dorado Hills Specific Plan area in 1992 to fund capital facilities needed to accommodate new development in the El Dorado Union High School District, the Buckeye Union School District, and the Rescue Union School District. These funds are collected annually over a long period; the district's annual CFD revenue is currently $1.9 million (SchoolWorks 2014).

Buckeye Union School District Facility Master Plan

The Buckeye Union School District's *Facility Master Plan* was adopted in February 2004 and is currently being updated. The 2004 *Facility Master Plan* is intended to guide district decision-making related to future facility needs. As such, it describes the district's history and demographics, existing and future educational programming, facility needs and potential funding sources.

The 2004 *Facility Master Plan* indicates that, at the time of plan adoption, the district operated on a mixed school year schedule in order to provide adequate classroom space for all of the enrolled students (Williams and Associates 2004). The plan defines the three scheduling systems used by the district to accommodate students within its facilities: traditional (September–June); modified traditional (shorter summer break and several shorter breaks throughout the year); and year-round. Of these, the year-round schedule, with fewer, but longer, school days per year, provides the most intense use of school facilities and increases capacity up to 20% (Williams and Associates

2004). The 2004 *Facility Master Plan* also notes that school building capacity shifts each year, depending not only on the total number of enrolled students but also on the number of students at each grade level (Williams and Associates 2004).

The 2004 *Facility Master Plan* projects student enrollment and facility adequacy through 2008. As of the time of its adoption in 2004, the *Facility Master Plan* predicted that two of the three elementary schools nearest the project site, William Brooks Elementary and Silva Valley Elementary, would have adequate facilities for projected 2008 student enrollment, under a traditional or modified traditional schedule (Williams and Associates 2004). The third nearby elementary school, Oak Meadow Elementary, was projected to be over capacity with existing facilities, even with schedule modification to a year-round school year (Williams and Associates 2004). The nearest middle school, Rolling Hills Middle School, was projected to have sufficient facilities to house the expected 2008 student population under a traditional or modified traditional schedule (Williams and Associates 2004). An additional elementary school, Valley View Elementary, has been constructed but not opened, pending increased district enrollment (Blackstone El Dorado 2011). The project site is within the boundaries of Rolling Hills Middle School (modified traditional schedule 6th through 8th grades) located to the north and northeast of the Serrano Westside and Pedregal planning areas, respectively (Buckeye Union School District 2013).

The Buckeye Union School District uses multiple revenue sources, including developer fees and CFD special taxes, to pay for its facilities. The2004 *Facility Master Plan* describes these local funding sources. The district collects developer fees on residential and commercial/industrial projects at the time the County issues building permits for those projects (Williams and Associates 2004). In addition, the Buckeye Union School District participates, with the El Dorado Union High School District and Rescue Union School District, in the El Dorado Schools CFD #1 (Williams and Associates 2004).

El Dorado Irrigation District Urban Water Management Plan

EID updated its Urban Water Management Plan (UWMP) in 2010 in accordance with the Urban Water Management Act (California Water Code, Division 6, Part 2.6, Sections 10610–10657), which requires urban water suppliers providing municipal water to more than 3,000 connections or supplying more than 3,000 acre-feet per year (AFY) of water to adopt and submit a plan every 5 years to the California Department of Water Resources (DWR) (El Dorado Irrigation District 2011). The UWMP describes EID's existing water supply sources and system, the areas it serves, and existing and projected water demands. The UWMP addresses water supply reliability and shortage contingency planning, conservation, and demand management.

El Dorado County Water Agency Water Development and Management Plan

In 2014, the El Dorado County Water Agency (EDCWA) updated its 2007 Water Resources Development and Management Plan (WRDMP). The 2007 WRDMP studied the adequacy of El Dorado County's existing and planned future public water supplies to meet projected future demand anticipated under the 2004 General Plan. The 2014 WRDMP Update revises the 2007 WRDMP to incorporate new information such as recent water supply and demand reports, recent and ongoing severe droughts (2007–2009 and 2012–present), climate change findings, water conservation efforts, changing land use and development patterns, recent and proposed County General Plan amendments, and altered actual and planned water purveyor service area boundaries as well as recently-adopted state regulations and water conservation requirements.

The 2014 WRDMP Update provides year 2030 water demand assumptions and projections for the county's west slope water purveyors in the context of low, medium, and high growth rate scenarios. The 2014 WRDMP Update also presents current and potential future water conservation measures that could be implemented to further reduce projected demand, summarizes each purveyor's water supply portfolio, and compares supply with estimated future demand in order to determine need for additional water supplies.

El Dorado Irrigation District Wastewater Facilities Master Plan

EID adopted its *Wastewater Facilities Master Plan* (WWFMP) in 2013. The plan outlines EID's long-term program for the collection and treatment of wastewater and the use of recycled water resources. The WWFMP provides recommendations and an implementation plan for the development of recommended wastewater and recycled water infrastructure to serve the growth anticipated by the County General Plan and associated specific plans (El Dorado Irrigation District 2013a). As such, the WWFMP focuses on three issues facing El Dorado County: wastewater discharge and the role of recycled water; future regulatory requirements; and infrastructure. The WWFMP includes estimates of existing and projected wastewater flows from the area served by EID's wastewater collection system. The WWFMP projects wastewater treatment needs for the EID service area based on the County General Plan land use designations and the number of anticipated connections associated with development of the specific plans for the Bass Lake Hills, Carson Creek, El Dorado Hills, Northwest El Dorado Hills, Promontory and Valley View areas. The plan also identifies needed system expansions and upgrades to meet the projected increases in wastewater flows associated with this growth. The plan recommends a number of system enhancements such as improvements to lift stations and sewer pipelines.

The WWFMP plans for expansion of the El Dorado Hills WWTP from its current capacity of 4.0 million gallons per day (mgd) to 5.45 mgd by 2025 (El Dorado Irrigation District 2013a). The WWFMP also recommends further consideration of upgrades to the El Dorado Hills WWTP recycled water pump station to supply increasing demands for recycled water (El Dorado Irrigation District 2013a). The WWFMP contains the following relevant objectives related to wastewater and recycled water.

> Define the long-term role of recycled water within the District's water resources portfolio.
>
> Develop integrated and prioritized water, wastewater and recycled water system capital improvements that are consistent with the District's long-term goals and objectives.

El Dorado County Subdivision Ordinance

The County Subdivision Ordinance (El Dorado County Code Title 130) requires the submission of drainage plans prior to the approval of tentative maps for proposed subdivision projects. The drainage plans must include an analysis of upstream, onsite, and downstream facilities and pertinent details, and details of any necessary offsite drainage facilities.

El Dorado County Design and Improvement Standards Manual

The *El Dorado County Design and Improvement Standards Manual* was adopted in 1990 and provides required erosion and sediment control measures applicable to subdivisions, roadways, and other development.

Stormwater Management Plan

The adopted *Storm Water Management Plan for Western El Dorado County* (SWMP) describes a program to reduce the discharge of pollutants associated with stormwater drainage system that serve western El Dorado County. It identifies how the County will comply with the provisions of the WDRs for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems General Permit No. CAS000004 (Order No. 2003-0005-DWQ) (Small MS4 Permit) issued by the State Water Board. The SWMP addresses County activities, including how the County manages the planning, design, and construction of projects carried out directly by the County and under permits issued by the County and how the County maintains facilities owned and operated by the County and activities carried out by others on properties owned by the County. It also addresses County responsibilities for implementing applicable stormwater management practices as well as training, public education, and outreach, monitoring, program evaluation, and reporting.

Additionally, the County is in the process of implementing requirements of the State Water Board's new NPDES General Permit for MS4s (Order 2013-0001-DWQ) which was adopted by the State Water Board on February 5, 2013. The proposed project qualifies as a "Regulated Project" as defined in Section E.12 of the Order and therefore will be required to comply with the standards provided in the Order.

County of El Dorado Drainage Manual

The *County of El Dorado Drainage Manual* was adopted in 1995. It documents criteria to address the procedures of hydrology and hydraulics required for the analysis and design of drainage facilities within El Dorado County, particularly as the county urbanizes. The manual is intended to outline procedures and techniques necessary to provide a standard methodology in the performance of the analysis and design of stormwater and drainage facilities. It is largely applicable to discretionary applications such as tentative subdivision maps and parcel maps.

El Dorado County Solid Waste Management Ordinance (No. 4525)

The County's solid waste management ordinance (No. 4525) governs the accumulation, storage, collection, and disposal of solid waste generated on residential, commercial, and industrial properties within El Dorado County. The ordinance includes prohibitions and permit requirements for specific activities (El Dorado County 1999).

El Dorado County Construction and Demolition Debris Diversion Ordinance

The County's debris recycling ordinance, adopted in 2003, added Chapter 8.43 to the County's Ordinance Code and requires individuals or businesses demolishing or constructing projects with structure footprints exceeding 5,000 square feet in area to recycle at least 50% of the construction and demolition debris created. Prior to the issuance of a permit, the permit applicant must submit a debris recycling acknowledgment. Within 60 days of completion of the project, the applicant must submit a debris recycling report demonstrating they have diverted at least 50% of the waste generated (California Department of Resources Recycling and Recovery 2006).

El Dorado County Solid Waste Management Plan

The *El Dorado County Solid Waste Management Plan*, adopted in 2012, was designed to assist the County in reaching a future 75% landfill diversion goal. The plan provides a strategic roadmap to use in planning for coordinated, countywide, and jurisdiction cooperation and initiating near-,

intermediate-, and long-term programs and infrastructure strategies. The plan includes the estimated potential diversion gains for each strategy and methods to track strategy progress. It also includes estimated costs and funding methods for the program and infrastructure strategies.

Environmental Setting

Public services include fire and police protection, schools, and libraries. Public utilities include water, wastewater, stormwater, solid waste, and energy.

Fire Protection

Fire protection services in El Dorado County are provided by 13 separate fire districts, 1 city fire department, the California Department of Forestry and Fire Protection (CAL FIRE), and the U.S. Forest Service (USFS). The project site is within the El Dorado Hills Fire Department boundaries. This fire department covers approximately 30 square miles and serves a population of approximately 42,000, with four fire stations and four response zones (El Dorado Hills Fire Department 2011). The department currently has 47 paid firefighters and about 33 volunteers (El Dorado Hills Fire Department 2011). Policy 5.1.2.2 of the County General Plan identifies that the minimum level of service for fire district responses should be an 8-minute response to 80% of the population. The standard for the fire department is a 6-minute travel time 90% of the time for all emergency calls (Lilienthal pers. comm.). Station 85, located at 1050 Wilson Boulevard, is adjacent to the project site.

Police Protection

The proposed project would be served by the El Dorado County Sheriff's Office for police protection. The County Sheriff's Office has a force of 358, including 164 sworn officers, and provides service to approximately 1,700 square miles of unincorporated areas of El Dorado County, which encompasses a population of approximately 183,000 (El Dorado County Sheriff's Department 2013). Currently, there is a substation in the El Dorado Hills Town Center, which serves as a satellite office for temporary deputy use and occasionally staffed by STARS (Sheriff's Team of Active Retirees) members during limited hours. The County's target service ratio is 1.0 officer per 1,000 residents (El Dorado County 2004). With a service population of 182,404 in unincorporated El Dorado County and 164 sworn officers, the current service ratio is 0.90 (or 1 officer for every 1,112 residents), which does not meet the 1.0: 1,000 ratio standard (El Dorado County Sheriff's Department 2013).

Policy 5.1.2.2 of the County General Plan (El Dorado County 2004) identifies that the minimum level of service for sheriff responses should be an 8-minute response to 80% of the population. In 2013, the sheriff's department responded to 572 priority 1 and 2 calls; 40% of these calls (228) were responded to in less than 8 minutes (El Dorado County Sheriff's Department 2013).

Schools

Approximately 44% of the total households in El Dorado Hills[2] have children under the age of 18 (i.e., school-age children). The household size in unincorporated El Dorado County averages 2.59 people. Approximately 13,926 children ages 3 and over are enrolled in school. Approximately 1,078

[2] The area identified by the U.S. Census Bureau as the Census Designated Place (CDP), for the purposes of the Census, has the same general boundaries as El Dorado Hills.

(7%) are enrolled in nursery school, 993 (7%) in kindergarten, 6,165 (44%) in elementary school, and 3,046 (22%) in high school (U.S. Census Bureau 2010).

The County General Plan relies on each individual school district to identify its own capacity and classroom utilization rate (El Dorado County 2004:5-87). Existing and projected school enrollment and capacity for the schools closest to the project site are described below.

For 9th through 12th grades, the project site is in the El Dorado Union High School District. The district's 2014 Master Plan identifies the capacity and enrollment of each school within the district. Although the El Dorado Union High School District experienced growth until 2005, it has seen a steady decline in students from 7,411 students in the 2005–2006 school year to 6,810 in the 2014–2015 school year (California Department of Education 2015a). This trend of declining enrollment is expected to continue through 2017 and then remain stable through 2021 (SchoolWorks 2014).

Oak Ridge High School (9th through 12th grades), the high school nearest to the project site, is located north–northeast of the project site. Oak Ridge High School's capacity is 2,405 students and its 2014–2015 student population was 2,389; enrollment is expected to increase slightly for the next 6 years and then decline to just over 2,100 students by 2023–2024 (California Department of Education 2015a; SchoolWorks 2014). The 2014 Master Plan assumes that, based on information from planned developments and the County, 6,283 new housing units would be built within the district over the next 10 years, 2,433 of which would be served by Oak Ridge High School (SchoolWorks 2014). Enrollment at Oak Ridge High School is expected to increase slightly by 2017, and then decline. The classroom utilization report prepared as part of the 2014 Master Plan determines classroom capacity by multiplying the number of classrooms, including portables, by the district's classroom loading standards; a similar calculation is performed to determine the adequacy of support facilities. According to the 2014 Master Plan, Oak Ridge High School has sufficient classrooms and support facilities to accommodate current and projected student needs for the next 10 years (SchoolWorks 2014).

For kindergarten through 8th grade, the project site is located in the Buckeye Union School District. Silva Valley Elementary School (year-round transitional kindergarten through 5th grade) is the closest elementary school to the project site and may serve the Serrano Westside planning area of the project site. Additionally, Oak Meadow Elementary (modified traditional schedule transitional kindergarten through 5th grade) may serve the southern portion of Serrano Westside planning area (Buckeye Union School District 2013). Brooks Elementary (year-round transitional kindergarten through 5th grade) is located to the west–southwest of the Pedregal planning area and may serve residences in the Pedregal planning area (Buckeye Union School District 2013). As described above, an additional elementary school, Valley View Elementary, has been constructed but not opened, pending increased district enrollment (Blackstone El Dorado 2011). The project site is within the boundaries of Rolling Hills Middle School (modified traditional schedule 6th through 8th grades) located to the north and northeast of the Serrano Westside and Pedregal planning areas, respectively (Buckeye Union School District 2013). Table 3.12-1 identifies student enrollment and capacity at these four schools for the 2014–2015 school year. All four schools that are open are operating within current capacity.

Table 3.12-1. Summary of 2014–2015 Elementary and Middle School Student Enrollment

School	Current Enrollment[a]	Current Capacity[b]
Silva Valley Elementary	603	768
Oak Meadow Elementary	760	824
William Brooks Elementary	492	664
Rolling Hills Middle School	1,004	1,056
Valley View Elementary	0[c]	–

Sources:
[a] California Department of Education 2015b.
[b] Boike pers. comm.
[c] This school has been constructed but has not opened, pending increased district enrollment.

In 2003, when the Buckeye Union School District completed its latest master plan, district enrollment was at 4,279 students (Williams and Associates 2004). The 2014–2015 total district enrollment was 5,157 students (California Department of Education 2015b). District enrollment has been holding steady for the last 5 years at approximately 5,000 to 5,200 students (California Department of Education 2015c). Several of the schools within the Buckeye Union School District operate on a year-round basis, allowing for the utilization of existing facilities by a greater number of students than a traditional school year schedule can provide. The 2004 *Facility Master Plan* shows a traditional schedule district capacity of 5,279 students and a multi-track year-round schedule capacity of 5,891 students (Williams and Associates 2004).

As described above in the *Regulatory Setting*, both the El Dorado Union High School District and the Buckeye Union School District use several revenue sources to pay for facility needs. The districts collect taxes via the El Dorado Schools Financing Authority CFD, which provides funds for capital facilities to serve students generated by new development. Additionally, the districts collect developer fees as permits are issued for residential and commercial/industrial projects. The fees are established by the state and are considered the basic mitigation fee if justification can be shown that anticipated development within a district will impact the district with additional students. The current rate, adopted in 2014, is $3.36 per square foot of residential and $0.54 per square foot of commercial development (SchoolWorks 2014:53).

Libraries

El Dorado County has six county libraries ranging in size from 23,000 square feet (Main Library in Placerville) to 1,200 square feet (Pollock Pines Library). A total of 67,387 square feet of library space in El Dorado County serves a population of approximately 180,712 people (0.37 square foot per person) (California State Library 2014). The 16,057-square-foot El Dorado Hills Library is located on Silva Valley Parkway and serves the El Dorado Hills area (California State Library 2014). It has more than 60,000 volumes (El Dorado County Library 2011). The El Dorado Hills Library serves a population of 28,490, providing 0.56 square foot of library space per capita (California State Library 2014). While the County library system does not currently have a facilities master plan, a typical standard used for planning purposes is to have a minimum of 0.5 square foot of library space per capita (El Dorado County 2003; Amos pers. comm.). With approximately 0.37 square foot of existing library space per capita, the County has an existing deficit of library space compared to the

typical standard. However, within the project vicinity of El Dorado Hills, the library square footage of 0.56 per capita exceeds the planning standard of 0.5 square feet.

Water Supply, Demand, and Conservation

The project site is within the EID service area for both potable and recycled water service and is subject to the district's water conservation plans. EID depends on surface water from the watersheds of the Sierra Nevada to serve existing and future customers through a complex network of storage, treatment, and transmission facilities.

Potable Water

An overall potable water delivery system is in place for El Dorado Hills, including offsite transmission mains, storage tanks, and booster stations. EID provides potable water to over 100,000 people in El Dorado County through two primary interconnected water systems in its service area—the El Dorado Hills system and the Western/Eastern system. The El Dorado Hills water system obtains its primary supplies under rights and entitlements from Folsom Reservoir, while the Western/Eastern system derives its supplies from sources under rights from the South Fork American River and Cosumnes River watersheds. The project site lies within EID's El Dorado Hills supply area.

EID has two broad categories of water assets available that could be used for the proposed project: (1) secured water assets, and (2) planned water assets. EID's secured water assets are derived from a variety of surface water sources, including pre-1914 appropriative water rights, licensed and permitted appropriative water rights, U.S. Bureau of Reclamation (Reclamation) CVP water service contracts, and Warren Act contracts, as well as recycled water produced from treated effluent at the El Dorado Hills and Deer Creek WWTPs, described below under *Recycled Water*. EID's planned water assets consist of acquiring two additional water supplies for use within its service area to make available for the proposed project: (1) water under the El Dorado–Sacramento Municipal Utility District (SMUD) Cooperation Agreement, in cooperation with the El Dorado Water and Power Authority (EDWPA)[3], and (2) a Central Valley Project (CVP) water entitlement derived from EDCWA Fazio water supply. Upon State Water Board approval, the El Dorado–SMUD Cooperation Agreement would provide EID with 30,000 AFY of water through 2025 and 40,000 AFY thereafter. The EDCWA Fazio water would provide EID with an additional 7,500 AFY of water from Folsom Reservoir and is expected to be available in 2015 (Appendix K:4–8). These planned water assets, although partially secured, are not yet fully available for EID's use. In normal years, the water supplies under these planned assets total 37,500 AFY. In 3 consecutive dry years, the water supplies under these planned assets total 10,625 AFY (Appendix K:4–15).

As shown in Table 3.12-2, together with EID's recycled water supply (see *Recycled Water Supply and Demand*), these district-wide secured and planned assets total 110,290 AFY in normal water years and 77,885 AFY in a single-dry water year. In year two and year three of a multiple-year drought in 2035, District-wide supplies would be reduced to 73,965 and 72,465 AFY, respectively (Appendix K:4–15). The current district-wide water supplies for a multiple-year drought are 63,860 acre-feet (AF) for year one, 59,940 AF for year two, and 58,440 AF for year three (Appendix K:5-2). Normal year water supplies currently available to EID with secured assets total 67,190 AFY; in dry years, the water supplies currently available to EID under the secured assets are 61,660 AFY (year 1 of

[3] This entity is a Joint Powers Authority consisting of El Dorado County, El Dorado County Water Agency, and El Dorado Irrigation District.

multiple dry year); 57,740 AFY (year 2 of multiple dry year); and 56,240 AFY (year 3 of multiple dry year) (Appendix K).

Table 3.12-2. EID Water Rights, Entitlements, and District-Wide Supply Availability

Water Right or Entitlement	Maximum Water Assets Available (AF)	Normal Year Planned Supply Availability (AF)	Dry-Year Planned Supply Availability (AF)
License 2184 and pre-1914 ditch rights, including Warren Act Contract 06-WC-20-3315	4,560	4,560	3,000
Licenses 11835 and 11836	33,400	23,000	20,920[a]
CVP Contract 14-06-200-1375A-LTR1	7,550	7,550	5,660
Pre-1914 American River diversion and storage rights	15,080	15,080	15,080
Permit 21112	17,000	17,000	17,000
Subtotal existing	77,590	67,190	61,660
Central Valley Project Fazio water entitlement (PL 101-514 [1990] Fazio)[d]	7,500	7,500	5,625
Applications 5645X-12, 5644X02, and partial assignment of Applications 5645, 5644 with El Dorado-SMUD Cooperation Agreement[e]	40,000[b]	30,000	5,000[c]
Subtotal planned	47,500	37,500	10,625
Recycled water (planned)	5,600	5,600	5,600
Total	130,690	110,290	77,885

Source: Appendix K:Table 4-1.

AF = acre-feet.

[a] This is the modeled safe yield of this water right during a single dry-year. For planning purposes, the second and third dry years of a 3-year dry period are assumed to be 17,000 AF and 15,500 AF, respectively.

[b] Section 5.1.1 of the El-Dorado SMUD Cooperation Agreement indicates that 40,000 AF of SMUD water will be available after 2025. For conservative Normal Year planning purposes, EID uses 30,000 AF of available supply.

[c] Available supply is 15,000 AF in a single dry year, but in preparing for multiple dry years, EID anticipates using only 5,000 AFY for a 3-year period.

[d] Available starting in 2015.

[e] Available starting in 2025.

EID acquires the Folsom Reservoir water for use in the El Dorado Hills system through a Reclamation CVP water service contract and Warren Act contracts for rediverted Weber Reservoir and EID ditch water and State Water Right Permit 21112 (El Dorado Irrigation District 2011). Through the Reclamation CVP contract, EID is entitled to 7,550 AFY during normal and wet years, subject to a Reclamation shortage policy that can restrict allocations during periods of water shortage to 75% of historic use. This policy allows Reclamation to limit EID's allocations to approximately 5,660 AFY or less during shortages (El Dorado Irrigation District 2013b).

Warren Act contracts allow nonfederal water assets to be transported through federal storage and conveyance facilities for retrieval. EID's Warren Act contract water consists of approximately 4,560

AFY of rediverted water that flows through EID's Weber Dam, Weber Creek, Slab Creek, and Hangtown Creek diversion ditches but is now available from Folsom Reservoir instead (El Dorado Irrigation District 2013b). Permit 21112 grants EID 17,000 AFY of water; EID currently maintains a temporary Warren Act Contract for this permit and is working to finalize a long-term Warren Act contract to allow diversion of this water at Folsom Reservoir (Appendix K). The only water that EID currently purchases wholesale is that associated with the Reclamation CVP contract; however, EID plans to purchase water wholesale from EDCWA, which is pursuing a Reclamation contract under Public Law 101-514 (El Dorado Irrigation District 2011). Raw water diverted from Folsom Reservoir is treated at the 26 mgd capacity El Dorado Hills Water Treatment Plant (WTP) prior to distribution (El Dorado Irrigation District 2013b).

Recycled Water

EID has been producing recycled water for more than 30 years at the El Dorado Hills WWTP, initially for industrial purposes and for turf irrigation at the El Dorado Hills Executive Golf Course (El Dorado Irrigation District 2011). The Deer Creek WWTP facilities began supplying recycled water to the Serrano area of El Dorado Hills in 1990, and in 1997 the systems and pipe networks of the El Dorado Hills and Deer Creek WWTPs became a single, interconnected delivery system (El Dorado Irrigation District 2011). Demand for recycled water has increased in the El Dorado Hills service area since the introduction in 1999 of a dual pipe system for residential construction that provides homes with both potable and recycled water supplies (El Dorado Irrigation District 2013a). Currently, EID uses recycled water in the El Dorado Hills and Cameron Park areas to offset potable water demand for the irrigation of golf courses, schools, parks, residential developments, commercial and industrial landscaping, and in some areas, for fire suppression and dust control (El Dorado Irrigation District 2011, 2013a). As shown in Figure 2-8a, there is an existing recycled water line in Serrano Parkway and along the east side of the Raley's and La Borgata development north of U.S. Highway 50 (US 50).

EID's recycled water production capabilities depend on a variety of factors, including the total wastewater flow entering the El Dorado Hills and Deer Creek WWTPs and the discharge of at least 0.5 to 1.0 mgd of treated effluent to Deer Creek as mandated by the State Water Board (El Dorado Irrigation District 2011, 2013b). Between 2008 and 2012, recycled water production at the El Dorado Hills and Deer Creek WWTPs averaged approximately 2,600 AFY (El Dorado Irrigation District 2013a). Demand for recycled water in 2012 was approximately 2,850 AF, slightly more than the amount produced. When demand exceeds production of recycled water, EID currently uses potable water to supplement the recycled water system at dedicated locations while protecting the potable water system (El Dorado Irrigation District 2013a). EID's current recycled water use is about 2,200 AFY on average (Appendix K). EID expects the production, and therefore supply, of recycled water to increase along with development in the El Dorado Hills and Deer Creek collection system areas and to eventually result in a balance of recycled water supply and demand (El Dorado Irrigation District 2013a). By 2035, EID anticipates having a supply of 5,600 AFY of recycled water within its service area (Appendix K).

Current and Future Demand

As reported in the WSA, based on the 2012 EID *Water Diversion Report*, EID diverted 36,580 AF into its potable water system. In addition to the potable water, EID served 2,404 AF of recycled water to meet customer demands. Combined, the current water demand is 38,984 AF. This value includes nonrevenue water,[4] including system losses, necessary to deliver these supplies from their respective treatment plants to the customer meter. This value also includes 1,269 AF sold to the City of Placerville (Appendix K:3-3).

Table 3.12-3 shows how total water demand from existing and planned uses in EID's service area is anticipated to increase through 2035. For a detailed description of the assumptions and calculations used to estimate existing and future demands, refer to Section 3, *Other Estimated Water Demands*, in the WSA (Appendix K).

Table 3.12-3. Estimated Combined Water Demand from Other Existing and Planned Future Uses in the EID Service Area

	Demand (AF/year)					
Category	Current	2015	2020	2025	2030	2035
Other currently proposed projects	0	275	1,193	1,836	2,505	2,861
Current customers and uses [a]	38,984	34,154	33,809	33,694	33,579	33,464
Adjusted GPU land use[b]	0	514	2,853	7,975	14,718	22,830
Subtotal water demand	38,984	34,944	37,855	43,505	50,803	59,156
Non-revenue	0	4,543	4,921	5,656	6,604	7,690
Total water demand	38,984	39,486	42,777	49,161	57,407	66,845

Source: Appendix K:Table 3-1.
AF = acre-feet.
GPU = General Plan Update.
[a] The "Current customers and uses" demand value includes the "Other authorized uses." This value is greater under the Current condition because "Non-revenue water" is included in the current year. All other years, beginning with 2015, have non-revenue water added separately, as shown above.
[b] *Adjusted GPU land use* reflects changes to the 2004 General Plan Update as determined by facility improvement letters (FILs) submitted to EID. This value does not include other proposed projects currently undergoing County CEQA review.

Water Conservation

Because El Dorado County relies heavily on surface water supplies from the Sierra Nevada snowpack, which varies annually, water conservation measures are implemented on the part of both the water supplier and the end user. EID has adopted demand management measures, including "water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies" that form an integral part of EID's water conservation efforts during both normal and dry years (El Dorado Irrigation District 2011). In addition to EID's internally applied conservation measures, such as leak detection,

[4] *Nonrevenue* water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially unmetered uses such as fire protection, hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings. The predominant source of nonrevenue water is from system leaks.

measures include commercial and residential water efficiency programs featuring water audits for both residential and commercial customers; complimentary low-flow showerheads and bathroom faucet aerators for residential customers; and rebates on residential high-efficiency toilets and clothes washers, irrigation efficiency upgrades, and weather-based irrigation control for residential customers (El Dorado Irrigation District 2014a).

EID Drought Preparedness Plan (2008)

In 2007, EID developed a comprehensive preparedness plan to help identify drought conditions and determine when El Dorado County would be considered to be entering into drought conditions. The EID Board of Directors adopted the Drought Preparedness Plan in 2008. Drought stages identified in the Drought Preparedness Plan range in increasing severity from 0 to 3 and also consider the potential for water shortage emergencies related to an unexpected disruption of supply, storage, or distribution system facilities (El Dorado Irrigation District 2011).

EID used the Drought Preparedness Plan to develop an action plan that would address a drought situation. In single dry years, EID would follow the Drought Preparedness Plan, along with adopted policies, when implementing voluntary or mandatory demand reduction measures (Appendix K). In the event of a second dry year, EID would invoke the first stage of the Drought Preparedness Plan, informing the public of predicted water shortages and encouraging conservation of up to 15% of normal demand through voluntary conservation (Appendix K). In a third dry year, EID would implement the Drought Preparedness Plan's second stage, increasing efforts to reduce demand by up to 30% of normal use through voluntary and mandatory conservation measures (Appendix K). EID's Drought Action Plan, updated most recently in 2014, implements the Drought Preparedness Plan and provides further direction in the event of drought conditions.

Drought Action Plan (2014)

EID's 2014 Drought Action Plan serves as a detailed work plan for EID staff to manage the district's water supply before, during, and after drought conditions. The Drought Action Plan identifies normal conditions plus four stages of drought severity that depend on EID water supply availability and indicates the water conservation measures to be implemented in each of those stages, as well as post-drought actions. Under normal water supply conditions, EID prohibits water waste, maintains ongoing water conservation measures, and implements public outreach and education to raise awareness of water efficiency practices. Stage 1 drought conditions would occur if water supplies were slightly restricted; in response, EID would inform customers of possible shortages and ask them to voluntarily conserve up to 15% of normal use. At Stage 2, water supplies would be moderately restricted, and EID would implement both voluntary and mandatory conservation measures to reduce use by up to 30% of normal. A Stage 3 drought would occur if water supplies became severely restricted, and would result in the enforcement of mandatory measures to achieve a demand reduction goal of up to 50% of normal use. Stage 4 would result from persistent drought conditions leading to extremely restricted water supplies; under Stage 4 conditions, EID would require water rationing for health and safety purposes in order to achieve a greater than 50% demand reduction (El Dorado Irrigation District 2014b). Table 3.12-4 summarizes the characteristics and actions associated with these drought stages.

Table 3.12-4. EID Drought Action Plan Stages and Required Actions

Water Supply Conditions	Drought Stage	Stage Title	Stage Objective	Response Actions
Normal water supply	None Ongoing water conservation and enforcement of water waste prohibition.	Normal Conditions	Public awareness of water efficiency practices and prohibition of water waste.	Public outreach and education for ongoing water efficiency practices and the prohibition of water waste.
Slightly restricted water supplies Up to 15% supply reduction	Stage 1 Introductory stage with voluntary reductions in use.	Water Alert	Initiate public awareness of predicted water shortage and encourage conservation.	Encourage voluntary conservation measures to achieve up to a 15% demand reduction.
Moderately restricted water supplies Up to 30% supply reduction	Stage 2 Voluntary and mandatory reductions in water use.	Water Warning	Increase public awareness of worsening water shortage conditions. Enforce mandatory measures such as watering restrictions.	Voluntary conservation measures are continued, with the addition of some mandatory measures to achieve up to a 30% demand reduction.
Severely restricted water supplies Up to 50% supply reduction	Stage 3 Mandatory reductions in water use.	Water Crisis	Enforce mandatory measures and/or implement water rationing to decrease demands.	Enforce mandatory measures to achieve up to a 50% demand reduction.
Extremely restricted water supplies Greater than 50% supply reduction	Stage 4 Water rationing for health and safety purposes.	Water Emergency	Enforce extensive restrictions on water use and implement water rationing to decrease demands.	Enforce mandatory measures to achieve greater than 50% demand reduction.

Source: El Dorado Irrigation District 2014c.

Following 2 consecutive dry years (2012 and 2013), EID implemented the *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 is required by the State Water Board to achieve a Districtwide cutback of 28% compared to 2013. As of August 5, 2015, cumulative water use since January 1, 2015 has dropped by 30% (El Dorado Irrigation District 2015a).

Groundwater

There is no groundwater basin in western El Dorado County. Overall, El Dorado County has experienced little groundwater change between 1999 and 2010. Depths fluctuated between 22 and 30 feet deep, with an increasing long-term trend. See Section 3.8, *Hydrology, Water Quality, and*

Water Resources, for a more detailed discussion of groundwater in El Dorado County and the project area.

Groundwater will not be used for the CEDHSP project, as EID will provide all water for the development.

Wastewater

In addition to providing potable and recycled water, EID also provides wastewater conveyance and treatment services. EID operates two wastewater collection systems in the El Dorado Hills/Cameron Park area, the El Dorado Hills and Deer Creek systems, which convey wastewater to the El Dorado Hills WWTP and the Deer Creek WWTP, respectively (El Dorado Irrigation District 2013a). The El Dorado Hills WWTP, approximately 1.25 miles south of US 50 along Latrobe Road, serves the El Dorado Hills area, where the project site is located (El Dorado Irrigation District 2013a). The El Dorado Hills WWTP serves an estimated population of 42,100 people in the El Dorado Hills service area. The Deer Creek WWTP, 2 miles south of US 50 off of Deer Creek Road, serves the drainage basin and areas of El Dorado, Diamond Springs, Cameron Park, and Shingle Springs (El Dorado Irrigation District 2013a).

The El Dorado Hills WWTP operates in accordance with Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board (Order R5-2013-0003, NPDES Permit No. CA0078671). The El Dorado Hills WWTP treats wastewater using preliminary and primary treatment, secondary treatment, and tertiary treatment, and discharges the treated effluent to Carson Creek or recycles it for beneficial use (El Dorado Irrigation District 2013a). The permit contains specific effluent limitations for discharges to Carson Creek. During dry weather periods, there is sufficient demand for recycled water that no wastewater is typically discharged into Carson Creek (El Dorado Irrigation District 2013a). The El Dorado Hills WWTP has had very few (11 total) violations in the past 10 years for only two constituents (alpha-BHC [one violation in 2009-2010] and ammonia [ten violations during the 2000-2009 timeframe]) (Central Valley Regional Water Quality Control Board 2013).

The El Dorado Hills WWTP was recently expanded to increase its rated capacity from 3.0 mgd to its existing capacity for average dry weather flow of 4.0 mgd. The existing average dry weather flow is 2.65 mgd. To accommodate future growth, EID plans to expand the El Dorado Hills WWTP's treatment capacity to 5.45 mgd, which would handle the projected future average dry weather flow of 5.45 mgd at buildout (sometime between 2032 and 2040) (El Dorado Irrigation District 2013a). The projected average dry weather flow is expected to reach the El Dorado Hills WWTP's existing capacity by around 2026, the same year that WWTP expansion is slated to be operational (El Dorado Irrigation District 2013a:150).

Wastewater generated in El Dorado Hills is conveyed south to the El Dorado Hills WWTP. In the vicinity of the project site, there are existing sewer lines that run north–south along the east side of the Serrano Westside planning area and that run along the northern and southern ends of the Pedregal planning area, as shown in Figures 2-8a and 2-8b, respectively. These lines connect to a trunk line in El Dorado Hills Boulevard north of Serrano Parkway. South of Serrano Parkway, the trunk line runs southeast and passes under US 50, through the Town Center East development, continuing south of White Rock Road to the WWTP. According to EID, several sections of the existing trunk sewer line south of US 50 may not have adequate capacity to convey existing and future flows from development in El Dorado Hills. EID's current WWFMP recommends that an approximately 4,500-foot-long segment of 18-inch line beginning north of White Rock Road extending south to the

WWTP be upsized to 24 inches to correct capacity deficiencies. Figure 2-9 shows the location of the line. The improvement could involve replacing the existing line or installing a parallel line (El Dorado Irrigation District 2013a:113). EID has been analyzing existing and future capacity improvements needed in this trunk sewer line, and this improvement is included in EID's 5-year Capital Improvement Plan (CIP) for 2016–2020. Design is planned for 2018, with construction in 2019-2020. Increasing the capacity of this line will correct capacity limitations and provide capacity for new wastewater customers. The capacity increment that provides for new connections is included in EID's Facility Capacity Charges (FCCs) (El Dorado Irrigation District 2015b).

EID has also recently determined that an approximately 300-foot-long segment of existing sewer pipeline north of and under Serrano Parkway on the east side of El Dorado Hills Boulevard requires upsizing to conform with the existing 18-inch line in that area. This segment of sewer is within an existing easement in the project site in the Serrano Westside planning area and is in an area proposed as open space in the CEDHSP. This project is not currently included in the CIP. Depending on the results of the required wastewater engineering evaluation (known as a Facility Plan Report [FPR]) that would be prepared for the CEDHSP, this improvement may be required prior to connection of a portion or potentially all of the CEDHSP north of this location to the EID wastewater collection system. The FPR would determine whether EID or the project applicant would be responsible for constructing the improvement.

Wastewater flows described in the WWFMP are based on growth defined by the County General Plan and the portions of the City of Placerville served by EID. The fundamental planning basis for developing water demands and projected wastewater flows is the planned land use presented in the County General Plan over the 20-year planning horizon of the adopted County General Plan (El Dorado County 2004), including the specific plans developed for the communities of Bass Lake Hills, Carson Creek, El Dorado Hills, Northwest El Dorado Hills, Promontory and Valley View. EID uses its wastewater generation rates, combined with the County General Plan land use designations and the number of planned connections in each of these specific plans, to project wastewater flows for the El Dorado Hills and Deer Creek collection systems (El Dorado Irrigation District 2013a).

The WWFMP assumes approximately 1,800 acres of development, including residential, commercial, and industrial properties, will occur within the El Dorado Hills collection system area, primarily consisting of infill and new developments along the eastern and southern perimeter of the existing El Dorado Hills collection system. Using this information, the WWFMP predicts future wastewater flows of 1.92 mgd for the El Dorado Hills system for areas of known density (specific plan areas). The plan predicts flows of 0.88 mgd in areas with land use designations but no specific plan. The total future wastewater flows of 5.45 mgd for the El Dorado Hills system, as described above, were determined by adding these projections to existing flows. Per EID administrative regulations, individual developers will be responsible for the planning, engineering, and construction of proposed sewer systems located within their respective development projects. Proposed sewer systems must be designed in accordance with EID's design standards and are subject to EID approval (El Dorado Irrigation District 2013a).

The WWFMP uses a hydraulic model of EID's El Dorado Hills collection systems to analyze the existing systems, evaluating capacity deficiencies and proposed upgrades for both the existing and future wastewater flow conditions. EID's analysis indicates several areas where actual peak wet weather flows are significantly higher than EID's design criteria, primarily along the northern and southern perimeters of the El Dorado Hills collection system and the eastern and western edges of the Mother Lode sewershed (El Dorado Irrigation District 2013a).

Stormwater

The west slope of El Dorado County contains three major watersheds, each of which drains into either the Middle Fork of the American River, the South Fork of the American River, or the Cosumnes River. The watersheds are further divided into smaller drainage basins that feed the tributaries to the three major rivers. Generally, developed drainage and stormwater infrastructure exist in the drainage basins.

North of US 50, El Dorado Hills Boulevard runs mostly north along the bottom of a small valley. A drainage channel parallels the road and then continues south along the east or back side of the Raley's Shopping Complex, where it discharges via a double box culvert under US 50. The Serrano Westside planning area drains to this channel, both upstream and downstream of the Serrano Parkway crossing. Downstream of US 50, the drainage channel continues through nature preserves and storage areas that are part of the Town Center amenities, then into Carson Creek, about one-half mile farther south. Both sides of the valley drain into the channel that parallels El Dorado Hills Boulevard (Watermark Engineering 2014).

Existing stormwater culverts at Serrano Parkway and US 50 attenuate 100-year storm flows from the Serrano Westside planning area, but a detention basin is needed within the Pedregal planning area to attenuate post-development flows from the VRH parcel (Serrano Associates, LLC 2015).

Solid Waste

Solid waste includes household garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded materials, including household hazardous waste, which are addressed separately in Section 3.7, *Hazards and Hazardous Materials*.

The County has solid waste collection franchise agreements with six companies to collect and manage solid waste. In 1962, the El Dorado Hills Community Service District (CSD) gained the authority to collect and dispose of residential and commercial garbage and refuse matter within the CSD boundaries. El Dorado Disposal, a Waste Connections, Inc. company, serves the unincorporated areas of El Dorado County and the El Dorado Hills CSD within which the project site is located.

Refuse collection is mandatory in the El Dorado Hills CSD area and El Dorado Disposal has approximately 12,095 residential customers. Two transfer stations/material recovery facilities are located in El Dorado County, where solid waste is taken and diverted to landfills, recycling facilities, or other locations. These facilities are located in Diamond Springs and South Lake Tahoe. The Diamond Springs Material Recovery Facility (MRF) serves western El Dorado County and can process 400 tons per day and currently brings in approximately 70 tons per day (Ross pers. comm.). The South Lake Tahoe Refuse Transfer Station serves the Tahoe Basin. Currently, two landfills, both outside of the county, are used by the waste collection and disposal services: Lockwood Landfill, located in Sparks, Nevada, and Potrero Hills Landfill, located in Solano County, California. These transfer facilities and landfills used by the County franchise companies receive solid waste from unincorporated areas and cities via the County's franchised haulers (El Dorado County Environmental Management Department 2012).

The Lockwood Landfill is a Class I municipal solid waste site that accepts municipal solid waste (Nevada Division of Environmental Protection 2013). Currently, the active landfill covers approximately 856 acres, with a permitted waste volume capacity of approximately 265 million

cubic yards, or an approximate capacity of 371 million to 530 million tons[5] (Eckert pers. comm.). As of May 2014, the landfill had approximately 268 million cubic yards of capacity remaining (Eckert pers. comm.). The remaining amount was more than the permitted amount because in the last permit, the landfill was granted an expansion that likely overestimated its rate of expansion (Eckert pers. comm.). It receives approximately 5,000 tons of waste per day (Nevada Division of Environmental Protection pers. comm.).

Potrero Hills Landfill is a Class III landfill that accepts only nonhazardous waste for disposal (EDAW 2003). The landfill's permitted area is approximately 525 acres (Solano County Department of Resource Management 2011). The solid waste facility permit for this landfill (48-AA-0075) authorizes the facility to receive a peak daily waste flow of 4,330 tons, or an annual maximum disposal volume of 1,234,200 tons (Potrero Hills Landfill 2013). In 2011, the 7-day average disposal volume was 1,386 tons (72,072 tons per year) and for 2012, 1,096 tons (56,992 tons per year) (California Department of Resources Recycling and Recovery 2013a). The estimated closure date for the landfill is 2048 (Solano County Department of Resource Management 2011).

Solid waste in El Dorado County is generated from a mix of residential, commercial, and industrial sources. Approximately 139,000 tons of solid waste was generated in El Dorado County in 2010, an average of 0.77 tons per person based on a 2010 population of approximately 180,000 (El Dorado County Environmental Management Department 2012). Approximately 91,424 tons of this waste was generated by commercial uses (El Dorado County Environmental Management Department 2012:3-6). As shown in Table 3-1 of the *El Dorado County Solid Waste Management Plan* (El Dorado County Environmental Management Department 2012), the residential population generating solid waste in El Dorado Hills in 2010 was estimated to be 36,000. The primary generator of residential waste in this area is single-family homes, as El Dorado County has a higher proportion of single-family homes than the statewide average. Based on the residential population and the annual solid waste generated by this population (23,922 tons), it is estimated that the average residential solid waste generated per person was 0.67 ton. The greatest increase in waste disposal over the County's 20-year planning period is from the projected population increase in El Dorado Hills, as the population for the El Dorado area is anticipated to increase by approximately 30% by 2030 (El Dorado County Environmental Management Department 2012).

El Dorado Hills Community Services District (CSD) is contracted with El Dorado Disposal until July 2015 for waste and recycling (El Dorado Hills Community Services District 2014). The CSD diverted 55% of waste in a 3-month period in 2011 through recycling, composting, and other reduction and diversion programs (El Dorado Hills Community Services District 2011). El Dorado Disposal collects mixed recycling containers and green waste materials on alternate weeks from residences within the CSD, as well as allowing residents to bring recycling material to the Diamond Springs MRF programs (El Dorado Hills Community Services District 2011). El Dorado Disposal encourages residents to dispose of yard waste through home composting, curbside pickup, or individually taking it to a transfer station that accepts "clean green" materials (El Dorado Disposal 2014). In addition, El Dorado Disposal operates several recycling and e-waste buyback centers to which residents are encouraged to bring additional recyclables; the nearest to the project site is located at 4421 Latrobe Road in El Dorado Hills. The CSD provides diversion reports, documenting compliance with its Source Reduction and Recycling Programs and the amount of waste disposed and diverted, to El Dorado County on a quarterly basis.

[5] Density assumes approximately 1.4–2 tons/cubic yard (Eckert 2014).

The nearest large-scale recycling facility to the project site is the Diamond Springs MRF, operated by El Dorado Disposal at 4100 Throwita Way in Diamond Springs. In addition to household recycling, the Diamond Springs MRF accepts a wide variety of waste materials, including mixed loose waste, clean wood waste, appliances, car bodies, and construction waste (lumber, concrete) (El Dorado Disposal 2014).

Hazardous waste in El Dorado County consists primarily of waste oil, old paint, and lead acid car batteries (El Dorado County 2014). Waste oil is collected through over 21 public waste oil collection sites that are open 7 days a week, and other hazardous materials such as old paint, car batteries, expired or banned pesticides or herbicides, and solvents are collected via a cooperative arrangement with the El Dorado Hills Fire Department and the Diamond Springs MRF to operate a permanent collection facility for hazardous waste. In addition, all curbside solid waste is screened for hazardous waste (El Dorado County 2014).

Energy

Energy usage is typically quantified using the British thermal unit (BTU[6]). As a point of reference, the approximate amounts of energy contained in common energy sources are indicated in Table 3.12-5.

Table 3.12-5. Energy Content by Energy Source

Energy Source	BTUs
Gasoline	120,388–124,340 per gallon
Diesel Fuel	138,490 per gallon
Natural Gas (compressed gas)	22,453 per pound
Electricity	3,414 per kilowatt-hour

Sources: U.S. Department of Energy 2014.

California has a diverse portfolio of energy resources. The state ranked fourth in the nation in conventional hydroelectric generation and first in the nation for net electricity generation from renewable resources. Other energy sources in the state include natural gas, nuclear, and biofuels (U.S. Energy Information Administration 2014).

Energy efficiency efforts have dramatically reduced statewide per capita energy consumption relative to historical averages. According to the U.S. Energy Information Administration (2014), California consumed approximately 7,612 trillion BTUs of energy in 2012. Per capita energy consumption (i.e., total energy consumption divided by the population) in California is amongst the lowest in the country, with 201 million BTU in 2012, which ranked 49th among all states in the country. Natural gas accounted for the majority of energy consumption (32%), followed by motor gasoline (22%), distillate and jet fuel (14%), interstate electricity (11%), nuclear and hydroelectric power (6%), and a variety of other sources (U.S. Energy Information Administration 2014). The transportation sector consumed the highest quantity of energy (38.5%), followed by the industrial and commercial sectors (U.S. Energy Information Administration 2014).

[6] A British thermal unit is a standard unit of energy measure, which is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at or near 39.2 degrees Fahrenheit. A therm is a unit of heat equivalent to 100,000 BTU.

California's per capita energy consumption, in general, is declining due to improvements in energy efficiency and design. However, despite this reduction in per capita energy use, the state's overall (i.e., non-per capita energy consumption) energy consumption is expected to increase over the next several decades due to growth in population, jobs, and demand for vehicle travel. Electricity usage is anticipated to grow about 26% over the next two decades, and diesel fuel consumption may increase by 35% to 42% over the same time period. Gasoline usage, however, is expected to decrease by 8.5% to 11.3%. This decrease would largely be a result of high fuel prices, efficiency gains, and competing fuel technologies (U.S. Energy Information Administration 2013).

Regionally, PG&E, the provider for electricity and gas in El Dorado Hills, has a diverse power production portfolio, which consists of a variety of renewable and non-renewable sources. Energy production typically varies by season and by year depending on hydrologic conditions. Regional electricity loads also tend to be higher in the summer because the higher summer temperatures drive increased demand for air-conditioning. In contrast, natural gas loads are higher in the winter because the colder temperatures drive increased demand for natural gas heating.

At the local level, El Dorado County consumes a small amount of energy relative to the state. Electricity and natural gas usage is approximately 0.4% and 0.2% of the statewide total, respectively (California Energy Commission 2014). Gasoline is about 0.5% of statewide usage, whereas diesel fuel usage is about 0.3% of the statewide total (California Department of Transportation 2009). For reference, El Dorado County is home to about 0.5% of California residents. As a whole, El Dorado County consumed 1,252,475,739 kWh of electricity and 31,333,421therms of natural gas. Table 3.12-6 provides a summary of total and per-capita El Dorado County energy consumption for year 2010 conditions.

Local Electricity and Natural Gas Service

The project area is within the Pacific Gas and Electric (PG&E) service area for natural gas and electricity. There are several natural gas distribution and transmission facilities north of U.S. Highway 50 that are available to serve the project through local connections (Serrano Associates, LLC 2015).

Table 3.12-6. El Dorado County Total and Per Capita Energy Consumption (2010)

Energy	Millions of kWh	kWh	Millions Therms	Therms	Daily VMT	Yearly VMT	BTU	Per Capita BTU
Electricity	1,252.475739	1,252,475,739	–	–	–	–	4,273,624,613,364	23,603,622
Natural Gas	–	–	31.333421	31,333,421	–	–	3,133,354,417,168	17,305,805
VMT	–	–	–	–	3,616,104	1,254,788,088	5,876,172,616,104	32,454,642
Total							13,283,151,646,636	73,364,069

Sources: California Energy Commission N.D.a; California Energy Commission N.D.b; El Dorado County Transportation Commission 2015.
VMT = vehicle miles traveled.
Notes: 3,412.141633: KWh/BTU.
100,000.3931: BTU/Therm.
347: Annual VMT conversion.
4,683: BTU_VMT Pavley.
6,329: BTU_VMT no Pavley.
181,058: El Dorado 2010 Population.

3.12.2 Environmental Impacts

Methods of Analysis

This analysis is based on the assumption that both the Serrano Westside and Pedregal planning areas would be developed in existing areas that already allow for residential and commercial development and where water, recycled water, wastewater, stormwater, electricity, natural gas, telephone, and transportation facilities are already in place for surrounding properties. Any new utility lines that would be required within the planning areas would be placed within the rights-of-way of existing roads in the planning areas or future roads or dedicated easements that would be built as part of the proposed project. The proposed project would require several potential offsite utility infrastructure improvements outside the CEDHSP area to support the project, such as expansion of a recycled water line and wastewater collection system upgrades. These related offsite improvements are shown in Figure 2-9.

The methods for conducting the impact analysis for public services and utilities are based on service ratios, capacities, response times, or other performance objectives and whether implementation of the proposed project would result in an exceedance of an existing, permitted, or acceptable performance objective, using the following information.

Fire and Police Protection

Minimum response times for fire and police protection are identified in Policy 5.1.2.2 of the County General Plan: the minimum level of service for sheriff responses should be an 8-minute response to 80% of the population, while the minimum level of service for fire district responses should be an 8-minute response to 80% of the population. The minimum level of service for fire district responses should be an 8-minute response to 80% of the population, and the County's target service ratio for the Sheriff's Department is 1.0 officer per 1,000 residents (El Dorado County 2004).

Schools

The County General Plan identifies the minimum levels of service for school districts within El Dorado Hills as those which the school districts determine to be appropriate (El Dorado County 2004:5-87). The project area falls within the Buckeye Union and El Dorado Union High school districts. The districts do not have projected school capacities for 2035, when the proposed project is expected to reach buildout. Therefore, projections for additional students from the proposed project are compared to existing capacities, which do not reflect the actual future capacities.

Libraries

The County General Plan does not specify service ratios for libraries. However, based on personal communication, a standard planning ratio is to have a minimum of 0.5 square foot of library space per capita (Amos pers. comm.). Therefore, this analysis uses that ratio as a reference.

Water Supply

The water supply analysis is based on the WSA prepared by Tully & Young (Appendix K). The WSA, which was approved by the EID Board of Directors in August 2013, assesses the availability and sufficiency of EID's water supplies to meet the proposed project's estimated water demands.

Methods used to evaluate water supply include development of residential and nonresidential baseline demand factors, application of those factors to the proposed project to estimate the projected CEDHSP water demands, and definition of projected EID service area demands. Project-specific and EID service area demands are then compared to the available water supply (described above in *Environmental Setting*) to determine the sufficiency of the water supply to meet the combined demands of the CEDHSP and all other existing and planned users. Methods used to identify demands are described in detail in the WSA (Appendix K) and summarized below.

Development of Water Demand Factors. To calculate the water supply requirements for the CEDHSP, Tully & Young reviewed the specific residential and nonresidential land uses, including the defined residential lot sizes, types of commercial uses and other characteristics, as well as the unique demand factors for each of the proposed land uses. Using this information, as outlined in the WSA (Appendix K), Tully & Young first determined the baseline unit water use demand factors, for residential and nonresidential uses, that form the basis of the CEDHSP water demand estimates.

Residential Baseline Demand. The WSA residential baseline uses total annual water use in comparable neighborhoods for the years 2008 through 2012 to best represent the greatest number of homes occupied within each selected area, including established backyard landscapes, and varied water use over a range of climatic conditions reflecting different rainfall amounts and timing. This approach takes into account the variety of housing types as well as the different residential lot sizes. Lot size constitutes the greatest factor affecting annual per-lot water demand (Appendix K). Because the CEDHSP includes numerous multifamily housing units, the WSA baseline incorporates community landscaping, multi-story housing structures, community pools, and other amenities into the multifamily residential category. Based on the available historic meter data for similar developments served by EID, the WSA defines the baseline annual per-unit residential water demand factors as 0.18AF/du of indoor water use for typical single-family units and 0.16 AF/du of combined indoor and outdoor demand for multifamily uses (Appendix K). Table 3.12-7 summarizes the residential demand factors used to estimate the CEDHSP future demands. All of these residential water demand factors are based on similar existing developments in the El Dorado Hills area. However, since construction of the existing developments, changes have occurred that would reduce the CEDHSP water demands below the baseline unit water demands derived from existing meter data, including implementation of CALGreen and the California MWELO, described in *Regulatory Setting*. Combined, these regulations have the potential to decrease unit demand by up to 10% for the larger lots (Appendix K).

Table 3.12-7. Summary of Residential Baseline and Proposed Project Demand Factors

EID Water Demand Category	Density Range[b]	Current Factor (AF/du)	Conservation Applied	Factor Used (AF/du)
½- to 1-acre custom lots	1–2 du/ac	0.87	8%	0.80
5,000–7,000 square-foot lots	5–8 du/ac	0.50	5%	0.48
Condominiums/town homes	8–14 du/ac	0.40	5%	0.38
Multifamily housing[a]	14–24 du/ac	0.16	2%	0.16

Source: Appendix K:Table 2-1.
du/ac = dwelling unit/acre.

[a] The Multifamily housing values remain constant due to rounding. The current factor was determined to be 0.165 AF/du (dwelling unit).

[b] Density ranges have been modified since the production of the WSA; ranges here match current SP ranges.

Nonresidential Baseline Demand. Similar to the residential water demand factors, nonresidential factors are based upon recent water use trends for similar types of land classifications and are described as AF of water use annually per acre of land (AF/AC). This value reflects indoor and outdoor water needs expected for a typical nonresidential use for each of the following classifications: neighborhood commercial; public and neighborhood parks; and other miscellaneous uses, including street medians and environmental mitigation (Appendix K). The unit water demand factors for nonresidential uses are based on the available historic meter data for similar facilities served by EID and, like the residential factors, modified downward to reflect CALGreen and likely modifications to landscape designs (compared to existing establishments) to limit outdoor water use (Appendix K). Table 3.12-8 summarizes the nonresidential demand factors used to estimate the CEDHSP future demands.

Table 3.12-8. Summary of Nonresidential Baseline and Proposed Project Demand Factors

Land Use	Current Factor (AF/AC)	Conservation % Applied	Factor Used (AF/AC)
Commercial	2.00	3%	1.94
Parks	2.77	0%	2.77
ROW Landscaping	3.30	0%	3.30
Open Space	0.00	0%	0.00

Source: Appendix K:Table 2-2.
AF/AC = acre-feet used per year per acre of land.

Projected Water Demands. The WSA combined the proposed land use and phasing details of the CEDHSP with the demand factors outlined above to estimate the water demands for the project from initiation to buildout.

As required by California Water Code Section 10910(b)(3), the WSA details EID's other "existing and planned future uses," including other currently proposed projects that EID would serve, and all other existing and planned future uses, which consists of current customers and uses, adjusted County General Plan land use growth, other authorized uses, and non-revenue water demands. The WSA combines these estimated water demands to derive the total estimated demand during each 5-year increment to 2035 (see Table 3.12-3 in *Environmental Setting*).

Sufficiency Analysis. The WSA sufficiency analysis integrates the water demands summarized above (and detailed in Sections 2 and 3 of Appendix K) with the available water supplies described in *Environmental Setting* (and Section 4 of Appendix K). The analysis assumes that the CEDHSP, along with the other projects for which WSAs were simultaneously prepared (the Village of Marble Valley Specific Plan, Lime Rock Valley Specific Plan, and Dixon Ranch Residential Project), are fully constructed by 2035, and other anticipated growth continues as described in Section 3.4 of the WSA.

Wastewater

The wastewater analysis is based on the EID's WWFMP. The plan uses projected wastewater flows for the district's El Dorado Hills and Deer Creek collection systems based on the existing County's General Plan land use designations, or approved planned uses, and the number of planned connections included in the specific plans for the communities of Bass Lake Hills, Carson Creek, El Dorado Hills, Northwest El Dorado Hills, Promontory, and Valley View. The plan then combined that

information with the district's wastewater generation rates to calculate projected flows for each collection system.

Stormwater

Drainage and stormwater were analyzed based on information in the *Central El Dorado Hills Specific Plan Drainage Analysis* (Watermark Engineering 2014), which is included in Appendix I. The drainage study included the following.

- Estimates of 100-year peak flows for existing and developed conditions.
- Limits of 100-year flooding along the drainage channel along El Dorado Hills Boulevard and east of the Raley's and La Borgata shopping centers.
- Floodway analysis along portions of Carson Creek where development will encroach onto the floodplain.
- Storage requirements for the Pedregal VRH site to attenuate 100-year flows to approximate existing-conditions flows.
- Conceptual water quality facilities for the development.

Solid Waste

The solid waste analysis uses current capacities of the Diamond Springs MRF, and Lockwood and Potrero Hills Landfills. To calculate the amounts of solid waste projected for the proposed project, the amount of residents for the proposed project were estimated based on data from the El Dorado Hills census and the 2009-2013 American Community Survey. The average persons per dwelling by land use for the proposed project would total 2.62 residents per dwelling, based on a projected total of 2,618 residents. The average amount of solid waste per year in the western region of El Dorado County was used as the residential waste generation rate (El Dorado County Environmental Management 2012). Waste generation rates for the proposed civic-limited commercial development and public facilities development were based on rates from the California Department of Resources Recycling and Recovery (2013b, 2013c).

Energy

The energy analysis for the project evaluates the following sources of energy consumption associated with the project.

- Short-term construction—gasoline and diesel consumed by vehicles and offroad construction equipment.
- Operational onroad vehicles—BTUs associated with gasoline and diesel consumed by personal automobiles and service trucks.
- Operational power, heating, and cooking—electricity and natural gas consumed by occupants.

Construction-related energy use (i.e., fuel consumption) was calculated by converting GHG emissions predicted by CalEEMod using the rate of CO_2 emissions emitted per gallon of combusted gasoline (19.4 pounds/gallon) and diesel (22.2 pounds/gallon) (Climate Registry 2014). The estimated fuel consumption was converted to BTU assuming an energy intensity of 113,927 BTU per gallon of gasoline and 129,488 per gallon of diesel (Argonne 2013). Materials manufacturing would also consume energy, although information on the intensity and quantity of fuel used during

manufacturing is currently unknown and beyond the scope of project-level environmental analyses. An analysis of energy associated with materials manufacturing is considered speculative and is not presented in this Draft EIR. This analysis focuses on energy associated with physical construction of the project (i.e., fuel consumed by heavy-duty equipment and vehicles).

Energy consumed by operational onroad vehicles was quantified using the VMT estimate developed by the air quality analysis and are included in Appendix C. The estimated VMT was converted to BTU using a Pavley-adjusted weighted energy intensity for El Dorado County light duty vehicles (Oak Ridge National Laboratory 2013).[7] Mixed-use design policies that encourage residents to travel from home to services within the project area without using an external roadway (known as *internalization*) would result in vehicle trip and corresponding fuel consumption reductions. Trips made by walking instead of personal vehicles would also contribute to trip and fuel use reductions (Appendix L). These features were incorporated into the VMT modeling and subsequent fuel consumption analysis.

Operational electricity and natural gas consumption under full project buildout (2035) was drawn from the CalEEMod modeling performed to support the greenhouse gas analysis (see Section 3.6, *Greenhouse Gases*). CalEEMod outputs for natural gas consumption are provided in BTU; outputs for electricity consumption, which are provided in kilowatt-hours (kWh), were converted to BTU assuming an energy intensity of 3,416 BTU per kWh (Argonne 2013).

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect on public services and utilities if it would result in any of the conditions listed below.

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 any of the following public services.
    - Fire protection
    - Police protection
    - Schools
    - Other public facilities

[7] Oak Ridge National Laboratory reports energy intensities (BTU/vehicle mile) for cars and light duty trucks (two-axle, four-tire trucks) by model year (19702012). These model year-specific energy intensity values were applied to the 1970-2012 model year mix for the 2012 vehicle fleet for El Dorado County (as reported by ARB's EMFAC model) to quantify the current weighted light-duty vehicle energy intensity for El Dorado County (6,329 BTU/mile). State Pavley standards will reduce average per-mile GHG emissions by 26 to 28%, which is roughly the same as improving fossil fuel economy by the same amount. Accordingly, a future weighted energy intensity of 4,683 BTU per vehicle mile was calculated by multiplying the existing calculated energy intensity (6,329) by 0.74.

- Exceed wastewater treatment requirements of the applicable Regional Water Board.
- Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.
- 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.
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- 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.
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, state, and local statues and regulations related to solid waste.

Appendix F to the State CEQA Guidelines identifies the following potential environmental impacts related to energy that may be considered in an EIR. Appendix J of this Draft EIR includes the CEQA Guidelines Appendix F for reference.

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak- and base-period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

The State CEQA Guidelines recommend that the discussion of applicable energy impacts focus on whether the project would result in the wasteful, inefficient, or unnecessary consumption of energy,. Efficiency projects that incorporate conservation measures to avoid wasteful energy usage facilitate long-term energy planning and avoid the need for unplanned or additional energy capacity. Accordingly, based on the criteria outlined in the State CEQA Guidelines Appendix F, the proposed project would cause significant impacts related to energy if it would lead to a wasteful, inefficient, and unnecessary usage of direct or indirect energy. As discussed in Section 3.12.1, under *Regulatory Setting*, energy legislation, policies, and standards adopted by California and local governments were enacted and promulgated for the purpose of reducing energy consumption and improving efficiency (i.e., reducing wasteful and inefficient use of energy). Therefore, for the purposes of this analysis, *wasteful* and *inefficient* are defined as circumstances in which the project would conflict with applicable state or local energy legislation, policies, and standards or result in increased per-capita energy consumption. Accordingly, inconsistency with legislation, policies, or standards designed to

avoid wasteful and inefficient energy usage, and increased per-capita energy consumption relative to the current County-wide average, is used to evaluate whether the Proposed Project would result in a significant impact related to energy resources and conservation.

Impacts and Mitigation Measures

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)

Fire Protection

The project site would be served by the closest fire station (adjacent to the project site on Wilson Boulevard), El Dorado Hills Fire Department Station Number 85 in the case of an emergency (Serrano Associates, LLC 2015). The existing average response time for Station Number 85 is under 6-minutes 90% of the time for all emergency calls (Lilienthal pers. comm.), which is better than the minimum requirements (8-minute response time for 80% of the population) identified in the County General Plan. Thus, based on Policy 5.1.2.2 of the County General Plan, the level of service currently achieved is more than sufficient, indicating that even after project construction, response times would still be within acceptable limits. Therefore, although the population increase associated with the proposed project would potentially increase the number of emergency calls, it is not expected to affect the ability of the fire department to meet the minimum required response time. Since no new fire department personnel would be required, there would be no need for construction of new fire department facilities or alterations to existing fire department facilities; therefore, there would be no environmental impacts. Impacts associated with fire protection services would be less than significant.

Police Protection

The County Sheriff's Office does not currently meet the service ratio requirements for providing police protection. The residential neighborhoods in the Serrano Westside planning area are proposed to be gated similar to the Serrano neighborhoods in the existing EDHSP. The Pedregal planning area may or may not be gated. If the communities are gated, they may also have their own security in addition to the public protection offered by the Sheriff's Office. Policy 5.1.2.2 of the County General Plan identifies that the minimum level of service for sheriff responses should be an 8-minute response to 80% of the population (El Dorado County 2004). The sheriff's department averaged an 8-mintue or better response to only 40% of the priority 1 and 2 calls that were received in 2013 (El Dorado County Sheriff's Department 2013). The proposed project would add population, which would further impact the existing law enforcement staff. Funding for staffing emergency services is obtained through taxes and other local government funding that the project would contribute to, not through developer fees. Though the project would add to the need for sheriff staff, the proposed project is located within an area that is currently served by the existing sheriff's facilities, and the addition of population would not require the addition of any new facilities, the construction of which would be an impact on the environment. Therefore, environmental impacts associated with police protection services would be less than significant.

Schools

As described above in the *Regulatory Setting* and *Environmental Setting* sections, the project area lies within the Buckeye Union School District and El Dorado Union High School District. The proposed project would not include any new school facilities or services, but would introduce additional students to existing schools in these districts. However, as discussed in Section 3.12.1, *Existing Conditions*, the El Dorado Union High School District anticipates a decline in student enrollment, even accounting for future development within the district.

As described above in the *Environmental Setting* section, the Buckeye Union School District has constructed a new school, Valley View Elementary, the opening of which has been postponed pending an increase in district enrollment, which has been holding steady for the past 5 years (Blackstone El Dorado 2011; California Department of Education 2015c). Table 3.12-9 summarizes the student generation factors for the two school districts that would serve the project area.

Table 3.12-9. Student Generation Factors in the Project Area

Grade Level	Single-Family Residential	Multifamily Residential
K–5 (Buckeye Union School District)	0.4	0.4
6–8 (Buckeye Union School District)	0.1	0.1
9–12 (El Dorado Union High School District)	0.177	0.177

Sources: Serrano Associates, LLC 2015; Williams and Associates 2004.

The proposed project is expected to result in 1,000 households (470 single-family and duplex and 530 multifamily), which could generate approximately 677 school-age (K–12) children (Serrano Associates, LLC 2015). Table 3.12-10 summarizes the projected CEDHSP student population, and Table 3.12-11 compares the expected additions from the proposed project to the existing enrollment and capacities of Oak Ridge High School in the El Dorado Union High School District, and to Rolling Hills Middle School, and Silva Valley Elementary, Oak Meadow Elementary, and Brooks Elementary schools in the Buckeye Union School District. The proposed project would not be fully built out until around 2035, but the school districts do not provide projections for that date. Oak Ridge High School's population is expected to decline to around 2,100 students by 2023–2024 (SchoolWorks 2014). If that occurs, the expected decline from current enrollment of 2,345 students would more than compensate for the additional 177 students expected from the proposed project. The Buckeye Union School District has not published student population projections beyond 2008 (Williams and Associates 2004). While the proposed project would exceed the district's existing elementary and middle school capacities by 41 and 49 students, respectively, the existing school capacity does not reflect the district's capacity in 2035.

Table 3.12-10. Projected Students Generated by the Proposed Project

Residential Dwelling Type	Residential Units	K–5 Factor	K–5 Students	6–8 Factor	6–8 Students	9–12 Factor	9–12 Students
Single-family and duplex	470	0.4	188	0.1	47	0.177	83
Multifamily	530	0.4	212	0.1	53	0.177	94
Total	1,000		400		100		177

Source: Serrano Associates, LLC 2015.

Table 3.12-11. Current Enrollments and Capacities in the Project Area

School	Current Enrollment (2013-2014)	Proposed Project Students	Expected Total Students	Current School Capacity (students)	Exceedance of Current Capacity (students)
Silva Valley Elementary	603[a]	400		768[d]	
Oak Meadow Elementary	760[a]			824[d]	
Brooks Elementary	492[a]			664[d]	
Elementary Total (Buckeye Union School District)	1,855	400	2,297	2,256	+41
Rolling Hills Middle School (Buckeye Union School District)	1,004[a]	100	1,105	1,056[d]	+49
Oak Ridge High School (El Dorado Union High School District)	2,389[b]	177	2,522	2,405[c]	+117

Sources:
[a] California Department of Education 2015b.
[b] California Department of Education 2015a.
[c] SchoolWorks 2014.
[d] Boike pers. comm.

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. Therefore, impacts on schools would be less than significant.

Libraries

As described in the *Environmental Setting* section, El Dorado County is currently deficient in library space with respect to its countywide population. The El Dorado Hills Library on Silva Valley Parkway is the closest library to the project site and, as described above, serves a population of 28,490 with a current service area ratio of 0.56 square foot of library space per capita. The number of residents for the proposed project were calculated based on data from the El Dorado Hills census and the 2009-2013 American Community Survey, and is estimated to total 2,618 residents. Therefore, buildout of the CEDHSP could introduce an additional 2,618 library users to the El

Dorado Hills area, increasing the population served by the local library facility to 31,108 (approximately 0.52 square foot of library space per capita). The projected ratio of 0.52 square foot per capita exceeds the standard library planning ratio of 0.5 square foot per capita. Because the standard ratio is not a legal requirement or in the County General Plan, there is no requirement for the proposed project to meet this standard. As described above for schools and additional students, increased population and potential library patrons would be a social impact (*Goleta Union School District v. Regents of U.C. 1995*). Because the proposed project does not include construction of a new library, there is no physical impact. Therefore, although patronage is expected to increase with the additional project-generated population, impacts on libraries would be less than significant.

Offsite Improvements

The offsite improvements would provide utility/infrastructure services but would not cause significant impacts on governmental facilities or emergency services response times, or result in the need for additional public services such as schools and libraries.

Summary

Overall, the proposed project would not result in the need for new or expanded public services, the construction of which would result in physical effects. Therefore, impacts from the proposed project on fire and police protection, schools, and libraries would be less than significant. No mitigation is required.

Impact PSU-2: Exceed wastewater treatment requirements of the applicable Regional Water Board (less than significant)

The El Dorado Hills WWTP operates under WDRs and an NPDES permit issued by the Central Valley Water Board. The WWTP is permitted to discharge up to 4.0 mgd of disinfected tertiary treated effluent to Carson Creek, and the permit contains specific numerical and narrative effluent limits for specific constituents.

Based on EID's Design Standards for wastewater generation rates, the approximately 1,000 equivalent dwelling units (EDUs), including 470 single-family and 530 multifamily dwelling units, and 11 acres of commercial development allowed under the proposed project, would generate an average dry weather flow of approximately 213,700 gallons of wastewater per day, or 0.21 mgd (El Dorado Irrigation District 2013a:92) (Table 3.12-12). This would be conveyed via the wastewater collection system to the El Dorado Hills WWTP for treatment. The WWTP currently treats an average flow of 2.65 mgd (El Dorado Irrigation District 2013a:8). Therefore, the additional 0.21 mgd combined with a current average dry weather flow of 2.65 mgd would be 2.86 mgd, which would be within the plant's permitted average dry weather flow effluent limit of 4.0 mgd.

The constituents in wastewater flows from the proposed project to the WWTP would be typical of residential uses, similar to flows from other residential development in El Dorado Hills, and would not contain constituents that would cause permitted effluent limitations to be exceeded.

Therefore, this impact would be less than significant.

Table 3.12-12. Wastewater Service Demand from the Proposed Project

Land Use	Unit	Wastewater Generation Rate (gpd/ EDU or gpd/acre)	Total Predicted Average Dry Weather Wastewater (gpd)
Residential (Low and Medium Density)	470 dwelling units	240 gpd/EDU	112,800
Residential (Multifamily Density)	530 dwelling units	180 gpd/EDU	95,400
Commercial	11 acres	500 gpd/acre	5,500
Total			213,700 gpd/ 0.21 mgd

Source: El Dorado Irrigation District 2013a:92.
gpd/EDU = gallons per day per equivalent dwelling unit.
gpd/acre = gallons per day per acre.

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 (less than significant with mitigation)

Wastewater Treatment

The proposed project would generate 0.21 mgd of wastewater. When added to the current average dry weather flow of 2.65 mgd, the total (2.86 mgd) would not exceed the WWTP's current treatment capacity of 4.0 mgd. The proposed project is expected to be approved in late 2015 or early 2016 and constructed over a number of years, and would likely be completed by 2030. Based on the County General Plan planning horizon, estimates of areas for future known densities, and estimate of areas for future unknown densities, EID projects that future flows to the WWTP will exceed 4.0 mgd in 2025, (El Dorado Irrigation District 2013a). The WWTP projected flows in 2030 are anticipated to reach between approximately 4.25 and 4.75 mgd, depending on projected slow and high growth scenarios in the County General Plan, respectively (El Dorado Irrigation District 2013a:Figure 4-1). Thus, EID plans to expand the WWTP to accommodate 5.45 mgd by 2025 to accommodate projected flows (El Dorado Irrigation District 2013a:151). Therefore, the proposed project would not require expansion of the El Dorado Hills WWTP to accommodate proposed project flows, according to the planned demand/capacity timeline outlined in the current WWFMP (El Dorado Irrigation District 2013a). Impacts on El Dorado Hills WWTP capacity would be less than significant.

Wastewater Conveyance

Although the proposed project would not require expansion of the El Dorado Hills WWTP, it would require additional wastewater collection system infrastructure. A system of new pipelines would be installed within road rights-of-way or public utilities easements within the project area and would carry wastewater south from the project area to the El Dorado Hills WWTP The new wastewater collection system lines are proposed to run parallel to El Dorado Hills Boulevard in the Pedregal planning area and Serrano Westside planning area. The Serrano Westside planning area lines would connect to a trunk sewer in El Dorado Hills Boulevard. The Pedregal lines would connect to sewer lines along Wilson Boulevard and Gillette Drive that connect to the line in El Dorado Hills Boulevard.

As noted in the *Environmental Setting* section, a segment of an existing trunk line south of US 50 is at or near capacity. The proposed project, along with other existing and future development, would contribute flows to this trunk line. EID has been evaluating needed improvements to this trunk line to serve development in the El Dorado Hills area, and has included this sewer project in its 2016-2020 CIP. Design is scheduled for 2018 and construction in 2019-2020. Figure 2-9 shows the location of the existing trunk line that would be upsized from 18 inches to 24 inches. Increasing the capacity of this line will correct capacity limitations and provide capacity for new wastewater customers (El Dorado Irrigation District 2015b). The improvement would be completed by EID and would occur regardless of whether the proposed project is approved. New wastewater infrastructure within the project area would be constructed in primarily developed areas surrounded with residential, civic-limited commercial, and freeway uses. Additionally, as required by EID Board of Directors Policy 9020, the project applicant would need to secure EID's approval of an engineering facility plan report (FPR) for the extension of EID facilities for subdivisions and commercial developments to serve the project and would be required to pay fair-share fees towards the planned CIP improvement for the wastewater collection system upgrade project south of US 50, and associated EID connection costs.

In addition, an approximately 300-foot-long segment of existing sewer pipeline north of and under Serrano Parkway on the east side of El Dorado Hills Boulevard requires upsizing to conform with the existing 18-inch line in that area. This segment of sewer is within an existing easement in the project site in the Serrano Westside planning area and is in an area proposed as open space in the CEDHSP. The wastewater collection system upgrade would involve some work within the project site and within Serrano Parkway. Depending on the results of the FPR, this improvement may be required prior to connection of a portion or potentially all of the CEDHSP north of this location to the EID wastewater collection system. The project is not currently in the CIP, and the FPR would determine whether EID or the project applicant would be responsible for constructing the improvement.

Final master utility plans for sewer must be reviewed and approved by EID in an FPR at the improvement plan stage (Serrano Associates, LLC 2015).

Construction of the onsite wastewater conveyance/distribution infrastructure would include site grading and infrastructure installation, which would require dust suppression and other incidental water uses. Those water uses are expected to be nominal and are included in the overall construction water demand assumed in the WSA. Construction of pipelines would require construction equipment and would cause soil disturbance, which could result in air pollutant and GHG emissions, noise generation, or require special construction methods such as blasting; use of small amounts of hazardous materials such as diesel and oil; generate stormwater runoff or erosion; result in the potential to encounter previously unidentified cultural resources; disturb habitat; or result in temporary roadway lane narrowing or detours, among other potentially significant environmental impacts. These types of construction impacts are a component of the site development footprint impacts evaluated in this document in Section 3.2, *Air Quality*, Section 3.3, *Biological Resources*, Section 3.4, *Cultural Resources*, Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*, Section 3.6, *Greenhouse Gas Emissions*, Section 3.8 *Hydrology, Water Quality, and Water Resources*, Section 3.10, *Noise and Vibration*, and Section 3.14, *Traffic and Circulation*. Implementation of the mitigation measures identified in those impacts would reduce impacts to a less-than-significant level.

Impacts related to offsite improvements are described in Section 3.2, *Air Quality* (Impact AQ-6), Section 3.3, *Biological Resources* (Impacts BIO-14 through BIO-23), Section 3.4, *Cultural Resources*

(Impact CUL-4), Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources* (Impact GEO-10), Section 3.8, *Hydrology, Water Quality, and Water Resources* (Impact WQ-11), Section 3.10, *Noise and Vibration* (Impact NOI-7), and Section 3.14, *Traffic and Circulation* (Impact TRA-8). As identified in those impacts, construction of some of the offsite improvements could result in significant impacts. Implementation of the mitigation measures listed below would reduce impacts of offsite improvements to less-than-significant levels.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X emissions

Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan

Mitigation Measure AQ-4: Submit and implement 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

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 BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs

Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction

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 within 100 feet of known prehistoric archaeological sites 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-3: 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 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-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 (less than significant with mitigation)

Potable Water Development Requirements

An overall potable water system is already in place for El Dorado Hills. However, the proposed project would require construction and extension of distribution mains and laterals. Additional water lines for the project area are proposed to run adjacent to El Dorado Hills Boulevard. As shown in Figure 2-8a, the proposed water lines would be constructed in the Serrano Westside planning area to run along El Dorado Hills Boulevard, east of existing water lines, and make a loop in the southern section. The Serrano development would not require offsite water improvements. As shown in Figure 2-8b, the proposed onsite lines in the Pedregal planning area would run west of El Dorado Hills Boulevard in the central portion of the project area (Serrano Associates, LLC 2015). To serve the Pedregal planning area, two offsite water line extensions are needed to extend utilities from the Ridgeview subdivision (north water line) and the Sterling Ranch Apartments (south water line) (Serrano Associates, LLC 2015) (Figure 2-9).

Recycled Water Development Requirements

EID operates a recycled water delivery system in the project area (Figure 2-8a), with lines in Serrano Parkway and east of the Raley's and La Borgata development to US 50. Development of the Serrano Westside planning area requires constructing a reclaimed water line onsite, which would run north-south through the Serrano Westside planning area and connect to the existing system. The recycled water line would be used to route recycled water to parks, landscape corridors, yards, and other areas as shown in Figure 2-8a. Development of the Serrano Westside planning area would also require expanding a recycled water line offsite from the southeastern corner of the Plan Area to Silva Valley Parkway, as illustrated in Figure 2-9. The expanded line would run approximately 3,000 feet, and if the project timelines allow, this infrastructure element would be co-located with the connection to Silva Valley Parkway, if it is built. Recycled water lines would not be extended to the Pedregal planning area.

Recycled and Potable Water Construction Impacts

Installation of the onsite recycled and potable water distribution infrastructure for the proposed project would include site grading and infrastructure installation, which would require dust suppression and other incidental water uses. Those water uses are expected to be nominal and are included in the overall construction water demand assumed in the WSA. Installation of pipelines would require construction equipment and would cause soil disturbance, which could result in air pollutant and GHG emissions, noise generation, or require special construction methods such as blasting; use of small amounts of hazardous materials such as diesel and oil; generate stormwater runoff or erosion; result in the potential to encounter previously unidentified cultural resources; disturb habitat; or result in temporary roadway lane narrowing or detours, among other potentially significant environmental impacts. These types of construction impacts are a component of the site development footprint impacts evaluated in this document in Section 3.2, *Air Quality*, Section 3.3, *Biological Resources*, Section 3.4, *Cultural Resources*, 3.5, *Geology, Soils, Minerals, and Paleontological*

Resources, Section 3.6, *Greenhouse Gas Emissions*, 3.8 *Hydrology, Water Quality, and Water Resources*, Section 3.10, *Noise and Vibration*, and Section 3.14, *Traffic and Circulation*. Implementation of the mitigation measures identified in those sections would reduce impacts to a less-than-significant level.

Construction of the offsite recycled water line expansion would result in impacts similar to those described for the onsite improvements. Impacts related to offsite improvements are described in Section 3.2, *Air Quality* (Impact AQ-6), Section 3.3, *Biological Resources* (Impacts BIO-14 through BIO-23), Section 3.4, *Cultural Resources* (Impact CUL-4), Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources* (Impact GEO-10), Section 3.8, *Hydrology, Water Quality, and Water Resources* (Impact WQ-11), Section 3.10, *Noise and Vibration* (Impact NOI-7), and Section 3.14, *Traffic and Circulation* (Impact TRA-8). As identified in the discussions of those impacts, construction of some of the offsite improvements could result in significant impacts. Implementation of the mitigation measures below would reduce impacts of offsite improvements to less-than-significant levels.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X emissions

Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan

Mitigation Measure AQ-4: Submit and implement 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

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 BIO-18a: Conduct surveys in the offsite infrastructure improvement areas for valley elderberry longhorn beetle and avoid elderberry shrubs

Mitigation Measure BIO-18b: Transplant elderberry shrubs that cannot be avoided or implement minimization measures during construction

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 construction monitoring during ground-disturbing activities within 100 feet of known prehistoric or archaeological sites 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-3: 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 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 (less than significant with mitigation)

The proposed project would generate stormwater runoff. The design standards for the proposed project require that projects within the CEDHSP area incorporate new stormwater drainage facilities to accommodate the potential increase in stormwater runoff as a result of the impervious surfaces (e.g., roads, home roofs, sidewalks). The new stormwater drainage facilities would be constructed under sidewalks and roads and would collect and divert stormwater from the proposed development to the existing stormwater system along El Dorado Hills Boulevard and east of the Raley's/La Borgata shopping area that discharges to the pond system in the Town Center East development south of US 50. The existing culverts at Serrano Parkway and US 50 would attenuate 100-year storm flows from the Serrano Westside planning area, so no detention or attenuation facilities are required for the Serrano Westside planning area (Appendix I). An approximately 0.6-acre detention basin would be required within the Pedregal planning area to attenuate post-development flows from the high-density residential area (Appendix I). Figure 3.8-1 shows the location of the proposed detention basin in the Pedregal planning area.

Design and construction of the storm drainage system would be required to comply with the adopted *Drainage Manual, Storm Water Management Plan* and current State Water Board order(s) regulating construction activities (e.g., Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ), the SWPPP, and BMPs. The stormwater system would also have to comply with the County's NPDES permit in place at the time of subsequent development approvals (e.g., Order No. 2013-0001-DWQ) and the Stormwater Quality Control Ordinance No. 5022 to ensure project stormwater flow rates and volumes can be accommodated in the drainage system.

Installation of the system would include onsite trenching and grading, which would require dust suppression and other incidental water uses. Those water uses are expected to be nominal and are included in the overall construction water demand assumed in the WSA. Installation of the storm drain lines would require construction equipment and would cause soil disturbance, which could result in air pollutant and GHG emissions, noise generation, or require special construction methods such as blasting; use of small amounts of hazardous materials such as diesel and oil; generate stormwater runoff or erosion; result in the potential to encounter previously unidentified cultural resources; disturb habitat; or result in temporary roadway lane narrowing or detours, among other potentially significant environmental impacts. These types of construction impacts are a component of the site development footprint impacts evaluated in this document in Section 3.2, *Air Quality*, Section 3.3, *Biological Resources*, Section 3.4, *Cultural Resources*, Section 3.5, *Geology, Soils, Minerals, and Paleontological Resources*, Section 3.6, *Greenhouse Gas Emissions*, Section 3.8 *Hydrology, Water Quality, and Water Resources*, Section 3.10, *Noise and Vibration*, and Section 3.14, *Traffic and Circulation*. Implementation of the mitigation measures identified in those sections would reduce impacts to a less-than-significant level.

Based on available information, the proposed project is not anticipated to require offsite storm drain improvements other than connections to the existing lines.

Mitigation Measure AQ-2b: Utilize clean diesel-powered equipment during construction to control construction-related NO_X emissions

Mitigation Measure AQ-2c: Implement EDCAQMD fugitive dust control measures and submit a Fugitive Dust Control Plan

Mitigation Measure AQ-4: Submit and implement 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

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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

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Mitigation Measure CUL-3: Perform construction monitoring during ground-disturbing activities within 100 feet of known prehistoric or archaeological sites 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-3: 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 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)

A WSA prepared in accordance with California Water Code Section 10910 has been prepared for the proposed project (Appendix K). The following evaluation of water supply availability regarding secured and planned water supplies is based on the information presented in the WSA. The analysis also includes a description and evaluation of alternative water supplies, consistent with the California Supreme Court decision in *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412.

Project Demand

The proposed project's water demand at buildout would be 450 AFY. Table 3.12-13 summarizes the demand by category through 2035. As illustrated by the data, most of the demand would not begin until 2025.

Table 3.12-13. Estimated Project Water Demands

	Demand (acre-feet/year)					
Category	Current	2015	2020	2025	2030	2035
Residential	0	0	109	266	314	314
Commercial	0	0	0	14	37	37
Public	0	0	6	47	47	47
Other	0	12	27	27	15	0
Subtotal demand	0	12	142	354	413	398
Non-revenue demand	0	2	18	46	54	52
Total demand	0	14	160	400	466	450

Source: Appendix K:Table 2-3.

Notes: Nonrevenue water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially unmetered uses such as fire protection, hydrant flushing, and unauthorized connections, and meter reading inaccuracies. The predominant source of nonrevenue water is from system leaks. The WSA assumed nonrevenue demand would be 13%.

"Other" includes construction water demand and water for oak woodland mitigation.

Table 3.12-14 summarizes the total estimated demand for the proposed project and all other existing and planned land uses in 5-year increments through 2035.

Table 3.12-14. Summary of Total Estimated Water Demands (Proposed Project and Other Existing and Planned Future Uses)

	Demand (acre-feet/year)					
Category	Current	2015	2020	2025	2030	2035
Proposed Project	0	14	160	400	466	450
Existing and Planned Future Uses	38,984	39,486	42,777	49,161	57,407	66,845
Total water demand	38,984	39,500	42,937	49,560	57,874	67,295

Source: Appendix K:Table 3-2.

Supply and Demand Comparison

Table 3.12-15 provides a comparison current and secured water supply and estimated demand of the proposed project combined with other existing and planned demand. Excluding recycled water, normal year water supplies currently available to EID with secured assets total 67,190 AFY. The current and secured water supplies for a multiple-year drought are 61,660 AF for year one, 57,740 AF for year two, and 56,240 AF for year three (Appendix K:5-2). If the entire buildout demand of the proposed project (450 AFY), which would not occur until 2035, is added to the current demand (38,984 AFY), the total existing plus project demand would not exceed available secured supply under existing plus project conditions through 2030.

However, as shown in Table 3.12-15, in 2035, current and secured supplies alone in all hydrologic year types would be insufficient to meet project demands in addition to the demands of other existing and planned future uses. The shortfall would range from approximately 100 AFY under normal year conditions to as much as approximately 9,000 AFY in Year 1 of multiple dry years. In subsequent dry years because the demand would drop as elements of EID's *Drought Preparedness Plan* are implemented (as illustrated in Table 3.12-15), this reduces the shortfall compared to the first dry year.

EID's water supplies associated with the entire secured and planned water assets would total 110,290 AFY for a normal year (Appendix K:4–8). Therefore, with the current secured and planned water assets, the WSA concluded that EID should have sufficient water available to meet the needs of the proposed project and all other demands in its service area through 2035. The WSA's conclusion that water supplies would be sufficient was based on the following assumptions (Appendix K:5-5):

- EID, EDCWA, and EDWPA successfully execute the contracts and obtain the water right permit approvals for currently unsecured water supplies: 7,500 AFY of Fazio water (which is anticipated to be available in 2015) and 30,000 AFY under the El Dorado-SMUD Cooperation Agreement. Absent these actions, the water supplies currently held by EID and recognized to be diverted under existing contracts and agreements would be insufficient in 2035 to meet the proposed project demands along with all other existing and planned future uses.
- EID will commit to implement Facility Capacity Charges in an amount sufficient to assure the financing is available as appropriate to construct the necessary infrastructure as detailed in the March 2013 EID *Integrated Water Resources Master Plan*.
- Demand in single-dry years includes an additional 5% of demand over the normal year demand during the same time period. This conservative assumption accounts for the likelihood that EID customers will irrigate earlier in the season to account for dry spring conditions. This hypothetical demand augmentation may or may not manifest in dry years, but this conservative assumption further tests the sufficiency of water supplies during dry conditions.
- The estimated demands include 13% to account for nonrevenue water losses (e.g., distribution system losses).

Table 3.12-15. Comparison of Water Supply and Total Demand by Hydrologic Year Type

	Supply and Demand (acre-feet/year)					
	Current	2015	2020	2025	2030	2035
Normal						
Demand	38,984	39,500	42,937	49,561	57,874	67,295
Supply (secured assets only)	67,190	67,190	67,190	67,190	67,190	67,190
Supply (secured and planned assets and recycled water)	69,390	77,090	77,290	107,890	108,790	110,290
Single Dry						
Demand	40,933	41,475	45,084	52,039	60,768	70,660
Supply (secured assets only)	61,660	61,660	61,660	61,660	61,660	61,660
Supply (secured and planned assets and recycled water)	63,860	69,685	69,885	75,485	76,385	77,885
Multiple Dry Year 1						
Demand	40,933	41,473	45,084	52,039	60,768	70,660
Supply (secured assets only)	61,660	61,660	61,660	61,660	61,660	61,660
Supply (secured and planned assets and recycled water)	63,860	69,685	69,885	75,485	76,385	77,885
Multiple Dry Year 2						
Demand	38,068	38,572	41,928	48,396	56,514	65,714
Supply (secured assets only)	57,740	57,740	57,740	57,740	57,740	57,740
Supply (secured and planned assets and recycled water)	59,940	65,765	65,965	71,565	72,465	73,965
Multiple Dry Year 3						
Demand	34,793	35,254	38,321	44,233	51,652	60,061
Supply (secured assets only)	56,240	56,240	56,240	56,240	56,240	56,240
Supply (secured and planned assets and recycled water)	58,440	64,265	64,465	70,065	70,965	72,465

Source: Appendix K:Table 5-1.

Based on these assumptions, no new or expanded entitlements would be needed, and as shown in Table 3.12-15 above, the Fazio portion of the planned supplies, 7,500 AF, is expected to be secured by 2015. Impacts related to sufficient water supplies would be less than significant. No mitigation is required.

Water Supply Management

EID manages water supply conditions to meet the increasing demands of new development within its service area, especially during the current drought. In February 2014, the EID Board of Directors declared a Stage 2 Water Warning and implemented the mandatory watering restrictions called for

under Stage 2 drought conditions. EID is currently required by the State Water Board to achieve a 28% cutback districtwide compared to 2013 water use. As of June 17, 2015, cumulative water use since January 1, 2015 has dropped by 29% (El Dorado Irrigation District 2015a).

As described in the *Water Conservation* section under *Drought Preparedness Plan* and *Drought Action Plan*, EID has in place a number of voluntary and mandatory measures to manage water supply during drought conditions of varying severity. Table 3.12-4 outlines the actions EID will take during each respective stage; these actions include convening a Drought Response Team to coordinate the responses of EID's various departments, reaching out to the community with information about water conservation, undertaking changes in operations to conserve water supplies, and determining when to increase or reduce the drought stage.

CEDHSP Water Conservation Policies

The CEDHSP contains a number of water efficiency and conservation policies designed to meet the objective of protecting local and regional water supplies. These policies include Policies 8.36 through 8.47, which address requirements to reduce residential water use by a minimum of 20% and incentives to reduce residential indoor and outdoor water consumption even further (see Appendix B).

2014 West Slope Update to the 2007 Water Resources Development Plan

The 2014 West Slope Update to the 2007 Water Resources Development Plan (2014 Update) prepared by EDCWA 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 conclusions presented in Section 7 of the 2014 Update identify "additional water supply need" for EID to meet estimated build-out water demands. The WSA (Appendix K) identifies sufficient water to meet estimated water demands in 2035. These documents are prepared for different purposes, as explained below, and actually reach similar conclusions.

First, 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 (also known as "build out" conditions) in the 2004 General Plan." (El Dorado County Water Agency 2014:ES-x) and, "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. 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." (El Dorado County Water Agency 2014:42). 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 2014 Update, which is a West Slope-wide document, also contemplates significant annexations into the EID service area over time, demand for which is appropriately not included in the WSA as EID is not obligated to provide service to these areas.

The WSA, in contrast, 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.

As a result, many assumptions and characterizations can and do differ between the two documents – with both documents appropriately developing conclusions based upon those differing conditions and differing responsibilities of the two agencies.

A key difference that manifests in the 2014 Update conclusions is the representation of "planned supplies." In the WSA, the Central Valley Project Fazio water entitlement (PL 101-514 [1990] Fazio) is reflected as one of the water assets EID views as part of their water rights and entitlement portfolio. Also included is the partial assignment detailed in the El Dorado-SMUD Cooperative Agreement. A full description of these water supplies is included in the WSA. In contrast, the 2014 Update does not include either supply as part of EID's available supply portfolio, but rather the most likely supplies that will meet demand. The result is a stated shortfall in the 2014 Update for the EID service area. Though the 2014 Update does discuss these as water supplies recognized by EID as capable of offsetting the stated shortfall (see 2014 Update, p. 109), they are not included in the calculations and resulting tables.

In contrast, as required by California Water Code Section 10910(c)(3) and recent CEQA case law (*Rancho*), the WSA appropriately considers these supplies as available.[8] Furthermore, this EIR details and assesses potential alternative supplies should either of these EID-planned water supplies not manifest (see *Alternative Water Supplies* section below).

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.

Alternative Water Supplies

As presented in Section 3.12.1 (see p. 3.12-2), CEQA case law requires the identification of possible alternative water supplies when "some uncertainty" exists with respect to the availability of planned supplies. As detailed in the WSA (Appendix K), there could be a potential water shortfall in dry years in 2035 if specific planned water supplies are not successfully secured. Specifically, EID water supplies include both existing and planned supplies which, when combined, are expected to provide sufficient water for the proposed project as well as existing and planned development. However, while there is certainty that all of the existing EID secured water supplies are available, there is some uncertainty whether the planned CVP Fazio water entitlement[9] or the supplies anticipated under the El Dorado-SMUD Cooperation Agreement (UARP supply) will be available in the quantities or on the schedule currently planned as EID proceeds through regulatory approval and contracting processes. Therefore, this Draft EIR discusses three potential alternative water supply options EID may pursue if existing and planned supplied are not available.

[8] CWC Section 10910(c)(3) requires the public water system's "*total projected water supplies*" to be included in the assessment. The WSAs included and explicitly characterized both "existing" and "planned" supplies, which comprise EID's "projected water supplies" that would be used to meet all projected demands.

[9] As detailed in Appendix L, the Fazio supply has a high likelihood of availability in the near future. The primary reason for it not already "existing" is due to delays in federal agency action to complete federal environmental compliance requirements. The water supply was granted to the County by Congress in 1990.

To understand the quantity of water needed under each water supply option, it is necessary to consider the conclusions about surplus water in the CEDHSP WSA. As demonstrated in Table 5-1 of the WSA (Appendix K) and summarized in Table 3.12-15, surplus water exists under all hydrologic conditions: normal, single-dry, and multi-dry years if all secured and planned water supplies are in place. Without the Fazio and the UARP water supplies, however, the surpluses shown in the CEDHSP WSA Table 5-1 would be reduced or even become shortfalls under some conditions. Table 3.12-16 presents the surplus as analyzed in the CEDHSP WSA and the resulting change when the Fazio and UARP planned water supplies are removed.

Table 3.12-16. Comparison of Surplus/Shortfall Conditions with and without Planned Supplies at Buildout Conditions (2035)

Hydrologic Year Type	Surplus Water (AFY)	Quantity of Planned Supplies (AFY)		Surplus or (Shortfall) without Planned Supplies (AFY)
		Fazio	UARP	
Normal	42,995	7,500	30,000	5,495
Single Dry	7,225	5,625	5,000	(3,400)
Multi Dry (Year 1)	7,225			(3,400)
Multi Dry (Year 2)	8,251			(2,374)
Multi Dry (Year 3)	12,404			1,779

Source: Appendix K.

At buildout (2035) during a normal year there would still be surplus water even without the planned supplies; no alternative supply would be necessary under such conditions. However, during single-dry and multi-dry hydrologic conditions, the absence of the planned supplies would cause a shortfall under several circumstances. The worst-case shortfall would occur during a single-dry hydrologic year—when supplies would be curtailed, demands would be elevated due to limited rainfall, and temporary demand management efforts would not yet be triggered by EID. Under these hypothetical shortfall conditions, EID would not have sufficient water to serve the proposed project and other existing and planned uses. Thus, as directed by the *Rancho* decision, an alternative water supply that would provide up to 3,400 AF during a single dry-year must be identified and its impacts assessed. Based on information presented in EID water supply planning documents, there are three water supply options that could meet this potential 3,400 AFY shortfall (Appendix K).

- Option 1: Construct Alder Reservoir
- Option 2: Construct recycled water seasonal storage and implement additional conservation
- Option 3: Participate in regional groundwater banking and exchange programs

Option 1: Construct Alder Reservoir

This option consists of the construction of a new dam and storage reservoir in the Alder Creek watershed. The Alder Creek reservoir has been studied for many years, most recently in EID's 2013 IWRMP, where it serves as an integral part of the EID-recommended water resources plan. Option 1 would provide more than ample dry-year water supplies to meet the targeted shortfall identified above. As described in the IWRMP, the Alder Reservoir would consist of a 143-foot-high rock-fill dam with a crest length of 800 feet and a width of 30 feet and a reservoir with a capacity of 31,700 AF. The reservoir would capture approximately 23,100 AF of water in an average runoff year from

the 18.6-square-mile Alder Creek drainage basin. The reservoir would also be used for hydroelectric generation via a new penstock and 10 megawatts (MW) powerhouse to be built near the existing El Dorado Canal. The hydroelectric facility would allow water from Alder Reservoir to be used for hydroelectric generation and released into the El Dorado Canal downstream of the Alder Creek inverted siphon (El Dorado Irrigation District 2013b). The new reservoir is projected to provide a dry-year safe yield of 11,250 AF (Appendix K). Water captured and stored during the spring snowmelt runoff period would be released throughout the remaining months at either (1) Jenkinson Lake via the Hazel Creek Tunnel, (2) the Forebay Reservoir, (3) Folsom Reservoir, or (4) a new point of diversion such as the proposed White Rock diversion (Appendix K).

While the estimated safe yield of 11,250 AF is more than three times the quantity necessary for this water supply option, the Alder Reservoir project as currently planned by EID provides a well-documented alternative that has already undergone assessment and is included in the EID Board-adopted IWMRP. Even with lower runoff quantities, there would still be substantially more water than is required for replacement of the planned supplies described above, resulting in a high level of certainty of availability during dry years (Appendix K).

Option 2: Construct Recycled Water Seasonal Storage and Implement Additional Conservation

This option includes two components: (1) a recycled water seasonal storage reservoir to capture treated wastewater produced by EID that is otherwise in excess of the daily demand for recycled water, and (2) additional water conservation actions implemented by EID and its customers to reduce customer demand and/or reduce delivery system losses.

EID has analyzed the first component of Option 2, seasonal storage for recycled water, in a report published in May, 2011, *Basis of Design Report–EID Recycled Water Seasonal Storage Reservoir* (Design Report). Of the 20 locations assessed in the Design Report, two–El Dorado Hills Reservoir, south of the El Dorado Hills WWTP, and Deer Creek Reservoir, just south of the Deer Creek WWTP–were identified as most suitable for additional analysis. EID thoroughly investigated these sites to determine the ability of each to store 2,500 AFY of recycled water supply, allowing the supply to shift in time for use during peak summer months when demand otherwise exceeds recycled water production quantities. With the ability to store up to 2,500 AF of recycled water produced during the off-season, EID could expand its water supplies rather than use its current practice of augmenting recycled water supplies with treated water supplies during the year due to the lack of storage. With storage, more recycled water could be used to meet demands, allowing existing potable water supplies to be directed to other existing and planned future uses.

The water conservation component of Option 2 would need to provide an additional 900 AFY, either as additional reduction in EID customer demands, or as a reduction in distribution system losses. As noted above, EID currently implements a variety of water conservation practices consistent with the BMPs identified in the CUWCC MOU. EID anticipates that through conservation measures, current customer demand would decrease by 2% by 2020 and an additional 1% by 2035, resulting in a 690 AFY reduction of current customer demand (Appendix K). In addition, EID could expand current rebate programs and other customer-focused water conservation measures. An additional 1% reduction in the demands of current customers, beyond the savings already anticipated in the WSA, could reduce demand by another 350 AF annually (Appendix K).

Though additional conservation opportunities from existing EID customers may be limited, EID recognizes opportunities to conserve water through improvements to its existing water delivery infrastructure. As described in the WSA, over 4,500 AFY, or 13% of the overall customer demand, is currently unaccounted for in EID's system under current delivery conditions, a quantity that increases to over 7,500 AFY by 2035 due to increased customer demands (Appendix K). By fixing system leaks and addressing other elements of nonrevenue demands, EID can recapture water and make it available to meet customer demands. One water conservation project EID has evaluated and included as part of its CIP is the Main Ditch piping project from Forebay Reservoir to the Reservoir 1 Water Treatment Plant. The water savings from piping a 3-mile-long earthen canal that carries as much as 15,080 AFY are estimated to be as high as 1,300 AFY (Appendix K). EID has included this project in its latest Board-approved CIP and is currently working to secure funding. For purposes of Option 2, this particular system loss reduction project is assumed to achieve the additional 900 AFY of conservation supply.

Combined, the recycled water seasonal storage reservoir and additional conservation measures could generate at least 3,400 AFY needed in dry years. Because the seasonal storage facility would capture and regulate the consistent outflows of EID's WWTPs, the identified yield would be highly reliable under all hydrologic conditions. Long-term reductions in customer demand and fixes to distribution system inefficiencies also provide a consistent savings regardless of hydrologic conditions. Thus, Option 2 provides a high level of certainty of water availability during dry years (Appendix K).

Option 3: Participate in Regional Groundwater Banking and Exchange Programs

This option would involve EID coordination with other regional water purveyors to exchange wet and normal year EID surface water supplies for use of non-EID water supplies in critical dry years. Option 3 could be achieved in partnership with one or more of many water purveyors that share access to the American River. Any opportunity would depend on an agreement among the parties and regulatory approvals to allow EID surface water supplies to be used or stored outside of EID's existing place of use during normal and wet conditions, and EID's use of a partner's American River-related water supplies during dry conditions.

As described in the WSA (Appendix K) and summarized in Table 3.12-16, at buildout during normal and wet years, EID has a surplus of secured (existing) water supplies totaling about 5,500 AFY. All or a portion of this supply is assumed available for delivery to another regional water purveyor to enable the conjunctive use exchange opportunities envisioned under this option. Table 3.12-17 includes a sample 13-year condition illustrating a potential exchange of water among the parties.

Table 3.12-17. Sample Water Exchange

Year	Sample Hydrology (2000–2012)	EID Supply Banked (acre-feet/year)	Other Water to EID (acre-feet/year)	Balance (acre-feet/year)
0	Above normal	5,500	0	5,500
1	Dry	0	3,400	2,100
2	Dry	0	2,374	-274
3	Above normal	5,500	0	5,226
4	Below normal	0	3,400	1,826
5	Above normal	5,500	0	7,326
6	Wet	5,500	0	12,826
7	Dry	0	3,400	9,426
8	Critical	0	2,374	7,052
9	Dry	0	2,374	4,678
10	Below normal	0	2,374	2,304
11	Wet	5,500	0	7,804
12	Below normal	0	3,400	4,404

Source: Appendix K.

Notes: Sample series of water year types is derived from DWR Bulletin 120 series for the Sacramento Valley.
In a second dry year, the EID demand for supplemental water is reduced.

Under Option 3, EID would exchange normal-year water for use of a portion of the partner's surface supplies (e.g., if Sacramento County Water Agency [SCWA] was the partner, the supply exchanged to EID could be SCWA's dry year CVP contract water supply or other SCWA water rights). In wetter and normal water years, EID would deliver its 5,500 AF surplus to its conjunctive use partner for use in the partner's service area (e.g., SCWA would deliver the surface water to its customers). In taking EID's surplus surface water, the partnering agency would forego groundwater use and bank (store) groundwater supplies in the underground aquifer. During critical dry years, the partnering agency would rely upon this banked groundwater to meet local needs and allow EID to divert up to 3,400 AF of its surface rights or entitlements at an existing EID facility in Folsom Reservoir or another existing EID diversion and treatment facility.

Option 3 could generate up to 3,400 AFY of water for diversion by EID in dry years on a reasonably certain basis, given that any conjunctive use partnership would only be established with a purveyor able to reliably provide adequate dry year surface supplies to EID (Appendix K). However, Option 3 would exchange groundwater supplies and surface supplies in the Sacramento region, which raises concerns related to the long-term reliability of groundwater supplies and the migration of existing groundwater contamination in eastern Sacramento County as a result of additional pumping under this option. These and other water banking considerations are actively being investigated as part of regional conjunctive use opportunities (Appendix K).

Potential Environmental Impacts of Implementing Alternative Water Supply Options

Table 3.12-18 provides general lists of the types of significant impacts that may be expected to result from these water supply options that could be implemented by EID, based on the impacts that are typical for these types of projects. The table takes a conservative view of potential impacts.

Because the projects have not been designed beyond a conceptual level, the actual level of impact avoidance or reduction that might be built into the projects is unknown. Similarly, the mitigation measures that might be identified in future CEQA documents and their effectiveness is unknown. Therefore, Table 3.12-18 does not take into account whether these impacts may be reduced below a level of significance through design or mitigation measures.

Table 3.12-18. Potential Impacts from Future El Dorado Irrigation District Water Supply Options

	Option 1: Construct Alder Reservoir	Option 2: Construct Recycled Water Seasonal Storage, Implement Additional Conservation Measures	Option 3: Regional Groundwater Banking and Exchange Program(s)	Related and Potential Impacts
Aesthetics	C, O	C, O	–	Changes in reservoir levels and streamflows and presence of new water storage facilities could affect the visual environment. Construction of new dams, water storage, pumping, and/or transmission facilities near or in residential or recreational areas could negatively affect views.
Air Quality	C, O	C, O	–	Pollutant emissions from construction equipment and traffic could occur during construction of new facilities. Operation of pumping and transmission facilities could produce emissions.
Biological Resources	C, O	C, O	O	Changes in the amount and quality of wildlife habitat, jurisdictional wetlands, or riparian areas from construction or operational changes could result. Plant and wildlife species could be disturbed as a result of construction activities or changes in streamflows or reservoir/lake hydrology. Changes in the amount and quality of fisheries and/or aquatic habitat in affected streams and reservoirs/lakes could result. Fish entrainment could occur at diversion sites in lakes and streams.
Cultural Resources	C	C	–	Historic, prehistoric, and ethnographic resources could be affected by construction and maintenance of new facilities or by changes in reservoir/lake levels and streamflows.
Geology, Soils, Minerals, and Paleontological Resources	C	C	–	Potential geologic hazards could expose people or structures to potential substantial adverse effects. New project facilities could interfere with the extraction of minerals at known or as-yet undiscovered mineral sites. Paleontological resources could be affected by construction and maintenance of new facilities or by changes in reservoir/lake levels and streamflows.
Greenhouse Gas Emissions	C, O	C, O	–	Construction activities and operation of facilities could generate greenhouse gas emissions.

	Option 1: Construct Alder Reservoir	Option 2: Construct Recycled Water Seasonal Storage, Implement Additional Conservation Measures	Option 3: Regional Groundwater Banking and Exchange Program(s)	Related and Potential Impacts
Hazards and Hazardous Materials	C	C	–	Construction activities could create safety hazards.
Hydrology, Water Quality, and Water Resources	C, O	C, O	O	Operational changes in the level of affected reservoirs/lakes and in the magnitude and timing of streamflows could alter sediment transport, erosion, and siltation. Construction activities could cause increased erosion and sedimentation in affected water bodies. Changes in stream and reservoir/lake temperature, dissolved oxygen, turbidity, total suspended solids, and other water quality parameters of concern during facility construction and operation. Construction and operation of new reservoir facilities could 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.
Land Use Planning and Agricultural Resources	C	C	–	New facilities may not be compatible with surrounding land uses, or may be inconsistent with related plans and policies. Some agricultural land could be taken out of production where project conveyance facilities need to be located.
Noise and Vibration	C, O	C	–	Construction activities and operation of pumping facilities could expose people to noise levels in excess of local standards or to excessive groundborne vibration or groundborne noise levels.
Population and Housing	O	O	O	Availability of additional water supplies could induce service area population growth through extension/expansion of water supply infrastructure.
Public Services and Utilities	C	C	–	Siting of facilities could interfere with the operation or maintenance of existing or planned public utilities, including communication and energy infrastructure.
Recreation	C, O	C, O	O	Changes in reservoir/lake levels and streamflows could affect the quantity or quality of recreation opportunities.
Traffic and Circulation	C	C	–	Construction-related traffic could affect local roads.
Growth-Inducing Effects	O	O	O	New system infrastructure and water supply projects would likely cause growth-inducing impacts.

C = construction-related impact(s); O = operational impact(s); – = no impact identified.

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)

The El Dorado Hills WWTP currently treats an average dry weather flow of 2.65 mgd. The addition of proposed project flows (0.21 mgd) would not exceed the plant's current capacity of 4.0 mgd. As noted in Impact PSU-3, based on the County General Plan planning horizon, estimates of areas for future known densities, and estimates of areas for future unknown densities, EID estimates that projected flows in 2030 are anticipated to be between approximately 4.25 and 4.75 mgd (El Dorado Irrigation District 2013a). EID plans to expand the WWTP to increase capacity as necessary to accommodate for growth. Based on the WWFMP, it is projected that the El Dorado Hills WWTP expansion will occur around the 2025 timeframe, and capacity will be increased to 5.45 mgd by that time. (El Dorado Irrigation District 2013a:15). Proposed project buildout (around 2030) would add 0.21 mgd. The addition of 0.21 mgd would increase flows to 4.96 mgd, which would not exceed the planned capacity of the El Dorado Hills WWTP of 5.45 mgd in 2030. This impact would be less-than-significant. No mitigation is required.

Impact PSU-8: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (less than significant)

The proposed project would generate solid waste during construction. The County's existing Construction and Demolition Debris Diversion Ordinance requires project applicants and their construction contractors to reuse or recycle a minimum of 50% of the construction and demolition debris. CEDHSP policy 6.21 requires project applicants and their construction contractors to reuse or recycle a minimum of 65% of the construction and demolition debris.

The CEDHSP would allow for residential, civic-limited commercial, public facilities, and open space development. The Western Region of El Dorado County generates an average of 0.67 tons of solid waste per person per year (El Dorado County Environmental Management 2012). The proposed project could generate an average of 1,754 tons of solid waste per year for the 1,000 residential units.[10] It is estimated that 50,000 square feet of civic-limited commercial space (e.g., professional offices) could generate 766 tons of solid waste per year.[11] The project could also generate 835 tons of solid waste per day for public facilities.[12] As a whole, the project could generate 3,355 tons of solid waste per year, or 9.2 tons per day, before recycling. Waste generation includes all materials discarded, whether or not they are later recycled or disposed in a landfill, but the proposed project would be required to comply with state and local regulations to recycle solid waste.

[10] The amount of residents for the proposed project were estimated based on data from the El Dorado Hills census and the 2009-2013 American Community Survey, and would total 2,618 residents. Therefore, the average persons per dwelling by land use for the proposed project would total 2.6 residents. (0.67 average tons per person)*(2,618 people) = 1,754 average tons of solid waste generated by proposed residential land use.

[11] Assumes 0.084 pounds per square foot per day (lbs/sq ft/day) produces approximately 4,200 lbs per day (California Department of Resources Recycling and Recovery 2013b). (4,200 lbs/day)*(365) = 1,533,000 lbs/year (assuming professional offices are open 7 days a week, which is conservative). (1,533,000 lbs/year)/(2,000 lbs/ton) = 766 tons.

[12] Assumes 1 acre = 43,560 square feet: 15 acres = 653,400 square feet (15 acres * 43,560 square feet). Assumes 0.007 pounds per square foot per day (lbs/sq ft/day) produces approximately 4,574 pounds per day (653,400*0.007), or 1,669,510 pounds per year (4,574*365) (California Department of Resources Recycling and Recovery 2013c). (1,669,510 pounds/year)/(2,000 lbs/ton) = 835 tons.

Solid waste from the project site would be collected and transported to the waste transfer facilities in El Dorado County and then sent to either the Lockwood or Potrero Hills Landfill. As described in the *Environmental Setting* section, the Diamond Springs MRF can process 400 tons of waste per day, including construction debris, and currently processes approximately 70 tons per day (Ross pers. comm.). An additional 9.2 tons per day from the proposed project would not exceed the facility's capacity.

As described in *Environmental Setting* section, the Potrero Hills Landfill can accept 4,330 tons of waste per day. In 2012, it processed an average of 1,096 tons per day (Potrero Hills Landfill 2013). An additional 9.2 tons (which is a conservative estimate, assuming all waste from the proposed project would only go to this landfill), would not exceed the landfill's capacity.

The Lockwood Landfill processes about 5,000 tons of waste per day (Nevada Division of Environmental Protection 2014). As described in the *Environmental Setting* section, it is permitted for a capacity of approximately 265 million cubic yards, or between 371 and 530 million tons (Eckert pers. comm.). As of May 2014, the landfill had approximately 268 million cubic yards remaining, or between 375 and 536 million tons greater than its permitted capacity due to issuance of a permit granting an expansion that likely overestimated its rate of expansion (Eckert pers. comm.). Therefore, the additional 3,355 tons per year, or 9.2 tons per day (assuming the project's waste would only go to this landfill), would not exceed the landfill's capacity.

Both landfills would individually be able to accommodate the proposed project's waste; between the two landfills combined, the required capacity for the proposed project would be sufficient. Additionally, these estimates are conservative because they do not include recycling diversions. Therefore, the proposed project would be served by landfills with sufficient permitted capacity to accommodate its solid waste disposal needs and impacts would be less than significant. No mitigation is required.

Impact PSU-9: Comply with federal, state, and local statues and regulations related to solid waste (less than significant)

The proposed project would be required to comply with all federal, state, and local statues and regulations related to solid waste during its construction and operation. These statues and regulations include those discussed in Section 3.12.1, *Existing Conditions,* under *Regulatory Setting*. Furthermore, CEDHSP policy 6.21 requires that the developer reuse or recycle a minimum of 65% of the construction and demolition debris, which exceeds the County's 50% requirement. These requirements would be enforced during construction and operation through the issuance of permits and the mandatory requirement that all solid waste be collected by a refuse collector such as the El Dorado Disposal Services. Therefore, impacts would be less than significant. No mitigation is required.

Impact PSU-10: Lead to a wasteful, inefficient, and unnecessary usage of energy (less than significant)

As indicated above, the wasteful, inefficient, and unnecessary usage of direct or indirect energy, when taken within the context of Appendix F, *Energy Conservation*, of the CEQA Guidelines is taken to mean circumstances in which the project would conflict with applicable state or local energy legislation, policies, and standards adopted, enacted, or promulgated for the purpose of reducing energy consumption and improving efficiency. As discussed below, the project would result in

energy consumption more efficient and less consumptive than under current conditions within the County.

Construction

Project construction would consume gasoline and diesel through operation of heavy-duty construction equipment and vehicles.

Based on the GHG emissions analysis, energy use associated with project construction is estimated to result in the one-time consumption of 102,845 million BTU[13].

The CEDHSP includes several policies that would help conserve indirect energy during construction. For example, CEDHSP Policy 8.24 requires a 20% reduction in cement use, which would reduce embodied energy associated with construction. Likewise, CEDHSP Policy 8.25 requires cement and concrete be made with recycled products, which would conserve virgin materials and may reduce manufacturing energy. CEDHSP Policy 8.27 also requires use of sustainably-sourced, regional, bio-based, and reused materials, which may reduce hauling requirements and associated onroad fuel consumption. These policies are consistent with statewide requirements to conserve energy, such as Title 24. Note the energy consumption of 102,845 million BTU associated with construction activities do not include the effects of these CEDHSP policies, as sufficient data is not available regarding the amount of cement required by the project that would be affected by these polices.

Operation

Electric and Natural Gas Infrastructure

PG&E will supply electric and natural gas service to the proposed project. Estimated peak electric demand at build-out for the residential units is approximately 4 megavolt amperes. The Serrano Westside planning area would be served by tapping a 600 amp main line circuit on Serrano Parkway and the La Borgata parking lot. 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.

Estimated peak natural gas demand at build-out is approximately 47 thousand cubic feet per hour (MCFH). PG&E will distribute natural gas service to the plan area by a network of six-inch and four-inch feeder mains. Distribution lines and services would extend from the feeder mains and sized based upon the anticipated gas loads to the various parcels. Two-inch distribution mains and one-inch services would serve residential neighborhoods (Capitol Utility Specialists 2013).

Energy Use

Occupancy of the project would generate vehicle trips from daily resident access, visitors, and employee travel. Project operations would also result in the consumption of electricity and natural gas for power, heating, and cooking. Gasoline and diesel consumed by onroad vehicles, as well as

[13] Construction BTU calculated based on a conversion of kilograms of greenhouse gas emissions per gallon of fuel consumed equaling 10.20648 for diesel and 8.7775 for gasoline (i.e., other) from Climate Registry (2015), with a BTUs per gallon rate of 129,488 for diesel and 113,927 for gasoline. Refer to Table J-1 in Appendix J for detailed emissions estimates used in the calculation.

electricity and natural gas consumed by residents, represents the long-term operational energy impact associated with the project.

Electricity and natural gas consumption at full project buildout (2035) were quantified using CalEEMod and the land use assumptions presented in Table 2-2 in Chapter 2, Project Description. The CEDHSP Sustainability chapter includes several policies that would improve energy efficiency and reduce indirect electricity and natural gas energy consumption. Energy benefits associated with the following CEDHSP policies were also quantified using CalEEMod.

- CEDHSP Policy 8.11, Title 24 standards
- CEDHSP Policy 8.16, EnergyStar appliances
- CEDHSP Policies 8.20–8.21, High efficiency lighting

Additional operational energy reductions may be achieved by the CEDHSP policies that support alternative transportation (CEDHSP Policies 8.3–8.5), improve sustainable land use design (Policies 8.1, 8.2, and 8.10), and require renewable energy (CEDHSP Policy 8.22) and passive heating and cooling (CEDHSP Policies 8.12-8.14, 8-18). See Appendix J for a listing of CEDHSP Policies that would help to reduce energy consumption directly (e.g., reducing the amount of electricity consumed, such as solar photovoltaic [PV] system installation) or indirectly (e.g., reducing the amount of water consumed, which reduces energy required to treat and transport water).

Energy reductions directly attributable to implementation of these policies cannot be quantified since many of the policies are voluntary or their exact benefit is unknown. However, potential energy reductions can be estimated using expected GHG benefits as a proxy for reduced fuel consumption. The Sacramento Metropolitan Air Quality Management District's *Recommended Guidelines for Land Use Emissions Reductions* (Reduction Guide) (2010) provides pre-quantified GHG reduction potentials that are likely to be achieved by energy-reducing policies such as those included in the CEDHSP. Based on the Reduction Guide, the CEDHSP transportation policies would reduce onroad vehicle GHG emissions by approximately 1.875% and the CEDHSP energy policies would reduce electricity and natural gas-related GHG emissions by 1%. Since transportation-related GHG emissions directly correlate with the volume of diesel and gasoline combusted,[14] reducing onroad GHG emissions by 1.875% would roughly reduce fuel consumption by the same amount. The same relationship existing among one metric ton of CO_2 emitted and one kilowatt-hour or therm of electricity or natural gas consumed; as such, reducing electricity and natural gas-related GHG emissions by 1% would reduce electricity and natural gas consumption by the same amount.

Operational energy consumption (expressed in terms of million BTU) at full buildout in 2035 is summarized in Table 3.12-19. It also identifies energy reductions achieved by CEDHSP policies.

[14] GHG emissions are directly related to vehicle fuel consumption, where 8.7775 kilograms of CO_2 are emitted per gallon of combusted gasoline and 10.20648 kilograms of CO_2 are emitted per gallon of combusted diesel (Climate Registry 2015).

Table 3.12-19. Estimated Annual Operational Energy (Fossil Fuel) Consumption for the Proposed Project

Condition	Million BTU/Year
Without CEDHSP policies[a]	161,570
Energy reduction from CEDHSP mixed use design[a]	*-4,578*
Energy reduction from CalEEMod-quantified CEDHSP energy policies[b]	*-3,438*
With CEDHSP mixed use design and CalEEMod-quantified energy policies	153,554
Estimated energy reduction from additional CEDHSP policies[c,d]	*-8,525*
Total with CEDHSP policies	145,029
Total energy reductions from CEDHSP policies	*-16,541*

[a] Based on CalEEMod modeling (Appendix C).
[b] Modeled energy policies include 8.11, 8.16, 8.20, and 8.21.
[c] Modeled energy policies include 8.2 and 8.14.
[d] Applies a 1% reduction to the estimated electricity and natural energy use with CalEEMod-quantified CEDHSP policies. Applies a 1.875% reduction to the estimated onroad energy use with CEDHSP mixed use design.

As shown in Table 3.12-19, long-term operation of the project would result in energy usage (onroad fuel consumption, electricity, and natural gas). However, CEDHSP policies would reduce energy consumption by up to 17,734 million BTU compared to if these state-mandated programs were not pursued.

Based on the energy consumption results presented in Table 3.12-19, Table 3.12-20 provides a summary of per-capita El Dorado County energy consumption. As indicated in Table 3.12-20, Per-Capita BTU energy consumption associated with the proposed project is anticipated at 55,201,681, well below the 73,364,069 per-capita BTU energy consumption associated with the current El Dorado County average (Table 3.12-6), indicating the project would result in more efficient and less consumption of energy resources.

Table 3.12-20. Proposed Project Per Capita Energy Consumption

	Million BTU	BTU	Per-Capita BTU
Low Range	143,836	143,836,000,000	54,941,176
High Range	144,518	144,518,000,000	55,201,681

Note: 2,618 Proposed Project population.

With respect to onroad vehicles, the project would improve energy efficiency and fuel consumption compared to the existing land use designations, as the project would promote mobility and connectivity between streets and major destinations, as well as configuring future development with typical densities and site design policies to minimize automobile use. This is consistent with the Energy Policy Act and AB 2076, both of which strive to reduce dependency on petroleum demand.

Many of these electricity and natural gas reductions of the project would be achieved through the energy conservation requirements of the CalGreen Code and Title 24 standards. For example, buildings would, where feasible, incorporate site design measures to reduce heating and cooling needs by orienting buildings on the project site to reduce heat loss and gain, depending on the time

of day and season (CEDHSP Policy 8.12). Buildings would also feature programmable thermostats (CEDHSP Policy 8.15) and EnergyStar-certified appliances installed prior to occupancy (CEDHSP Policy 8.16). All lighting in publicly or commonly accessed outdoor areas would use high-efficiency light-emitting diode (LED) or similar lighting with automatic or dimmable controls; and public street lighting would also use LED or similar technologies (CEDHSP Policies 8.20 and 8.21).

The CEDHSP also includes policies concerning renewable energy sources. For example, CEDHSP Policy 8.22 requires that all residential, commercial, and public buildings be designed to allow for the installation of renewable energy systems, including active solar, wind, or other emerging technologies. Solar water heating systems, radiant heating systems, or similar types of energy-efficient technologies would be required in commercial and multi-family buildings, and encouraged in single-family residences and swimming pools (CEDHSP Policy 8.23).

As previously indicated, the CEDHSP contains many policies that serve to result in beneficial effects to energy resources through a variety of many different means and strategies, including:

- Decreased use of energy (CEDHSP Policy 8.20)
- More efficient use of energy (CEDHSP Policy 8.51)
- More efficient use of resources that require energy (CEDSP Policy 8.36)
- Increased reliance on renewable energy sources (CEDHSP Policy 8.22)
- Reduced automobile travel (CEDHSP Policies 8.3–8.5).

In addition, as indicated in the CEDHSP, zero net energy (ZNE) is a newly emerging approach to integrating energy efficiency and renewable energy in building design and construction. A ZNE building produces as much clean, renewable, grid-tied energy on-site as it uses when measured over a calendar year. By 2020, all new residential development in California will be required to meet zero net energy (ZNE) standards, and by 2030, all new commercial development in California will be required to meet ZNE standards.

Because the project is consistent with and would go above and beyond state and local energy policies enacted to reduce energy consumption (See CEDHSP Policies identified in Appendix J), would result in lower per-capita energy consumption than the current El Dorado County average, and would also help the County in meeting ZNE requirements, the project would not result in a wasteful, inefficient, and unnecessary usage of energy. This impact would be less than significant. No mitigation is required.

With regards to the proposed project's effects on local and regional energy supplies and on requirements for additional capacity, peak and base period demand for electricity and other forms of energy, and other energy resources, it is anticipated the CEDHSP Polices that promote residential and commercial self-sufficiency will enhance energy, environmental, and transportation efficiency, which would reduce the requirement for additional capacity.

The degree to which the proposed project encourages efficient and reduced energy consumption and generation of its own energy resources will dictate its dependency on the local energy utility. This will allow a certain degree of self-sufficiency, as less reliance and dependency on the local energy utility occurs. As an example, individual homeowners or a special district set up on behalf of individual homeowners could pursue the purchase of renewable resources from the local utility to meet CEDHSP renewable resource goals. In turn, the utility would procure power from renewable power on their behalf and charge the actual energy costs, which generally would cost more than the

blend of conventional resources that would typically be used. Therefore, the extent the proposed project is able to reduce its energy load and meets its own energy requirements will have a direct effect on peak and base supply from the local energy utility.

The local energy utility will need to plan on the degree of dependency associated with the proposed project, as well as the potential for export of excess energy from potential renewable components that could be implemented as part of the proposed project to its system. The local energy utility will evaluate and plan for the energy resources needed to accommodate the proposed project, and these resources include generation, transmission, and distribution facilities. The costs of these facilities are generally included in the rates paid for by the served users.

The planning by an energy utility of the energy needs of its service territory utilizes local and regional development plans. This dynamic process is subject to regulatory oversight by the Public Utility Commission (PUC) where every two years in Long Term Procurement Plan proceedings the PUC assesses the system and local resource needs of the state's three investor-owned utilities over a ten-year horizon[15]. The PUC establishes upfront standards for utility procurement activities and cost recovery by reviewing and approving proposed procurement plans prior to their implementation. Integral to this process is the utility demand forecast which is subject to review by the CEC and used in its Integrated Energy Policy Report[16]. To ensure consistency with approved plans, the PUC conducts annual Energy Resource Recovery Account proceedings where energy forecasts are refined versus on-going procurement. This continual planning process ensures the local energy requirements for a region, both current and planned, will be accommodated by the local utility. Consequently, it is anticipated the proposed project would not have a detrimental effect on local and regional energy supplies, nor on any requirements for additional capacity. In addition, the proposed project would not impede on the local utility's ability to meet the proposed project's peak and base period demand for electricity and other forms of energy. Consequently, this impact is considered less than significant.

[15] The PUC issues key Long Term Procurement Plan decisions on planning assumptions and scenarios

[16] Pursuant to law (SB 1389, Bowen and Sher, Chapter 568, Statutes of 2002), the Energy Commission is required to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." (Pub. Res. Code § 25301(a))

3.13 Recreation

This section describes the regulatory and environmental setting for recreation facilities within the western area of El Dorado County. It also describes impacts on recreation facilities that would result from implementation of the Central El Dorado Hills Specific Plan (CEDHSP) (proposed project). The environmental effects of constructing and operating parks proposed within the project site are included in the technical analyses in Sections 3.1 through 3.14.

3.13.1 Existing Conditions

Regulatory Setting

The provision of parkland is governed at the state level by California Government Code Section 66477, commonly called the Quimby Act. At the local level, the *El Dorado County General Plan* (County General Plan), the El Dorado County *Parks and Trails Master Plan*, and the El Dorado Hills Community Services District (CSD) *Parks and Recreation Facilities Master Plan* guide the dedication and maintenance of recreational facilities within the unincorporated area of western El Dorado County. Applicable recreation regulations and policies related to the CEDHSP are described below.

State

Quimby Act

The Quimby Act (California Government Code Section 66477), enacted in 1966, is a state law, applied at the local level, that specifies the parkland dedication requirements for new residential development. The Quimby Act allows local jurisdictions to require developers of new residential subdivisions to dedicate up to 3 acres of park area per 1,000 persons or, if the amount of existing neighborhood and community park area exceeds that limit, the jurisdiction can require that existing ratio, not to exceed 5 acres of land per 1,000 persons or to pay in-lieu fees for park or recreational purposes. Although the Quimby Act requires the dedication of new parkland, it does not address the development, operation, or maintenance of new park facilities. Therefore, the Quimby Act provides open space needed to develop park and recreational facilities, but does not ensure the development of the land or the provision of a park.

Local

At the local level, the dedication, operation and maintenance of recreation facilities on the project site and surrounding area is guided by the County General Plan, the El Dorado County *Parks and Trails Master Plan*, and the El Dorado Hills CSD *Parks and Recreation Facilities Master Plan*.

El Dorado County General Plan

The Parks and Recreation Element of the County General Plan guides the establishment and maintenance of parks, recreation facilities, and trails within unincorporated El Dorado County (El Dorado County 2004). The Parks and Recreation Element contains the following goals, objectives, and policies applicable to recreation resources within and near the CEDHSP site. 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 9.1, *Parks and Recreation Facilities*, addresses provision of adequate recreation opportunities and facilities for the health and welfare of all residents and visitors of the County, and includes Objective 9.1.1, *Park Acquisition and Development*, and implementing policies 9.1.1.1, 9.1.1.2, 9.1.1.3, 9.1.1.4, and 9.1.1.5; and Objective 9.1.2, *County Trails*, and implementing policies 9.1.2.4, and 9.1.2.8; and Objective, 9.1.3, *Incorporation of Parks and Trails*, and implementing policy 9.1.3.1.
- Goal 9.2, *Funding*, addresses Quimby Act requirements related to provision of ongoing development, operation, and maintenance of parks associated with new development projects, and includes Objective 9.2.2, *Quimby Act*, and implementing policy 9.2.2.2.

El Dorado County Parks and Trails Master Plan

The El Dorado County *Parks and Trails Master Plan* covers County-owned recreational facilities in its plan area, consisting of that portion of western El Dorado County not within the boundaries of a local parks provider. The stated purpose of the *Parks and Trails Master Plan* is to "provide direction and implementation strategies to guide the acquisition, development, and operation of County-owned parks and trails in the Plan Area" (El Dorado County 2012). The *Parks and Trails Master Plan* incorporates the goals, objectives, and policies included in the Parks and Recreation Element of the County General Plan and supplements those with additional goals, objectives, and policies to direct the planning, operation, and maintenance of parks and trails consistent with the County's long range vision. The *Parks and Trails Master Plan* includes the following relevant goal, objectives, and policies.

> **GOAL 1: Health and Wellness.** El Dorado County residents will have reasonable access to a variety of park and trail facilities to enhance their opportunities for physical, mental, and social health and well-being.
>
> **Objective 1.1: Park and Trail Locations.** Park and trails facilities shall be located taking into consideration the potential to provide recreational opportunities to underserved populations and to expand the diversity of recreational experiences available to County residents.
>
> > **Policy 1.1.2:** Some trails should be located to provide connections to neighborhoods or public places such as schools, parks, and civic areas to encourage residents to incorporate walking and cycling as a regular activity.
> >
> > **Policy 1.1.3:** As new parks and trail are planned, consideration should be given to locating them in places that will provide access to diverse and unique recreation experiences.
>
> **Objective 1.2: Public Access.** El Dorado County parks and trails will be designed and operated to provide maximum public access as feasible considering safety, sensitive natural resources, and other constraints.

El Dorado Hills Community Services District Parks and Recreation Facilities Master Plan

The El Dorado Hills CSD *Parks and Recreation Facilities Master Plan* (adopted in 2007) outlines the way El Dorado Hills CSD parks, facilities, and recreation programs will be managed to respond to anticipated growth and changing recreation trends over a 15-year planning period. The El Dorado Hills CSD *Parks and Recreation Facilities Master Plan* outlines the following pertinent goals.

> **Promote health and wellness:** A livable community provides diverse opportunities for improving health and wellness through physical activity, mental challenges, and social engagement. The CSD will offer these opportunities by supporting active lifestyles in its parks, facilities, and programs.

Develop community partnerships: Strong community collaboration brings additional resources to parks and recreation and enhances community ownership. The District will continue to cultivate positive relationships with public, private, and non-profit organizations in order to unite the community in efforts to acquire, develop, and maintain parks, recreation facilities, and programs.

Preserve natural resources: The District will protect the community's open spaces by preserving, restoring, and enhancing important natural resources. Through these efforts, the CSD will promote an ethic of environmental stewardship, conservation, and sustainability.

Provide diverse opportunities: The District will provide parks, recreation facilities, and programs which engage a broad cross-section of the community, including residents of all ages, abilities, and economic and cultural backgrounds. The District will strive to make all parks, facilities, and programs geographically, physically, socially, and economically accessible to all members of the community.

Achieve financial stability: The District will make fiscal responsibility, accountability, and long term financial stability a high priority. The CSD will maximize existing resources and engage innovative funding mechanisms in order to provide and maintain high quality parks, facilities, and programs at affordable costs to residents.

County Code (El Dorado County Subdivision Ordinance) 120.12.090

The County implements the Quimby Act (described above) through Section 120.12.090 of the County Code. The County Code sets standards for the acquisition of lands for parks and recreational purposes, or the payments of fees in lieu thereof, on any discretionary residential development project that is subject to land subdivision. A subdivision of 50 or fewer units can only be required to pay in-lieu fees; subdivisions of greater than 50 units may dedicate land, pay fees, or a combination of both. Non-residential subdivisions are conditioned so that Quimby fees would be paid if the property is developed with multifamily housing within 5 years of map recordation.

The County Code includes formulas to calculate the amount of parkland to be dedicated and/or in-lieu fees based on the number of proposed dwelling units and population density. For park planning purposes, the County uses a household size of 3.3 people per single-family residential unit and 2.1 people per multifamily unit (County Code Section 120.12.090.H).

Environmental Setting

Recreation amenities in El Dorado County include a wide range of federal, state, local, and privately owned facilities (Figure 3.13-1). In the westernmost part of the county near the CEDHSP site, recreation facilities are primarily owned and operated by the County, El Dorado Hills CSD, and private homeowners' associations. County-owned and El Dorado Hills CSD facilities in western El Dorado County are described below. The project site is not adjacent to any existing parklands or developed recreational facilities, but it is adjacent to the El Dorado Hills Bowmen Archery Range.

County Recreation Facilities

El Dorado County categorizes parks, in increasing size, as neighborhood, community, and regional facilities. Neighborhood parks, 2 to 10 acres in size, are typically within walking or biking distance of the residents they serve and have amenities such as play areas, turf, and picnic areas. Community parks, generally 10 to 44 acres in size, are intended to serve the larger community and may include sports fields and courts, a swimming pool, and a community center as well as the amenities found in the smaller neighborhood parks. Regional parks range in size from 30 to 1,000 acres, are intended to serve a region larger than an individual community, may include all the amenities typically found at

neighborhood and community parks, and may also feature facilities such as amphitheaters, trails, campgrounds, and interpretive centers.

The County is responsible for managing and maintaining six existing public recreation facilities and owns land targeted for four additional parks (El Dorado County 2012). The six existing facilities consist of two community parks (51-acre Henningsen Lotus Park and 21-acre Pioneer Park), one neighborhood park (3-acre Bradford Park), the El Dorado County Fairgrounds and Joe's Skate Park, located at the fairgrounds, and the 16-acre Chili Bar rafting/kayaking put-in on the South Fork of the American River. The four proposed County parks include Bass Lake Park (a 40-acre site between the communities of El Dorado Hills and Cameron Park), the 26-acre Pollock Pines Community Park site, a 62-acre portion of the 1,600-acre Cronan Ranch Regional Trails Park in Pilot Hill, and the 6.3-acre Railroad Park site in the community of El Dorado. If constructed, the proposed Bass Lake Park would be the closest facility, approximately 2.5 miles from the project site.

El Dorado Hills Community Service District Recreation Facilities

El Dorado Hills CSD manages a total of approximately 386 acres of existing, undeveloped, and planned parkland, providing parks and recreation facilities and services to residents of the El Dorado Hills area. The project site is within the El Dorado Hills CSD boundaries.

El Dorado Hills CSD identifies six categories of parks within its service area: neighborhood, village, community, open space preserves, linear, and special use areas. Table 3.13-1 summarizes these park categories and the acres of each type within the service area. Neighborhood parks, located within walking and bicycling distance of most users, range in size from 1 to 3 acres, are designed primarily for unsupervised, non-organized recreation. Village parks, 3 to 15 acres in size, are located within walking and driving distance 0.5 to 1 mile of residents. Village parks are intended to provide active and passive recreational opportunities and may have amenities such as trails, bathrooms, play equipment, and facilities for organized sports. Community parks are intended for use by the broader community. They range from 15 to 100 acres in size and feature facilities for organized sports, parking areas, and bathrooms. Community parks may also include passive recreational opportunities and community centers. Open space preserves consist of permanent, undeveloped green or open space ranging from 1 to 1,000 acres and managed for natural value and recreational use. Open space preserves are intended to provide opportunities for nature-based recreation and the El Dorado Hills CSD has been identified as one of the organizations that may accept the dedication of public open space lands within the El Dorado Hills Specific Plan (EDHSP). Linear parks are developed, landscaped areas that typically follow linear corridors. Special use areas consist of free-standing facilities such as community centers, aquatic centers, sports complexes or skate parks.

Table 3.13-1. El Dorado Hills CSD Parks Categories

Park Type	Description	Total Acreage
Neighborhood	Designed primarily for unsupervised, non-organized recreation Located within walking and bicycling distance of most users 1–3 acres	54
Village	Provide active and passive recreational opportunities for large and diverse groups Located within a 0.5- to 1-mile radius of residents and can be within walking and driving ranges Can have amenities like trails, bathrooms, play equipment, and recreational facilities for organized sports 3–15 acres	57
Community	Focal points and gathering places for the broader community Include recreational facilities for organized sports, parking areas, and bathrooms, and may include passive recreational opportunities May incorporate senior centers or community centers 15–100 acres	171
Open Space Preserves	Permanent, undeveloped green or open space Managed for natural value and recreational use and provides opportunities for nature-based recreation 1–1,000 acres	95
Linear	Developed, landscaped areas that typically follow linear corridors (e.g., abandoned railroad rights-of-way, rivers, power lines)	0
Special Use Areas	Free standing specialized use facilities such as community centers, aquatic centers, sports complexes or skate parks	9
Total		386

Source: El Dorado Hills Community Services District 2007.

Parks in the El Dorado Hills CSD service area include facilities owned and maintained by El Dorado Hills CSD, facilities owned and maintained by local homeowners' associations, and local school grounds. The 386 acres of existing, undeveloped, and planned El Dorado Hills CSD parkland consist of 17 neighborhood parks, 8 village parks, 6 community parks, 8 open space areas, and 2 special use areas. The El Dorado Hills CSD does not own or maintain any linear parks (El Dorado Hills Community Services District 2007). Facilities owned and operated by local homeowners' associations comprise approximately 56 acres of privately owned neighborhood and village parks, as well as 2,230 acres of open space (El Dorado Hills Community Services District 2007). Local elementary, middle, and high schools provide approximately 144 acres of additional parkland in the El Dorado Hills CSD service area (El Dorado Hills Community Services District 2007).

Each park category has a designated service ratio. Table 3.13-2 summarizes these service ratios and current levels of service.

Table 3.13-2. Parkland Levels of Service

Park Type	El Dorado Hills CSD Existing Standard (acres per 1,000 people)[a]	El Dorado Hills CSD Existing Level of Service (acres per 1,000 people)[b]	Existing Levels of Service with Home Owners Associations (acres per 1,000 people)[b, c]	El Dorado Hills CSD Projected Level of Service (2020) (acres per 1,000 people)[d]	Projected Level of Service Including Other Local Agencies (acres per 1,000 people)[d]
Neighborhood	1.5	0.95	1.5	0.92	1.23
Village	1.5	1.28	2.51	0.96	1.60
Community	2.0	1.75	2.21	2.90	2.90
Open Space Preserves	5.0	1.51	1.51	1.61	39.52
Linear	–	0.0	0.0	–	–
Special Use Areas (open space or sports/ recreation facilities)	–	0.26	1.61	0.14	0.91
Total	10	5.76	8.58	6.54	46.16

Sources: El Dorado Hills Community Services District 2005, 2007.

[a] As defined in *El Dorado Hills Community Services District Parks and Recreation Facilities Master Plan* (El Dorado Hills Community Services District 2007).

[b] As shown in *El Dorado Hills Community Services District Parks and Recreation Facilities Master Plan Existing Conditions Summary Report* (El Dorado Hills Community Services District 2005).

[c] Each planned development with the El Dorado Hills CSD owns private parkland managed through individual homeowners' associations. In sum, they add over 100 acres to the service area's total parkland inventory.

[d] El Dorado Hills Community Services District 2007.

With inclusion of homeowners' association parks, the El Dorado Hills CSD meets or exceeds the neighborhood, village, and community parkland acreage requirements (Table 3.13-2). Given the expected parks to be developed over the next 5 to 8 years, El Dorado Hills CSD anticipates it will provide sufficient village parks, community parks, and special use areas to meet its level of service standards. These parks are expected to have service ratios in 2020 of 1.6 acres per 1,000 people for village parks, 2.90 acres per 1,000 people for community parks, and 39.52 acres per 1,000 people for special use areas (El Dorado Hills Community Services District 2007). However, in 2020 the service area will still be deficient in neighborhood parks with a service ratio of 1.23 acres per 1,000 people, requiring 16 acres of additional neighborhood parkland (El Dorado Hills Community Services District 2007). The area will also be deficient in special use areas (recreational and sports facilities) with a service ratio of 0.91 acre per 1,000 people, generating a demand for additional sports parks and a pool (El Dorado Hills Community Services District 2007).

Central El Dorado Hills Specific Plan Area Recreation Facilities

No functioning, developed recreational resources currently exist within the CEDHSP area. The former El Dorado Hills Executive Golf Course, developed in the early 1960s and closed in 2007, is located within the Serrano Westside planning area. Serrano Villages D1, Lots C and D, and portions of the natural open space lands of the EDHSP form the northeast and eastern boundaries of the Serrano Westside planning area. The project site is not directly adjacent to any existing parklands;

however, it is adjacent to the El Dorado Hills Bowmen Archery Range. Several pedestrian and bicycle trails, both paved and unpaved, pass near or adjacent to portions of the CEDHSP area.

3.13.2 Environmental Impacts

Methods of Analysis

The analysis of the CEDHSP's impacts on recreational resources was conducted using a review of local recreation planning documents, including the County General Plan Parks and Recreation Element, the El Dorado County *Parks and Trails Master Plan*, and the El Dorado Hills CSD *Parks and Recreation Facilities Master Plan*. The parkland and recreation impact assessment in this section is based on a comparison of the anticipated population of the CEDHSP area with the ability of existing and CEDHSP-proposed recreational facilities to accommodate that population. The assessment includes an analysis of the County's Quimby Act parkland dedication requirements outlined in County Code Section 120.12.090. The analysis assumes 3.3 people per single-family residential unit and 2.1 people per multifamily unit to estimate the population, in accordance with County Code Section 120.12.090.H.

Thresholds of Significance

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.

- 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.
- Require the construction or expansion of offsite recreational facilities that might have an adverse physical effect on the environment.

Impacts and Mitigation Measures

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)

The CEDHSP proposes development of up to 470 single-family and 530 multifamily housing units. Based on a household size of 3.3 people per single-family residential unit and 2.1 people per multifamily unit (County Code Section 120.12.090.H), buildout of the CEDHSP would introduce up to 2,664 park users into the area, which would increase the use of existing parks and recreational facilities.

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. 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.

The CEDHSP includes development of 16 acres of parks, consisting of 15 acres of Village Park (VP), and 1 acre of neighborhood park. The 15-acre Village Park would be located in the southernmost portion of the Serrano Westside planning area adjacent to U.S. Highway 50 (US 50) and would

provide for active and passive recreational uses. The neighborhood park would be owned and maintained by a Master Owners' Association, but, because it would be publicly accessible, the neighborhood park would receive 100% credit for satisfying the County's Quimby Act parkland dedication requirements.

Based on maximum buildout, the amount of parkland provided by the CEDHSP would exceed the Quimby Act requirements for the project (13.32 acres) by 2.68 acres. If the El Dorado Hills CSD uses the planned Civic–Limited Commercial site for recreation uses, total park acreage could be as much as 27 acres, or nearly twice the County's Quimby Act requirements. In addition, the project includes approximately 169 acres of open space (168 acres of natural open space and a 1-acre neighborhood park), Class I bikeways, and paved and unpaved trails. The Serrano Westside planning area would provide a bicycle and pedestrian network that would connect to and enhance existing trails and would also provide a potential safe, dedicated bicycle/pedestrian overcrossing connection, replacing the existing location, to areas south of US 50.

The CEDHSP contains the following objectives and policies that address open space and parkland dedication, and use. Implementation of these policies would minimize potential effects associated with deterioration of existing neighborhood parks.

Objective 3.6: Set aside natural open space lands to preserve sensitive environmental resources and provide for wildlife habitat, while allowing for the passive recreational enjoyment of the community.

Objective 3.7: Provide parks and gathering spaces for a range of ages and users.

Policy 3.8: Set aside a minimum of 30% open space consistent with the El Dorado County General Plan.

Policy 3.10: Provide private neighborhood parks and public community parks at an overall minimum standard of 5 acres per 1,000 residents, linking them to residential areas and activity centers through a network of sidewalks, bike paths, and trails.

Policy 3.11: All multi-family and high-density residential sites are encouraged to incorporate on-site recreational amenities for its residents.

Policy 5.26: Create an open space zone that may contain limited recreation uses and facilities, storm water quality detention basins, water quality structures, wetland and tree mitigation areas, and other potential public utilities.

Policy 5.28: Locate Class I bicycle paths, or paved and unpaved trails throughout the public open space.

Objective 6.2: Create new park and recreation opportunities within the Plan Area for the enjoyment of existing and new residents.

Policy 6.1: To promote walking and cycling, village and neighborhood parks shall be connected to the pedestrian and bicycle network.

Policy 6.2: Locate neighborhood parks reasonably central to the neighborhoods they are intended to serve.

Policy 6.3: Neighborhood parks shall be a minimum of 1 acre.

Policy 6.4: Acceptable amenities for neighborhood parks include open turf for unstructured play, landscape improvements, playground structures, site furnishings (picnic tables and shelters, benches, bike racks, drinking fountains, trash receptacles, etc.), site identification and interpretive signage, basketball court (full or half), natural areas, and walking paths. Sports fields, artificial turf, off-street parking, and restrooms are not allowed. Examples of neighborhood parks include Serrano Villages B, D, G, and K1/K2.

Policy 6.8: Village parks (VP land use designation) shall be no less than 15 acres (based on the proposed maximum build out), but may be less to reflect actual buildout.

Policy 6.9: In addition to the acceptable amenities for neighborhood parks, village parks may include sports fields (natural or artificial turf and lighted or unlighted); restrooms; active recreation facilities appropriate for the size, scale, and topography of the park; and off-street parking. Prohibited amenities include regional-scale facilities, large indoor facilities, swimming pools, and large storage and maintenance buildings. Examples of village parks include Alan Lindsey Park and the planned park at Serrano Village J.

Policy 6.10: Park designs shall accommodate a variety of active and passive recreational facilities and activities that meet the needs of Plan Area residents of all ages, abilities, and special interest groups, including the disabled.

Policy 6.16: Easements and designated open space shall not be credited as parkland acreage. These areas may be used for park activities, but not to satisfy Quimby parkland dedication requirements.

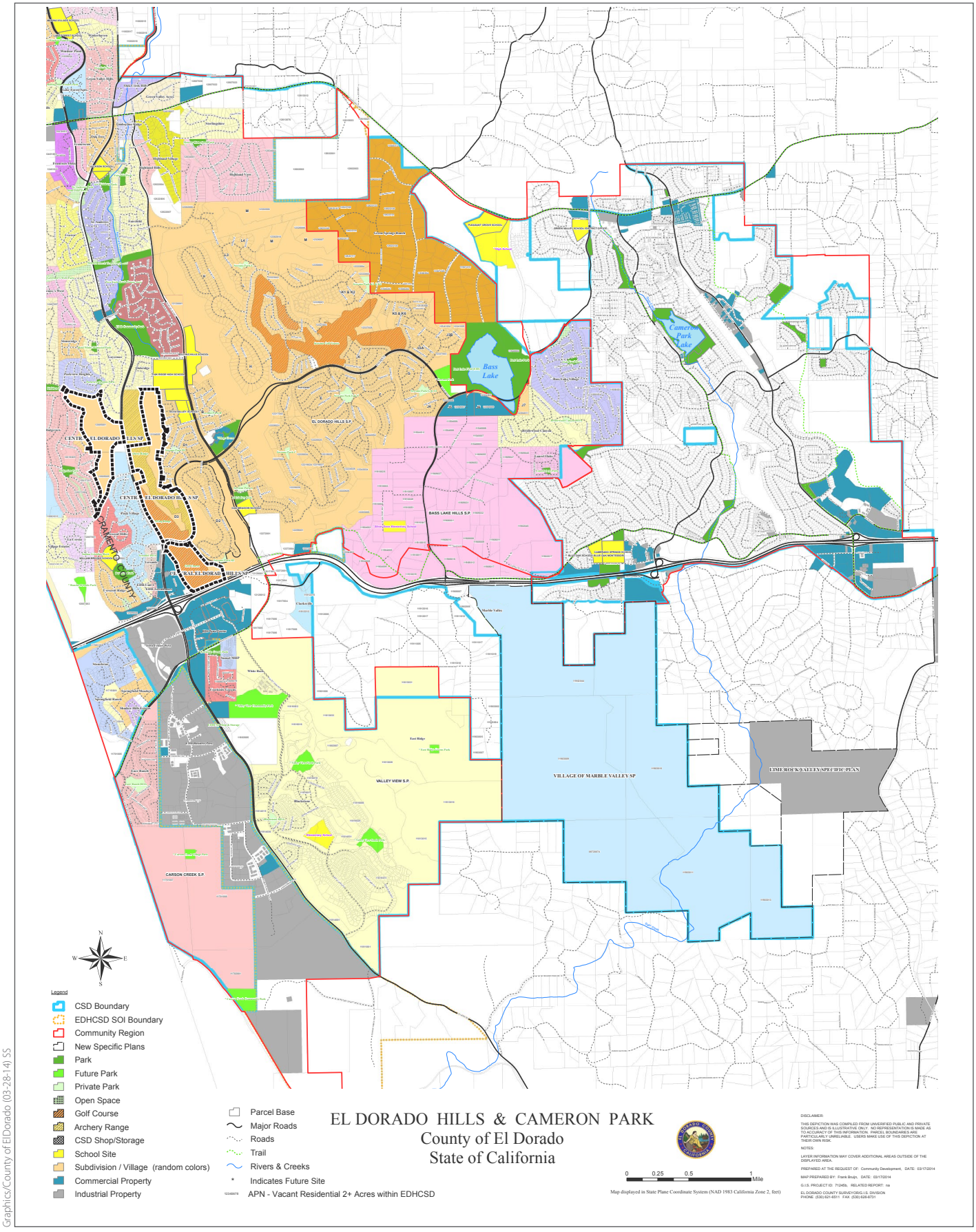
Policy 6.18: The Project Proponent shall dedicate park land acreage consistent with Quimby park land dedication requirements. It is currently contemplated that the Project Proponent will dedicate a minimum of 13.32 acres of park lands to the El Dorado Hills CSD as specified in the Public Facilities Financing Plan and any associated Development Agreement, provided the Plan Area builds out to its maximum dwelling count of 1,000 units.

In addition to the objectives and policies listed above, Appendix A of the CEDHSP indicates that the only uses allowed within open space zones are picnic areas, resource protection and restoration, temporary special events, trailhead parking or staging areas, roadways, walking and bicycling trails, stormwater facilities, and limited utilities (specifically, wireless communication facilities and El Dorado Irrigation District water, wastewater, and reclaimed water facilities).

Because the proposed project would establish open space and active recreational opportunities that meet or exceed the parkland dedication requirements of the Quimby Act, the County General Plan and the El Dorado Hills CSD, implementation of the CEDHSP would not be expected to cause or accelerate the deterioration of existing park facilities. This is a less-than-significant impact. No mitigation is required.

Impact REC-2: Require the construction or expansion of offsite recreational facilities that might have an adverse physical effect on the environment (no impact)

The proposed project would provide new parkland within the CEDHSP that would accommodate existing and project-related residents, and would contribute toward remedying the expected deficiency in 2020 for neighborhood park and special use areas identified by the El Dorado Hills CSD. Therefore, the proposed project is not anticipated to result in the need for the construction or expansion of offsite recreational facilities that might have adverse physical effects on the environment.



Graphics/County of ElDorado (03-28-14) SS

Figure 3.13-1
Parks in the Project Vicinity
19-1670 F 503 of 686

3.14 Traffic and Circulation

This section identifies the setting information and transportation impacts associated with the project and proposes mitigation for significant impacts. The preliminary vehicle circulation plan is shown in Figure 2-6, and the preliminary trail circulation plan is shown in Figure 2-7. Fehr & Peers prepared a consolidated transportation impact analysis (Appendix L) that encompasses the transportation network within the proposed project Pedregal and Serrano Westside planning areas and surrounding area. The information presented herein and the evaluation of impacts is based on the Fehr & Peers transportation impact analysis, which is provided in Appendix L. This section provides the results of the existing plus project conditions analysis. The analysis of cumulative transportation and circulation impacts is presented in Section 5.2, *Cumulative Impacts*.

3.14.1 Existing Conditions

Regulatory Setting

State

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for operating and maintaining the state highway system. In the project vicinity, U.S. Highway 50 (US 50) is under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission (CTC) for state funding programs. The CTC adopts the State Transportation Improvement Program (STIP), which is a multi-year capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

In June 2014, Caltrans approved a *Transportation Concept Report and Corridor System Management Plan (TCR/CSMP) for United States Route 50*. Caltrans prepares a TCR/CSMP, which is a long-range (20-year) planning document, for each state highway. The purpose of each TCR/CSMP is to identify existing route conditions and future needs and to communicate the vision for the development of each route during a 20-year planning horizon. Caltrans has established LOS E as the *concept LOS* consistent with the *El Dorado County General Plan* (County General Plan) LOS policy. Since LOS E is identified as the concept LOS no further degradation of service from existing "E" is acceptable. The concept LOS is a generalized LOS for large study segments used by Caltrans that reflect the minimum level of service or quality of operations acceptable for each route segment.

According to the *Guide for the Preparation of Traffic Impact Studies* (California Department of Transportation 2002), the existing LOS should be maintained if a freeway facility is currently operating at an unacceptable LOS (e.g., LOS F). According to the guide, a traffic impact results when the project degrades LOS from an acceptable to unacceptable level, but a traffic impact may also occur when the addition of project trips exacerbates existing LOS F conditions and leads to a perceptible increase in density on freeway mainline segments or ramp junctions, or a perceptible increase in service volumes in a weaving area. In addition, a traffic impact would occur when the addition of project trips causes a queue on the off-ramp approach to a ramp terminal intersection to extend beyond its storage area and onto the freeway mainline.

Regional

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento region. Its members consist of the counties of Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba as well as 22 cities. SACOG provides transportation planning and funding for the region, and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

The *Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for 2035* (Sacramento Area Council of Governments 2012a) is a federally mandated long-range fiscally constrained transportation plan for the six-county area. Most of this area is designated a federal nonattainment area for ozone, indicating that the transportation system is required to meet stringent air quality emissions budgets to reduce pollutant levels that contribute to ozone formation. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS.

The *2013/16 Metropolitan Transportation Improvement Program (MTIP)* is a list of transportation projects and programs to be funded and implemented over the next 3 years (Sacramento Area Council of Governments 2012b). SACOG submits the MTIP to Caltrans and amends the program on a quarterly cycle. Only projects listed in the MTP/SCS may be included in the MTIP.

Local

El Dorado County Transportation Commission

The El Dorado County Transportation Commission (EDCTC) is the Regional Transportation Planning Agency (RTPA) for El Dorado County, except for that portion of the County within the Tahoe Basin, which is under the jurisdiction of the Tahoe Regional Planning Agency (TRPA). EDCTC prepares the County's regional transportation plan. The *El Dorado County Regional Transportation Plan 2010–2030* (RTP) is designed to be a blueprint for the systematic development of a balanced, comprehensive, multimodal transportation system (El Dorado County Transportation Commission 2010a). EDCTC submits the RTP to SACOG for inclusion in the MTP/SCS process.

The *El Dorado County Bicycle Transportation Plan* provides a blueprint for the development of a bicycle transportation system on the western slope of El Dorado County (El Dorado County Transportation Commission 2010b).

In May 2013, EDCTC completed the *El Dorado Hills Community Transit Needs Assessment and US 50 Corridor Operations Plan* (Transit Plan), which explores how recent growth and projected development affect the need for transit services, and identifies the most appropriate type and level of service needed given the demand (El Dorado County Transportation Commission 2013). The Transit Plan represents a recommendation from the *Western El Dorado County 2008 Short-Range Transit Plan* to study and consider improved transit service in the El Dorado Hills area.

In August 2008, EDCTC adopted the *Western El Dorado County Coordinated Public Transit – Human Services Transportation Plan*, which is intended to improve mobility of individuals who are disabled, elderly, or of low-income status (El Dorado County Transportation Commission 2008). The plan identifies needs specific to those population groups and strategies to meet their needs.

El Dorado County

The County provides for the mobility of people and goods within El Dorado Hills, which is an unincorporated area of the County. The Transportation and Circulation element of the County General Plan (as amended in January 2009) outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following goals and their associated policies are relevant to the project. The full text of these goals 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 TC-1, which addresses planning for and providing countywide road and highway systems, and associated policy TC-1s.
- Goal TC-X, which addresses maintaining adequate levels of service on County roads, and associated policies TC-Xa, TC-Xd, TC-Xe, TC-Xf, and TX-Xg. (The LOS policy specific to this project is described in Section 3.14.2, *Methods of Analysis*)
- Goal TC-2, which addresses the transit system, and associated policy TC-2b.
- Goal TC-3, which seeks to reduce the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities, and associated policy TC-3c.
- Goal TC-4, which addresses the non-motorized transportation system, and associated policy TC-4i.
- Goal TC-5, which addresses pedestrian facilities, and associated policies TC-5a and TC-5c.

The El Dorado County Community Development Agency's *Transportation Impact Study Guidelines* sets forth the protocols and procedures for conducting transportation analysis in the County (El Dorado County 2014), including the identification of the study area. All of the study intersections for the proposed project are within the County's jurisdiction. This traffic analysis is consistent with the County-established methods at the commencement of environmental review for the project.

El Dorado County Transit Authority

El Dorado County Transit Authority (El Dorado Transit) operates El Dorado Transit, which provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route.

The *El Dorado Park-and-Ride Facilities Master Plan* calls for constructing nine new facilities over 20 years (El Dorado County Transit Authority 2007). The plan calls for El Dorado Transit to assume primary responsibility for existing park-and-ride facilities in the county and sets forth an annual program to fund the upkeep and operation. The plan reiterates that demand exceeds supply at the park-and-ride lot in El Dorado Hills, referred to as the El Dorado Hills Multimodal Facility, located in the northeast corner of the White Rock Road/Latrobe Road intersection. In particular, Table 2 of the plan suggests that future (year 2027) deficiency at this location is 172 additional spaces. The plan identifies the construction of a 325-space multi-story parking garage with ground floor retail as priority project #12 in the Capital Improvement Program list. The proposed location is the existing park-and-ride lot.

Environmental Setting

Study Area

Figure 3.14-1 identifies the study area.

The following lists identify existing intersections, intersections proposed as part of the project, roadways, and freeway facilities that were analyzed. Intersections 25 and 26 were considered only in the cumulative conditions analysis, which is included in Chapter 5, *Other CEQA Considerations*.

Existing Intersections

1. Green Valley Road/Francisco Drive
2. Green Valley Road/El Dorado Hills Boulevard
3. Green Valley Road/Silva Valley Parkway
4. El Dorado Hills Boulevard/Francisco Drive
5. Silva Valley Parkway/Apian Way
6. El Dorado Hills Boulevard/Harvard Way
7. Harvard Way/Silva Valley Parkway
8. El Dorado Hills Boulevard/Olson Lane
9. El Dorado Hills Boulevard/Wilson Boulevard
10. El Dorado Hills Boulevard/Serrano Parkway
11. Serrano Parkway/Penela Way
12. Serrano Parkway/Silva Valley Parkway
13. El Dorado Hills Boulevard/Saratoga Way/Park Drive (proposed project access)
14. El Dorado Hills Boulevard/Park Drive
15. El Dorado Hills Boulevard/US 50 westbound ramps
16. Latrobe Road/US 50 eastbound ramps
17. Latrobe Road/Town Center Boulevard
18. Latrobe Road/White Rock Road
19. White Rock Road/Post Street
20. White Rock Road/Valley View Parkway/Vine Street

Future Intersections

21. El Dorado Hills Boulevard/Pedregal Multi-Family Access – Left-in and Right-in/Right-out
22. El Dorado Hills Boulevard/Project Access – Left-in and Right-in/Right-out
23. Serrano Parkway/Project Access
24. Wilson Boulevard/ Project Access

25. Silva Valley Parkway/US 50 westbound ramps (cumulative conditions)
26. Silva Valley Parkway/US 50 eastbound ramps (cumulative conditions)

Roadways

- El Dorado Hills Boulevard
- Latrobe Road
- White Rock Road
- Silva Valley Parkway
- Serrano Parkway
- Saratoga Way
- Wilson Boulevard
- Olson Lane/Gillette Drive
- Harvard Way

Freeway Facilities

- US 50 mainline (eastbound and westbound) – Sacramento County to Cameron Park Drive
- El Dorado Hills Boulevard interchange
- Bass Lake Road interchange
- Cambridge Drive interchange
- Silva Valley Parkway interchange (cumulative conditions)

Roadway Network

The characteristics of the roadway system in the vicinity of the project are described below. Where applicable, the roadway designation given in the County General Plan (as amended in January 2009) is provided.

US 50 is an east-west freeway located south of the project site. Generally, US 50 serves El Dorado County's major population centers and provides regional connections west to Sacramento and east to the State of Nevada. The US 50/El Dorado Hills Boulevard/Latrobe Road interchange would provide the primary access to the proposed project. Near the project area, westbound US 50 has an HOV lane and two general purpose travel lanes, and eastbound US 50 has an HOV lane and three general purpose travel lanes. The County General Plan identifies US 50 as an eight-lane freeway under future conditions. US 50 serves about 80,000 vehicles per day east of Latrobe Road/El Dorado Hills Boulevard.

The **US 50/El Dorado Hills Boulevard/Latrobe Road** interchange, latest phase construction completed in 2015, improved the westbound on- and off-ramps, added 1,000 feet of auxiliary lane to westbound US 50, and provided westbound ramp metering and a dedicated HOV on-ramp lane. Future improvements are planned for this interchange as described in Appendix L.

The new **US 50/Silva Valley Parkway** interchange just east of the project area is under construction. The interchange will be constructed in two phases. Phase 1 (CIP #71328) will provide

a new connection to US 50 with signalized slip on- and off-ramps westbound, and a slip off-ramp and loop on-ramp eastbound. The mainline will cross under Silva Valley Parkway and will be improved to include eastbound and westbound auxiliary lanes between the US 50/El Dorado Hills Boulevard/Latrobe Road interchange and the new interchange. Completion of Phase 1 is scheduled for 2016. Phase 2 will provide a westbound loop on-ramp and eastbound slip on-ramp (CIP #71345). The westbound loop on-ramp will begin the addition of an auxiliary lane that will continue westbound through the El Dorado Hills Boulevard interchange and terminate at the planned US 50/Empire Ranch Road interchange (CIP #53120).

The planned reconstruction of the **US 50/Bass Lake Road interchange** (CIP #71330 and GP148) will add a westbound auxiliary lane to US 50 between the Bass Lake Road and Silva Valley Parkway interchanges.

El Dorado Hills Boulevard is a north-south roadway that turns into Salmon Falls Road north of Green Valley Road and turns into Latrobe Road south of US 50. The roadway has four lanes with a center median between Park Drive and Governor Drive. Between US 50 and Park Drive, the roadway section widens to three lanes northbound to accommodate vehicle demand near the US 50 interchange. The County General Plan identifies El Dorado Hills Boulevard as a four-lane divided road except near US 50, where the designation changes to a six-lane divided road. Project access points are proposed on El Dorado Hills Boulevard. El Dorado Hills Boulevard serves about 22,000 vehicles per day north of Wilson Boulevard.

Gillette Drive is a two-lane local roadway that connects to El Dorado Hills Boulevard via Olson Lane. Gillette Drive serves fewer than 3,000 vehicles per day.

Green Valley Road is an east-west roadway that connects Placerville with western portions of El Dorado County and eastern Sacramento County, south of Folsom Lake. Through the study area, Green Valley Road provides one travel lane in each direction to just west of El Dorado Hills Boulevard. West of Francisco Drive, Green Valley is a four-lane facility. The County General Plan identifies Green Valley Road as a four-lane divided road between the El Dorado County/Sacramento County line and Deer Valley Road. Green Valley Road serves about 27,000 vehicles per day west of Francisco Drive.

Harvard Way is a relatively short (2,000-foot) east-west roadway that connects El Dorado Hills Boulevard on the west and Silva Valley Parkway on the east. It is an undivided four-lane roadway that provides direct access to Oak Ridge High School. Rolling Hills Middle School is located directly opposite Harvard Way at the Silva Valley Parkway intersection. Harvard Way serves about 7,000 vehicles per day.

Latrobe Road is a north-south roadway and is the continuation of El Dorado Hills Boulevard south of US 50. Latrobe Road has six lanes near the US 50 interchange, narrows to four lanes south of White Rock Road, and eventually narrows to two lanes as it continues south to connect with State Route 16 in Amador County. The County General Plan identifies Latrobe Road as a six-lane divided roadway near the US 50 interchange, transitioning to a four-lane divided road, then a two-lane major road and eventually a two-lane regional road serving the southwest portion of El Dorado County. Latrobe Road serves about 30,000 vehicles per day north of White Rock Road.

Olson Lane is a two lane local roadway serving as one of the primary access points to residential areas west of El Dorado Hills Boulevard. Olson Lane terminates at Gillette Drive and serves about 3,000 vehicles per day west of El Dorado Hills Boulevard.

Park Drive is a two-lane local roadway serving the Raley's shopping center located in the northeast quadrant of the US 50/El Dorado Hills Boulevard interchange. Park Drive intersects El Dorado Hills Boulevard at two locations, opposite the new US 50 westbound loop off-ramp, and Saratoga Way. Park Drive is proposed as a project access for the portion of the Serrano Westside planning area south of Serrano Parkway. Park Drive serves about 6,000 vehicles per day east of El Dorado Hills Boulevard.

Saratoga Way has two lanes and extends west of El Dorado Hills Boulevard to Finders Way. Saratoga is planned as a four-lane divided arterial that will connect to Iron Point Road in the City of Folsom. Saratoga Way serves about 3,000 vehicles per day west of El Dorado Hills Boulevard.

Serrano Parkway primarily serves residential land uses east of El Dorado Hills Boulevard. The roadway provides one lane in each direction with a landscaped median between El Dorado Hills Boulevard and Silva Valley Parkway. The County General Plan identifies this segment of Serrano Parkway as a major two-lane road. Serrano Parkway is proposed as a project access for the Serrano Westside planning area. Serrano Parkway serves about 9,000 vehicles per day west of Silva Valley Parkway.

Silva Valley Parkway is a north-south roadway that generally runs parallel to El Dorado Hills Boulevard north of US 50. In the study area, Silva Valley Parkway ranges from two lanes to four lanes with a center median. The County General Plan identifies Silva Valley Parkway as a four-lane divided road. A new US 50 interchange at Silva Valley/White Rock Road is under construction and included in the cumulative conditions transportation analysis. The interchange project provides a realigned Silva Valley Parkway that will connect to the existing four-lane Silva Valley Parkway to the north and the existing two-lane White Rock Road on the south. A new signalized intersection will be installed where the new Silva Valley Parkway will intersect old White Rock Road on the south. Silva Valley Parkway serves about 10,300 vehicles per day north of US 50.

White Rock Road is the continuation of Silva Valley Parkway south of US 50. Between US 50 and Latrobe Road, White Rock Road is predominately a two-lane roadway with a center turn lane in some stretches. The segment of White Rock Road between Latrobe Road and Monte Verde Drive was recently widened to accommodate four lanes, sidewalks, and Class II bicycle lanes. The County General Plan designates White Rock Road as a six-lane divided road east of Latrobe Road and a four-lane divided road west of Latrobe Road. The US 50/Silva Valley Parkway/White Rock Road interchange will modify the roadway alignment and introduce a new signalized intersection at White Rock Road/Existing Silva Valley Parkway/New Silva Valley Parkway and is assumed to be functioning under cumulative conditions. White Rock Road serves about 10,600 vehicles per day west of Latrobe Road.

Wilson Boulevard primarily serves residential areas west of El Dorado Hills Boulevard. Wilson Boulevard is proposed as a project access for the Pedregal planning area. Wilson Boulevard continues for 1 mile west of El Dorado Hills Boulevard, with four lanes between El Dorado Hills Boulevard and Ridgeview Drive, and two lanes west of Ridgeview Drive, where it dead ends. Wilson Boulevard terminates just east of El Dorado Hills Boulevard, where a roadway extension is proposed as part of the project. This new connection would serve as a primary roadway within the Serrano Westside planning area and provide a direct connection to Serrano Parkway on the south. Wilson Boulevard serves about 5,000 vehicles per day west of El Dorado Hills Boulevard.

Existing Conditions Peak Hour Traffic Volumes

Intersection, roadway segment, and freeway counts were collected to determine the existing traffic operations of study facilities. Weather conditions were generally dry and local schools were in full session during the traffic count data collection. Please see Appendix L for further details.

For study intersections, A.M. peak period (7 to 9 a.m.) and P.M. peak period (4 to 6 p.m.) intersection turning movement counts were collected in May 2012 and January 2013. For study roadways, 24-hour traffic counts were collected in May 2012. At the commencement of this study, construction was ongoing at the US 50/El Dorado Hills Boulevard interchange. Field observations conducted during the A.M. and P.M. peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues southbound during the A.M. peak hour and northbound during the P.M. peak hour. Each intersection's peak hour within the peak period was used for the analysis. For the majority of study intersections, the counts indicate that the A.M. peak hour is 7:15 to 8:15 a.m. and the P.M. peak hour is 5:00 to 6:00 p.m. Figure 3.14-2 depicts peak hour traffic volumes, lane configurations and traffic controls at each of the study intersections.

Traffic counts were collected for 26 roadway segments on El Dorado Hills Boulevard, Latrobe Road, White Rock Road, Silva Valley Parkway, Serrano Parkway, Saratoga Way, Wilson Boulevard, Olson Lane, Gillette Drive, and Harvard Way.

For US 50, directional traffic counts were collected during the A.M. peak period (6 to 9 a.m.) and P.M. peak period (3 to 6 p.m.) and included vehicle classification (i.e., automobiles and trucks) and vehicles using the HOV lanes. The freeway traffic counts were conducted midweek (i.e., Tuesday, Wednesday, and Thursday) in August 2013. The August 2013 traffic counts were verified for reasonableness by comparing to traffic data from Caltrans' Performance Measurement System (PeMS) and the Transportation Systems Network (TSN) data. PeMS data is collected continuously from traffic counts detectors located in the travel lanes of freeway facilities (HOV, general purpose, and on- and off-ramps). The TSN data includes an estimate of peak hour traffic based on 7-day traffic counts. Figure 3.14-3 identifies peak hour traffic volumes and lane configurations on US 50. Based on the August 2013 counts, heavy vehicles (i.e., trucks) represented 1% and 2% of westbound traffic during the morning and evening peak hours, respectively. In the eastbound direction, heavy vehicles represented 4% and 1% of traffic during the morning and evening peak hours, respectively. These peak hour heavy vehicle percentages are lower than rates based on daily traffic volumes, because heavy vehicle operators avoid peak hour conditions.

Existing Conditions Peak Hour Vehicle Level of Service

Intersections

Table 3.14-1 summarizes existing A.M. and P.M. peak hour LOS for the study intersections. LOS is a qualitative measure used to describe operating conditions. LOS ranges from A (best), which represents short delays, to LOS F (worst), which represents long delays and a facility that is operating at or near its functional capacity.

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	**F/88**	**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	D/36	C/25
14	El Dorado Hills Blvd/Saratoga Way	Signal	E/56	B/15
15	El Dorado Hills Blvd/US 50 westbound ramps	Signal	D/43	C/29
16	Latrobe Road/US 50 eastbound ramps	Signal	B/15	B/14
17	Latrobe Road/Town Center Blvd	Signal	C/29	E/75
18	Latrobe Road/White Rock Road	Signal	C/35	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

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.

As described under Section 3.14.2, *Thresholds of Significance*, County General Plan policy states than an intersection in a Community Region that is operating at LOS E or better operates at an acceptable level. Under existing conditions, one study intersection, Francisco Drive/El Dorado Hills Boulevard, operates unacceptably (LOS F) during both the A.M. and P.M. peak hours. The intersection is currently all-way stop controlled. This intersection has just been improved by the County to provide an eastbound to southbound free right-turn pocket. Construction was completed in 2015. Future roadway improvements (e.g., roadway realignment, signalization) are planned by the County and are described in Appendix L.

At the commencement of the traffic study, construction was ongoing at the US 50/El Dorado Hills Boulevard interchange during the traffic counts. Field observations conducted during the A.M. and P.M. peak periods identified extensive vehicle queuing near the US 50/El Dorado Hills Boulevard interchange, with the longest queues southbound during the A.M. peak hour and northbound during the P.M. peak hour. Along El Dorado Hills Boulevard, the vehicle queuing results in LOS D operations at the Serrano Parkway/Lassen Lane and Saratoga Way intersections during the A.M. peak hour and at the Town Center Boulevard intersection during the P.M. peak hour and is a result of poor lane utilization caused by the interchange construction.

Detailed LOS analysis sheets are contained in Appendix L. See *Methods of Analysis* in Section 3.14.2 and Table 3.14-2 for a definition of LOS as it relates to intersection delay.

Table 3.14-2. Intersection Level of Service Criteria

Level-of-Service	Average Control Delay (seconds/vehicle)		Description
	Signalized	Stop Controlled	
A	<10.0	<10.0	Very low delay. At signalized intersections, most vehicles do not stop.
B	10.1 to 20.0	10.1 to 15.0	Generally good progression of vehicles. Slight delays.
C	>20.1 to 35.0	>15.1 to 25.0	Fair progression. At signalized intersections, increased number of stopped vehicles.
D	>35.1 to 55.0	>25.1 to 35.0	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.
E	>55.1 to 80.0	>35.1 to 50.0	Poor progression. High delays and frequent cycle failure.
F	>80.0	>50.0	Oversaturation. Forced flow. Extensive queuing.

Source: Transportation Research Board 2010.

Roadway Segments

Table 3.14-3 summarizes existing A.M. and P.M. peak hour LOS for the study roadways. All study area roadway segments operate at acceptable levels (better than LOS F), with most operating at LOS C or better.

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	1,324/0.80/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	2,807/0.70/D	2,976/0.74/D
	Saratoga Way to US 50	6-lane divided arterial	2,685/0.57/C[a]	2,806/0.60/D
Latrobe Road	US 50 to Town Center Blvd	6-lane divided arterial	3,339/0.71/D	4,081/0.87/D
	Town Center Blvd to White Rock Road	6-lane divided arterial	2,253/0.48/C[a]	2,628/0.56/C[a]
	White Rock Road to Golden Foothill Pkwy	4-lane divided arterial	1,813/0.55/C[a]	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	831/0.5/C[a]	969/0.59/D
	Vine Street to US 50	2-lane arterial	830/0.5/C[a]	945/0.57/D
Silva Valley Pkwy	Green Valley Road to Glenwood Way	2-lane arterial	651/0.39/C[a]	591/0.36/C[a]
	Glenwood 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	1,142/0.69/D	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	222/0.13/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.

Detailed LOS analysis sheets are contained in Appendix L. See *Methods of Analysis* in Section 3.14.2 and Table 3.14-4 for a definition of LOS as it relates to roadway segments.

Table 3.14-4. Peak Hour Roadway Segment Capacities by Functional Classification and Level of Service

Functional Classification	Lanes	Roadway Segment Capacity (vehicles per hour)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Arterial (divided)	4	NA	NA	1,850	3,220	3,290
	5	NA	NA	2,350	4,060	4,110
	6	NA	NA	2,760	4,680	4,710
	7	NA	NA	3,215	5,410	5,420
Arterial (undivided)	2	NA	NA	850	1,540	1,650
	4	NA	NA	1,760	3,070	3,130

Source: Peak hour roadway segment capacities based on the *Highway Capacity Manual* (Transportation Research Board 2010) and developed by El Dorado County Community Development Agency, Long Range Planning.

Notes: Five-lane capacity calculated by adding half of the difference between the two-lane and four-lane capacity to the four-lane capacity. Seven-lane capacity calculated by adding half of the difference between the four-lane and six-lane capacity to the six-lane capacity.

NA means "not applicable" because there are no specific vehicles per hour requiring maintenance of LOS higher than C.

Freeway Facilities

Freeway facilities in the County are under the jurisdiction of Caltrans. US 50 and interchanges within or near the study area have undergone improvements in recent years or are undergoing various improvements to increase capacity and improve traffic operations. These recently completed improvements include: HOV lanes east to Cameron Park Drive and modifications to the US 50/El Dorado Hills Boulevard/Latrobe Road interchange westbound ramps. As described above, in the *Roadway Network* section, the US 50/Silva Valley Parkway interchange is under construction.

Table 3.14-5 summarizes existing peak hour freeway operations. All of the study facilities currently operate acceptably. To verify the results shown in Table 3.14-5, average midweek (i.e., Tuesday, Wednesday, and Thursday non-holiday) speed data was collected from the Caltrans Performance Measurement System (PeMS) for the period from October 2013 through September 2014. The speed data was collected for general purpose lanes (i.e., not HOV lanes) on eastbound and westbound US 50 near the El Dorado/Sacramento county line. As a secondary performance measure, the PeMs speed data is consistent with and confirms the LOS results shows in Table 3.14-5 for the segments of US 50 at the county line. The PeMs data identifies average speeds of 60 and 59 miles per hour on eastbound and westbound US 50, respectively, during peak hour conditions. Detailed LOS analysis sheets are contained in Appendix L. See *Methods of Analysis* in Section 3.14.2 and Table 3.14-6 for a definition of LOS as it relates to freeway facilities.

Table 3.14-5. Freeway Facility Peak Hour Level of Service – Existing Conditions

Freeway	Segment	Facility Type	Existing Density[a]/LOS	
			A.M.	P.M.
US 50 eastbound	Latrobe Road off-ramp	Diverge	22/C	31/D
	El Dorado Hills Blvd off-ramp	Diverge	14/B	27/C
	Latrobe Road on-ramp	Merge	14/B	26/C
	El Dorado Hills Blvd on-ramp to Bass Lake Road off-ramp	Basic	10/A	20/C
	Bass Lake Road off-ramp	Diverge	14/B	25/C
	Bass Lake Road on-ramp	Merge	16/B	28/C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	13/B	25/C
	Cambridge Road off-ramp	Diverge	18/B	31/D
	Cambridge Road on-ramp	Merge	18/B	26/C
US 50 westbound	Cambridge Road off-ramp	Diverge	27/C	22/C
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Merge	19/B	12/B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23/C	16/B
	Bass Lake Road off-ramp	Diverge	28/D	21/C
	Bass Lake Road on-ramp	Merge	31/D	20/C
	Bass Lake Road on-ramp to El Dorado Hills Blvd off-ramp	Basic	29/D	17/B
	El Dorado Hills Blvd off-ramp	Diverge	33/D	22/C
	El Dorado Hills Blvd on-ramp	Merge	34/D	24/C

Source: Appendix L.

[a] Density reported as passenger cars (v. longer vehicles like tractor trailer trucks) per mile per lane.

Table 3.14-6. Freeway Facility Level of Service Criteria

Level of Service	Density (passenger cars per mile per lane)	
	Mainline	Ramp Junction or Weaving
A	≤11	≤10
B	11–18	10–20
C	18–26	20–28
D	26–35	28–35
E	35–45	>35
F	>45	Demand exceeds capacity

Source: Transportation Research Board 2010.

Pedestrian Circulation

Attached or landscape-separated detached sidewalks are provided intermittently throughout the study area. Some of the following major roadway facilities lack sidewalks and result in pedestrian network gaps.

- The majority of the west side of El Dorado Hills Boulevard lacks sidewalk.

- Both sides of Latrobe Road lack sidewalk except for detached sidewalk on the east side between US 50 and Town Center Drive.
- Both sides of White Rock Road lack sidewalk except for west of Post Street (both sides) and on the north side adjacent to development just west of Vine Street.
- The east side of Silva Valley Parkway north of Harvard Way and both sides of the street north of US 50 to Oak Meadow Elementary School lack sidewalks.
- Wilson Boulevard lacks pedestrian facilities between Ridgeview Drive and approximately 500 feet west of El Dorado Hills Boulevard.
- Olson Lane/Gillette Drive do not have sidewalks.
- Green Valley Road lacks sidewalks except for the south side between Miller Road and east of Francisco Drive.

Most study intersections provide signal-controlled pedestrian crossings with marked crosswalks. As described below, Class I bicycle paths double as pedestrian facilities. In particular, the New York Creek Nature Trail, adjacent to El Dorado Hills Boulevard, provides connectivity between the Pedregal and Serrano Westside planning areas.

Bicycle Circulation

Existing bicycle facilities within the study area are displayed in Figure 3.14-4. Bicycle facilities are classified into three categories.

- Class I Bicycle Path—Off-street bike paths within exclusive right-of-way; usually shared with pedestrians.
- Class II Bicycle Lane—Striped on-road bike lanes adjacent to the outside travel lane on preferred corridors for biking.
- Class III Bicycle Route—Shared on-road facility, usually delineated by signage and pavement markings.

According to the *El Dorado Bicycle Transportation Plan* (El Dorado County Transportation Commission 2010b), mapping information, and field observations, the following major bikeway facilities are present within the study area.

- Class II bicycle lanes on Serrano Parkway, Saratoga Way, White Rock Road, and Latrobe Road.
- Class II bicycle lanes on Green Valley Road (west of Francisco Drive) and portions of Silva Valley Parkway and El Dorado Hills Boulevard.
- Class I bicycle path, New York Creek Nature Trail, adjacent to El Dorado Hills Boulevard on the east side between Serrano Parkway and St. Andrews Drive.
- Class I bicycle path adjacent to El Dorado Hills Boulevard on the west side north of Telegraph Hill Road to Green Valley Road.
- Class I bicycle path, Bull Frog Gully Trail, on the north/west side of Serrano Parkway opposite Penela Way.

Figure 3.14-4 also identifies planned bikeways presented in the *El Dorado Bicycle Transportation Plan* and the MTP/SCS for 2035.

Transit

El Dorado Transit provides public transit service within the project area. El Dorado Hills is currently served by El Dorado Transit Dial-A-Ride services, Commuter Service, and the Iron Point Connector Route. Both the Commuter Service and the Iron Point Connector Route serve only the El Dorado Hills park-and-ride lot and do not circulate within the community.

In May 2013, EDCTC completed the Transit Plan, which explores how the recent growth and projected development affect the need for transit services, and identifies the most appropriate type and level of service needed based on the demand. All three services are addressed in the Transit Plan and are described briefly below.

- Dial-A-Ride service is a demand response service designed for seniors and disabled passengers, with limited access available for the general public. The service is available on a first-come, first-serve basis Monday through Friday from 7:30 a.m. to 5:00 p.m., and from 8:00 a.m. to 5:00 p.m. on Saturdays and Sundays. El Dorado Hills is one of 12 geographic zone service areas.
- Commuter Service is offered Monday through Friday between El Dorado County and downtown Sacramento. Morning departures from El Dorado County locations are scheduled from 5:10 a.m.to 8:00 a.m., and afternoon service departs Sacramento from 2:40 p.m. to 6:00 p.m. A reverse commuting service is offered. The El Dorado Hills park-and-ride lot located in Town Center at the White Rock Road/Post Street intersection is the nearest stop location for the project. According to the Transit Plan, nearly one-half of commute passengers boarded at the El Dorado Hills park-and-ride lot in the morning, which makes this location the highest boarding stop offered as part of the Commuter Service.
- Iron Point Connector Route provides direct service from El Dorado County to Folsom with connections to Sacramento Regional Transit light rail on weekdays. This route runs twice in the morning and twice in the afternoon from the Central Transit Center to the Iron Point Light Rail Station in Folsom. The El Dorado Hills park-and-ride located in Town Center at the White Rock Road/Post Street intersection is the stop nearest to the project area.

Based on ridership data presented in the Transit Plan, El Dorado Hills residents make 41,760 annual commute trips (one way) using El Dorado Transit Commuter Service (El Dorado County Transportation Commission 2013). Residents of El Dorado Hills account for about 72% of boardings at the El Dorado Hills park-and-ride lot, including transit riders who park in the lot and riders who use other means to access the service (i.e., walk, bike, and drop-off). Assuming a population of 42,100 in El Dorado Hills (U.S. Census Bureau 2010), El Dorado Transit Commuter Service ridership is equivalent to approximately one annual commute trip per El Dorado Hills resident. This estimate provides a basis for projecting the potential transit trip generation associated with the project and evaluating the adequacy of transit services and facilities (i.e., park-and-ride parking spaces) under project conditions.

The El Dorado Hills park-and-ride lot provides 120 parking spaces. The Transit Plan reports that parking demand exceeds supply. Specifically, Table 19 of the Transit Plan reports 96% parking utilization in 2004 and 108% parking utilization in 2005 based on SACOG and Caltrans data. The Transit Plan also describes other transit providers that serve western El Dorado County, including the Senior Shuttle Program, which has recently initiated service in El Dorado Hills.

3.14.2 Environmental Impacts

Methods of Analysis

The following describes how existing and existing plus project conditions were evaluated. The assumptions and procedures for evaluating cumulative impacts are presented in Section 5.2, *Cumulative Impacts*.

Analysis Procedures

Intersections, roadways, and freeway facilities were selected for analysis based on coordination with the El Dorado County Community Development Agency, Long Range Planning staff and Caltrans, and based on the expected distribution of project trips and review of the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines* (El Dorado County 2014).

Each study roadway facility was analyzed using the *Highway Capacity Manual* concept of LOS, which is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned (Transportation Research Board 2000, 2010). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents conditions with little to no delay and congestion, and LOS F represents greater delays and a facility that is operating at or near its functional capacity. For basic freeway segments (i.e., such as US 50 west of El Dorado Hills Boulevard), LOS A represents a vehicle density of up to 11 passenger cars per mile per lane and vehicle speeds (a secondary measure) at or above 65 miles per hour, and LOS F represents a vehicle density of greater than 45 passenger cars per mile per lane and vehicle speeds less than 52 miles per hour.

Intersections

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual* (Transportation Research Board 2000, 2010). These methodologies were applied using Synchro or SimTraffic software packages (Version 7), developed by Trafficware. Table 3.14-2 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the *Highway Capacity Manual*.

The micro-simulation analysis software, SimTraffic, was used to analyze operations at the US 50/El Dorado Hills Boulevard interchange (Town Center Boulevard to Saratoga Way) to accurately analyze the effect of closely spaced intersections. The SimTraffic micro-simulation analysis applied the following methodology.

- The simulation was conducted for the entire peak hour (i.e., 60 minutes) using four 15-minute intervals with the peak hour factor applied in the second interval.
- The results were based on the average of ten model runs.
- Each of the ten model runs applied a 10-minute seeding time.

The existing conditions SimTraffic model was validated to field-measured traffic volumes and observed maximum vehicle queue lengths.

The *Highway Capacity Manual* methodology determines the LOS at signalized intersections by comparing the average control delay (i.e., delay resulting from initial deceleration, queue move-up

time, time actually stopped, and final acceleration) per vehicle at the intersection to the established thresholds. The LOS for traffic signal controlled and all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, LOS is evaluated separately for each individual movement with delay reported for the critical (i.e., worst case) turning movement.

The following procedures and assumptions were applied for the analysis of existing and cumulative conditions.

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered into models according to the peak hour of each intersection, except for the US 50/El Dorado Hills Boulevard interchange and adjacent intersections. For the interchange and adjacent intersections, a consistent peak hour was used so that volumes would balance (a requirement for accurate simulation analysis). The volume balancing was small relative to the traffic through the interchange and within the daily variation of traffic flows. The traffic simulation was supported by extensive field observations of driver behavior, driver aggressiveness, and travel origin/destination flows at the interchange. The peak hour of the freeway is based on traffic counts.
- Headway factors were adjusted based on the observed driver behavior. Drivers were observed to be more aggressive and use smaller headway to travel through the intersections near the US 50/El Dorado Hills Boulevard interchange.
- The peak hour factor (PHF) was calculated based on traffic counts and applied by approach, except for the interchange and adjacent intersections, which applied the intersection PHF (a requirement for accurate simulation analysis).
- The counted pedestrian and bicycle volumes were used with a minimum of two pedestrians per approach to the intersection per peak hour.
- Heavy-vehicle percentages were based on traffic counts and applied by movement.
- Signal phasing and timings were based on existing signal timing sheets and field observations at the US 50/El Dorado Hills Boulevard interchange.
- Speeds for the model network were based on the posted speed limit.
- The PHF calculated for existing conditions was used for cumulative conditions, except for the interchange and adjacent intersections. Those intersections used a PHF of 0.95.
- The existing heavy vehicle percentages were maintained for cumulative conditions.
- The existing pedestrian and bicycle volumes were maintained for cumulative conditions.
- Traffic signals were optimized to serve future traffic volumes.

Roadway Segments

Roadway segment LOS was determined by comparing traffic volumes for selected roadway segments with peak hour LOS capacity thresholds. These thresholds are shown in Table 3.14-4 and were calculated based on the methodology contained in the *Highway Capacity Manual* (Transportation Research Board 2010) and applied for the analysis of the 2004 County General Plan.

Freeway Facilities

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-range planning efforts like the *Highway 50 Corridor System Management Plan*, which groups many freeway facilities into single analysis segments. The project level analysis in this report is based on operations analysis methods and analyzes each freeway facility separately, focusing on analysis detail instead of breadth of coverage. The operations analysis method is consistent with County General Plan Policy TC-Xd and Caltrans traffic impact study guidelines.

Freeway operations were analyzed using the procedures and methodologies contained in the *Highway Capacity Manual*. Table 3.14-6 describes the *Highway Capacity Manual* LOS criteria for freeway mainline, freeway ramp junctions, and freeway weaving segments. For weaving segments, Caltrans District 3 prefers analysis based on the Leisch Method, which is described in the *Highway Design Manual* (California Department of Transportation 2008). For consistency with both the County General Plan and Caltrans preference, analysis of freeway weaving segments was conducted using both the *Highway Capacity Manual* and Leisch Methods.

Trip Generation

Based on information contained in the Notice of Preparation and subsequent correspondence with the applicant, trip generation estimates for the project were prepared based on methodologies and trip rates presented in *Trip Generation Manual*, 9th Edition (Institute of Transportation Engineers 2012), with adjustments to account for internal vehicle trips and walking trips enabled by the proximity and access that portions of the project would have to nearby retail and commercial services located in the Raley's and La Borgata shopping centers and along El Dorado Hills Boulevard.

The traffic study determined that the combined effects of the project's proposed land use, location, and development scale would partially offset the number of offsite average weekday vehicle *trips.* One vehicle trip is when a person drives from their home to shopping or their job. Their return drive home is another trip. The offset is due largely to the project's proximity to commercial and retail services and connections between the project and these services. That is, most of the reduction in total offsite vehicle trips generated by the project would be attributable to trips beginning on the project site, traveling to adjacent services, and ending on the project site without using offsite roadways and by walking.

The study used the MXD (or mixed-use development trip generation) model in estimating the internalization of project trips (U.S. Environmental Protection Agency n.d.). This method begins with rates based on the Institute of Transportation Engineers' (ITE's) *Trip Generation Handbook* and develops trip internalization estimates based on a series of factors tied to numerous site attributes. It should also be noted that the MXD model has been developed in cooperation with the US Environmental Protection Agency and ITE and that ITE is currently reviewing the model for potential inclusion in its updated recommended practice for evaluating mixed-use development projects. The MXD methodology is described in greater detail below.

Mixed-Use Development Trip Internalization Methodology

The internal capture percentage reported is not an assumed number, but rather is a number that was derived using a best practices trip generation model designed specifically for mixed-use development projects. This model estimates trip generation and internal capture by adjusting trip generation rates to account for the influence of built environment variables. The MXD model used was developed based on household travel survey data obtained from 239 existing mixed-use developments in six metropolitan regions throughout the United States, including developments in Sacramento. The internal capture percentage calculated for the proposed project is reflective of the land uses that would be developed as part of the proposed project and land use near the project, which would reduce the need to travel beyond the project site or surrounding area. A set of 16 independent mixed use sites that were not included in the initial model was tested to help validate the model. Among the validation sites, use of the MXD model produced superior statistical performance when compared with the simplified methodology applied in the ITE handbook. Based on the statistical robustness of the MXD model, it was deemed the most appropriate approach for estimating internalization of project trips.

MXD Model Inputs and Trip Generation Estimates

To determine the amount of trips that would be internal within the project site, an MXD trip generation estimate was prepared (see Appendix L). The MXD analysis first begins with gross trip rates identified ITE's *Trip Generation Manual*. It then incorporates the MXD methodology for "matching" trips to estimate the amount of internalization within the project site. Tables 7, 8, and 9 in Appendix L summarize project land use, assumed trip rates, calculated trip generation totals, and MXD adjustments for both Serrano Westside and Pedregal planning areas.

The entire project is projected to generate 8,757 daily vehicle trips, including 694 A.M. peak hour vehicle trips and 979 P.M. peak hour vehicle trips. The daily total does not include 192 vehicle trips that would remain within the project site or that would be made to nearby locations without using external roadways. The projection further assumes that 150 trips would be made by walking rather than in vehicles, a reflection of the Serrano Westside planning area's reasonable walking distance to nearby commercial land uses.

Trip Distribution and Assignment

The expected distribution of project trips is shown on Figure 3.14-5. The distribution was developed using the following sources and analytical techniques.

- Existing travel patterns based on the existing traffic counts.
- Traffic assignment using the validated base year El Dorado County travel demand forecasting model.
- Project access and internal circulation.

As shown on Figure 3.14-5, the largest share of project trips (37%) would be on US 50 to and from the west in the morning and evening, with 9% of trips on US 50 to and from the east. Travel to and from the north on El Dorado Hills Boulevard and to and from the south on Latrobe Road would be fairly balanced at 25% and 24%, respectively. Figure 3.14-6 shows only project trips based on the trip distribution shown on Figure 3.14-5. The resulting A.M. and P.M. peak hour traffic volumes under existing plus project conditions are presented on Figure 3.14-7.

Pedestrian and Bicycle Circulation

Proposed pedestrian and bicycle facilities in the project area were reviewed and qualitatively evaluated for their integration with existing and planned facilities in the study area as well as their ability to provide connectivity and safe means of access between existing and proposed land uses. In particular, access to existing schools and commercial land uses was considered in assessing the adequacy of the proposed non-motorized transportation network.

Transit

An estimate of transit trip generation was established based on review of existing ridership information in the study area. As described above, it is estimated that El Dorado Transit Commuter Service ridership is equivalent to approximately one annual commute trip per El Dorado Hills resident. This figure was used to assess the potential for additional demand for transit services and facilities as a result of implementation of the proposed project. This additional demand was then compared with existing levels of service in the study area in order to assess whether project-induced ridership would exceed existing transit service levels.

Thresholds of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. Informed by the 2015 CEQA Statues and Guidelines, specifically Appendix G, the following criteria have been established to determine whether or not the project would have a significant impact on transportation and circulation.

For most areas related to transportation and circulation, policies from the County General Plan (as amended in January 2009) and the updated El Dorado County Community Development Agency's *Transportation Impact Study Guidelines* (El Dorado County 2014) were used. For the freeway system, Caltrans' standards were used. Implementation of the proposed project would have a potentially significant impact on transportation and circulation if it would result in any of the conditions listed below.

- 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 intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The following specific measures of effectiveness, which have been generated by the County and Caltrans, are applicable to this project.
    - County General Plan Policy TC-Xd provides level of service standards for County-maintained roads and state highways based on the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*.
        - LOS for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions.
        - If a project causes the peak hour LOS on a county road or state highway that would otherwise meet the County standards (without the project) to exceed the LOS threshold, then the impact shall be considered significant.

- If any county road or state highway fails to meet the above listed county standards for peak hour LOS or volume-to-capacity ratios under existing conditions, and the project will "significantly worsen" conditions on the road or highway, then the impact shall be considered significant. The term "significantly worsen" is defined according to County General Plan Policy TC-Xe as any of the following conditions.
    A. A 2% increase in traffic during the A.M. peak hour, P.M. peak hour, or daily.
    B. The addition of 100 or more daily trips.
    C. The addition of 10 or more trips during the A.M. peak hour or the P.M. peak hour.
- Caltrans considers the following to be significant impacts.
    - Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway (i.e., exceed the available storage capacity).
    - Project traffic increases that cause any ramp's merge/diverge LOS to be worse than the freeway's LOS.
    - Project traffic added to a facility already operating at LOS F. The US 50 TCR/CSMP identifies LOS E as the concept LOS for US 50 from the Sacramento County/El Dorado County line to Cameron Park Drive.

- Conflict with an applicable congestion management program, including, but not limited to, LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways.
- 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.
- Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
    - Based on the County General Plan, the project may trigger a potentially significant impact if it conflicts with any of the following goals or policies.
        - **County General Plan Goal TC-2:** "To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment."
            - **Policy TC-2a** The County shall work with transit providers to provide transit services within the county that are responsive to existing and future transit demand and that can demonstrate cost-effectiveness by meeting minimum fare box recovery levels required by state and federal funding programs.
            - **Policy TC-2b** The County shall promote transit services where population and employment densities are sufficient to support those transit services, particularly within the western portion of the county and along existing transit corridors in the rural areas.

- **Policy TC-2c** The County shall cooperate with other agencies in the identification and development of transit corridors.
- **Policy TC-2d** The County shall encourage the development of facilities for convenient transfers between different transportation systems (e.g., rail-to-bus, bus-to-bus).
- **Policy TC-2e** The County shall work with the Tahoe Regional Planning Agency, Tahoe Transportation District, California Department of Transportation, and transit service providers to pursue the development of waterborne transportation for transit services in the Tahoe Basin.
- **Policy TC-2f** The County shall work with the El Dorado Transit Authority and support the provision of paratransit services and facilities for elderly and disabled residents, and those of limited means, which shall include bus shelters, bus stops, and ramps at stops.

- **County General Plan Goal TC-3:** "To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities."
  - **Policy TC-3a** The County shall support all standards and regulations adopted by the El Dorado County Air Quality Management District governing transportation control measures and applicable state and federal standards.
  - **Policy TC-3b** The County shall consider Transportation Systems Management measures to increase the capacity of the existing road network prior to constructing new traffic lanes. Such measures may include traffic signal synchronization and additional turning lanes.
  - **Policy TC-3c** The County shall encourage new development within Community Regions and Rural Centers to provide appropriate on-site facilities that encourage employees to use alternative transportation modes. The type of facilities may include bicycle parking, shower and locker facilities, and convenient access to transit, depending on the development size and location.
  - **Policy TC-3d** Signalized intersections shall be synchronized where possible as a means to reduce congestion, conserve energy, and improve air quality
- **County General Plan Goal TC-4:** "To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes."
  - **Policy TC-4a** The County shall implement a system of recreational, commuter, and inter-community bicycle routes in accordance with the County's Bikeway Master Plan. The plan should designate bikeways connecting residential areas to retail, entertainment, and employment centers and near major traffic generators such as recreational areas, parks of regional significance, schools, and other major public facilities, and along recreational routes.
  - **Policy TC-4b** The County shall construct and maintain bikeways in a manner that minimizes conflicts between bicyclists and motorists.

- **Policy TC-4c** The County shall give priority to bikeways that will serve population centers and destinations of greatest demand and to bikeways that close gaps in the existing bikeway system.
- **Policy TC-4d** The County shall develop and maintain a program to construct bikeways, in conjunction with road projects, consistent with the County's Bikeway Master Plan, taking into account available funding for construction and maintenance.
- **Policy TC-4e** The County shall require that rights-of-way or easements be provided for bikeways or trails designated in adopted master plans, as a condition of land development when necessary to mitigate project impacts.
- **Policy TC-4f** The County shall sign and stripe Class II bicycle routes, in accordance with the County's Bikeway Master Plan, on roads shown on Figure TC-1, when road width, safety, and operational conditions permit safe bicycle operation.
- **Policy TC-4g** The County shall support development of facilities that help link bicycling with other modes of transportation.
- **Policy TC-4h** Where hiking and equestrian trails abut public roads, they should be separated from the travel lanes whenever possible by curbs and barriers (such as fences or rails), landscape buffering, and spatial distance. Existing public corridors such as power transmission line easements, railroad rights-of-way, irrigation district easements, and roads should be put to multiple use for trails, where possible.
- **Policy TC-4i** Within Community Regions and Rural Centers, all development shall include pedestrian/bike paths connecting to adjacent development and to schools, parks, commercial areas, and other facilities where feasible. In Rural Regions, pedestrian/bike paths shall be considered as appropriate.

- Conflict with adopted policies, plans, or programs regarding the delivery of goods and services.

Impacts and Mitigation Measures

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 (less than significant with mitigation)

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 without the project. The project would result in unacceptable LOS F conditions during the P.M. peak hour.

As described in Appendix L, Section 8.3, two intersections were also evaluated for potential impacts related to increased vehicle queuing lengths. Available storage at both intersections (stop-controlled project access intersections on El Dorado Hills Boulevard) would accommodate estimated vehicle queues.

Roadway Segments

Results for roadway segments, which are presented in Table 3.14-8, indicate that all study roadway segments would operate acceptably once the proposed project is completed. Traffic generated by the proposed project is not anticipated to result in roadway segment impacts according to established significance criteria. A comparison of the results in Table 3.14-8 with the results in Table 3.14-7 shows that the number of through travel lanes on the study area roadways would be adequate, but that improvements are needed at intersections, which are the locations where drivers would experience delay traveling through the study area.

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	**F/88**	**F/69**	***F/108***	***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	D/36	C/24	E/62	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	D/43	C/29	C/32	D/36
16	Latrobe Road/US 50 EB Ramps	Signal	B/15	B/14	B/15	D/42
17	Latrobe Road/Town Center Blvd	Signal	C/29	E/75	C/30	***F/128***
18	Latrobe Road/White Rock Road	Signal	C/35	D/44	C/35	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/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

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. Roadway Segment Peak Hour Level of Service – Existing Plus Project Conditions

Roadway	Segment	Facility Type	Existing Volume/Volume to Capacity Ratio/LOS		Existing + Project Volume/Volume to Capacity Ratio/LOS	
			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	1,456/0.88/D	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	2,807/0.70/D	2,976/0.74/D	3,265/0.82/E	3,622/0.91/D
	Saratoga Way to US 50	6-lane divided arterial	2,685/0.57/C[a]	2,806/0.60/D	3,143/0.67/E	3,452/0.73/D
Latrobe Road	US 50 to Town Center Blvd	6-lane divided arterial	3,339/0.71/D	4,081/0.87/D	3,499/0.74/D	4,306/0.91/D
	Town Center Blvd to White Rock Road	6-lane divided arterial	2,253/0.48/C[a]	2,628/0.56/C[a]	2,343/0.50/C[a]	2,755/0.58/C[a]
	White Rock Road to Golden Foothill Pkwy	4-lane divided arterial	1,813/0.55/C[a]	2,104/0.64/D	1,869/0.57/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	831/0.5/C[a]	969/0.59/D	838/0.51/C[a]	979/0.59/D
	Vine Street to US 50	2-lane arterial	830/0.50/C[a]	945/0.57/D	830/0.5/C[a]	945/0.57/D
Silva Valley Pkwy	Green Valley Road to Glenwood Way	2-lane arterial	651/0.39/C[a]	591/0.36/C[a]	654/0.4/C[a]	596/0.36/C[a]
	Glenwood 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	2-lane arterial	1,142/0.69/D	946/0.57/D	1,149/0.7/D	956/0.58/D

Table 3.14-8. Roadway Segment Peak Hour Level of Service – Existing Plus Project Conditions – Continued

Roadway	Segment	Facility Type	Existing Volume/Volume to Capacity Ratio/LOS		Existing + Project Volume/Volume to Capacity Ratio/LOS	
			A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	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	222/0.13/C[a]	279/0.17/C[a]	229/0.14/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.

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		Existing + Project Density[a]/LOS	
			A.M.	P.M.	A.M.	P.M.
US 50 east-bound	Latrobe Rd off-ramp	Diverge	22/C	31/D	23/C	34/D
	El Dorado Hills Blvd off-ramp	Diverge	14/B	27/C	14/B	28/C
	Latrobe Road on-ramp	Merge	14/B	26/C	15/B	26/C
	El Dorado Hills Blvd on-ramp to Bass Lake Road off-ramp	Basic	10/A	20/C	11/A	20/C
	Bass Lake Road off-ramp	Diverge	14/B	25/C	15/B	26/C
	Bass Lake Road on-ramp	Merge	16/B	28/C	16/B	28/C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	13/B	25/C	14/B	26/C
	Cambridge Road off-ramp	Diverge	18/B	31/D	18/B	31/D
	Cambridge Road on-ramp	Merge	18/B	26/C	19/B	27/C
US 50 west-bound	Cambridge Road off-ramp	Diverge	27/C	22/C	27/C	23/C
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Merge	19/B	12/B	19/B	13/B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23/C	16/B	23/C	16/B
	Bass Lake Road off-ramp	Diverge	28/D	21/C	28/D	21/C
	Bass Lake Road on-ramp	Merge	31/D	20/C	31/D	21/C
	Bass Lake Road on-ramp to El Dorado Hills Blvd off-ramp	Basic	29/D	17/B	29/D	17/B
	El Dorado Hills Blvd off-ramp	Diverge	33/D	22/C	33/D	22/C
	El Dorado Hills Blvd on-ramp	Merge	34/D	24/C	***-/F***	25/C

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.

Pedestrian and Bicycle Circulation

The project proposes or accommodates the following bicycle and pedestrian facilities (shown in Figure 2-7) that would integrate with existing and planned facilities in the study area.

- Relocate the existing Class I (off-street) bike path east separated from El Dorado Hills Boulevard to the existing drainage channel, extending from just south of the fire station to US 50 at the community park (Village Park [VP] land use designation). (Proposed Project)
- Connect the bike path to the exiting undercrossing of Serrano Parkway. (Proposed Project)
- Relocate the planned bicycle/pedestrian crossing of US 50 to connect the off-street bike path at the planned community park to El Dorado Hills Town Center. (By Others)
- Provide a connection from the project site to the Raley's and La Borgata shopping centers. (Proposed Project)
- Connect to a potential Class I bike path between the project boundary and Silva Valley Parkway. This would complete a connection to the planned Country Club Drive extension between Silva Valley Parkway and Bass Lake Road as identified in the County General Plan Circulation Element. (By Others)

The provision of these facilities would support County General Plan Goal TC-4 and policies related to providing safe routes to school (specifically, Policies TC-4a and TC-4i) by providing new bicycle lanes along El Dorado Hills Boulevard, a proposed new local street, and Serrano Parkway, which will improve bicycle access from the Serrano Westside planning area to Oak Ridge High School, Rolling Hills Middle School, and Silva Valley Elementary School to the north of the project area and William Brooks Elementary School to the west of the project area. Additionally, existing and planned facilities, including proposed bicycle and pedestrian connections to adjacent commercial uses, will provide pedestrians adequate access from the Serrano Westside planning area to nearby commercial uses, including the Raley's and La Borgata shopping centers, as well as El Dorado Hills Town Center, when the planned bicycle and pedestrian crossing of US 50 is constructed.

However, pedestrian traffic associated with the Pedregal planning area may experience a gap in accessing areas to the east and south, as the sidewalk along the north side of Wilson Boulevard ends approximately 500 feet west of El Dorado Hills Boulevard. Such a gap could create unsafe conditions for residents of the Pedregal area and would conflict with the County General Plan Goal TC-4, to "provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes." Therefore, this would be a significant impact.

Transit

The proposed project provides for a park-and-ride location in the Serrano Westside planning area at the proposed community park, as a joint-use facility between El Dorado Transit and the El Dorado Hills Community Services District. As many as 50 parking stalls within the VP land use designation may be reserved for park-and-ride use during weekday business hours when park activities are minimal. The details of the park-and-ride facility would be determined at the time the community park is developed. In addition, opportunities exist to accommodate a bus stop (turnout and shelter) on the east side of El Dorado Hills Boulevard next to the Serrano Westside planning area, provided the existing Class I bike path is relocated to the east side of the drainage channel. An additional bus stop (turnaround and shelter) may be accommodated on the future potential extension of Park Drive near the community park.

As described in Section 3.14.1, *Existing Conditions*, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (U.S. Census Bureau 2010) in El Dorado Hills. Based on the project's estimated population of 2,618 (see Table 3.11-7 in Section 3.11, *Population and Housing*), the proposed project could result in demand of about 2,618 annual commute trips, or about 10 commute trips per weekday. Because trips are counted as one-way and because as many as 50 parking stalls at the community park will be reserved for park-and-ride use, the proposed project would not be anticipated to have an effect on existing park-and-ride capacity so long as at least five stalls are dedicated to park-and-ride use.[1] If this capacity is provided prior to the completion of the 500th unit (the half-way point of development of the project), the impact related to transit would be less than significant. If, however, additional park-and-ride capacity of five

[1] Assuming ridership is equivalent to approximately one annual commute trip per El Dorado Hills resident, the project would add approximately 2,618 potential commute trips to the study area per year. There are approximately 260 weekdays per year (5 weekdays x 52 weeks). Therefore, the new population would be expected to demand approximately 10 commute trips per weekday (2,618 commute trips per year/260 weekdays per year). Because trips are counted as one-way, it is assumed that each parking stall at the park-and-ride lot would serve two trips per day. Therefore, five dedicated park-and-ride stalls would be considered adequate to meet the estimated 10 daily commute trips.

or more reserved parking stalls were not provided prior to the half-way point of project development, this impact would be significant.

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 addition of project traffic would also result in LOS F conditions at the US 50 westbound on-ramp from El Dorado Hills Boulevard. 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, and TRA-1d would reduce this impact to a less-than-significant level. Some of the 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: 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.

Mitigation Measure TRA-1c: Extend sidewalk from Wilson Boulevard to Pedregal planning area

The applicant will construct a sidewalk along the north side of Wilson Boulevard, which connects the Pedregal subdivision to the existing sidewalk stub in front of the Sterling Ranch Apartments. This will provide Pedregal homeowners a safe dedicated pedestrian path from their homes to the El Dorado Hills Class I path.

Mitigation Measure TRA-1d: Provide alternative park-and-ride facilities

If the proposed park-and-ride facility at the Village Park is not completed or does not provide five dedicated parking stalls for park-and-ride users prior to the construction of the 500th unit (the half-way point of project development), the applicant will provide for or contribute to the provision of five parking stalls to serve park-and-ride users within the project area.

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)

There are no congestion management programs applicable to El Dorado County. There would be 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)

Although Cameron Airpark is located approximately 4 miles east of the project area, the proposed project is outside of the identified airport influence area (El Dorado County Airport Land Use Commission 2012). Additionally, the project is not anticipated to result in a substantial increase in air traffic. Therefore, the project would not result in a change in air traffic patterns or otherwise result in a safety risk. There would be 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)

As described in Section 4.4, Roadway Classifications, of the CEDHSP, a selection of street widths and designs has been included to accommodate a range of anticipated traffic volumes within the project site in a manner compatible with adjacent land uses. Streets would generally be curvilinear in design, conforming vertically, horizontally, and as closely as possible to natural topography. If approved, the proposed project's circulation system would be consistent with the County's functional road classification system. Additionally, under Policy 4.11 of the CEDHSP and Policy TC-1a of the County General Plan, internal roads would be designed to reduce vehicular speed by including narrower traffic lanes, roundabouts, well-marked pedestrian crossings, bulb-outs, or median treatments. This would be a less-than-significant impact.

Impact TRA-5: Result in inadequate emergency access (less than significant with mitigation)

The portion of the Serrano Westside planning area north of Serrano Parkway and east of El Dorado Hills Boulevard would connect to the east leg of Wilson Boulevard for access at the El Dorado Hills Boulevard/Wilson Boulevard intersection, which is also used by the El Dorado Hills Fire Department. The proposed project would add traffic to and increase delay at this intersection. However, as shown in Table 3.14-7, the intersection would operate acceptably. The intersection is equipped with emergency vehicle signal preemption, which is designed to give priority to emergency vehicles during emergencies. Additionally, all roads would comply with the 2013 California Fire Code, California Code of Regulations, Title 24, Part 9, Chapter 5, Section 503 and Title 14, California Code of Regulations, Division 1.5, Chapter 7, Subchapter 2, Article 2, and Emergency Access, Section 1273.01 of the Fire Safe Regulations.

Additionally, emergency access to and through the project area would be maintained during construction activities associated with the project. However, during construction of infrastructure improvements and development associated with the CEDHSP, an increase in truck traffic on offsite roadways could restrict access for emergency vehicles in and around the project area. The portion of the EID wastewater collection system upgrade project within Serrano Parkway could require temporary lane closure or roadway narrowing. Because the project could result in inadequate emergency access, this would be a significant impact. Implementation of Mitigation Measure TRA-5 would reduce this impact to a less-than-significant level.

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 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, 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.

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 (less than significant with mitigation)

For information regarding the CEDHSP's consistency with the MTP/SCS, please see Appendix H, *Determination of MTP/SCS Consistency for the Central El Dorado Hills Specific Plan*.

Implementation of the proposed project would increase demand for pedestrian and bicycle facilities. As outlined above, the project proposes pedestrian and bicycle facilities that would connect and integrate with existing and planned facilities adjacent to the project. In addition, elements of the proposed project would complete planned pedestrian and bicycle facilities identified in the *El Dorado County Bicycle Transportation Plan*. However, pedestrian traffic associated with the Pedregal planning area may experience a gap in accessing areas to the east and south, as the sidewalk along the north side of Wilson Boulevard ends approximately 500 feet west of El Dorado Hills Boulevard. Such a gap could create unsafe conditions for residents of the Pedregal area and would conflict with the County General Plan Goal TC-4, to "provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes." Therefore, this would be a significant impact. Implementation of Mitigation Measure TRA-1c would reduce this impact to a less-than-significant level.

Implementation of the proposed project would also increase demand for transit. As outlined above, the project could result in demand of about 2,600 transit commute trips annually, which would be an average of about 10 commute trips per weekday. This increase represents about a 6% increase in El Dorado Transit Commuter Service, which is generally in line with historic population growth rates in El Dorado County. Consequently, the growth in these trips would not likely exceed the ability to serve this ridership through existing funding sources for transit that are tied to population growth. Most of the boardings for the El Dorado Transit Commuter Service at the El Dorado Hills park-and-ride lot are from El Dorado Hills residents. Consequently this increase in commuter trips will increase demand for the El Dorado Hills park-and-ride lot, which operates at capacity.

However, as described above, the proposed project would provide a park-and-ride location in the Serrano Westside planning area. This would be a joint-use facility between El Dorado Transit and the El Dorado Hills CSD. As many as 50 parking stalls within the VP land use designation may be reserved for park-and-ride use during weekday business hours when park activities are minimal. The details of the park-and-ride facility will be determined at the time the community park is developed; however, it is anticipated that the facility will dedicate at least five stalls to park-and-ride users, which would offset the additional demand created by the project (assuming five parking stalls is required for 10 one-way commute trips). If this capacity were provided prior to the half-way point of development of the project, the impact related to transit would be less than significant. If, however, additional park-and-ride capacity of five or more reserved parking stalls were not provided prior to the project development half-way point, this impact would be significant. Implementation of Mitigation Measure TRA-1d would reduce this impact to a less-than-significant level.

Mitigation Measure TRA-1c: Extend sidewalk from Wilson Boulevard to Pedregal planning area

Mitigation Measure TRA-1d: Provide alternative park-and-ride facilities

Impact TRA-7: Impacts on circulation as a result of offsite improvements (less than significant)

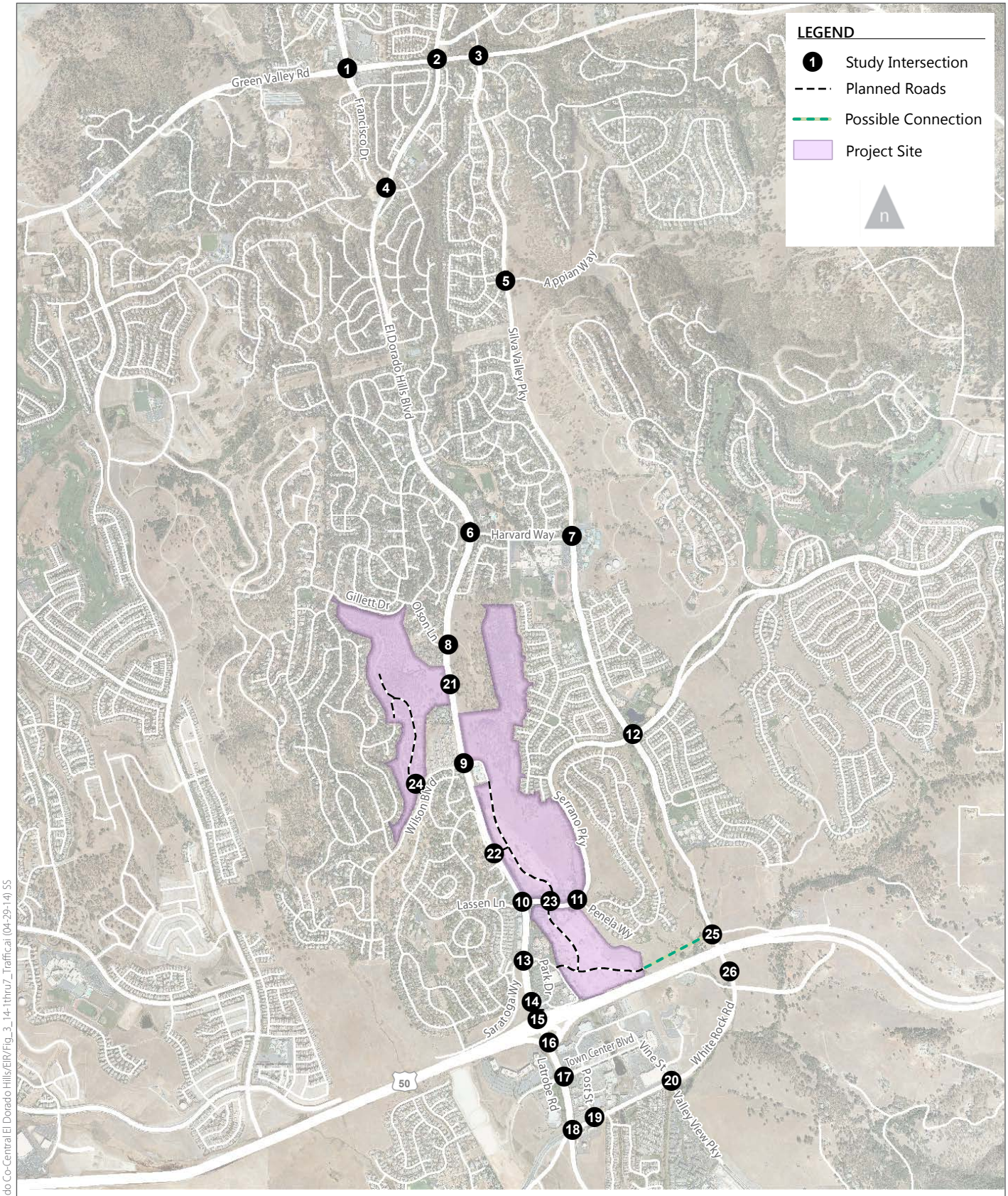
As described in Chapter 2, *Project Description*, and shown in Figure 2-9, the CEDHSP would include offsite improvements, including extension of Park Drive to the Serrano Westside planning area through the Raley's and La Borgata complex. The proposed Park Drive extension would include realignment of the existing roadway east of El Dorado Hills Boulevard and reconfiguring the location of 13 parking stalls (Figure 2-10). There would be no loss of parking. The two pedestrian crossings would provide access between the Serrano Westside planning area and the existing office and retail uses at Raley's and La Borgata shopping centers. A reserved location for the planned US 50 pedestrian overcrossing would support pedestrian access across the highway, connecting primarily residential uses on the north side of the highway to a range of commercial and employment opportunities at El Dorado Hills Town Center to the south.

Currently, the roadway network lacks a continuous roadway system through the center of El Dorado Hills from Cameron Park to Folsom Boulevard. As a result, trips are directed to US 50. To address this lack of connectivity, the planned circulation system within the proposed project incorporates reconstruction of Park Drive to the Serrano Westside planning area, from the existing Raley's shopping center, with a potential connection to Silva Valley Parkway. This potential roadway reconstruction and extension is designed to improve regional connectivity and provide for an uninterrupted roadway network parallel to US 50. Although this potential extension is not necessary to provide acceptable LOS E (or better) operations, it would provide redundancy in the circulation network and reduce volumes on segments of El Dorado Hills Boulevard, Silva Valley Parkway (P.M. peak hour), and Serrano Parkway (A.M. peak hour). This connection would also benefit bicycle and pedestrian circulation by providing a shorter, lower volume east-west connection. Traffic volumes would increase on the existing segment of Park Drive (A.M. and P.M. peak hours), and during A.M. peak hours on Saratoga Way and Silva Valley Parkway between US 50 and the potential Park Drive extension. However, these segments would operate at acceptable levels of service; therefore, the impact on offsite circulation would be less than significant.

Impact TRA-8: Result in inadequate emergency access as a result of offsite improvements (less than significant with mitigation)

Installation of the two water lines in the Pedregal planning area, the EID wastewater collection system upgrade, the recycled water line (if it crosses public roadways), and the connection to Silva Valley Parkway could involve work such as trenching, grading, and paving within public roadways. These construction activities could result in lane closures or narrowings for short periods of time, which could restrict emergency vehicle access. This is a significant impact. Implementation of Mitigation Measure TRA-5 would reduce this impact to a less-than-significant level.

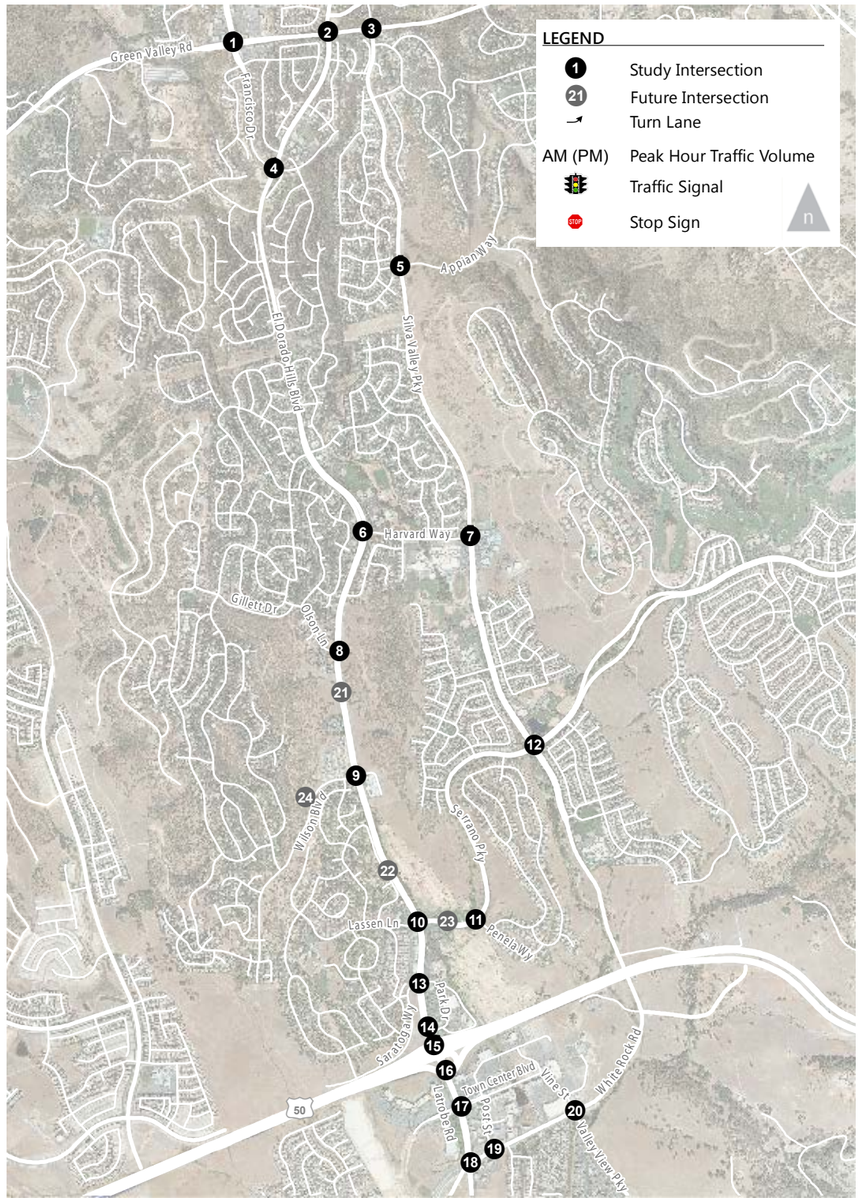
Mitigation Measure TRA-5: Obtain an encroachment permit or implement a site-specific traffic management plan



Source: Fehr& Peers

00668.12 El Dorado Co-Central El Dorado Hills/EIR/Fig_3_14-1thru7_Traffic.ai (04-29-14) SS

Figure 3.14-1
Study Area



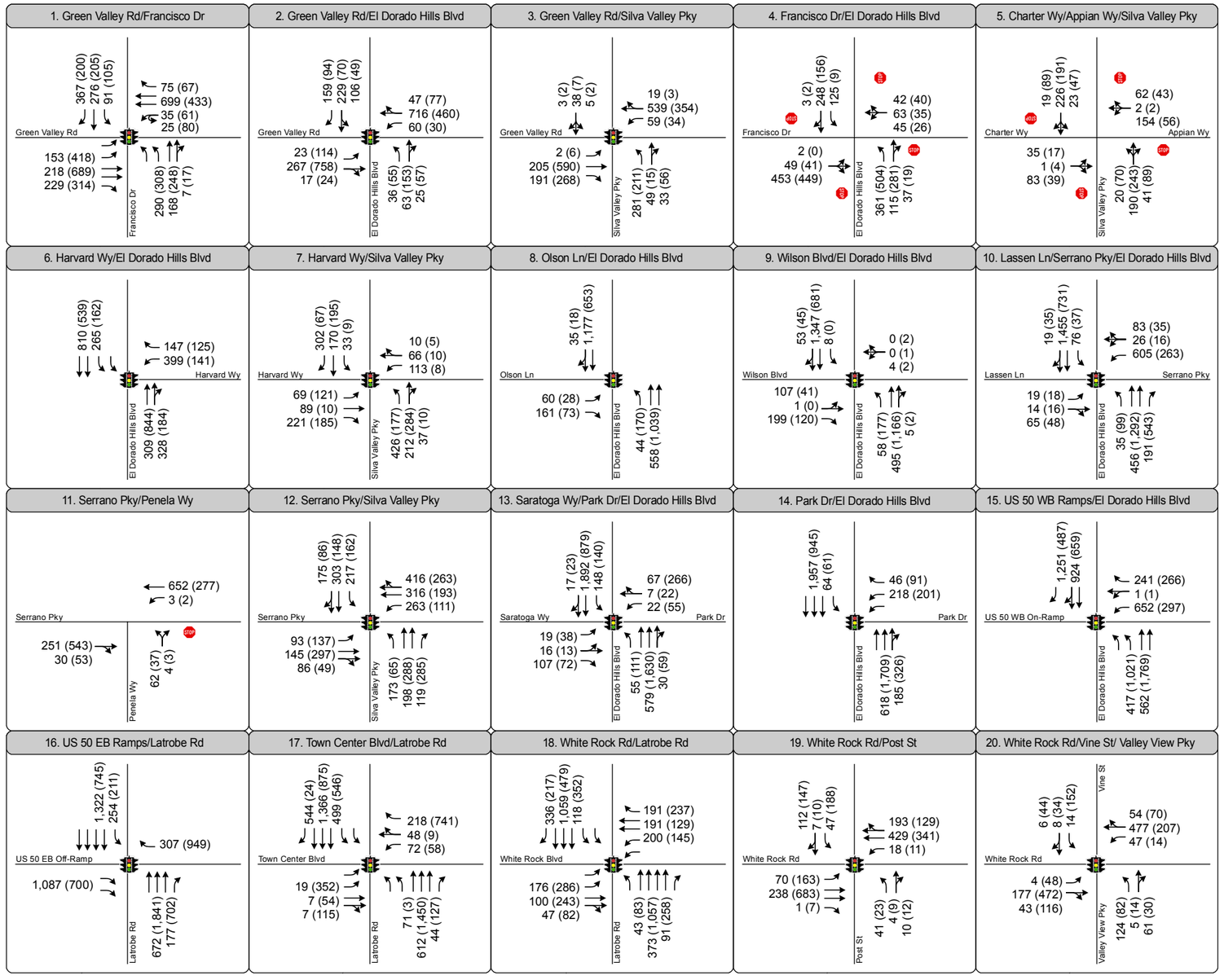


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Figure 3.14-2
Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

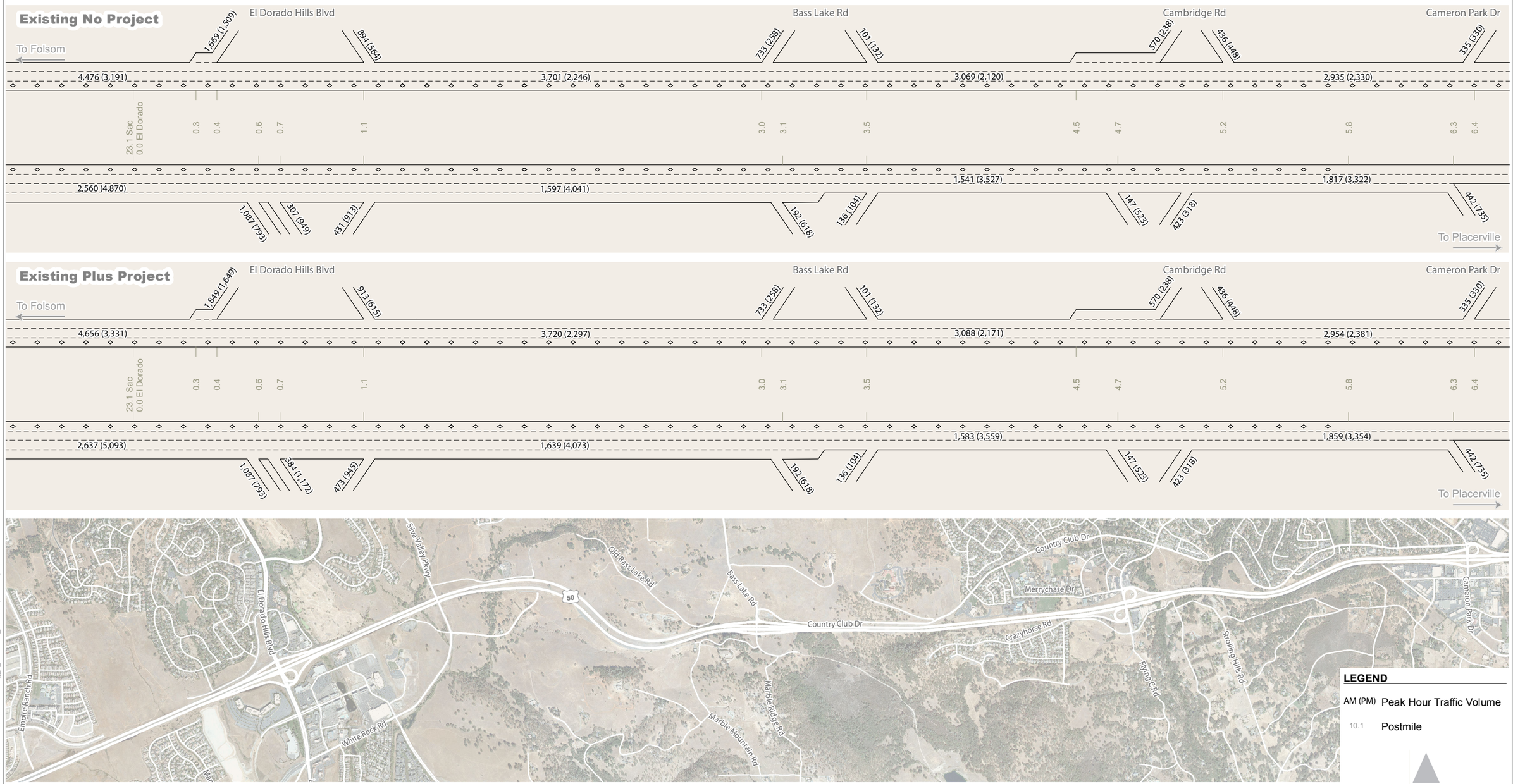

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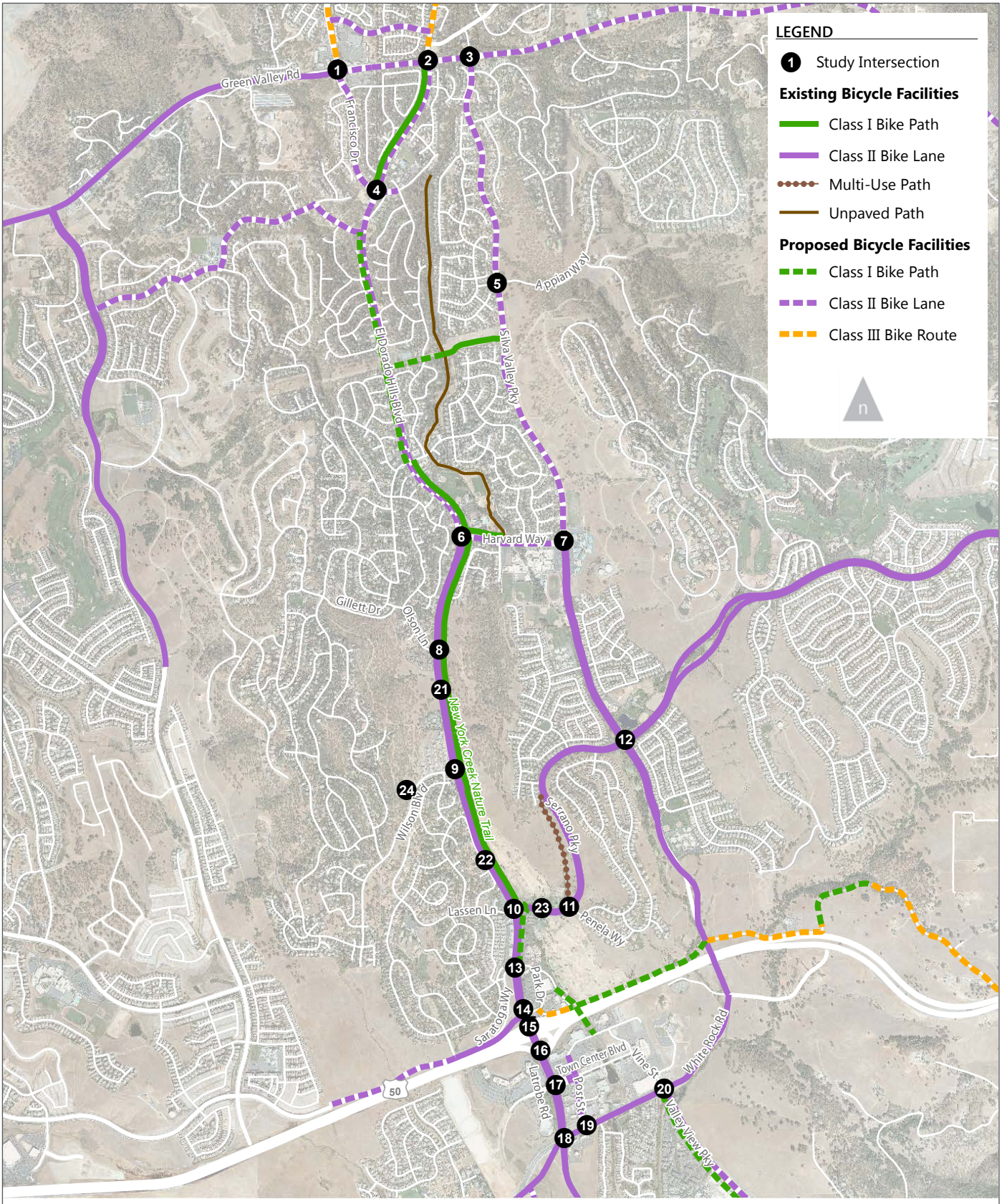
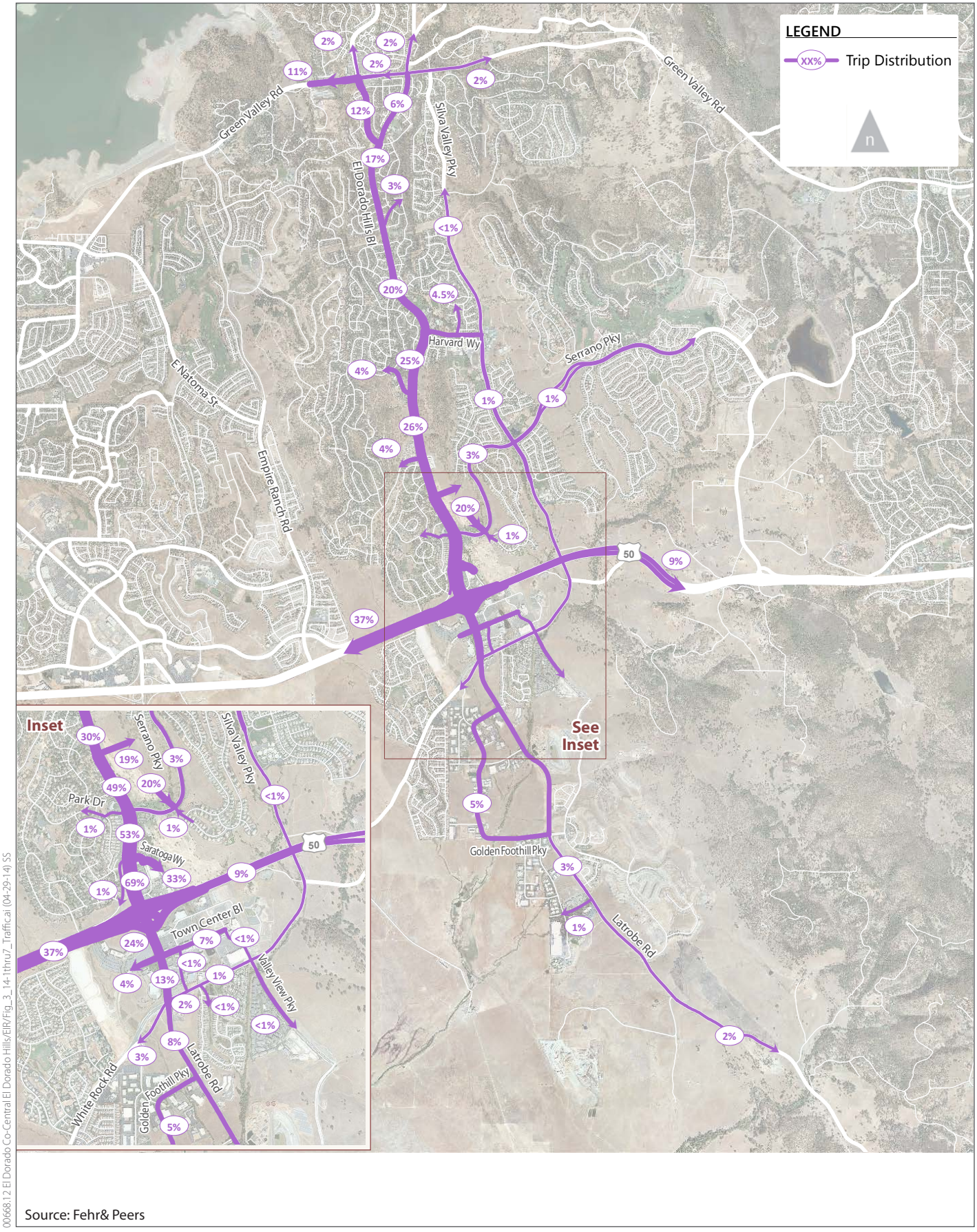
Figure 3.14-3
US 50 Freeway Mainline and Ramp Peak Hour Traffic Volumes - Existing Conditions



Source: Fehr& Peers

00668.12 El Dorado Co-Central El Dorado Hills/EIR/Fig_3_14-1thru7_Traffic.ai (04-29-14) SS

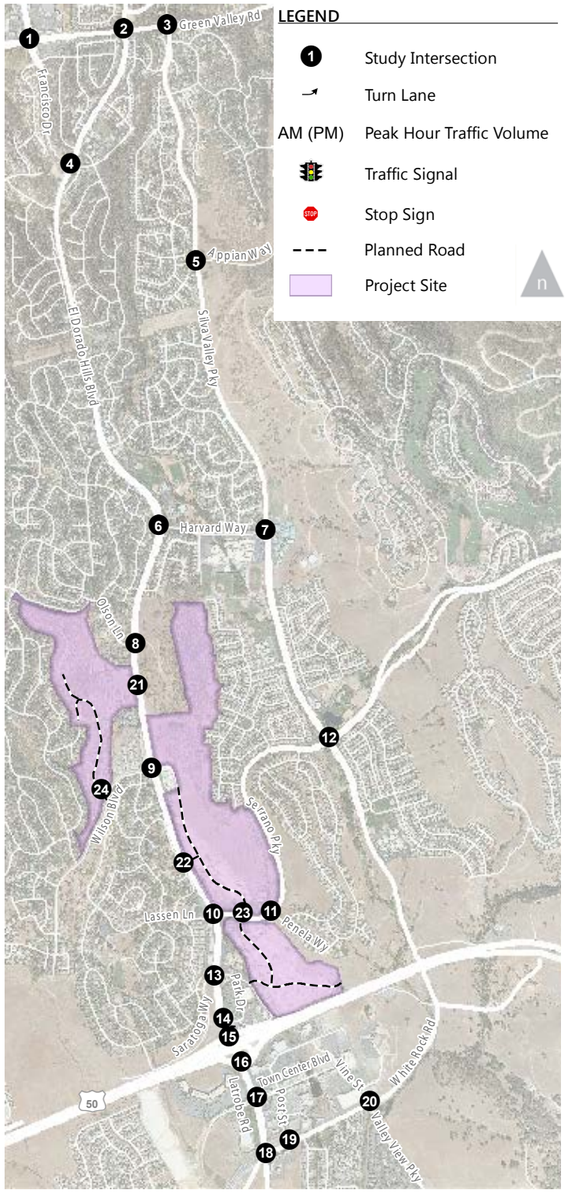
Figure 3.14-4
Bicycle Facilities

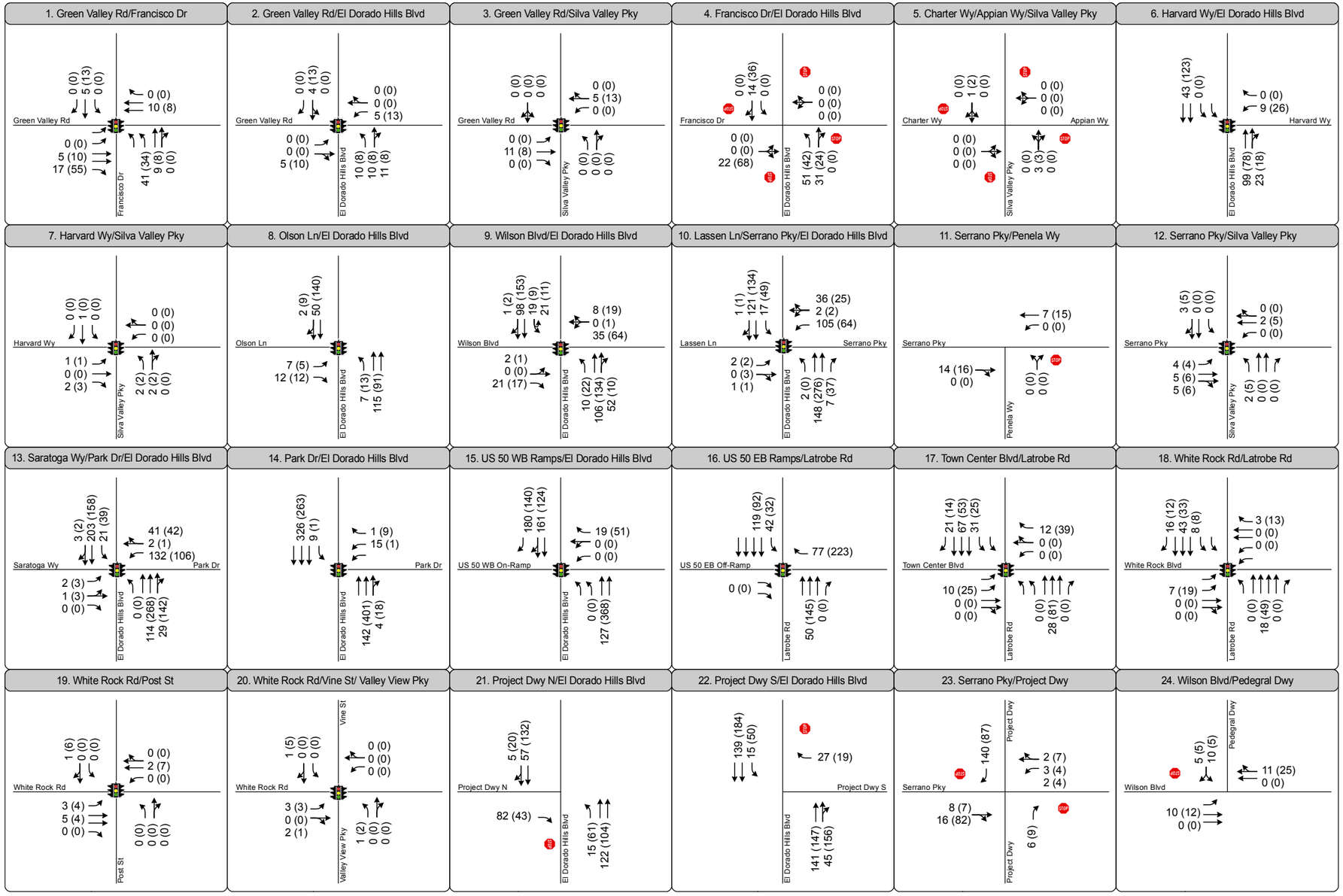


Source: Fehr& Peers

00668.12 El Dorado Co-Central El Dorado Hills/EIR/Fig_3_14-1thru7_Traffic.ai (04-29-14) SS

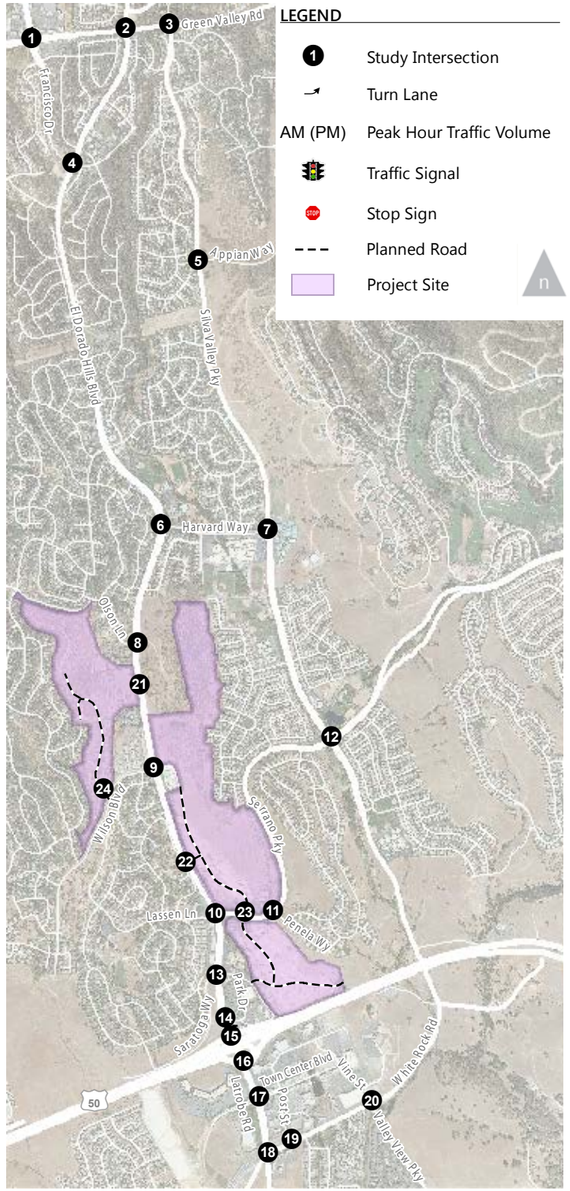
Figure 3.14-5
Existing Plus Project Trip Distribution

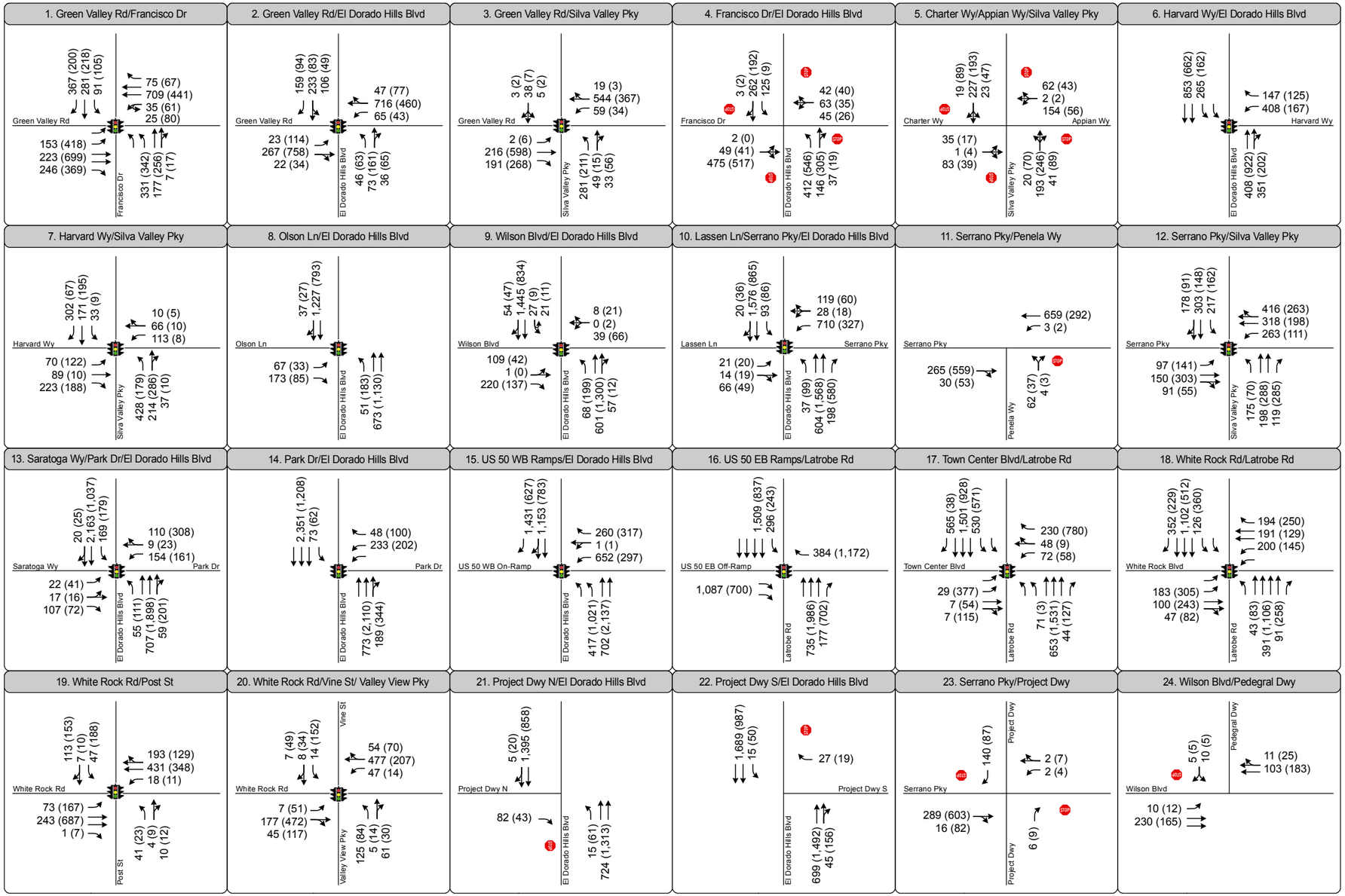




Source: Fehr& Peers

Figure 3.14-6
Project Only Trip Assignment - Existing Plus Project Conditions





Source: Fehr& Peers

Figure 3.14-7
Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

Chapter 4
Alternatives Analysis

4.1 Alternatives Overview

CEQA requires that an EIR include a reasonable range of feasible alternatives to the project that meet most or all project objectives while reducing or avoiding one or more significant impacts 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." Where a potential alternative is examined but not chosen as one of alternatives, the State CEQA Guidelines require that an EIR briefly discuss the reasons the alternative was dismissed. An EIR is not required to consider alternatives which are infeasible. In addition to a range of alternatives, an EIR must discuss the "No-Project Alternative," which describes the reasonably foreseeable probable future conditions if the project is not approved (State CEQA Guidelines Section 15126.6).

The lead agency must consider the alternatives discussed in an EIR before acting on a project. The agency is not required to adopt an alternative that may have environmental advantages over the project if specific economic, social, or other conditions make the alternative infeasible (Public Resources Code [PRC] Section 21002).

This chapter describes the alternatives to the Central El Dorado Hills Specific Plan (CEDHSP) (proposed project) and compares the anticipated environmental impacts of the alternatives to those of the proposed project, analyzed in Chapter 3, *Impact Analysis*, Sections 3.1 through 3.14.

4.2 Alternatives Development and Screening Criteria

The alternative screening criteria are listed here and are described below in detail.

- **Ability to meet project objectives**—the extent to which the alternative fulfills the project's objectives.
- **Impact avoidance**—the extent to which the alternative substantially avoids, minimizes, reduces, or eliminates an impact associated with the proposed project.
- **Feasibility**—the extent to which the alternative is potentially capable of being accomplished given economic, environmental, legal, social, and technological factors.

Through this screening process, alternatives were considered and included for further analysis in the Draft EIR or removed from further consideration. Those alternatives that meet the project objectives, that would reduce one or more project impacts, and that appear feasible are discussed in greater detail in Section 4.3, *Alternatives Analysis*. Those alternatives that were considered but removed from further consideration are described below under Section 4.5, *Alternatives Considered but Dismissed from Further Analysis in the EIR.*

4.2.1 Ability to Meet Project Objectives

El Dorado County's (County's) primary objective for the proposed project, as described in Chapter 2, *Project Description*, is to create development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. There are an additional 15 objectives of the proposed project, as follows.

- ***Fulfill regional land use objectives by achieving Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) Consistency.*** Establish new development that fulfills regional land use objectives by directing growth to the established community of El Dorado Hills and achieving consistency with The Sacramento Area Council of Governments' (SACOG's) adopted 2035 MTP/SCS.
- ***Curtail suburban sprawl.*** Curtail suburban sprawl (County General Plan Goal 2.1) by utilizing undeveloped infill sites and promoting mixed-use development patterns to accommodate the County's future population growth and support economic expansion.
- ***Assist in meeting future Regional Housing Needs Allocations (RHNA) needs.*** 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.*** Maximize opportunities for higher-density housing as an alternative to single-family detached dwellings. 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).
- ***Provide a strong community identity and quality built environment.*** Establish a community setting with an identifiable character and a visually attractive design theme that is compatible with the surrounding area and contributes to the quality of life and economic health (County General Plan Goal 2.4). Carefully plan and incorporate visual elements that enhance and promote a sense of community (County General Plan Goal 2.5) and provide quality residential environments for all income levels (County General Plan Goal HO-2).
- ***Utilize existing infrastructure and public services.*** 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).
- ***Improve connectivity of the regional roadway network.*** Provide an opportunity for the County to expand its regional roadway network and improve parallel capacity to U.S. Highway 50 (US 50).
- ***Encourage future transit opportunities.*** Locate development in the El Dorado Hills Community Region within walking distance of El Dorado Hills Boulevard to 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).
- ***Create a new non-motorized transportation system.*** Create a new non-motorized transportation system (County General Plan Goal TC-4) linking new development to existing retail services. Incorporate Class I bike paths, "complete streets" with Class II bike lanes, and

sidewalks in new development to promote alternative transportation modes and reduce vehicle miles traveled.

- ***Improve north-south pedestrian and bicycle connectivity.*** Reduce barriers to pedestrians created by US 50 and improve access between the north and south sides of the freeway and improve pedestrian and bicycle safety.
- ***Provide opportunities for recreational facilities in El Dorado Hills.*** Provide recreational facilities for the health and welfare of residents and visitors (County General Plan Goal 9.1), thus promoting opportunities to capitalize on recreational uses through tourism and recreational-based businesses and industries (County General Plan Goal 9.3).
- ***Maintain characteristics of natural landscape.*** Maintain natural landscape features, including ridgelines (County General Plan Goal 2.3), conserve existing natural resources for ecological value (County General Plan Goal 7.4), and conserve open space to provide for the enjoyment of scenic beauty (County General Plan Goal 7.6).
- ***Minimize impacts on oak woodlands.*** Minimize impacts on the oak woodlands by directing new development to areas with minimal or little oak canopy.
- ***Protect important cultural resources.*** Protect the County's important cultural resources (County General Plan Goal 7.5), including significant pre-historic and Native American resources and unique historical features of the County's Gold Rush history.
- ***Foster sustainable communities.*** Foster sustainable communities (County General Plan Goal 2.1) by utilizing sustainable design practices to reduce greenhouse gas emissions, and increase the efficiency of energy and water use in new development (County General Plan Goal HO-5).

4.2.2 Impact Avoidance

In addition to identifying feasible mitigation for a proposed project's impacts, a lead agency must also consider alternatives that could provide a means of avoiding altogether or reducing the level of impact that would otherwise result from implementation of a project. The following significant impacts would result from the proposed project. These impacts are analyzed in detail in Chapter 3, *Impact Analysis*, Sections 3.1 through 3.14.

Significant and Unavoidable Impacts

Air Quality

- Impact AQ-1 and AQ-1 CUM: Conflict with or obstruct implementation of the applicable air quality plan
- Impact AQ-2b and AQ-2b CUM: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operation
- Impact AQ-2c and AQ-2c CUM: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during combined construction and operation
- Impact AQ-3 and AQ-3 CUM: 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)

Cultural Resources

- Impact CUL-1 CUM: Cause a substantial adverse change in the significance of an archaeological resource that is a historical resource as defined in Section 15064.5.

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
- 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
- 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 Impacts That Can Be Mitigated to Less-Than-Significant Levels

Aesthetics

- Impact AES-2: Have a substantial adverse effect on a scenic vista
- Impact AES-4: Substantially degrade the existing visual character or quality of the site and its surroundings

Air Quality

- Impact AQ-2a: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction
- Impact AQ-4d: Expose sensitive receptors to naturally occurring asbestos during construction

Biological Resources

- Impact BIO-1: Loss of oak woodland canopy and oak woodland habitat
- Impact BIO-2: Loss of riparian woodland
- Impact BIO-3: Loss of jurisdictional wetlands, including seasonal wetlands, seasonal wetland swales, and seeps
- Impact BIO-4: Loss of other waters of the United States, including intermittent drainages, drainage ditches/roadside ditches, and ponds
- Impact BIO-5: Potential impacts on special-status plant species within CEDHSP project area
- Impact BIO-6: Potential mortality or disturbance of California red-legged frog within the CEDHSP project area
- Impact BIO-7: Potential mortality or disturbance of Pacific pond turtle within the CEDHSP project area
- Impact BIO-8: Potential mortality or disturbance of Blainville's horned lizard within the CEDHSP project area

- Impact BIO-9: Potential mortality or disturbance of nesting special-status and non–special-status birds within the CEDHSP project area
- Impact BIO-10: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within the CEDHSP project area
- Impact BIO-11: Interfere with the movement of resident or migratory wildlife
- Impact BIO-13: Potential introduction and spread of invasive plant species
- Impact BIO-14: Potential loss of sensitive natural communities within the offsite infrastructure improvement areas
- Impact BIO-15: Potential loss of waters of the United States within the offsite infrastructure improvement areas
- Impact BIO-16: Potential impacts on special-status plant species within the offsite infrastructure improvement areas
- Impact BIO-17: Potential mortality or disturbance of listed vernal pool branchiopods and their habitat within offsite infrastructure improvement areas
- Impact BIO-18: Loss or disturbance of valley elderberry longhorn beetle and its habitat within offsite infrastructure improvement areas
- Impact BIO-19: Potential mortality or disturbance of California red-legged frog within offsite infrastructure improvement areas
- Impact BIO-20: Potential mortality or disturbance of Pacific pond turtle within offsite infrastructure improvement areas
- Impact BIO-21: Potential mortality or disturbance of Blainville's horned lizard within offsite infrastructure improvement areas
- Impact BIO-22: Potential mortality or disturbance of nesting special-status and non–special-status birds within offsite infrastructure improvement areas
- Impact BIO-23: Potential injury, mortality, or disturbance of tree-roosting bats and removal of roosting habitat within offsite infrastructure improvement areas

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
- Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries
- Impact CUL-4: Result in disturbance to or destruction of cultural resources as a result of offsite improvements

Geology, Soils, Minerals, and Paleontological Resources

- Impact GEO-4: Result in fracturing and/or erosion from special construction methods that could result in unstable geologic or soil conditions
- Impact GEO-9: Directly or indirectly destroy a unique paleontological resource
- Impact GEO-10: Impacts on geological, mineral and paleontological resources resulting from offsite improvements

Hazards and Hazardous Materials

- Impact HAZ-9: Create a significant hazard to the public or the environment as a result of offsite improvements

Hydrology, Water Quality, and Water Resources

- Impact WQ-6: Otherwise substantially degrade water quality
- Impact WQ-11: Impacts on hydrology and water quality resulting from offsite improvements

Noise and Vibration

- Impact NOI-1b: Expose persons to or generate noise levels from project-generated traffic in excess of standards established in the General Plan
- 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
- Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels
- Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Impact NOI-7: Result in noise impacts due to activities associated with project offsite improvements

Public Services and Utilities

- 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
- 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
- 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

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 on-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
- Impact TRA-5: Result in inadequate emergency access
- 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
- Impact TRA-8: Result in inadequate emergency access as a result of offsite improvements

4.2.3 Feasibility

CEQA requires that alternatives considered in an EIR be feasible. Section 15364 of the State CEQA Guidelines defines *feasible* as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." CEQA does not require that an EIR determine the ultimate feasibility of a selected alternative, but rather that an alternative probably be feasible. Factors considered in determining an alternative's feasibility included site suitability, infrastructure availability, general plan consistency, consistency with other plans and regulatory limitations, jurisdictional boundaries, economic viability, and whether an alternate site could reasonably be acquired.

4.3 Alternatives Analysis

After the screening process, the County determined that two alternatives—a reduced-density alternative and a reduced-wetland-impact alternative—would fulfill the CEQA requirements of meeting most of the project objectives, being feasible, and reducing or eliminating project impacts. In addition, a No-Project Alternative must be considered in an EIR. Therefore, the following alternatives are evaluated in comparison with the proposed CEDHSP in this Draft EIR.

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

Table 4-1 provides a comparison of the types and extent of development associated with the proposed project and the No-Project, Reduced-Density, and Reduced Wetland-Impact Alternatives. Each of the alternatives analyzed is further described in Sections 4.3.1 through 4.3.4.

Table 4-1. Alternatives Analyzed

Land Use	Proposed Project	Alternative 1 – No Project	Alternative 2 – Reduced Density	Alternative 3 – Reduced Wetland Impact
Developed Acres[a]	134 ac	93 ac	185 ac	139 ac
Open Space[b]	168 ac	235 ac	130 ac	173 ac
Oak Tree Impacts	14 ac	32 ac[c]	34 ac[c]	38 ac[c]
Wetlands Impacts	2.9 ac	0.15 ac	3.6 ac	0.25 ac
Residential Land Use				
HDR/VRL (<1-5 du/ac)	37 du	168 du	472 du	203du[c]
HDR/VRM-Low (5-8 du/ac)	123 du	–	–	159 du
HDR/VRM-High (8-14 du/ac)	310 du	–	–	200 du
MFR/VRH (14-24 du/ac)	530 du	144 du	200 du	353 du
Total Dwelling Units	1,000 du	312 du	672 du	915 du
Road Impacts	12 ac	13 ac	21 ac	17 ac
Private Parks (quantity)	1	–	2	–
Entry Park	1.2 ac	–	2.2 ac	–
Neighborhood Park	–	–	2.5 ac	–
Total Public Parks (acres)	26 ac	–	–	12 ac
Village Park – Westside	15 ac	–	–	–
Park/Limited Commercial – Westside	11 ac	–	–	12 ac
Total Developed Acres[d]	173 ac	106 ac	211 ac	168 ac
Total Project Area	341 ac	341 ac	341 ac	341 ac
Offsite Improvements				
Pedregal water lines	X	X	X	X
Recycled water line expansion	X		X	
Park Drive extension[e]	X		X	
Two pedestrian crossings	X			
US 50 pedestrian crossing	X			
Potential connection to Silva Valley Parkway	X			
Other roadway connections			X	X

ac = acres (rounded in some cases).
du = dwelling units.

[a] Excludes roads and parks, which are listed separately.

[b] Open space estimated in project area includes Serrano Village D1,Lots C and D.

[c] Duplexes/half-plexes assumed on the VRL lots in Pedregal.

[d] Developed acres, road impacts, and parks.

[e] Extension from El Dorado Hills Boulevard to the Serrano Westside roundabout.

4.3.1 Alternative 1 – No Project

Section 15126.6(e)(2) of the State CEQA Guidelines requires an EIR to include an analysis of the No-Project Alternative. 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 but does not necessarily preclude use or development of the project site. Rather, the No Project Alternative evaluated in this Draft EIR considers "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" (State CEQA Guidelines Section 15126.6 [e][2]).[1]

For this Draft EIR, the No-Project Alternative assumes that 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 El Dorado Hills Executive Golf Course). A General Plan amendment, El Dorado Hills Specific Plan amendment, or rezoning would not be required. However, the No-Project Alternative would require a tentative subdivision map, which would be subject to environmental review under CEQA.

Buildout of existing plans and/or entitlements under the theoretic maximum density for the project area would allow development under the No-Project Alternative of up to 759 dwelling units on 181 acres. However, in order to be feasible in the Pedregal planning area in consideration of slope and oak canopy restrictions, the No-Project Alternative development density and dwelling unit count was modified to be consistent with County development requirements, which would limit allowable development to a total of 312 dwelling units on the 341-acre project site (93 developed acres). Figure 4-1 shows the land use assumptions for this alternative.

Under this scenario, the No-Project Alternative would consist of the development of 168 detached, single-family residential units at a density of <1–5 dwelling units per acre (du/ac and 144 multifamily residential units at a density of 14–24 du/ac. The Serrano Westside planning area encompasses Serrano Village D1, Lots C and D, which would be developed with residential uses consistent with the 1988 *El Dorado Hills Specific Plan* (EDHSP). Within the Serrano Westside planning area, 41.2 acres would be developed with detached, single-family residential units at a density of <1–5 du/ac (135 dwelling units). The Pedregal planning area would be developed with 45.3 acres of detached, single-family residential units at a density of <1–5 du/ac (33 units), and 6.3 acres of multifamily residential unit at a density of 14–24 du/ac (144 units). No public or private parks would be dedicated. This alternative would not include the civic–limited commercial land use. The former El Dorado Hills Executive Golf Course property would remain in its existing state as maintained vacant land. Table 4-1 summarizes the development assumptions for this alternative.

Circulation improvements associated with the proposed project, including those associated with vehicular connectivity, pedestrian amenities, and the public trail system, would not be constructed under the No-Project Alternative.

[1] 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.

Offsite infrastructure improvements (outside the project area) would be required to support the No-Project Alternative. These offsite improvements would include new water lines to supply the Pedregal planning area. The No-Project Alternative would not include a recycled water line, the two pedestrian crossings at the Raley's and La Borgata shopping area, the Park Drive extension, a pedestrian crossing over US 50, or a potential connection to Silva Valley Parkway.

The CEDHSP policies would not apply to development in either planning area. Further, the No-Project Alternative is not a specific plan or development proposal. Thus, in the evaluation of environmental impacts of the No-Project Alternative, the analysis generally assumes that development within the Pedregal planning area would be subject to General Plan policies, zoning and development standards set forth in the County Code of Ordinances, and General Plan EIR mitigation measures adopted for mitigating potential environmental effects. In the Serrano Westside planning area, the No-Project Alternative assumes that environmental effects could be addressed through EDHSP policies, EIR mitigation measures, and conditions of approval.

It is reasonable to assume that the mitigation measures identified in this Draft EIR for the proposed project would provide effective environmental protection. Therefore, the proposed project's mitigation measures are referenced in the technical analyses, below, to allow for meaningful comparison with the proposed project and as an indicator of the level of mitigation that could be required for a project with the land uses associated with the Alternative.

Aesthetics

The primary difference between the No-Project Alternative and the proposed project affecting aesthetics and visual resources would occur within the Serrano Westside planning area. Development in the Pedregal planning area would be very similar to the proposed project and, therefore, visual impacts would be essentially the same.

Under the proposed project, impacts on important public scenic views along the US 50 corridor and impacts on the visual character would be less than significant, in part because there would be no development along ridgelines. Under the No-Project Alternative, effects on the portion of US 50 with important public scenic viewpoints would be less because the area next to US 50 would not be developed and would remain as open space. While the No-Project Alternative has a decreased development density, overall smaller project footprint, and because it preserves more open space, it could increase visual impacts by developing the ridgelines of Serrano Village D1, Lots C and D, which would not occur with the proposed project. In addition, construction of the No-Project Alternative would require the removal of more oak trees, which are located on the ridges and are an onsite visual amenity. Developing ridgelines would have a greater impact on scenic vistas and the existing visual character and quality of the Serrano Westside planning area, compared to the proposed project, because the ridgeline is undeveloped. Removal of oaks on the ridgeline would reduce the visual quality by converting the natural open space condition to residential development and removing the visual amenity that this naturally vegetated ridgeline provides. In addition, the development would stand out at this location because it would be at the top of the hill, serving as a visual focal point, and would lack trees to buffer views.

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 (i.e., residences and streetlights), and the surrounding area is

already well-lit. However, ridgeline development would make lighting under the No-Project Alternative more visible because of the development's elevated position in the landscape and fewer trees that would help filter and screen new light sources visible to surrounding viewers than the proposed project. County policies, zoning ordinances (130.14.170 Outdoor Lighting), and design review ensure that the proposed project minimizes lighting impacts to the degree possible. Specifically, Section 130.14.170 of the County Code requires shielding to avoid impacts on adjoining areas. While the elements of Mitigation Measure AES-2 recommended for the proposed project would reduce visual impacts under the No-Project Alternative, impacts on visual resources under the No-Project Alternative would be slightly greater than under the proposed project because of ridgeline development.

Air Quality

The types of air quality impacts under the No-Project Alternative would be similar to those under the proposed project, but of a lesser magnitude. Development would be consistent with the existing County General Plan and would be limited to 312 dwelling units and 13acres of roadways. As with the proposed project, construction and operation of these features would generate criteria pollutant emissions that could exceed the El Dorado County Air Quality Management District's (EDCAQMD's) significance thresholds. However, because the extent of construction and operational activities would be less under the No-Project Alternative than under the proposed project, criteria pollutant emissions generated by the No-Project Alternative would likely be lower than those estimated for the proposed project.

While fewer emissions are expected under the No-Project Alternative, there is still the potential for the No-Project Alternative to violate EDCAQMD's "project alone" criteria and result in a significant air quality impact. The No-Project Alternative would be required to comply with all state and local rules and regulations to control criteria pollutant emissions. Mitigation to further reduce emissions, similar to the actions identified in Mitigation Measures AQ-2a through AQ-2c for the proposed project, identified in Section 3.2, *Air Quality*—could be required as a result of project-level review completed for the No-Project Alternative.

Implementation of the No-Project Alternative could expose adjacent existing sensitive receptors adjacent to the Pedregal planning area and residents in Serrano Village D1 to increased health risks from construction-related diesel particulate matter (DPM), and to elevated carbon monoxide (CO) emissions associated with operation of this alternative. Similar to criteria pollutant emissions, DPM generated during construction and CO emissions generated during operation of the No-Project Alternative would be less than that of the proposed project. Construction-generated DPM may be reduced through best available control technologies similar to those identified in Mitigation Measure AQ-2b in Section 3.2, *Air Quality*. New residents would not be exposed to excessive DPM concentrations. In addition, the existing cancer risk and hazard index for the area is below the EDCAQMD thresholds. CO modeling for the proposed project showed that no new localized violations of the 1-hour or 8-hour ambient air quality standards would occur, and the same conclusion would be expected for the No-Project Alternative.

Similar to the proposed project, receptors could be exposed to significant naturally occurring asbestos (NOA) impacts. If the results of project-level review for the No-Project Alternative identify potential NOA impacts, the requirements identified in Mitigation Measure AQ-4, identified in Section 3.2, *Air Quality*, would reduce any significant NOA impacts to a less-than-significant level. Odor impacts arising from construction equipment or the El Dorado Hills Wastewater Treatment Plant

(WWTP) were not identified as significant for the proposed project and would not be significant for the No-Project Alternative because the No-Project Alternative is in the same location as the proposed project.

Biological Resources

Under the proposed project, impacts on sensitive vegetation communities, oak canopy, and special status plant and animal species would be less than significant with the implementation of mitigation, while impacts on oak canopy would be less than significant with implementation of the project important habitat mitigation plan (IHMP). Biological resource impacts would be reduced under the No-Project Alternative for annual grasslands, riparian, and waters of the United States, and therefore also less than significant, but would be greater for oak woodland canopy (approximately 32 acres) than under the proposed project (approximately 14 acres). The No-Project alternative would include only three of the offsite infrastructure improvements addressed under the proposed project (the north and south Pedregal water lines), which would reduce impacts on sensitive biological resources, including riparian, waters of the United States, and oak woodland canopy. In the Pedregal planning area, there would be a small decrease in impacts on oak woodland, riparian, and annual grassland habitat. The greater difference in impacts would occur in the Serrano Westside planning area, where the impacts on riparian, wetlands, and other waters of the United States would be entirely avoided in the area south of Serrano Parkway and would be substantially avoided north of Serrano Parkway. Impacts on annual grassland would also be avoided south of Serrano Parkway and slightly reduced north of Serrano Parkway. The increased impacts on oak woodland under the No-Project Alternative would be due to the low-density residential proposed in the northern and eastern parts of the Serrano Westside planning area, which would be left as open space under the proposed project.

Impacts on special-status species would generally be less substantial under the No-Project Alternative, except for those species that utilize oak woodland habitat. These species would include white-tailed kite, special-status bats, and other birds and raptors.

The requirements listed in Mitigation Measures BIO-1 through BIO-23, as proposed for the proposed project in Section 3.3, *Biological Resources*, or similarly effective measures would still be needed under the No-Project Alternative in order to ensure that impacts on biological resources would be reduced to a less-than-significant level. Development of an important habitat mitigation plan similar to the one prepared for the proposed project would address oak woodland impacts. Because the extent of construction would be less under the No-Project Alternative than under the proposed project, the impacts on most biological resources identified in the project area would be of a lesser magnitude, except for the increased impacts on oak woodland, white-tailed kite, special-status bats, and other birds and raptors that utilize oak woodland.

Cultural Resources

The impacts on archaeological resources under the No-Project Alterative would be slightly reduced as compared to those of the proposed project, which are less than significant with the implementation of mitigation measures. Because there are no built environment resources located in the project area that are considered historical resources and there are no traditional cultural properties in the project area, there would be no impact under the No-Project Alternative, identical to the proposed project. Under the No-Project Alternative, a reduced development footprint would mean less ground disturbance. As a result, potential impacts on buried archaeological resources

could be reduced. As with the proposed project however, construction under the No-Project Alternative would still occur in an area known to be sensitive for archaeological resources and, therefore, result in impacts on archaeological resources. The requirements identified in Mitigation Measures CUL-1a, CUL-1b, CUL-1c, CUL-3, and CUL-4, as proposed for the project, or similarly effective measures would be needed under the No-Project Alternative in order to ensure impacts on archaeological resources are reduced to a less-than-significant level. Because the extent of construction would be less under the No-Project Alternative than under the proposed project, the impact would be of a lesser magnitude.

Geology, Soils, Minerals, and Paleontological Resources

Geology and Soils

The No-Project Alternative would result in the development of residential land uses, open space, and roadways. The number of residential units that would be developed under the No-Project Alternative would be less than the number of units developed under the proposed project. As a result, less construction activity would be required under the No-Project Alternative, which would lead to less overall construction impacts compared to the proposed project. Site-specific investigation would be necessary to address issues such as slope stability, expansive soils, and earthquake safety. However, the overall types of potential impacts would not be different under the No-Project Alternative than under the proposed project, and the same mitigation, Mitigation Measure GEO-3, identified for the proposed project, would be needed to reduce impacts to a less-than-significant level under the No-Project Alternative.

Minerals

The impacts on mineral resources under the No-Project Alternative would be similar to those under the proposed project. Mineral resource zones (MRZs) identified within the footprint of the proposed project are also present in the footprint of this alternative. Construction under the No-Project Alternative would occur in the same or nearby areas within the same or similar MRZs as the proposed project. As with the proposed project, there would be a less-than-significant impact on known important mineral resources and no impact on the availability of important mineral resource sites.

Paleontological Resources

The impacts on paleontological resources under the No-Project Alternative would be similar to those under the proposed project but of a lesser magnitude. As with the proposed project, construction could occur in units sensitive for paleontological resources, such as Quaternary alluvium and, therefore, result in impacts on paleontological resources. However, because the extent of construction and the overall development footprint would be smaller under the No-Project Alternative than under the proposed project, the impact of the No-Project Alternative would be of a lesser magnitude than that of the proposed project. The mitigation measures identified for the proposed project would be necessary to reduce impacts to a less-than-significant level under the No-Project Alternative.

Greenhouse Gas Emissions

Similar to the criteria air pollutant emissions, construction and operational greenhouse gas (GHG) emissions associated with the No-Project Alternative would likely be lower than those estimated for the proposed project. However, because the CEDHSP would not be adopted under the No-Project Alternative, policies outlined in the CEDHSP Sustainability Element intended to reduce GHG emissions would not be incorporated into the project design for the No-Project Alternative. Moreover, mobile source emissions generated by the No-Project Alternative would not be eligible to tier from SACOG's MTP/SCS EIR because the No-Project Alternative would not qualify as a mixed-use residential project. Therefore, although mobile source operational emissions associated with the No-Project Alternative may be less than the proposed project, total operational GHG emissions may exceed the Sacramento Area Regional draft GHG threshold (regional draft GHG thresholds), resulting in a significant impact. Mitigation to reduce emissions below applicable threshold levels and ensure consistency with Assembly Bill 32 and the MTP/SCS would be evaluated and could be required by additional project-level review upon a proposal for development.

Hazards and Hazardous Materials

The impacts related to hazards and hazardous materials under the No-Project Alternative would be similar to those under the proposed project but of a lesser magnitude. Construction would result in the development of residential land uses, open space, and roadways. The number of residential units that would be developed under the No-Project Alternative would be less than the number of units developed under the proposed project. As a result, less construction activity would be required under the No-Project Alternative, which would lead to fewer overall construction impacts related to the potential for hazardous material releases compared to the proposed project. Construction impacts would be less than significant as under the proposed project. Operation-related impacts would also be reduced compared to the proposed project. There would be no business-related wastes or hazard risks because there would be no civic–limited commercial development. Residential impacts, such as generation of household hazardous waste, would not be reduced because there would be fewer residences and therefore impacts would be less than significant, as under the proposed project.

The County has not identified specific roads as emergency evacuation routes but encourages residents to learn their local roads in preparation for an emergency (Cathey pers. comm.); therefore, development under this alternative would not be expected to result in significant impacts on emergency response or evacuation plans. This impact would be similar in nature under the No-Project Alternative and also less than significant because there would be less development and fewer residences; however, this impact would have a lesser magnitude under the No-Project Alternative than under the proposed project.

Although development under this alternative would introduce new fire hazards or risk to people and structures in the project area, existing County policies related to fire hazards and fire minimization would be enforced, and subdivision plans would need to be approved by the El Dorado Hills Fire Department, and this impact would be less than significant as under the proposed project. Because there would be less development, fewer residences, and fewer residents, the risk of people and structures being exposed to fire would be less under the No-Project Alternative than under the proposed project.

Hydrology, Water Quality, and Water Resources

The impacts on hydrology, water quality, and water resources under the No-Project Alternative would be similar to those of the proposed project but of a lesser magnitude. Because the extent of construction would be less under the No-Project Alternative than it would be under the proposed project (i.e., there would be fewer acres of residential land use and more open space acreage), the construction-related impacts would be of a lesser magnitude. As with the proposed project, such impacts would be minimized and would be less than significant through compliance with the latest National Pollutant Discharge Elimination System (NPDES) and other water quality requirements (i.e., Construction General Permit, Small Municipal Separate Storm Sewer System (MS4) Permit, Waste Discharge Requirements (WDRs) for dewatering, other federal and state regulations, County plan standards, and County ordinances). In addition, the requirements identified in Mitigation Measures BIO-1a through BIO-1c, BIO-3a, and BIO-3b, as recommended for the proposed project, or similarly effective measures would be required to reduce potential water quality impacts where wetlands or other waters may be affected by construction.

The overall development footprint associated with the No-Project Alternative would be smaller, and there would be fewer postconstruction-related impacts associated with the No-Project Alternative than under the proposed project. Proper measures to maintain water quality after construction would be required as under the proposed project, which would require preparation of a drainage study and identification of postconstruction drainage system features and water quality protection measures. Source and treatment control measures contained in the State Water Resources Control Board's MS4 Permit Order No. 2013-0001-DWQ, the County Stormwater Management Program (SWMP) (El Dorado County 2004), Stormwater Quality Ordinance No. 5022, and the County Drainage Manual (El Dorado County 1995) would need to be implemented. General site housekeeping and design control measures incorporated into the project design can include conserving natural areas, protecting slopes and channels, and minimizing impervious areas. Treatment control measures may include use of vegetated swales and buffers, detention basins, wet ponds, or constructed wetlands, infiltration basins, and other low impact development (LID) technology measures. These measures can also help comply with the Central Valley Regional Water Quality Control Board (Central Valley Water Board) *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan), which specifies water quality objectives and beneficial use requirements.

Land Use Planning and Agricultural Resources

As with the proposed project, development under the No-Project Alternative would result in the conversion of currently undeveloped land to urban uses. However, the No-Project Alternative would not rearrange the types of planned land uses on the project site as proposed under the project, but would instead maintain the existing entitlements and land use designations established under the adopted EDHSP. Like the proposed project, the No-Project Alternative would not divide existing urban uses surrounding the project site.

Unlike the proposed project, the No-Project Alternative does not include amendments to the County General Plan land use designations. Development would instead be guided by the existing land use plans, policies, and regulations, including the County General Plan and EDHSP. The proposed project's potential conflicts with the current EDHSP open space designation (which is less than significant with mitigation) would be avoided under this alternative because those lands now designated for open space would not be redesignated for development, as would happen under the

proposed project. As discussed in Section 3.9, *Land Use Planning and Agricultural Resources*, the stated purpose of the open space designation in the EDHSP was to preserve areas of visual or environmental significance in natural open space. Although the overall amount of land preserved in open space would not be reduced as a result of the proposed project, conversion of the specific open space areas to urban uses as a part of the proposed project could result in significant impacts on biological resources that the policy was adopted in part to protect (see Section 3.3, *Biological Resources*). This impact would be avoided under the No-Project Alternative. Because the project site is not covered by any habitat conservation plan or natural community conservation plan, the No-Project Alternative, like the proposed project, would not conflict with any applicable habitat conservation plan or natural community conservation plan. Unlike the proposed project, the No-Project Alternative would not be consistent with the MTP/SCS, as the average net residential density would be 3.35 du/ac, which is less than the 3.8 du/ac set forth in the adopted MTP/SCS.

There would be no impacts associated with conversion of agricultural land—including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance—or conversion of forest land to nonagricultural or non-forest use under either the No-Project Alternative or the proposed project because no agricultural or forest lands are present on or adjacent to the site. Similarly, no agricultural or timberland zoning exists on the project site, and none of the site is covered by a Williamson Act contract. There would be no impact under either the proposed project or the No-Project Alternative.

Noise and Vibration

The No-Project Alternative would result in the development of residential land uses, open space, and roadways. The number of residential units that would be developed under the No-Project Alternative would be less than the number of units developed under the proposed project. As a result, less construction activity and a shorter construction period would likely be required under the No-Project Alternative. However, under the No-Project Alternative, new residential development would be constructed adjacent to existing residences along the eastern boundary of the Serrano Westside planning area while, under the proposed project, this area would be mostly open space. As a result, noise impacts on these residences could be greater than under the proposed project. Conversely, the proposed project would construct residential development in the southern portion of the Serrano Westside planning area adjacent to existing residences, while under the No-Project Alternative this area would be mostly open space. As a result, noise impacts on these residences could be greater than under the No-Project Alternative. Therefore, both the proposed project and the No-Project Alternative would result in construction noise near existing residences, although these impacts would affect different areas of the project site. Assessed on a qualitative basis, the construction noise impacts of the No-Project Alternative would likely be comparable to the construction noise impacts of the proposed project. Mitigation measures to reduce construction noise identified for the proposed project would also be required under the No-Project Alternative. However, it is likely that noise impacts associated with construction would be significant and unavoidable, as under the proposed project.

Less development under the No-Project Alternative would result in less operational noise compared to the proposed project, as increases in traffic and the associated noise would be proportionately less than under the proposed project. However, the project area is located in an area where many roadways result in traffic noise that exceeds the County's 60 day-night average sound level (L_{dn}) compatibility standard. New residential development along El Dorado Hills Boulevard as part of the No-Project Alternative would be located in areas that exceed this standard; thus, sound barriers

would be needed in these areas to minimize the amount of noise to which the residences are exposed.

Because there would be less development under the No-Project Alternative than the proposed project, and because increased traffic and operational noise generated by the proposed project would be less than significant with Mitigation Measure NOI-1b, the increase in traffic and operational noise generated by the No-Project Alternative would also be less than significant with Mitigation Measure NOI-1b implemented. Impacts would be the same as the proposed project.

As with the proposed project, implementation of the No-Project Alternative would not likely require impact equipment that could generate substantial ground vibrational impacts. However, similar to the proposed project, implementation of the No-Project Alternative could potentially involve some blasting that would generate vibration. Mitigation Measure NOI-2 would reduce blasting impacts to a less-than-significant level. Impacts would be the same as the proposed project.

Because the No-Project Alternative and the proposed project would involve similar types of land uses (residences, open space, roadways), which would require similar types of construction activities, vibration impacts would be similar to the proposed project. Because the project location would be the same as the proposed project, development under the No-Project Alternative would also not be located near any public or private airports. However, as discussed in Section 3.10, *Noise and Vibration*, the site experiences aircraft overflight noise from aircraft on flight paths to Mather field that is significant and unavoidable, even with mitigation identified in the County's 2004 General Plan EIR. This impact would be the same under the No-Project Alternative as under the proposed project.

Population and Housing

As with the proposed project, development under the No-Project Alternative would follow the current and anticipated trend of continuing growth in unincorporated El Dorado County. The 312 housing units associated with the No-Project Alternative fall within the population projections. However, the No-Project Alternative would induce less population growth than the proposed project. Development under this alternative would ensue as currently entitled or allowed under existing land use designations, with up to 312 residential units, including 168 low-density, and 144 high-density units. Using data from the El Dorado Hills census and the 2009–2013 American Community Survey, occupancy of 312 new housing units proposed under the No-Project Alternative would be expected to increase the county's population by approximately 872 people.[2] The No-Project Alternative would result in less growth than the proposed project and would also not result in substantial population growth.

The project area currently contains no housing units. Therefore, as with the proposed project, development under the No-Project Alternative would not displace any existing housing units or people, or necessitate the construction of replacement housing elsewhere but would instead result in the creation of additional housing units on a largely undeveloped site presently surrounded by existing residential and commercial uses.

[2] 168 low-density dus at 3.06 average residents (514.08); 135 medium-density dus at 2.61 average residents (352.35); 144 high-density dus at 2.49 average residents (358.56).

Public Services and Utilities

The No-Project Alternative would have approximately one-third fewer dwelling units than the proposed project and, therefore, fewer residents, resulting in less demand on fire, police, and library services. The No-Project Alternative would result in 213 school-age children rather than 677 as under the proposed project, resulting in less demand on schools. The El Dorado Union High School District and the Buckeye Union School District collect taxes through the El Dorado Schools Financing Authority Community Facilities District, which provides funds for capital facilities to serve students generated from new development (SchoolWorks 2014:53) or development impact fees. Increased school enrollment would not cause significant environmental effects; rather, it would cause only social effects. Similarly, impacts on libraries are of a social nature and would not have environmental effects.

Therefore, overall, the No-Project Alternative would result in reduced impacts on public services, as compared to the proposed project, though both would result in less-than-significant impacts.

Because the No-Project Alternative would result in fewer residents than the proposed project, it would also result in a decreased demand on wastewater, potable water, recycled water, solid waste services, dry utilities, electricity, natural gas, and other energy demands. Impacts on utilities would be less than significant under the No-Project Alternative, as under the proposed project, although mitigation measures similar to those identified for the proposed project would be necessary to mitigate impacts from the expansion of and connection to infrastructure and offsite improvements. Wastewater demands under the No-Project Alternative have already been calculated in El Dorado Irrigation District's (EID's) planning, so there would be no additional impact. Although energy- and resource-conserving measures would most likely be utilized under the No-Project Alternative, it is not assumed that measures under this alternative would match the energy-saving policies incorporated in the proposed project. Therefore, energy conservation under this alternative would be slightly less than it would be under the proposed project. Because the overall development footprint associated with the No-Project Alternative would be smaller than the proposed project, the construction- and operation-related effects would also be of a lesser magnitude, causing less demand for public services, utilities, and energy.

Recreation

Development under the No-Project Alternative would include construction of up to 168 single-family and 144 multifamily housing units. Using the County's park-planning household sizes of 3.3 people per single-family residential unit and 2.1 people per multifamily unit, the No-Project Alternative would be expected to introduce approximately 857 park users into the area, compared to 2,664 new park users under the proposed project. While these 857 new park users represent 32% of the park users anticipated under the proposed project, this alternative would still increase the demand for parks and recreation facilities in an area where deficiencies in the neighborhood parks category are anticipated in 2020 (El Dorado Hills Community Services District 2007). In addition, the No-Project Alternative would not provide new parkland, compared to the proposed project's 16 acres of parks plus 11 acres of civic–limited commercial that could be used for recreation uses. 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, but would still be less than significant as under the proposed project. To comply with the Quimby Act, the No-Project Alternative would be required to dedicate 5 acres of parkland per 1,000 residents. The 135 units in Village D1 already satisfy Quimby requirements. Thus, the No-Project

Alternative would be required to dedicate 2.05 acres of parkland, or pay in-lieu fees, to accommodate this population.

The No-Project Alternative would be more likely to require the construction of new offsite recreational facilities, as none would be constructed onsite. With implementation of mitigation measures similar to those identified for offsite improvements for the proposed project, this impact would likely be less than significant. Therefore, while there is no impact associated with the adverse physical effects on the environment from the construction of new facilities under the proposed project, it is a potential impact under the No-Project Alternative.

Traffic and Circulation

The impacts on traffic and circulation under the No-Project Alternative would be similar in mechanism (additional traffic volumes associated with residential development) to those of the proposed project but of a lesser magnitude. Under the proposed project, traffic impacts related to both construction and operation would be less than significant with mitigation. Under the No-Project Alternative, buildout would result in the development of residential land uses, open space, and roadways. Circulation improvements associated with the proposed project, including those associated with vehicular connectivity (such as the Park Drive extension), pedestrian amenities, and the public trail system would not be constructed under the No-Project Alternative. The number of residential units that would be developed under the No-Project Alternative (312 units) is about one-third of those planned under the proposed project (1,000 units), and the No-Project Alternative would not include commercial use.

This alternative could result in fewer intersection level of service (LOS), roadway segment, and freeway facility impacts associated with traffic and circulation on roadways in proximity to the project area. For example, 8,000 gross residential-related trips (and 9,099 total trips, including park and commercial uses) would be generated by the proposed project compared with approximately 2,600 trips that would result from the No-Project Alternative. Nevertheless, the addition of these trips could result in significant LOS impacts or contribution to cumulative impacts and therefore could require mitigation measures similar to those identified in conjunction with the proposed project. Similarly, demand for transit services and facilities associated with this alternative would be anticipated to be approximately one-third of that estimated for the proposed project. Because demand exceeds capacity at existing park-and-ride facilities, however, this could result in a significant impact, requiring mitigation similar to that proposed under Mitigation Measure TRA-1d. The lack of pedestrian and bicycle facilities under this alternative would conflict with associated County goals for providing a safe and accessible non-motorized transportation network, which would be a significant impact, requiring mitigation, including Mitigation Measure TRA-1c and other measures required for providing connectivity in the Serrano Westside planning area. It is also likely that mitigation measures related to the preparation of traffic studies and the implementation of monitoring plans identified for the proposed project, in addition to specific road improvements, would be necessary under the No-Project Alternative and that impacts would be less than significant with mitigation.

The overall development footprint associated with the No-Project Alternative would be smaller, which could result in fewer construction-related traffic impacts associated with the No-Project Alternative. This is because fewer construction truck trips would be associated with overall buildout, and haul routes may be limited to fewer segments as a result of the smaller footprint. As

with the proposed project, it would be necessary to implement mitigation to prepare and implement a traffic management plan to reduce this impact to a less-than-significant level.

The public trail system that would be constructed under the proposed project would not be constructed under the No-Project Alternative. Therefore, implementation of this alternative could conflict with planned pedestrian and transit improvements.

Application of Screening Criteria

Ability to Meet Project Objectives

The County's primary objective for the proposed project is to create development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. The No-Project Alternative would make efficient and feasible use of existing infrastructure, but it would not necessarily promote a sense of community. The No-Project Alternative would, at least to some extent, meet 6 of the 15 additional project objectives:

- Curtail suburban sprawl.
- Assist in meeting future RHNA needs.
- Broaden the housing stock in El Dorado Hills.
- Utilize existing infrastructure and public services.
- Improve north-south pedestrian and bicycle connectivity.
- Protect important cultural resources.

It would not meet the other objectives listed in Section 4.2.1. Because the density would be low and pedestrian trails would not be included, the No-Project Alternative would not meet objectives related to walkability, bicycle and pedestrian access, and transit opportunities. However, the US 50 overcrossing would be constructed at the old location and so would offer some north-south connectivity for pedestrians and bicycles. The No-Project Alternative would result in the development of the ridgeline in Village D1 and therefore would not meet objectives to maintain the character of the natural landscape or minimize impacts on oaks.

Impact Avoidance

The No-Project Alternative would avoid impacts related to changes in land use designations or zoning. It would result in development of fewer acres and nearly 70% fewer dwelling units and would therefore result in reduction of impacts related to population and traffic. Impacts on air quality, noise, population and housing, and public services would be reduced, although impacts related to GHGs could increase. Because fewer acres would be developed, it would result in fewer impacts on biological and cultural resources. Potential impacts related to the need for and construction of new recreational facilities which would not exist under the proposed project would be increased under the No-Project Alternative, although likely to a less-than-significant level.

Feasibility

Implementation of the No-Project Alternative would be possible as described because County requirements for construction and oak preservation have been considered. This alternative would

result in far fewer residential units within the same acreage and therefore may not be economically feasible for the applicant.

4.3.2 Alternative 2 – Reduced Density

Compared to the proposed project, the Reduced-Density Alternative would reduce the total number of dwelling units from 1,000 to 672 but would increase the development footprint by over 50 acres to accommodate the reduced density (from 134 acres for the proposed project to 185 acres under this alternative). This alternative would provide the least open space—130 acres—of all the alternatives, and 39 fewer acres of open space than the proposed project. This alternative assumes development of Village D1, Lots C and D (135 units) and combines the current approved land uses and existing housing types within the Serrano Westside planning area with development of the Pedregal planning area as envisioned under the proposed project.

Buildout of the Reduced-Density Alternative would result in development of 672 dwelling units, of which 337 would be low density (<1 du/ac), 135 medium-low density (5–8 du/ac), and 200 high density (14–24 du/ac). This alternative would have 300 more low-density (<1 du/ac) and 12 more medium-low density (5–8 du/ac) residential units than the proposed project, while eliminating all medium-density (8–14 du/ac) units and decreasing high-density (14–24 du/ac) units from 530 to 200 (Table 4-1). This alternative would not include the civic–limited commercial land use. Table 4-1, above, summarizes the development assumptions for this alternative.

Roads would occupy 21 acres, and two private parks—a 2.2-acre entry park and a 2.5-acre neighborhood park totaling 4.7 acres—would be developed. 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. The public trail system, US 50 pedestrian overcrossing, the north and south pedestrian crossings from the Serrano Westside planning area, and the Silva Valley Parkway connection that would be constructed under the proposed project, would not be built under the Reduced-Density Alternative. To facilitate traffic circulation, connections would be made to Penela Drive, Estero Way and Meadow Wood Drive. Figure 4-2 depicts proposed development under the Reduced-Density Alternative.

Aesthetics

Proposed development in the Pedregal planning area under the Reduced-Density Alternative would be the same as under the proposed project. Therefore, the primary differences between the two alternatives would mostly affect visual resources within the Serrano Westside planning area.

Under the proposed project, impacts on the visual character would be less than significant, in part because there would be no development along ridgelines. While the Reduced-Density Alternative has a decreased development density, it has a slightly larger development footprint than the proposed project and would increase visual impacts by developing Serrano Village D1, Lots C and D ridgelines that would not happen under the proposed project. Developing ridgelines under the Reduced-Density Alternative would have a greater impact on scenic vistas and the existing visual character and quality of the Serrano Westside planning area compared to the proposed project because the ridgeline is and would remain undeveloped under the proposed project. Construction of the Reduced-Density Alternative would also require the removal of more oak trees, which are located on the ridges and are an onsite visual amenity. Removal of oaks on the ridgeline would

reduce visual quality by converting the natural open space condition to residential development and removing the visual amenity that this naturally vegetated ridgeline provides. In addition, the development would stand out at this location because it would be at the top of the hill, serving as a visual focal point, and would lack trees to buffer views. The portions of US 50 with important public scenic views that would experience less-than-significant impacts under the proposed project would be affected more under the Reduced-Density Alternative. Although the impacts would remain less than significant, they would be increased because the area next to US 50 would be developed more intensely with residential development directly adjacent to the highway instead of having a Village Park to serve as a visual buffer.

Both the proposed project and Reduced-Density Alternative would result in new sources of nighttime light, which would be less than significant. The Reduced-Density Alternative would result in slightly less lighting due to its decreased development density and smaller project footprint, which would result in fewer lighting sources (i.e., residences and streetlights); in addition, the surrounding area is already well lit. However, ridgeline development under the Reduced-Density Alternative would make lighting more visible because of the elevated position of the new light sources in the landscape and because there would be fewer trees to help filter and screen new light sources visible to surrounding viewers. 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 possible. Specifically, Section 130.14.170 of the County Code requires shielding to avoid impacts on adjoining areas. Mitigation Measure AES-2, established for the proposed project, would also reduce visual impacts under the Reduced-Density Alternative. However, impacts on visual resources under the Reduced-Density Alternative would be slightly increased compared to those of the proposed project because of ridgeline development and residential development occurring directly adjacent to US 50.

Air Quality

The types of air quality impacts under the Reduced-Density Alternative would be similar to those under the proposed project, but of a lesser magnitude. As with the proposed project, construction and operation of building features would generate criteria pollutant emissions that could exceed EDCAQMD's significance thresholds. However, because the extent of construction and operational activities are less under the Reduced-Density Alternative than under the proposed project, criteria pollutant emissions generated by the Reduced-Density Alternative would likely be lower than those estimated for the proposed project. Mitigation Measures AQ-2a through AQ-2c, identified in Section 3.2, *Air Quality*, would reduce emissions, but the potential to violate EDCAQMD's "project alone" thresholds and conflict with applicable air quality attainment plans would remain. Therefore, impacts of the Reduced-Density Alternative on air quality would be significant and unavoidable.

Implementation of the Reduced-Density Alternative could expose new residents and adjacent existing sensitive receptors, in addition to those discussed for the proposed project, in the northern portion of the Serrano Westside planning area to increased health risks from construction-related DPM, and to elevated CO emissions associated with operation of this alternative. Similar to criteria pollutant emissions, DPM generated during construction and CO emissions generated during operation of the Reduced-Density Alternative would be less than that of the proposed project. Construction generated DPM may be reduced through the use of best available control technologies if additional project-level review requires Mitigation Measure AQ-2b, and the construction period would be well below the 70-year exposure period. New residents would not be exposed to excessive DPM concentrations; CEDHSP Policy 8.59 requires air filters be installed on central air or ventilation

systems in new residences. In addition, the existing cancer risk and hazard index for the area is below the EDCAQMD thresholds. CO modeling for the proposed project showed that no new localized violations of the 1-hour or 8-hour ambient air quality standards would occur, and the same conclusion would be expected for the Reduced-Density Alternative. Accordingly, these impacts under the Reduced-Density Alternative would be less than significant, as under the proposed project.

Similar to the proposed project, receptors could be exposed to significant NOA impacts. Mitigation Measure AQ-4, identified in Section 3.2, *Air Quality*, would therefore be required to reduce NOA impacts to a less-than-significant level. Odor impacts arising from construction equipment or the El Dorado Hills WWTP were not identified as significant for the proposed project, and would not be significant for the Reduced Density Alternative either, as both would involve similar construction equipment and land use activities.

Biological Resources

Under the proposed project, impacts on sensitive vegetation communities and special-status plant and animal species would be less than significant with the implementation of mitigation measures, while impacts on oak canopy would be less than significant with implementation of the project IHMP. Onsite biological resource impacts would be greater under the Reduced-Density Alternative for all vegetation communities as compared to those of the proposed project. However, the Reduced-Density Alternative would have fewer impacts resulting from offsite infrastructure improvements because the north and south Pedregal water lines, Park Drive extension, and recycled waterline extension would not be constructed.

Greater impacts would occur in the Serrano Westside planning area as a result of the Reduced-Density Alternative due to the low-density residential use proposed in the northern and eastern portions, which would be left as natural open space under the proposed project. As a result of these differences in the Pedregal and Serrano Westside planning areas, approximately 34 acres of oak canopy would be affected under the Reduced-Density Alternative as compared to approximately 14 acres under the proposed project.

Impacts on annual grassland, waters of the United States, and riparian habitats would be slightly greater under the Reduced-Density Alternative as compared to the proposed project due to the larger development area north of Serrano Parkway.

Potential impacts on special-status plant species that could occur in annual grassland or oak woodland habitat would be greater under the Reduced-Density Alternative as compared to the proposed project because of the low-density residential development in the area that would be open space under the proposed project. Impacts on special-status animal species would generally be greater under the Reduced-Density Alternative for those species that utilize oak woodland, annual grassland, and riparian (white-tailed kite, burrowing owl, Blainville's horned lizard, special-status bats) as compared to the proposed project. For those species that utilize habitats within waters of the United States, the impacts would vary depending on wetland and water type. For California red-legged frog and western pond turtle, the Reduced-Density Alternative would affect more potential aquatic habitat (pond) compared to the proposed project. For vernal pool branchiopods and special-status plants that use seasonal wetland habitat, the Reduced-Density Alternative would affect a little less aquatic habitat for these species (seasonal wetland and seasonal wetland swale) compared to

the proposed project because the potential Silva Valley Parkway connection would not be an element of this alternative

Mitigation Measures BIO-1 through BIO-23, proposed for the project (listed in the Executive Summary Table ES-1 and described in Section 3.3, *Biological Resources*) would still be needed under this alternative in order to keep impacts on biological resources to a less-than-significant level. Development of an important habitat mitigation plan similar to the proposed project's IHMP would address oak woodland impacts. Because overall the extent of construction is greater under the Reduced-Density Alternative than under the proposed project, the impact for most biological resources identified in the project area would be of a greater magnitude.

Cultural Resources

Under the Reduced-Density Alternative, the development footprint would increase by 50 acres as compared to the proposed project. Because there are no built environment resources that are historical resources and no traditional cultural properties located in the project area, there would be no impact under either the proposed project or the Reduced-Density Alternative. Under this alternative, the larger construction footprint would increase ground disturbance and the potential to affect buried archaeological resources, though impacts could be mitigated to less than significant by the implementation of mitigation measures as with the proposed project. As with the proposed project, construction under the Reduced-Density Alternative would still take place in an area known to be sensitive for cultural resources and, therefore, result in similar impacts on known archaeological resources. In order to reduce impacts on archaeological resources to a less-than-significant level, Mitigation Measures CUL-1a, CUL-1b, CUL-1c, CUL-3 and CUL-4, as proposed for the project, would need to be implemented. However, due to the larger development footprint under the Reduced-Density Alternative, the impact on cultural resources would be greater than those of the proposed project.

Geology, Soils, Minerals, and Paleontological Resources

Geology and Soils

The impacts on geology and soils under the Reduced-Density Alternative would be similar to those under the proposed project. However, under the Reduced-Density Alternative, the construction footprint would increase by more than 50 acres compared to the proposed project. As a result, more area would be affected. Site-specific investigation would be necessary to address issues such as slope stability, expansive soils, and earthquake safety. However, the overall types of potential impacts would not be different under the Reduced-Density Alternative than under the proposed project, and Mitigation Measure GEO-3, as identified for the propose project, would be needed to reduce the impacts to a less-than-significant level.

Minerals

The impacts on mineral resources under the Reduced-Density Alternative would be similar to those under the proposed project. While the construction footprint under the Reduced-Density Alternative would increase by more than 50 acres compared to the proposed project, the project location is the same. Construction under both alternatives would take place in areas with the same or similar MRZs. As with the proposed project, although the extent of construction would be more, there would

be a less-than-significant impact on known important mineral resources and no impact on the availability of important mineral resource sites.

Paleontological Resources

The impacts on paleontological resources under the Reduced-Density Alternative would be similar to those under the proposed project but of a greater magnitude. As with the proposed project, this construction could take place in units sensitive for paleontological resources, such as Quaternary alluvium and, therefore, could result in impacts on paleontological resources. Because, however, the construction footprint is greater under the Reduced-Density Alternative than under the proposed project, the impact would be of a greater magnitude. Mitigation measures identified for the proposed project would reduce the impact under the Reduced-Density Alternative to less than significant.

Greenhouse Gas Emissions

GHG impacts under the Reduced-Density Alternative would be similar to those under the proposed project but of a lesser magnitude. Construction and operational emissions associated with the Reduced-Density Alternative would likely be lower than those estimated for the proposed project. Compliance with CEDHSP Sustainability Element policies would reduce construction and operational GHG emissions consistent with reductions estimated for the proposed project. Accordingly, since impacts would be less than significant under the proposed project, impacts under the Reduced-Density Alternative would likewise be less than significant.

Hazards and Hazardous Materials

Although the construction footprint under the Reduced-Density Alternative would increase by more than 50 acres compared to the proposed project, impacts related to hazards and hazardous materials would be similar and also less than significant. The number of residential units that would be developed under the Reduced-Density Alternative would be less than the number of units developed under the proposed project. As a result, less construction activity would be required under the Reduced-Density Alternative, which would lead to fewer overall construction impacts compared to the proposed project. Operation-related impacts would also be reduced compared to the proposed project. There would be no business-related wastes or hazard risks because there would be no civic–limited commercial development. Residential impacts, such as generation of household hazardous waste, would not be expected to be reduced because there would be one-third fewer residents.

The County has not identified specific roads as emergency evacuation routes but encourages residents to learn their local roads in preparation for an emergency (Cathey pers. comm.); therefore, development under this alternative would not be expected to cause significant impacts on emergency response or evacuation plans. Though this impact would be similar under the Reduced-Density Alternative because there would be less development and fewer residences, this impact would of lesser magnitude than under the proposed project.

Although development under this alternative would introduce new fire hazards or fire risk to people and structures in the project area, existing County policies related to fire hazards and fire minimization would be enforced and subdivision plans would need to be approved by the El Dorado Hills Fire Department, and this impact would be less than significant as under the proposed project. Because there would be less development, fewer residences, and fewer residents, the risk of fire to

people and structures would be less under the Reduced-Density Alternative than under the proposed project.

Hydrology, Water Quality, and Water Resources

The impacts on hydrology, water quality, and water resources under the Reduced-Density Alternative would be similar to those under the proposed project but of a greater magnitude because the construction footprint and developed acreage would increase by more than 50 acres compared to the proposed project (i.e., there are more acres of residential land use, and fewer acres of open space). As with the proposed project, such impacts would be minimized and would be less than significant through compliance with the latest NPDES and other water quality requirements (i.e., Construction General Permit, Small MS4 Permit and WDRs for dewatering, other federal and state regulations, County plan standards, and County and other local ordinances). In addition, Mitigation Measures BIO-1a through BIO-1c, BIO-3a, and BIO-3b, as recommended for the proposed project, would be required to reduce potential water quality impacts where wetlands or other waters may be affected by construction.

With regard to post-development impacts, proper measures to maintain water quality after construction would be required as under the proposed project, which would ensure that impacts on water quality would be less than significant. Source and treatment control measures contained in the State Water Board MS4 Permit Order 2013-0001-DWQ (specifically, Section E.12), the County SWMP (El Dorado County 2004) and the County Drainage Manual (El Dorado County 1995), and/or U.S. Environmental Protection Agency (EPA) guidance and other related guidance documents would be implemented. General site housekeeping and design control measures incorporated into the project design can include conserving natural areas, protecting slopes and channels, and minimizing impervious areas. Treatment control measures may include use of vegetated swales and buffers, detention basins, wet ponds, or constructed wetlands, infiltration basins, and other LID technology measures. These measures can also help comply with the Central Valley Water Board Basin Plan, which specifies water quality objectives and beneficial use requirements.

The overall development footprint associated with the Reduced-Density Alternative would be larger, and there would be more postconstruction related impacts associated with the Reduced-Density Alternative than under the proposed project.

Land Use Planning and Agricultural Resources

Development under the Reduced-Density Alternative, like the proposed project, would result in the conversion of currently undeveloped land at the former El Dorado Hills Executive Golf Course that is designated for open space use to urban uses, rearranging the types of planned land uses on the project site. Compared to the proposed project, this alternative would decrease the total number of dwelling units from 1,000 to 672 but would increase the total developed acreage from 134 to 185 acres. Like the proposed project, the Reduced-Density Alternative would connect existing urban uses surrounding the project site.

Like the proposed project, the Reduced-Density Alternative would likely require amendments to the County General Plan land use designations in order to direct development to areas currently designated for open space use. This alternative would also conflict with the current EDHSP open space designation in a manner similar to the proposed project and, like the proposed project, mitigation measures would reduce the impact on biological resources to a less-than-significant level.

Because the project site is not covered by any habitat conservation plan or natural community conservation plan, the Reduced-Density Alternative, like the proposed project, would not conflict with any such applicable plan. Because there would be residential development adjacent to US 50 under this alternative, rather than a Village Park under the proposed project, a significant and unavoidable noise impact that would conflict with noise standards in the County General Plan would occur that would not occur under the proposed project. Unlike the proposed project, the Reduced-Density Alternative would not be consistent with the MTP/SCS, as the average net residential density would be 3.63 dus/acre which is less than the 3.8 dus/acre set forth in the adopted MTP/SCS. There would be no impacts associated with conversion of agricultural land—including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance—or forest land to nonagricultural or non-forest use under either the proposed project or the Reduced-Density Alternative because no agricultural or forest lands are present on or adjacent to the site. Similarly, no agricultural or timberland zoning exists on the project site, and none of the site is covered by a Williamson Act contract. There would be no impact under either the proposed project or the Reduced-Density Alternative.

Noise and Vibration

The Reduced-Density Alternative would result in a similar pattern of development as the proposed project but with an increased footprint and fewer residents. Under the Reduced-Density Alternative, residential development would be constructed in the northern and eastern portions of the Serrano Westside planning area where development would not occur for the proposed project. Consequently, this could result in construction noise impacts on residences in these areas that would not occur under the proposed project. Implementing Mitigation Measure NOI-1a, as discussed in Section 3.10, *Noise and Vibration*, would reduce construction noise impacts as with the proposed project, but not to a less-than-significant level. Therefore, as under the proposed project, noise impacts from construction would be significant and unavoidable.

Less development under the Reduced-Density Alternative would result in less operational noise compared to the proposed project as increases in traffic and the associated noise would be less due to the reduced density and corresponding reduction in residents. Exposure of new residents to noise above the County's 60 L_{dn} standard would be similar to the proposed project with the exception of residences west of Serrano Parkway near the end of the cul-de-sac at Estero Way which could be exposed to noise above 60 $L_{dn.}$ This would require the construction of a sound barrier. Sound barriers discussed for the proposed project would also be required for the Reduced-Density Alternative. Thus, this impact for the Reduced-Density Alternative could be marginally greater than the proposed project but would be reduced to a less-than-significant level with the construction of a sound barrier. Under the Reduced-Density Alternative, the area adjacent to US 50 would be designated for residential development, rather than park uses. Exposure of residences to noise in excess of the County's standard for residential uses in this area would constitute a significant impact. There is no feasible mitigation that would reduce noise at residential uses close to US 50. Thus, this alternative would result in a significant and unavoidable impact that would not occur under the proposed project.

Because there would be less development under the Reduced-Density Alternative than the proposed project, and because increased traffic and operational noise generated by the proposed project would be less than significant with Mitigation Measure NOI-1b, the increase in traffic and operational noise generated by the Reduced-Density Alternative would be less than significant as well with NOI-1b implemented.

In addition, as with the proposed project, implementation of the Reduced-Density Alternative would not likely require impact equipment that could generate substantial ground vibrational impacts. However, similar to the proposed project, implementation of the Reduced-Density Alternative could potentially involve some blasting that would generate vibration. Mitigation Measure NOI-2 would reduce blasting impacts to a less-than-significant level. Because the type of land uses (residences, open space, roadways) and the resulting construction activities, vibration impacts would be similar to the proposed project.

Because the project location would be the same as the proposed project, development under the Reduced-Density Alternative would also not be located near any public or private airports. However, as discussed in Section 3.10, *Noise and Vibration*, the project site experiences aircraft overflight noise from aircraft on flight paths to Mather field that is significant and unavoidable, even with mitigation identified in the County's 2004 General Plan EIR. This impact would be the same under the Reduced-Density Alternative as under the proposed project.

Population and Housing

Compared to the proposed project, the Reduced-Density Alternative would reduce the total number of dwelling units from 1,000 to 672. As with the proposed project, these housing units fall within the population projections for El Dorado County. However, the Reduced-Density Alternative would induce less population growth than the proposed project. Using data from the El Dorado Hills census and the 2009–2013 American Community Survey, occupancy of 672 new dwelling units associated with this alternative would be expected to increase the county's population by approximately 1,942 people, as compared with 2,618 under the proposed project. The Reduced-Density Alternative would result in less growth than the proposed project and would also not result in substantial population growth.

The project area currently contains no housing units. Therefore, as with the proposed project, development under the Reduced-Density Alternative would not displace any existing housing units or people, or necessitate the construction of replacement housing elsewhere, but would instead result in the creation of additional housing units on a largely undeveloped site presently surrounded by existing residential and commercial uses. As with the proposed project there would be no impact.

Public Services and Utilities

Impacts on public services and utilities under the Reduced-Density Alternative would be similar to those of the proposed project though to a lesser degree, with the exception of water supply, because 672 dwelling units would be allowed as opposed to 1,000 under the proposed project.

Fewer dwelling units and, therefore, fewer residents are expected under this alternative, causing less demand on fire, police, and library services. This alternative would result in 456 school-age children rather than 677 as under the proposed project, resulting in less demand on schools. The El Dorado Union High School District and the Buckeye Union School District collect taxes via the El Dorado Schools Financing Authority Community Facilities District or development impact fees that provides funds for capital facilities to serve students generated from new development (SchoolWorks 2014:53). Increased school enrollment would not cause significant environmental effects; rather, it would cause only social effects. Similarly, impacts on libraries are of a social nature and would not have environmental effects.

The Reduced-Density Alternative would result in greater annual demand for potable water than the proposed project (approximately 518 acre-feet/year (af/yr) compared to the proposed project's buildout demand 450 af/yr). This is because there would be substantially more low-density units (High-Density Residential [HDR]/Village Residential – Low [VRL]) than under the proposed project (472 units compared to 37 units), and these unit types have the highest demand factor. This alternative would also involve greater oak woodland replacement acreage than the proposed project (34 acres compared to approximately 15 acres [rounded]), requiring more irrigation than the proposed project.[3]

The Reduced-Density Alternative would, however, result in a decreased demand on wastewater conveyance and treatment facilities. Whereas the proposed project would result in a demand of 0.21 million gallons per day (mgd), the Reduced-Density Alternative would result in 0.15 mgd.[4] Therefore, the Reduced-Density Alternative would result in 0.06 mgd less demand than the proposed project and less demand than that of the allowed land uses. As such, similar to the proposed project, the El Dorado Hills WWTP would have capacity to accommodate flows from the Reduced-Density Alternative.

Because the Reduced-Density Alternative would result in fewer dwelling units, it would also result in a decreased demand for recycled water, solid waste services, dry utilities, electricity, natural gas, and other energy demands. As described in Section 3.12, *Public Services and Utilities*, Impact PSU-9, the same energy- and resource-conserving effects that would occur under the proposed project would occur under this alternative. However, as compared to the proposed project, this alternative would result in fewer dwelling units and residents, thereby resulting in a decreased demand for energy. Impacts on utilities would be less than significant under the Reduced-Density Alternative, as under the proposed project, although mitigation measures identified for the proposed project would be necessary to mitigate impacts from the expansion of and connection to infrastructure and offsite improvements.

Recreation

Development under the Reduced-Density Alternative would result in the construction of 672 dwelling units. Using the County's park-planning household sizes of 3.3 people per single-family residential unit and 2.1 people per multifamily unit, the Reduced-Density Alternative would be expected to introduce up to 1,978 new park users into the area, compared to the 2,664 new park users anticipated for the proposed project. While these new park users under the Reduced-Density Alternative represent 686 fewer new users than the proposed project, this alternative would still increase the demand for parks and recreation facilities in an area where deficiencies in the neighborhood park category in 2020 have been identified (El Dorado Hills Community Services District 2007). The Reduced-Density Alternative would only provide 4.7 acres of new, private parkland compared to the proposed project's 16 acres of public parks and 11 acres of civic–limited commercial that could be developed for recreation uses. Effects of the Reduced-Density Alternative on the deterioration of existing neighborhood parks would therefore be greater than those associated with the proposed project, but still less than significant. The 135 units in Village D1

[3] 472 low density residential units*0.80 acre-feet/year (af/yr) + 200 multifamily units*0.16 af/yr + 4.77 ac park*2.77 af/yr + 34 ac oak mitigation*1 af/ac/yr + construction (2 af/yr) + non-revenue water (13%) = 518 af/yr.
[4] 472 low density residential units * 240 gallons per day/equivalent dwelling unit (gpd/EDU) = 113,280 gpd. 200 multifamily residential units * 180 gpd/EDU = 36,000 gpd. 113,280 + 36,000 = 149,280 average dry weather flow, or 0.15 mgd.

already satisfy Quimby requirements. Thus, to comply with the Quimby Act, the Reduced-Density Alternative would be required to dedicate 7.66 acres of parkland, or pay in-lieu fees, to accommodate a park planning population of 1,978 park users.

The Reduced-Density Alternative would involve construction of 4.7 acres of new private parks but no public parks, and therefore may require the construction of offsite recreational facilities that could result in environmental impacts. With implementation of mitigation measures identified for offsite improvements for the proposed project, this impact would likely be less than significant. While there is no impact associated with the adverse physical effects on the environment from the construction of new facilities under the proposed project, it is a potential impact under the Reduced-Density Alternative.

Traffic and Circulation

The impacts on traffic and circulation under the Reduced-Density Alternative would be similar in mechanism (additional traffic volumes associated with residential development) to those under the proposed project but of a lesser magnitude. Fewer residential units would be developed under the Reduced-Density Alternative (672) as compared to the proposed project (1,000), and the Reduced-Density Alternative would not include civic–limited commercial use. The public trail system that would be constructed under the proposed project would not be constructed under the Reduced-Density Alternative.

This alternative could result in fewer intersection LOS, roadway segment, and freeway facility impacts associated with traffic and circulation on roadways in proximity to the project area. For example, 9,099 gross trips would be generated by the proposed project compared with approximately 6,000 generated by the Reduced-Density Alternative. In addition, development of this alternative would include three additional connections to existing residential neighborhoods in the Serrano Westside planning area, which could increase traffic on existing local streets (Meadow Wood Drive, Penela Way, Boundary Oaks Drive, and Estero Way). The addition of new trips and new connections to existing local streets could result in significant LOS impacts or contributions to cumulative impacts and therefore could require mitigation measures similar to those identified in conjunction with the proposed project. Similarly, demand for transit services and facilities associated with this alternative would be anticipated to be approximately two-thirds of that estimated for the proposed project. Because demand exceeds capacity at existing park-and-ride facilities, however, this could result in a significant impact, requiring mitigation similar to that proposed under Mitigation Measure TRA-1d. The lack of a public trail system under this alternative could conflict with associated County goals for providing a safe and accessible non-motorized transportation network, which would be a significant impact, requiring mitigation, including Mitigation Measure TRA-1c and other measures required for providing connectivity in the Serrano Westside planning area.

The overall development footprint associated with the Reduced-Density Alternative would also be 50 acres larger than that of the proposed project, which could result in additional construction-related traffic impacts because construction trucks may require use of additional haul routes. As with the proposed project, it would be necessary to implement mitigation to prepare and implement a traffic management plan to reduce this impact to a less-than-significant level.

The public trail system that would be constructed under the proposed project would not be constructed under the Reduced-Density Alternative. Therefore, implementation of this alternative could conflict with planned pedestrian and transit improvements.

Application of Screening Criteria

Ability to Meet Project Objectives

The County's primary objective for the proposed project is to create development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. The Reduced-Density Alternative would make efficient and feasible use of existing infrastructure, and it would promote a sense of community. The Reduced-Density Alternative would, at least to some extent, meet 5 of the15 additional project objectives:

- Curtail suburban sprawl.
- Utilize existing infrastructure and public services.
- Provide opportunities for recreational facilities.
- Encourage future transit opportunities.
- Protect important cultural resources.

It would not meet the other objectives listed in Section 4.2.1. Because the density would be lower and public trail system and pedestrian crossings from the Serrano Westside planning area and over US 50 would not be included, this alternative would not meet objectives related to bicycle and pedestrian connectivity and safety. The Reduced-Density Alternative includes only single-family residences and therefore would not meet objectives related to RHNA or housing diversity. The Reduced-Density Alternative would result in the development of the ridgeline in Village D1 and therefore would not meet objectives to maintain the character of the natural landscape or minimize impacts on oaks.

Impact Avoidance

Although the Reduced-Density Alternative would not altogether avoid any impacts of the proposed project, it would result in development of approximately one-third fewer dwelling units and would therefore result in reduction of impacts related to population and traffic. Impacts on air quality, noise, population and housing, and public services also would be reduced. Because more acres would be developed, it would not result in fewer impacts on biological and cultural resources. Because residential units would be located adjacent to US 50, a significant and unavoidable traffic noise impact would occur that would not occur under the proposed project. This alternative would introduce impacts (although likely less than significant) related to recreational facilities that would not occur under the proposed project, and would require the dedication or payment of in-lieu fees to accommodate new park users.

Feasibility

Implementation of the Reduced-Density Alternative would be possible as described because County requirements for construction and oak preservation have been considered. This alternative would

result in approximately one third fewer residential units and therefore may not be economically feasible for the applicant.

4.3.3 Alternative 3 – Reduced Wetland Impact

Alternative 3, the Reduced-Wetland-Impact Alternative (Figure 4-3), is intended to reduce wetland impacts compared to the proposed project through changes to the location and density of development. A total of 0.24 acre of wetland would be affected under this alternative, versus 2.9 acres of wetlands and other waters of the United States under the proposed project.

The Reduced-Wetland-Impact Alternative would reduce the quantity and density of potential dwelling units in the Serrano Westside planning area and would include the development of Serrano Village D1, Lots C and D (135 units), which would be designated as Open Space under the proposed project. Of the 341-acre total site area, 168 acres would comprise the development footprint and approximately 173 acres would remain in open space use. Buildout of the Reduced-Wetland-Impact Alternative would result in the development of 68 low-density units, 294 medium-low density units, 200 medium-high density units, and 353 high-density units, for a total of 915 dwelling units on approximately 139 acres. The Reduced-Wetland-Impact Alternative assumes construction of duplexes and half-plexes within the Pedregal planning area as a means to increase density, while reducing and configuring the development footprint to avoid wetlands. The civic-limited commercial land use of the proposed project would be retained under this alternative but with slightly more acreage (12 acres under The Reduced-Wetland Impact Alternative versus 11 acres under the proposed project). Table 4-1, above, summarizes the development assumptions for this alternative.

Roads would occupy 17 acres, 5 acres more than the proposed project's 12 acres of roadways. The pedestrian crossing of US 50, the pedestrian crossings from the Serrano Westside planning area, and the Park Drive extension included in the proposed project would not be components of this alternative. However, this alternative would include the water line extensions to serve the Pedregal planning area, and the recycled water line expansion. The option for the Silva Valley Parkway connection would not be provided. Vehicle circulation would require connections to Gillette Drive (from the Pedregal planning area) and to Meadow Wood Drive and Estero Way (from the Serrano Westside planning area).

Aesthetics

Impacts on visual character would be less than significant under the proposed project. Proposed development in the Pedregal planning area would be reduced under the Reduced-Wetland-Impact Alternative compared to the proposed project because of the decreased development density and smaller development footprint. This reduced density and smaller footprint would require the removal of fewer oak trees, which are an onsite visual amenity in the Pedregal planning area. However, while the Reduced-Wetland-Impact Alternative has a decreased development density in the Pedregal planning area, it develops more acres and increases visual impacts in the Serrano Westside planning area by developing the ridgelines associated with Serrano Village D1, Lots C and D. In addition, construction of the Reduced-Wetland-Impact Alternative would require the removal of more oak trees in the Serrano Westside planning area, which are an onsite visual amenity, resulting in a greater visual impact on scenic vistas compared to the proposed project. This impact would also be less than significant with implementation of Mitigation Measure AES-2 designed for the proposed project.

The portion of US 50 with important public scenic viewpoints would be affected in a similar manner under the Reduced-Wetland Impact Alternative as under the proposed project because, while the area next to US 50 would be developed with residential development, the Reduced-Wetland-Impact Alternative would include some open space directly adjacent to the highway to serve as a visual buffer. This impact would be less than significant under this alternative, as it is under the proposed project.

Both the proposed project and Reduced-Wetland-Impact Alternative would result in less-than-significant impacts related to new sources of nighttime light in an area that is already well-lit. However, ridgeline development would make lighting under the Reduced-Wetland-Impact Alternative more visible because of the ridgeline lighting's elevated position in the landscape and because there would be fewer trees to help filter and screen new light sources visible to surrounding viewers. 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 possible. Specifically, Section 130.14.170 of the County Code requires shielding to avoid impacts on adjoining areas. Mitigation Measure AES-2, established for the proposed project, would reduce visual impacts under the Reduced-Wetland Impact Alternative. Therefore, impacts on the existing visual character and visual quality of the site would be greater under the Reduced-Wetland Impact Alternative compared to the proposed project.

Air Quality

The types of air quality impacts under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project but of slightly lesser magnitude. As with the proposed project, construction and operation of building features would generate criteria pollutant emissions that could exceed the EDCAQMD's significance thresholds. Because the extent of construction and operational activities are marginally less under the Reduced-Wetland Impact Alternative than under the proposed project, criteria pollutant emissions generated by the Reduced-Wetland Impact Alternative would likely be lower than those estimated for the proposed project. However, they would not be reduced enough to avoid the significant and unavoidable impacts of the proposed project. Mitigation Measures AQ-2a through AQ-2c, identified in Section 3.2, *Air Quality*, would reduce emissions, but the potential to violate EDCAQMD's "project alone" thresholds and conflict with applicable air quality attainment plans would remain.

Implementation of the Reduced-Wetland Impact Alternative could expose adjacent sensitive receptors throughout the Pedregal planning area and the northern portion of the Serrano Westside planning area to increased health risks from construction-related DPM, and to elevated CO emissions associated with operation of the project. Similar to criteria pollutant emissions, DPM generated during construction and CO emissions generated during operation of the Reduced-Wetland-Impact Alternative would be less than that of the proposed project. Construction-generated DPM may be reduced through best available control technologies if additional project-level review requires Mitigation Measure AQ-2b, and the construction period would be well below the 70-year exposure period. New residents would not be exposed to excessive DPM concentrations; CEDHSP policy 8.59 requires air filters be installed on central air or ventilation systems in new residences. In addition, the existing cancer risk and hazard index for the area is below the EDCAQMD thresholds. CO modeling for the proposed project showed that no new localized violations of the 1-hour or 8-hour ambient air quality standards would occur, and the same conclusion would be

expected for the Reduced-Wetland-Impact Alternative. Accordingly, these impacts would be less than significant.

Similar to the proposed project, receptors could be exposed to significant NOA impacts. Mitigation Measure AQ-4, identified in Section 3.2, *Air Quality*, would therefore be required to reduce NOA impacts to less than significant. Odor impacts arising from construction equipment or the El Dorado Hills WWTP were not identified as significant for the proposed project, and would not be significant for the Reduced-Wetland Impact Alternative either, as both would result in similar construction equipment and land use activities.

Biological Resources

Under the proposed project, impacts on sensitive vegetation communities, and special-status plant and animal species would be less than significant with the implementation of mitigation, while impacts on oak canopy would be less than significant with implementation of the project IHMP. Biological resource impacts would be reduced under the Reduced-Wetland-Impact Alternative for annual grasslands, riparian, and all types of waters of the United States as compared to those of the proposed project, and the amount of natural open space would be increased by nearly 5 acres. The Reduced-Wetland-Impact Alternative would include the north and south Pedregal water lines, and the recycled water line expansion offsite infrastructure improvements, but would not include the offsite roadway and pedestrian crossing improvements, reducing impacts on sensitive biological resources, including riparian, waters of the United States, and oak woodland canopy compared to the proposed project. The Reduced-Wetland-Impact Alternative would reduce the acreage of development in the Serrano Westside planning area south of Serrano Parkway and in the Pedregal planning area, reducing the impact on wetlands and other waters of the United States to approximately one-tenth of the impact under the proposed project.

Impacts on oak woodland canopy would be less in the Pedregal planning area under this alternative, because fewer acres would be developed than under the proposed project. However, oak woodland canopy impacts would be greater in the Serrano Westside planning area north of Serrano Parkway. The net oak woodland canopy impacts for the entire project area would be approximately 38 acres, as opposed to approximately 14 acres under the proposed project and therefore the impact on oak woodland canopy would be greater under the Reduced-Wetland-Impact Alternative. Under the Reduced-Wetland-Impact Alternative, impacts on riparian habitat would be eliminated in the Pedregal planning area and reduced by more than one-half in the Serrano Westside planning area. Impacts on annual grassland would be similar to slightly greater (less than 10%) under the Reduced-Wetland Impact Alternative.

Potential impacts on special-status plant species that could occur in annual grassland or oak woodland habitat would be greater under the Reduced-Wetland-Impact Alternative as compared to the proposed project because of the low-density residential development in the area that would be open space under the proposed project. Impacts on special-status animal species would also generally be less substantial under the Reduced-Wetland Impact Alternative, except for on those species that utilize oak woodland habitat. These species would include white-tailed kite, special-status bats, and other birds and raptors. For those species that utilize habitats within waters of the United States, including vernal pool branchiopods, California red-legged frog, western pond turtle, and special-status plants that occupy wetland habitat, the Reduced-Wetland-Impact Alternative would avoid most of the suitable habitat unlike the proposed project.

Mitigation measures BIO-1 through BIO-23, as proposed for the project, listed in the Executive Summary Table ES-1, and described in Section 3.3, *Biological Resources*, would still be needed under this alternative in order to ensure that impacts on biological resources would be reduced to a less-than-significant level. Development of an important habitat mitigation plan similar to the proposed project's IHMP would address oak woodland impacts. The extent of construction is slightly less under the Reduced-Wetland Impact Alternative than under the proposed project and is strategically placed to avoid waters of the United States as much as possible. As a result, the impacts on waters of the United States and most biological resources identified in the project area would be of a lesser magnitude, except for oak woodland, white-tailed kite, special-status bats, and other birds and raptors.

Cultural Resources

The impacts on archaeological resources under the Reduced-Wetland Impact Alternative would be similar to those under the proposed project but of a slightly lesser magnitude. Because there are no built environment resources located in the project area that are considered historical resources, there would be no impact on built environment resources under the proposed project or this alternative. Under the Reduced-Wetland Impact Alternative, the construction footprint would be slightly smaller than the proposed project and, with the implementation of mitigation measures, this impact would be less than significant. As with the proposed project, this construction would occur in areas sensitive for cultural resources and, therefore, could result in impacts on archaeological resources. In order to reduce impacts on archaeological resources to a less-than-significant level, mitigation measures CUL-1a, CUL-1b, CUL-1c, CUL-3 and CUL-4, as proposed for the project, would need to be implemented. However, because the extent of construction is slightly less under the Reduced-Wetland Impact Alternative than under the proposed project, the impact would be of a slightly lesser magnitude.

Geology, Soils, Minerals, and Paleontological Resources

Geology and Soils

The impacts on geology and soils under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project but of slightly lesser magnitude. Under the Reduced-Wetland-Impact Alternative, the construction footprint would be slightly smaller and would avoid wetlands. As a result, a slightly smaller area would be affected. Site-specific investigation would be necessary to address issues such as slope stability, expansive soils, and earthquake safety. However, the overall types of potential impacts would not be different under the Reduced-Wetland-Impact Alternative than under the proposed project, and the same Mitigation Measure GEO-3 identified for the proposed project would be needed to reduce impacts to a less-than-significant level.

Minerals

The impacts on mineral resources under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project. Under the Reduced-Wetland-Impact Alternative, the construction footprint would avoid wetlands and incorporate approximately 5 acres more open space than the proposed project and would be in the same location as the proposed project. Construction under the Reduced-Wetland-Impact Alternative would occur in areas with the same or similar MRZs as the proposed project. As with the proposed project, construction under this

alternative would result in a less-than-significant impact on known important mineral resources and no impact on the availability of important mineral resource sites.

Paleontological Resources

The impacts on paleontological resources under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project but of a slightly lesser magnitude because the construction footprint would avoid wetlands and incorporate approximately 5 acres more open space than the proposed project. As with the proposed project, this construction could occur in units sensitive for paleontological resources, such as Quaternary alluvium, and therefore could result in impacts on paleontological resources. Because the extent of construction is slightly less under the Reduced-Wetland-Impact Alternative than under the proposed project, the impact would be of a slightly lesser magnitude. The mitigation measures identified for the proposed project would be necessary to reduce impacts to a less-than-significant level under this alternative.

Greenhouse Gas Emissions

GHG impacts under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project but of a slightly lesser magnitude. Similar to the criteria air pollutant emissions, construction and operational GHG emissions associated with the Reduced-Wetland-Impact Alternative would likely be slightly lower than those estimated for the proposed project because of the reduced development. Compliance with CEDHSP Sustainability Element policies would reduce construction and operational GHG emissions consistent with reductions estimated for the proposed project. Accordingly, since impacts would be less than significant under the proposed project, impacts under the Reduced-Wetland-Impact Alternative would likewise be less than significant.

Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials under the Reduced-Wetland-Impact Alternative would be similar to those under the proposed project; less than significant, but of a slightly lesser magnitude. The number of residential units that would be developed under the Reduced-Wetland-Impact Alternative would be slightly less than the number of units developed under the proposed project. As a result, less construction activity would be required under the Reduced-Wetland-Impact Alternative, which would lead to fewer overall construction impacts compared to the proposed project. Operation-related impacts would also be less than significant and reduced slightly compared to the proposed project. There would be slightly fewer residences that would generate household hazardous waste, and, like the proposed project, these would not be expected to result in a significant hazard to the public or environment.

El Dorado County has not identified specific roads as emergency evacuation routes but encourages residents to learn their local roads in preparation for an emergency (Cathey pers. comm.); therefore, development under this alternative would not be expected to result in significant impacts on emergency response or evacuation plans.

Although development under this alternative would introduce new fire hazards or risk for people and structures in the project area, existing county policies related to fire hazards and fire minimization would be enforced, and subdivision plans would need to be approved by the El Dorado Hills Fire Department, and this impact would be less than significant as under the proposed project. Because there would be less development, fewer residences, and fewer residents, the risk of fire to

people and structures would be slightly less under the Reduced-Wetland-Impact Alternative than under the proposed project.

Hydrology, Water Quality, and Water Resources

The impacts on hydrology, water quality, and water resources under the Reduced-Wetland-Impact Alternative would be similar to those of the proposed project but of a slightly lesser magnitude. Under the Reduced-Wetland-Impact Alternative, the construction footprint would decrease slightly and avoid wetlands. Other impacts on water quality, including the discharge of dredged or fill material into waters of the United States (which could affect beneficial uses of the wetlands, such as riparian and wildlife habitat) would be minimized with this alternative. Similar to the proposed project, impacts related to hydrology, water quality, and water resources would be minimized and would be less than significant through compliance with the latest NPDES and other water quality requirements (i.e., Construction General Permit, Small MS4 Permit, WDRs for dewatering, other federal and state regulations, County plan standards, and County and other local ordinances). In addition, Mitigation Measures BIO-1a through BIO-1c, BIO-3a, and BIO-3b, as recommended for the proposed project, would be required to reduce potential water quality impacts where wetlands or other waters may be affected by construction

With regard to post-development impacts, proper measures to maintain water quality after construction would be required as under the proposed project, which would ensure that impacts on water quality would be less than significant. Source and treatment control measures contained in the State Water Board MS4 Permit Order No. 2013-0001-DWQ, the County SWMP (El Dorado County 2004) and the County Drainage Manual (El Dorado County 1995), and/or EPA guidance and other related guidance documents would be implemented. General site housekeeping and design control measures incorporated into the project design can include conserving natural areas, protecting slopes and channels, and minimizing impervious areas. Treatment control measures may include use of vegetated swales and buffers, detention basins, wet ponds, or constructed wetlands, infiltration basins, and other LID technology measures. These measures can also help comply with the Central Valley Water Board Basin Plan, which specifies water quality objectives and beneficial use requirements.

The overall development footprint associated with the Reduced-Wetland-Impact Alternative would be smaller, and there would be less postconstruction related impacts associated with the Reduced-Wetland-Impact Alternative than under the proposed project.

Land Use Planning and Agricultural Resources

The Reduced-Wetland-Impact Alternative would have the same impacts on land use planning and agricultural resources as the proposed project. As with the proposed project, development under this alternative would result in the conversion of currently undeveloped land at the former El Dorado Hills Executive Golf Course to urban uses and would rearrange the types of planned land uses on the project site, resulting in the development of urban uses in areas currently designated for open space use. Compared to the proposed project, the Reduced-Wetland-Impact Alternative would decrease the total number of dwelling units from 1,000 to 915 and would reduce the total developed acreage by approximately 5 acres. Like the proposed project, development of the Reduced-Wetland-Impact Alternative would connect the existing urban uses that largely surround the project site.

Similar to the proposed project, the Reduced-Wetland-Impact Alternative would likely require amendments to the existing County General Plan land use designations in order to direct development to areas currently designated for open space use. Therefore this alternative would, like the proposed project, conflict with the current EDHSP open space designation, and, like the proposed project, mitigation measures would reduce the impact on biological resources to a less-than-significant level. Because the project site is not covered by any habitat conservation plan or natural community conservation plan, this alternative, like the proposed project, would not conflict with any such applicable plan. Because there would be residential development adjacent to US 50 under this alternative rather than a Village Park under the proposed project, a significant and unavoidable noise impact that would conflict with noise standards in the County General Plan would occur that would not occur under the proposed project. Like the proposed project, the Reduced-Wetland-Impact Alternative would be consistent with the MTP/SCS, as the average residential density would be 6.58 dus/acre, well in excess of the 3.8 dus/acre set forth in the adopted MTP/SCS.

There would be no impacts associated with conversion of agricultural land—including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance—or forest land to nonagricultural or non-forest use under either the proposed project or this alternative because no agricultural or forest lands are present on or adjacent to the site. Similarly, no agricultural or timberland zoning exists on the project site, and none of the site is covered by a Williamson Act contract. There would be no impact on under either the proposed project or the Reduced-Wetland-Impact Alternative.

Noise and Vibration

The Reduced-Wetland-Impact Alternative would result in a slightly smaller development footprint and 85 fewer dwelling units than the proposed project. It is likely that construction and operational activity would be generally comparable in duration and intensity to the proposed project but dispersed differently in the project area. More specifically, noise impacts in the Pedregal planning area would be less severe than under the proposed project as there would be less development in this area, resulting in less construction activity near existing residences and less traffic and operational noise. However, noise impacts in the Serrano Westside planning area would be greater than the proposed project because construction in Village D1, Lots C and D would occur near existing residences, and there would be more development in these areas, resulting in increased traffic noise. The exposure of new residents to construction noise that exceeds the County's standards would be significant, and mitigation measures designed for the proposed project would not reduce noise impacts to a less-than-significant level. The exposure of new residents to traffic noise that exceeds the County's standards would be significant, similar to the proposed project, requiring the construction of sound barriers. The residential development along US 50 in the Serrano Westside planning area would be exposed to noise above the County's standard that could not be mitigated, because there is no feasible mitigation, as discussed in Section 3.10, *Noise and Vibration*. Because this area is designated for residential development under the Reduced-Wetland-Impact Alternative, rather than the Village Park under the proposed project, this impact would be more severe than under the proposed project and would be significant and unavoidable.

Traffic and operational noise generated by the Reduced-Wetland-Impact Alternative would be comparable to the proposed project. Increased traffic noise would occur in different areas than the proposed project, but the amount of increased noise would be approximately comparable. Because the proposed project traffic and operational noise is less than significant with Mitigation Measure

NOI-1b, the increase in traffic and operational noise generated by the Reduced-Wetland-Impact Alternative would be less than significant as well with NOI-1b implemented.

As with the proposed project, implementation of the Reduced-Wetland-Impact Alternative would not likely require impact equipment that could generate substantial ground vibrations. However, similar to the proposed project, implementation of the Reduced-Wetland-Impact Alternative could potentially involve some blasting that would generate vibration, but Mitigation Measure NOI-2 would reduce blasting impacts to a less-than-significant level. Because of the type of land uses (residences, open space, roadways) and the resulting construction activities, vibration impacts would not differ substantially from the proposed project.

Because the project location would be the same as for the proposed project, development under the Reduced-Wetland-Impact Alternative would also not be located near any public or private airports. However, as discussed in Section 3.10, *Noise and Vibration*, the site experiences aircraft overflight noise from aircraft on flight paths to Mather field that is significant and unavoidable, even with mitigation identified in the County's 2004 General Plan EIR. This impact would be the same under the Reduced-Wetland-Impact Alternative as under the proposed project.

Population and Housing

Compared to the proposed project, the Reduced-Wetland-Impact Alternative would reduce the total number of dwelling units from 1,000 to 915. As with the proposed project, these housing units fall within the population projections for El Dorado County. Using data from the El Dorado Hills census and the 2009–2013 American Community Survey, occupancy of the 915 dwelling units associated with this alternative would be expected to increase the county's population by approximately 2,509 people, as opposed to 2,618 under the proposed project. The Reduced-Wetland-Impact Alternative would result in slightly less growth than the proposed project and would also not result in substantial population growth.

The project area currently contains no housing units. Therefore, as with the proposed project, development under this alternative would not displace any existing housing units or people, or necessitate the construction of replacement housing elsewhere, but would instead result in the creation of additional housing units on a largely undeveloped site presently surrounded by existing residential and commercial uses.

Public Services and Utilities

Impacts on public services and utilities under the Reduced-Wetland-Impact Alternative would be similar compared to those of the proposed project. The number of dwelling units would decrease from 1,000 under the proposed project to 915. The slightly fewer dwelling units and, therefore, slightly fewer residents expected under this alternative would also result in slightly less demand on fire, police, and library services. This alternative would result in 620 school-age children compared to 677 under the proposed project, resulting in a slightly reduced demand on schools. The El Dorado Union High School District and the Buckeye Union School District collect taxes through the El Dorado Schools Financing Authority Community Facilities District, which provides funds for capital facilities to serve students generated from the new development (SchoolWorks 2014:53), or through development impact fees. Increased school enrollment would not cause significant environmental effects; rather, it would cause only social effects. Similarly, impacts on libraries are of a social nature and would not have environmental effects.

The Reduced-Wetland-Impact Alternative would result in greater annual demand for potable water than the proposed project (approximately 529 af/yr compared to the proposed project's buildout demand 450 af/yr). This is primarily because there would be substantially more low-density units (VRL) than under the proposed project (203 units compared to 37 units), and these unit types have the highest demand factor. For the remaining product types, the water demand would be approximately the same as under the proposed project. This alternative would also have greater oak woodland replacement acreage than the proposed project (38 acres compared to approximately 15 acres [rounded]), requiring more irrigation than under the proposed project.[5]

The Reduced-Wetland-Impact Alternative would result in a slightly decreased demand on wastewater. Whereas the proposed project would result in a demand of 0.21 mgd, the Reduced-Wetland-Impact Alternative would result in 0.19 mgd.[6] Projections of flows in EID's *Wastewater Facilities Master Plan* (WWFMP) are based on the approved land uses in the project area, which, as shown in Table 3.12-11 in Chapter 3-12, are 0.17 mgd. Therefore, the Reduced-Wetland-Impact Alternative would result in 0.02 mgd less demand than the proposed project. As such, similar to the proposed project, the El Dorado Hill WWTP would have capacity to accommodate flows from the Reduced-Wetland-Impact Alternative.

Recycled water, solid waste services, electricity, natural gas, and other energy services demand would be slightly less than under the proposed project. As described in Section 3-12, *Public Services and Utilities*, Impact PSU-9, the same energy- and resource-conserving effects would occur under this alternative. However, as compared to the proposed project, this alternative would result in fewer dwelling units and residents, thereby resulting in a decreased demand for energy. Impacts on utilities would be less than significant under the Reduced-Wetland-Impact Alternative, as under the proposed project, although mitigation measures identified for the proposed project would be necessary to mitigate impacts from the expansion of and connection to infrastructure and offsite improvements.

Recreation

Development under the Reduced-Wetland-Impact Alternative would result in the construction of 915 dwelling units, including 353 multifamily and 562 single-family housing units. Using the County's park-planning household sizes of 3.3 people per single-family residential unit and 2.1 people per multifamily unit, the Reduced-Wetland-Impact Alternative would be expected to introduce approximately 2,596 park users into the area, compared to 2,664 new park users for the proposed project. This would be approximately 68 fewer park users compared to the proposed project. The Reduced-Wetland-Impact Alternative would provide 12 acres of civic-limited commercial, which could be developed for recreational uses, but no new parkland, compared to the proposed project's 16 acres of parks plus 11 acres of civic–limited commercial that could be developed for recreation uses. Effects of the Reduced-Wetland-Impact Alternative on the deterioration of existing neighborhood parks would therefore be expected to be greater than those associated with the proposed project, though still less than significant. The 135 units in Village D1 already satisfy Quimby requirements. Thus, to comply with the Quimby Act, the Reduced-Wetland-

[5] 203 low density residential units*0.80 af/yr + 159 low (5-8 du/ac) density residential units*0.48 af/yr +200 high (8-14 du/ac) residential units*0.38 af/yr + 200 multifamily units*0.16 af/yr + 12 ac park*2.77 af/yr + 38 ac oak mitigation*1 af/ac/yr + construction (2 af/yr) + non-revenue water (13%) = 529 acre-feet/year.

[6] 362 low and medium density residential units * 240 gpd/EDU = 86,880 gpd. 553 medium high and high residential units * 180 gpd/EDU = 99,540 gpd. 86,880 + 99,540 = 186,420 average dry weather flow, or 0.19 mgd.

Impact Alternative would be required to dedicate 10.7 acres of parkland, or pay in-lieu fees, to accommodate the 2,596 park users.

The Reduced-Wetland-Impact Alternative would not involve construction of any new parks and may require the construction of new offsite recreational facilities to serve new residents. With implementation of mitigation measures identified for offsite improvements for the proposed project, this impact would likely be less than significant. While there is no impact associated with the adverse physical effects on the environment from the construction of new facilities under the proposed project, it is a potential impact under the Reduced-Wetland-Impact Alternative.

Traffic and Circulation

The overall impacts on traffic and circulation under the Reduced-Wetland-Impact Alternative would be similar in mechanism (additional traffic volumes associated with residential development) to those under the proposed project but of a lesser magnitude. Slightly fewer residential units would be developed under the Reduced-Wetland-Impact Alternative (915) as compared to the proposed project (1,000). The public trail system that would be constructed under the proposed project would not be constructed under the Reduced-Wetland-Impact Alternative, and planned open space south of Serrano Parkway would require the pedestrian crossing of US 50 to be located outside of the project area and would not allow for the establishment of vehicle and pedestrian connections to existing retail and roadways in this part of the project area.

This alternative could result in slightly fewer intersection LOS, roadway segment, and freeway facility impacts associated with traffic and circulation on roadways in proximity to the project area, as well as fewer construction-related traffic impacts. For example, 9,099 gross trips would be generated by the proposed project, compared with approximately 8,300 as a result of the Reduced-Wetland-Impact Alternative. In addition, this alternative would include an additional connection to an existing residential neighborhood in Parkview Heights, which could increase traffic on existing local streets, including Gillette Drive. This addition of new trips and a new connection to existing local streets could result in significant LOS impacts or contributions to cumulative impacts and therefore could require mitigation measures similar to those identified in conjunction with the proposed project. Similarly, demand for transit services and facilities associated with this alternative would be anticipated to be similar to those estimated for the proposed project. Because demand exceeds capacity at existing park-and-ride facilities, this could result in a significant impact, requiring Mitigation Measure TRA-1d. The lack of a public trail system and inability to facilitate a pedestrian crossing of US 50 within the project area could conflict with associated County goals for providing a safe and accessible non-motorized transportation network, which would be a significant impact, requiring mitigation, including Mitigation Measure TRA-1c and other measures required for providing connectivity in and around the Serrano Westside planning area. Mitigation Measure TRA-5 identified to reduce impacts under the proposed alternative would be required for this alternative to reduce construction traffic impacts to a less than significant level.

Additionally, the proposed Park Drive Extension, which would provide roadway capacity parallel to US 50 and would be accommodated by the proposed project, would not be feasible under the Reduced-Wetland-Impact Alternative because the area between Serrano Parkway and US 50 would be designated for open space uses.

Application of Screening Criteria

Ability to Meet Project Objectives

The County's primary objective for the proposed project is to create development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. The Reduced-Wetland-Impact Alternative would make efficient and feasible use of existing infrastructure, and it would promote a sense of community. The Reduced-Wetland-Impact Alternative would, to some extent, meet 10 of the 15 project objectives:

- Fulfill regional land use objectives by achieving MTP/SCS Consistency.
- Curtail suburban sprawl.
- Assist in meeting future RHNA needs.
- Broaden the housing stock in El Dorado Hills.
- Provide a strong community identity and quality built environment.
- Utilize existing infrastructure and public services.
- Encourage future transit opportunities.
- Provide opportunities for recreational facilities in El Dorado Hills.
- Protect important cultural resources.
- Foster sustainable communities.

The lack of public trail system and pedestrian crossings from the Serrano Westside Planning area and over US 50 would not result in a walkable community, and objectives related to pedestrian and bicycle safety and connectivity would not be met. This alternative would also develop the ridgeline in Village D1, and therefore would not meet objectives to maintain the character of the natural landscape or minimize impacts on oaks.

Impact Avoidance

Although the Reduced-Wetland-Impact Alternative would not altogether eliminate any impact, it would substantially reduce impacts on wetlands and on special-status species that occupy wetland habitat, but it would increase impacts on oak woodlands. This alternative would also result in development of slightly fewer acres and approximately 9% fewer dwelling units and would therefore result in very slight reductions of impacts related to air quality, population, public services, and vehicle traffic. This alternative would introduce a significant and unavoidable noise impact related to siting sensitive uses near US 50 and would result in a greater impact than the proposed project because occupied residential uses would be close to US 50. Impacts on geology and soils, paleontological resources, greenhouse gas emissions, and hydrology, water quality and water resources would be slightly reduced. Aesthetic impacts would increase slightly due to development on ridgelines. Potential impacts related to the need for and construction of new recreational facilities which would not exist under the proposed project, would be increased under the Reduced-Wetland-Impact Alternative, although likely to a less-than-significant level.

Feasibility

Implementation of the Reduced-Wetland-Impact Alternative would likely be economically feasible as the reduction in residential units is less than 10%.

4.4 Environmentally Superior Alternative

CEQA requires an EIR to examine a range of feasible alternatives to a proposed project. State CEQA Guidelines Section 15126.6(e)(2) requires that an EIR identify which of those alternatives is the environmentally superior alternative. The *environmentally superior alternative* is considered to be the alternative to the proposed project that has the least environmental impact, compared to the proposed project. If, in the course of identifying the environmentally superior alternative, the No-Project Alternative is found to be the environmentally superior alternative, then Section 15126.6(e)(2) of the State CEQA Guidelines further requires that an EIR identify which among the other alternatives is the environmentally superior alternative. Consequently, although the No-Project Alternative is evaluated and presented for comparison purposes, determination of the environmentally superior alternative in this chapter primarily reflects the differences in impacts among the remaining alternatives. Determination of the environmentally superior alternative uses the impact evaluations of the proposed project and of each alternative in a comparative process. The impacts of each alternative are identified and compared to those of the proposed project. The type and relative magnitude of each alternative's impacts are evaluated, and the alternative found to have the least impact, as compared to the others, is determined to be the environmentally superior alternative.

Table 4-2 provides a comparison of the level of impacts under the alternatives considered in this Draft EIR as compared to the proposed project. In many instances, the potential effects would be similar, meaning that the overall outcome of implementing the proposed project compared to any one of the alternatives would generally result in the same type and magnitude of effects on a specific resource even though the approach of the alternatives differ in some ways from the proposed project.

As shown in Table 4-2, the No-Project Alternative was determined to be environmentally superior. Although it still entails development and is, therefore, not a "no-build," the reduced footprint and reduced overall dwelling units result in lesser environmental impacts overall. 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]). Of the two remaining alternatives, the Reduced-Density Alternative appears to be the environmentally superior alternative. The Reduced-Density Alternative would result in the construction of 672 dwelling units and develop 211 of the 341 acres on the project site. It would also provide more pedestrian facilities than the Reduced-Wetland-Impact Alternative (but not the US 50 overcrossing) and a recycled water line extension.

The Reduced-Density Alternative would facilitate a walkable community, more than would the Reduced-Wetland-Impact Alternative. Though the larger overall footprint (approximately 50 acres more than the proposed project) would result in more potential to affect "on the ground" resources, such as biological, paleontological and archaeological resources and hydrology and water resources, the development of far fewer residential units (328 less than the proposed project) would result in

less traffic and fewer traffic-associated air quality and noise impacts. Additionally, impacts on public services, utilities, and recreational facilities would be reduced.

The Reduced-Wetland-Impact Alternative would develop 5 acres less than the proposed project and 43 acres less than the Reduced-Density Alternative, which would avoid potential impacts on the ground resources, including many biological resources, but it would result in more acres of woodland impacts than any other alternative. With the development of 915 dwelling units (only 85 fewer than the proposed project), the reduction in traffic and population-associated impacts would be minimal compared to those of the proposed project and would be greater than those of the Reduced-Density Alternative.

Table 4-2. 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	LTS	LTS w/mit	(>)	LTS	(<)	LTS	(<)
Conflict with Plan	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	
Hazards and Hazardous Materials							
Construction	LTS	LTS	(<)	LTS	(<)	LTS	(<)
Operation	LTS	LTS	(<)	LTS	(<)	LTS	(<)
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.

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.

4.5 Alternatives Considered but Dismissed from Further Evaluation in this Draft EIR

The following alternatives were considered using the process described in Section 4.2, *Alternatives Development and Screening Criteria*, but were dismissed from detailed evaluation in this chapter for the individual reasons stated for each potential alternative.

4.5.1 Alternate Location Alternative

The Alternate Location Alternative would use the same land use and density balance but in a different location. Project objectives for this infill project revolve around providing a walkable community, which includes being located within 1 mile of retail, commercial, and emergency services. Other potential locations with close proximity to retain, commercial, and emergency services are rare in El Dorado Hills proper. A few parcels exist on the south side of US 50 that are located across Latrobe Road from the Town Center commercial area. This area would be less conducive to a walkable community because there are no neighborhood retail services or infrastructure in the commercial center. Additionally, Parker Development does not own those parcels. For these reasons, there is no alternative site available for development of this infill project that would result in a substantial reduction of environmental impacts while meeting the project objectives. Therefore, this alternative was removed from further consideration for detailed analysis in this Draft EIR.

4.5.2 Equestrian Center Alternative

The Equestrian Center Alternative would consist of developing the former El Dorado Hills Executive Golf Course property (approximately 98 acres) as an equestrian center, and the remainder of the proposed project land uses and densities would remain the same as the proposed project. The equestrian facility would be privately owned and available for use by the general public. While this alternative was popular with some residents of the area, it does not meet the County's central objective of creating development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community. The central location of the Serrano Westside planning area is conducive to residential development because it is near infrastructure (sewer, water, roads) and in close proximity to services (fire, police, schools). While the remainder of the project area would be in residential development, the former El Dorado Hills Executive Golf Course is the most walkable portion of the project area. Additionally, while an equestrian center at this location may reduce traffic-related impacts that are associated with residential development, it would also introduce new potential environmental impacts, including odors and pests that come with livestock and traffic issues that come with larger vehicles (horse trailers). A more rural setting would be more conducive to an equestrian center. Because this alternative would result in additional impacts not resulting from the proposed project, and because this alternative would not meet the core project objectives, this alternative was removed from further consideration for detailed analysis in this Draft EIR.

4.5.3 All Parks and Open Space Alternative

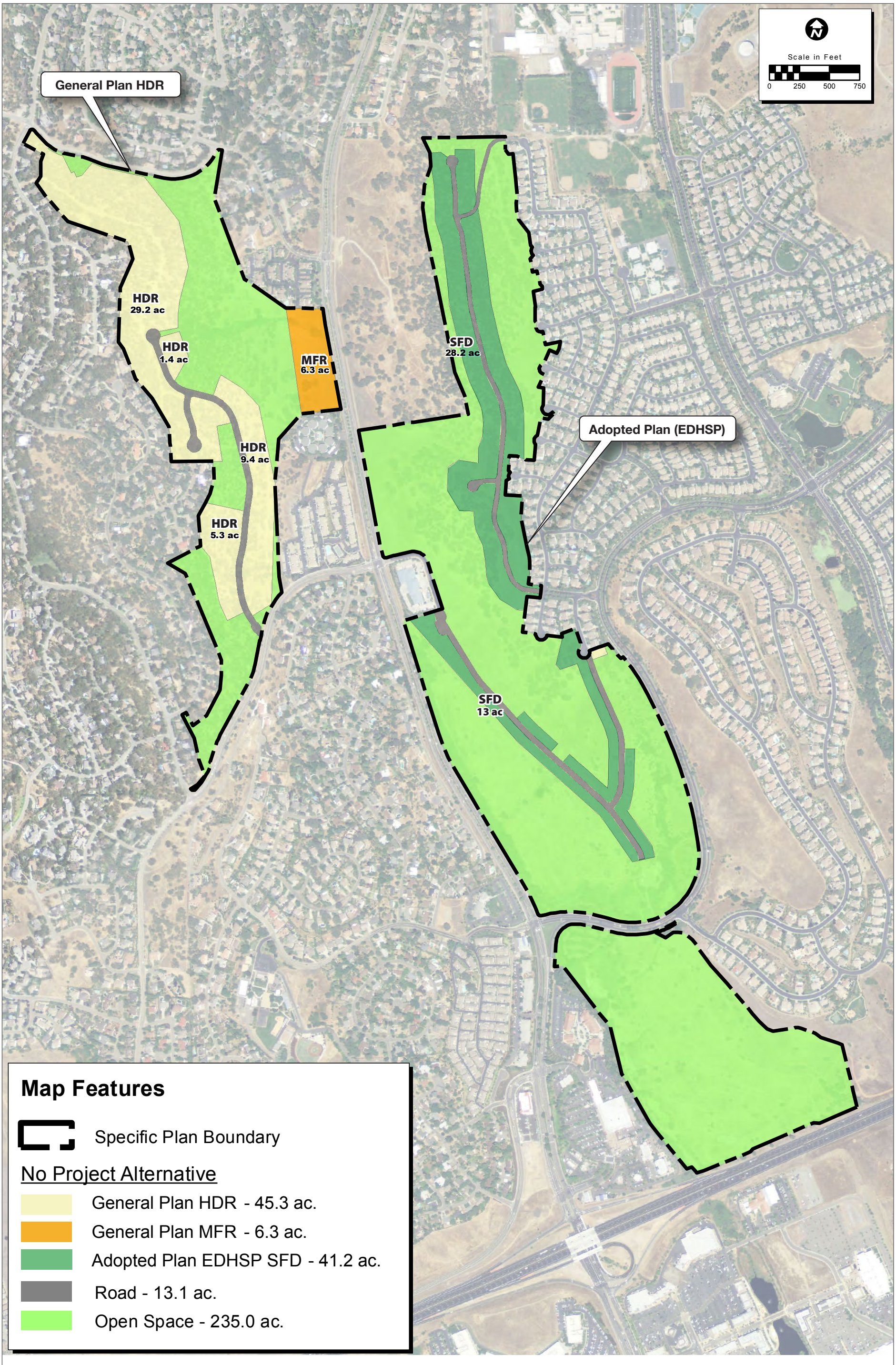
The All Parks Alternative would consist of rezoning and designating the entire approximately 341-acre project site as open space and park uses. There would be no residential development. Park facilities, where feasible, could include indoor and outdoor sports facilities with lighting; storage buildings, restrooms and associated infrastructure; internal circulation (roads and paths); and parking areas. Because such a project would not result in the payment of any park impact fees, the facility would likely be privately owned and operated and would be open to the public. If public, it would likely require a special tax to support the acquisition and development of the park land.

The extent of park facilities that could be developed under this alternative would be a function of the physical constraints of each site, such as topography, oak canopy, wetlands, and cultural resource sites, among others. A brief description of these conditions for each planning area is presented below.

The Serrano Westside planning area encompasses 239 acres, including 50 acres in the EDHSP. An All Parks and Open Space Alternative would likely exclude the area known as Village D1, Lots C and D, which would likely be developed with residential uses as allowed by the current specific plan (whereas the proposed project designates this area as permanent open space and retains 21 acres of oak tree canopy). The golf course portion of the Serrano Westside planning area consists of approximately 98 acres, with about half the acreage ranging from 10 to 20% slope. The El Dorado Hills Community Services District's (CSD's) Master Plan (2007) requires that a community park site be at least 80% level (with a 2% slope) and usable. Given the existing topography, the feasibility of the construction of active recreational facilities would be more costly because of the grading necessary to construct the facilities. In addition, if a project proponent elected to grade the more heavily sloped areas of the former golf course, the visual impact of the extensive grading and likely terracing associated with the flat recreational facilities might not be aesthetically pleasing. The land with greater than 30% slopes would likely be designated Open Space.

The Pedregal planning area contains slopes that vary from 10% to more than 30%, and an oak tree canopy of 70% of the site. Given these two constraints, and in order to protect cultural resource sites, most of the property, 96 acres, would only be suitable for natural open space uses with no recreational opportunities. Of the 6 acres along El Dorado Hills Boulevard, 1 acre would be set aside for wetland preservation. The remaining 5 acres might be suitable for an active recreational facility.

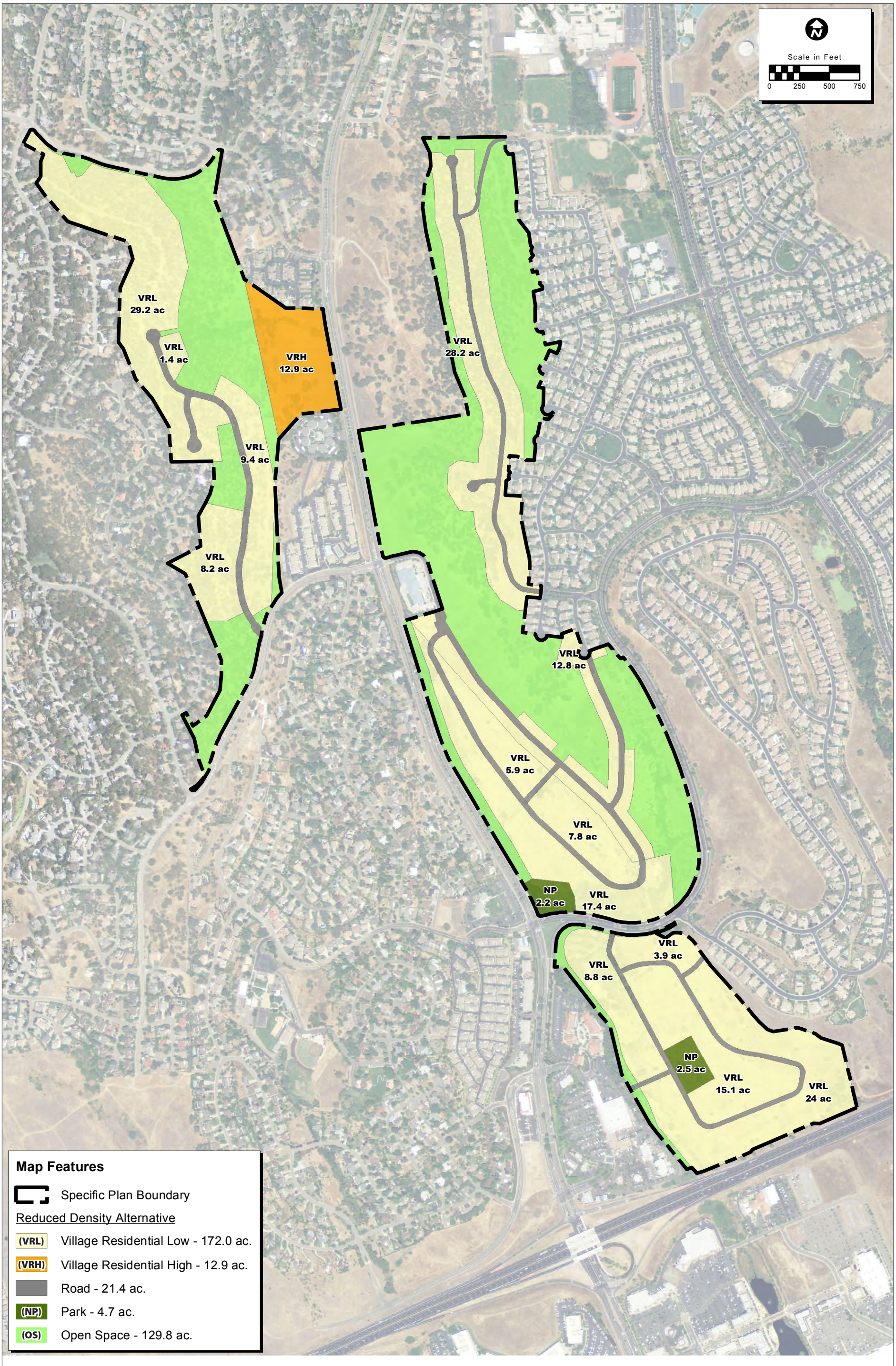
While this alternative was popular with some members of the public and local agencies, it does not meet the County's central objective of creating development patterns that make the most efficient and feasible use of existing infrastructure and public services while promoting a sense of community as envisioned by the County General Plan. Furthermore, it would eliminate a multifamily housing opportunity as set forth in the County's adopted 2013–2021 Housing Element. Additionally, while athletic fields at this location may reduce peak-hour traffic-related impacts that are associated with residential development, traffic impacts would still result at game times, when athletes and observers would arrive and leave the facility in large numbers at the same time. It would also introduce new potential environmental impacts, including night-time lighting, the visual impact of active athletic fields, and noise associated with sporting events. Because this alternative would result in additional impacts not resulting from the proposed project, and because this alternative would not meet the core project objectives, this alternative was removed from further consideration for detailed analysis in this Draft EIR.



Source: ECORP Consulting,Inc. (2014)

Graphics/00668.12 CEDH/EIR (05-20-14) SS

Figure 4-1
Alternative 1
No Project Alternative



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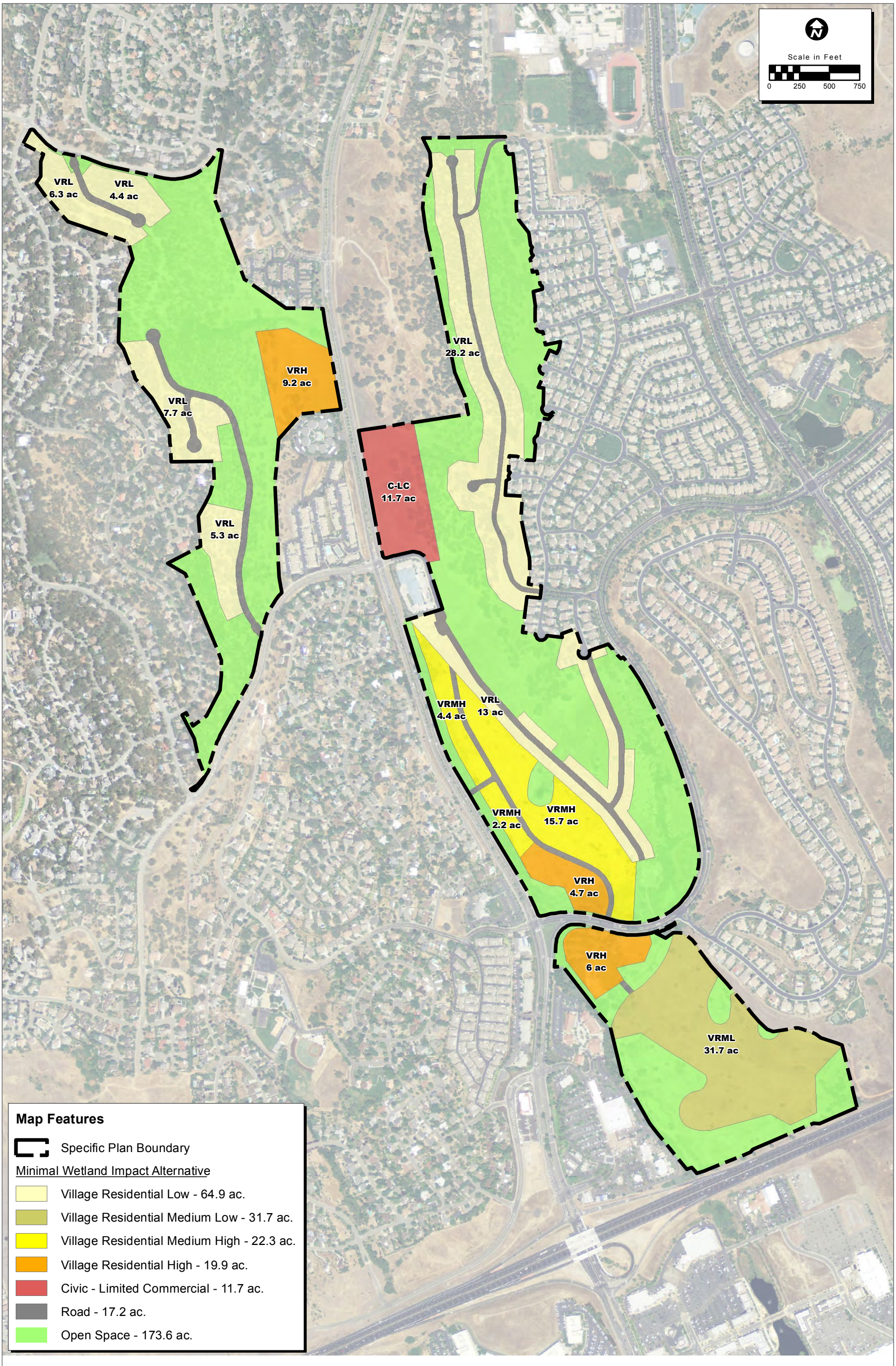
Source: ECORP Consulting,Inc. (2014)

Figure 4-2
Alternative 2
Reduced Density



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Source: ECORP Consulting,Inc. (2014)

Figure 4-3
Alternative 3
Reduced-Wetland-Impact Alternative

Chapter 5
Other CEQA Considerations

5.1 Overview

This chapter includes the following discussions and analyses required by CEQA.

- Cumulative impacts.
- Growth-inducing impacts.
- Significant and unavoidable environmental impacts.
- Significant irreversible environmental impacts.
- Mitigation measures with the potential for environmental effects.

5.2 Cumulative Impacts

The State CEQA Guidelines define a *cumulative impact* as two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. The incremental impact of a project may be considerable when viewed in the context of other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time (State CEQA Guidelines Section 15355).

State CEQA Guidelines Section 15130(b) indicates that an adequate discussion of significant cumulative impacts requires consideration of either of the following.

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan.

This EIR uses a combination of both approaches. That is, the cumulative analysis is initially based on the adopted general plan (the projections approach based on projected population at the planning horizon under the *El Dorado County General Plan* [County General Plan]) supplemented by a list of additional projects that are not currently included in the County General Plan. This combined approach is used to determine whether significant cumulative impacts would occur.

In reaching a conclusion for each resource area (i.e., the topics analyzed in Sections 3.1 through 3.14 of Chapter 3, *Impact Analysis*), five factors were considered: (i) the geographic scope of the cumulative impact area for that resource, (ii) the timeframe within which project-specific impacts could interact with the impacts of other projects, (iii) whether a significant adverse cumulative condition presently exists to which project impacts could contribute, (iv) the significance of the

incremental project-specific contribution to cumulative conditions, and (v) whether any cumulative impact is significant.

For the purpose of this EIR, significant cumulative impacts would occur if impacts related to the implementation of the project, combined with the environmental impacts of the planning horizon under the County General Plan and the additional projects indicated below, would result in an adverse significant effect. For an impact to be considered cumulative, these incremental impacts and potential incremental impacts must be related to the types of impacts caused by the project and evaluated in Chapter 3, *Impact Analysis*.

5.2.1 Cumulative Scenario

The cumulative analysis considers impacts of the proposed Central El Dorado Hills Specific Plan (CEDHSP) together with the planning horizon under the County General Plan and other reasonably foreseeable projects producing related impacts, as described below.

General Plan Updated Planning Horizon

The County General Plan, adopted in 2004, presents the County's comprehensive, long-term vision for physical development and resource conservation. The County General Plan analyzed two scenarios, a 20-year planning horizon (estimated to be 2025 at the time of preparation of the 2004 County General Plan) and a maximum theoretical density buildout. The maximum theoretical density permitted under buildout of the County General Plan would result in the development of up to 78,692 new housing units beyond the 44,708 units existing in 1999, for a total of 123,400 dwelling units housing an estimated 317,692 people within the unincorporated west slope area (El Dorado County 2003). The maximum commercial and industrial development permitted at County General Plan maximum theoretical density buildout is estimated to be 6,684 acres, at a floor area ratio (FAR) of 0.25, accommodating a total of 117,122 jobs (El Dorado County 2003, 2004a). In 2007, the County Board of Supervisors approved increasing the FAR to 0.85, accommodating a total of 245,543 jobs (El Dorado County 2007a). Practical constraints, such as slope, waterways, biological resources, and availability of roadways and infrastructure, make it unlikely that maximum theoretical density buildout could be achieved and certainly not within the planning horizon of the County General Plan. In addition, the proposed project is anticipated to be built out within the 20-year planning horizon and therefore, the planning horizon is used as a basis for this cumulative scenario.

The County's forecasts for the 2004 County General Plan 2025 planning horizon calculated that growth to the planning horizon would be an additional 32,491 new housing units beyond the 44,708 units that existed in 1999, for a total of 77,199 units. Approximately 15,000 new housing units have been built since 1999, leaving approximately 17,500 remaining housing units to be built in the planning horizon.

In 2013, the County updated the housing and employment growth projections to assist in the preparation of the updated County Travel Demand Model, which was used for the CEDHSP traffic analysis. These projections, developed by BAE Urban Economics (2013) cover the western slope of El Dorado County (excluding Placerville) and examine growth from 2010 to a planning horizon (now labeled 2035). Growth allocations based on the distribution of new development in the County between 2000 and 2011 and development applications from 2006 through present were used to extrapolate future growth. In 2010, there were 59,668 existing housing units. For 2035, it was

projected that there would be 77,077 housing units. The BAE 2013 study projects that by 2015, 62,803 housing units exist, leaving approximately 14,300 housing units to be built in the 2035 planning horizon. The 2035 planning horizon forecasts differ only slightly from the 2025 planning horizon forecasts done in 2002. This is largely a result of the economic recession in the late 2000s, and the resulting drastic reduction in the rate of growth in El Dorado County. Detail on the methodology for the forecasts is presented in the BAE memo, available on the County's website at https://www.edcgov.us/Government/Planning/BAE_Report.aspx.

Among the specific projects included in planning horizon for the County General Plan are those considered to be existing commitments—projects for which a tentative map or development agreement existed before approval of the 2004 County General Plan but that are not built out at the time the 2004 County General Plan was adopted. These projects have the potential to contribute 14,565 dwelling units to the County General Plan total (El Dorado County 2003). Since adoption of the County General Plan, several of the approved projects have decreased in size or were partially built out and are now expected to supply an additional 7,216 of the possible 14,300 new dwelling units. These projects include the 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 (Table 5-1).

Table 5-1. El Dorado County Approved Projects – 2004 County General Plan

	Residential Uses (dwelling units)			Commercial and Industrial/Research and Development Uses (acres)	Parkland and Open Space Uses (acres)
Project	Entitled	Built	Remaining		
Bass Lake Hills Specific Plan	1,458	99	1,359	0	31 – Park 151 – OS
Carson Creek Specific Plan	1,700	460	1,240	99	37 – Park 199 – OS
El Dorado Hills Specific Plan	6,162	3,935[a]	2,227	301	60 – Park 808 – OS
Marble Valley Master Plan	398[b]	0	398	0	54 – Park 1,271 – OS
Promontory Specific Plan	1,100	709[c]	391	7	35 – Park 101 – OS
Valley View Specific Plan	2,840	1,239	1,601	40	86 – Park 617 – OS
Total	13,658	6,442	7,216	447	303 – Park 3,147 – OS

Source: El Dorado County 2003.

[a] As of March 14, 2013.

[b] From approved 1997 Master Plan

[c] Includes 59-109 lots that are recorded but not yet built.

Bass Lake Hills Specific Plan

The 1,196-acre Bass Lake Hills Specific Plan is approximately 3 miles east of the Sacramento–El Dorado County line, north of U.S. Highway 50 (US 50) between El Dorado Hills and Cameron Park, and abuts the El Dorado Hills Specific Plan (EDHSP) on the east. The Bass Lake Hills Specific Plan was adopted in 1995 and allows development of 1,458 dwelling units with 31 acres of parks and 151 acres of open space (El Dorado County 1995a). As of 2013, only 99 dwelling units had been constructed.

Carson Creek Specific Plan

The Carson Creek Specific Plan, adopted in 1996 and amended in 1999, allows development of an approximately 710-acre area along the Sacramento County line, south of US 50 and adjacent to the El Dorado Hills Business Park. Buildout of the Carson Creek Specific Plan would allow 1,700 dwelling units, though only 460 have been constructed as of 2013, up to 40,000 square feet (sf) of commercial uses, up to 449,605 sf of research and development uses, and 780,279 sf of industrial uses, 37 acres of public parkland, and 199 acres of open space (El Dorado County 1999).

El Dorado Hills Specific Plan

The El Dorado Hills Specific Plan allows development of up to 6,162 dwelling units, 301 acres of commercial uses, 60 acres of parks and public facilities, and 808 acres of open space uses on a 3,646-acre site north of US 50 and south of Green Valley Road, as well as approximately 158 acres of commercial land uses south of US 50 (El Dorado County Community Development Department 1988). Only 3,935 dwelling units have been constructed as of 2013.

Marble Valley Master Plan

The Marble Valley Master Plan development, a 2,418-acre area south of US 50 between the Bass Lake Road and Cambridge Road interchanges, was approved by the County Board of Supervisors in 1997 for 398 dwelling units, 54 acres of parks and public facilities, and 1,271 acres of open space (El Dorado County 2003). However, this project was not constructed, and there is a new proposed plan, which is described under *Other Projects*, below.

Promontory Specific Plan

The Promontory Specific Plan allows development of an approximately 1,000-acre area, south of Folsom Reservoir and north of US 50, with up to 1,100 dwelling units, 7 acres of commercial and office uses, 35 acres of parks and public facilities, and 101 acres of public open space (El Dorado County 2003). As of 2013, 709 units have been constructed or lots have been recorded.

Valley View Specific Plan

The Valley View Specific Plan area covers 2,837 acres south of US 50 in the El Dorado Hills area and allows development of up to 2,840 dwelling units, 40 acres of commercial uses, including mixed-use development, 86 acres of multi-use open space (parks and public facilities), two schools, and 617 acres of passive open space and buffer areas (El Dorado County 2003). As of 2013, 1,239 dwelling units have been constructed.

Other Projects

Other more recent projects not specifically addressed in the County General Plan planning horizon assumptions are the proposed Dixon Ranch residential project, Lime Rock Valley Specific Plan (LRVSP), Saratoga Estates (formerly Rancho Dorado) residential development, San Stino residential project, Tilden Park subdivision, and Village of Marble Valley Specific Plan (VMVSP). In addition, the El Dorado Town Center Apartments, a 250-unit apartment complex approved by the County in 2014, was originally planned as a hotel project in Village T of the EDHSP and was included as such in the planning horizon assumptions described above in the County General Plan. However, the change in use from hotel to residential would result in higher density and require a general plan amendment. The locations of these proposed projects are shown in Figure 5-1. Residential and commercial development, and parks and open space lands associated with these projects, are described below and in Table 5-2. In addition, a targeted general plan amendment and zoning ordinance update (TGPA/ZOU) is currently in process, though there are no development projects associated with it.

Table 5-2. Other Projects

Project	Residential Uses		Commercial and Industrial/Research and Development Uses (acres)	Parkland and Open Space Uses (acres)
	Dwelling Units	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 (Rancho Dorado)	316	70.98	0	5.42 – Park 37.04 – OS
San Stino	1,041	375	0	0 – Park[b] 270 – OS
Tilden Park	14	2.97	8.22	0 – Park 1.64 – OS
Village of Marble Valley Specific Plan (as proposed)	3,236[c]	797	57	87 – Park 1,284 – OS
Subtotal	6,262	1,806.55	65.22	100.42 – Park 1,925.68 – OS
Combined Park/OS Total	–	–	–	2,110.10[d]

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] 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] Includes 398 dwelling units already approved. Net new units would be 3,236 – 398 = 2,838.

[d] Combined Park/OS Total includes Dixon Ranch combined park/open space acreage.

Dixon Ranch Residential Project

The proposed Dixon Ranch residential project consists of development of 605 dwelling units, 160 of which would be age-restricted (55 years and older), and a clubhouse, on an approximately 280-acre site south of Green Valley Road near Malcolm Dixon Road (El Dorado County 2012a). The project includes 84 acres of active and passive open space uses consisting of parks, trails, landscaped lots, and natural open space.

El Dorado Hills Town Center Apartments Project

The Town Center Apartments project is a 250-unit apartment complex located at the northwest corner of Town Center Boulevard and Vine Street within the Town Center East Planned Development in El Dorado Hills. The site is within Village T of the EDHSP and was originally planned as a hotel, and as such is included in the County General Plan planning horizon. The project required an amendment to the County General Plan to increase residential density from 24 dwelling units/acre (du/ac) to 55 du/ac, amendments to the EDHSP, rezone, and revisions to the approved Town Center East Development Plan. The County approved the project in 2014 but it is currently under litigation.

Lime Rock Valley Specific Plan

The proposed Lime Rock Valley Specific Plan would allow development of up to 800 residential units on approximately 360 acres, as well as an 8-acre neighborhood park with recreational amenities, and about 333 acres of public and private open space (El Dorado County 2013c). The project site is south of US 50, southwest of the Cambridge Road interchange, along Flying C Road. A portion of the site adjoins the proposed Village of Marble Valley Specific Plan. It is adjacent to the existing Cameron Estates subdivision on the north and the Royal Equestrian subdivision on the south.

Saratoga Estates (Rancho Dorado) Residential Development

The proposed Saratoga Estates (formerly Rancho Dorado) residential project would include development of 316 residential units, 5.42 acres of public parkland, 37.04 acres of open space, and 8.4 acres of public roads in the El Dorado Hills area (El Dorado County 2015). The Rancho Dorado site is north of US 50 and 0.5 mile west of the intersection of US 50 and El Dorado Hills Boulevard. The current Saratoga Estates proposal would result in 131 more dwelling units than originally planned for in the Rancho Dorado project.

San Stino Residential Project

The proposed San Stino residential project would entail 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). Two lots would be set aside for future school, park, or residential development and 270 acres of the site would be devoted to open space uses.

Tilden Park Subdivision

The Tilden Park subdivision consists of a proposed residential and commercial development on a 12.01-acre site north of Wild Chaparral Drive and 500 feet west of Crosswood Drive in Shingle Springs just north of US 50. The Tilden Park subdivision proposes development of 14 residential

units, and a total of 56,500 square feet of commercial development that would include retail, grocery, restaurant and office uses, as well as an 80-unit hotel. The subdivision would dedicate 1.64 acres of land to open space use (El Dorado County 2012b).

Village of Marble Valley Specific Plan

The proposed Village of Marble Valley Specific Plan would replace the existing development agreement for the Marble Valley site, and would allow development of up to 3,236 residential units, 475,000 square feet of non-residential uses, 55 acres of agricultural use, 87 acres of public facilities/recreational use (including 47 acres of public parkland), 1,284 acres of open space, and 61 acres of road impact areas and future right-of-way (El Dorado County 2013b). As such, buildout of the proposed Village of Marble Valley Specific Plan would increase the total number of dwelling units proposed within the Marble Valley site—and the county—by 2,838 beyond what is currently approved and described above as part of County General Plan maximum theoretical density buildout (i.e., the total proposed 3,236 dwelling units, less the 398 already approved).

Targeted General Plan Amendments/Zoning Ordinance Update

El Dorado County (County) is proposing targeted amendments to certain County General Plan policies and land use designations (TGPA) and a comprehensive update to the zoning ordinance (ZOU). The project does not include any site-specific development proposals, although it does include adoption of guidelines for mixed-use development. Rather, it is limited to amendments to County General Plan policies and a comprehensive revision of the zoning ordinance. Policies pertinent to the proposed project include policies to increase the maximum density for the residential portion of mixed use projects in Community Regions from 16 du/ac to 20 du/ac, to amend the multifamily residential (MFR) designation to encourage a full range of housing types, to encourage infill projects. This project is currently in environmental review.

Folsom South of US Highway 50

One other project considered in the cumulative analysis assumes buildout of the grazing land south of US 50 and north of White Rock Road that was annexed to the city of Folsom in 2012 and is slated for suburban development.

5.2.2 Analysis of Potential Cumulative Impacts

Aesthetics

The El Dorado National Forest serves as a natural resource area that is generally protected from, and therefore limits, the eastward expansion of mixed-use development that is occurring and is likely to occur within the western portion of the County. Therefore, the cumulative context for aesthetics includes western El Dorado County in areas slated for development, as forested areas to the east would remain largely untouched. Cumulative impacts for aesthetics would occur where a project, when combined with cumulative projects, would contribute to the substantial degradation or alteration of the existing visual character of the vicinity and regional context, associated scenic vista views, and views from scenic highways. Such views can be altered by extensive vegetation removal and landform alteration and the introduction of incompatible constructed features, all which act to transform the visual landscape of the vicinity and the region as a whole. In addition,

new sources of light can create light pollution and ambient glow that can affect nighttime views, for example, by reducing the amount of visible dark sky and stars and introducing nuisance light spill.

Development of the CEDHSP would result in the impacts on visual resources identified in Section 3.1, *Aesthetics*, and would contribute to cumulative visual impacts in the area. These impacts include temporary visual changes as a result of construction activities, changes to scenic resources along important public scenic viewpoints, changes in visual character and quality at the project site, and changes in light and glare at the project site and vicinity introduced from new lighting sources.

The land use changes associated with the cumulative scenario, including those anticipated within the planning horizon of the County General Plan and other projects, have the potential to contribute similar impacts on aesthetic/visual resources. These impacts would also result from construction activities; the development of roadways, parking areas, and buildings; alteration of the area's visual character, and the introduction of new light sources that would change the visual resources in the area.

While construction activities are temporary, they would require the removal of mature native oak trees on the site, which is largely undeveloped. However, the proposed project is designed to retain large portions of the oak woodlands onsite. While construction would occur near sensitive visual receptors, the quality of available views would be affected for only a short time because the proposed project is fairly small; furthermore, it is located in a developed area already accustomed to construction activities. Accordingly, construction would not result in a considerable contribution to cumulative impacts related to construction in the area.

As described in Section 3.1, *Aesthetics*, the area has rolling terrain and affords quality scenic vistas, but the proposed project retains ridgelines and limits development that would be seen in vista views. It would also minimally affect views from important public scenic viewpoints because the Village Park (VP) land use serves as an open space area to buffer views of development. County policies, zoning ordinances, design review, and the proposed CEDHSP ensure that the proposed project minimizes visual impacts to the degree possible. In addition, Mitigation Measure AES-2 would further reduce the appearance of buildings located within oak woodland and grassland areas, as seen in vista views and views from US 50, and would reduce visual impacts associated with the proposed project so that they are not cumulatively considerable. In addition, while the project site is unlit open space, the surrounding area is currently well-lit. Therefore, lighting associated with the proposed project would not substantially increase the amount of glare and nighttime lighting and would not result in a considerable contribution to cumulative impacts related to ambient light glow and light pollution in the area.

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.

Air Quality

The El Dorado County Air Quality Management District (EDCAQMD) considers projects to have less-than-significant cumulative air quality impacts on criteria pollutant emissions if the project satisfies the following conditions.

- Does not require a change in the existing land use designation, such as through a general plan amendment or rezone.
- Does not exceed the "project alone" significance criteria.
- Implements applicable 2009 Ozone Plan emission reduction measures.
- Complies with all applicable district rules and regulations.

As discussed in Section 3.2, *Air Quality*, under Impact AQ-1, while the proposed project requires an amendment to the County General Plan, anticipated growth associated with the proposed project would not exceed the Sacramento Area Council of Government's (SACOG's) socioeconomic projections for the region. Moreover, the CEDHSP Sustainability Element outlines several policies that would contribute to reducing criteria pollutants. These policies are consistent with reduction measures in the 2009 Ozone Plan and SACOG's Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). The proposed project also would comply with applicable EDCAQMD rules and regulations, including Rules 223-1 and 223-2. Despite the proposed project's sustainability elements and consistency with the MTP/SCS, combined construction and operational reactive organic gas (ROG) and nitrogen oxide (NO_X) and operational ROG emissions are estimated to exceed EDCAQMD's project-alone significance criteria (see Impact AQ-2) and could therefore impede regional attainment of the National Ambient Air Quality Standards. Accordingly, based on EDCAQMD's analysis criteria outlined in the district's CEQA Guidelines, the proposed project's contribution is considerable and would result in a cumulatively considerable air quality impact from criteria pollutant emissions (Impact AQ-3). The cumulative impact would remain significant and unavoidable even with implementation of mitigation measures.

With respect to health risks from diesel particulate matter (DPM), construction of cumulative projects would generate DPM, and the proposed project would contribute to these emissions. Health risks associated with exposure to diesel exhaust are typically associated with chronic exposure (70 years). Project construction activities are of substantially shorter duration (15 years in the case of the proposed project) and typically intermittent rather than continuous. DPM concentrations, and in turn, the associated health risks, dissipate as a function of distance from emissions sources. Thus, cumulative construction DPM impacts would be site-specific and localized would not combine with other projects. The proposed project would reduce its contribution to cumulative construction DPM to levels that would be less than cumulatively considerable through Mitigation Measure AQ-2b, which requires U.S. Environmental Protection Agency (EPA) Tier 3 or cleaner engines during years 2016–2022 of construction and EPA Tier 4 or cleaner thereafter. Alternatively, the applicant can pursue an alternative compliance program to achieve a minimum project-wide fleet-average reduction of 30% for NO_X, compared to the most recent California Air Resources Board (ARB) fleet average at time of construction. Similar requirements would apply to other construction projects, particularly as DPM emissions regulations become more stringent. The proposed project would be a

minimal source of operational DPM because it is primarily a residential project (Impact AQ-4). Therefore, it would not substantially contribute to cumulative impacts, and the project's impact would be less than cumulatively considerable.

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 contribute to any new localized violations of the 1-hour or 8-hour ambient air quality standards under cumulative plus project conditions. The proposed project alone would not cause violations of the applicable standards at modeled intersections under existing 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.

With respect to health risks from naturally occurring asbestos (NOA), development of cumulative projects could expose people to NOA during construction, if NOA is present. Risks from NOA exposure would be localized, however, and all projects would be required to demonstrate compliance with El Dorado County Air Quality Management District (EDCAQMD) Rule 223-2 As described in Chapter 3.2, *Air Quality*, exposure to NOA would be less than significant for the proposed project with implementation of Mitigation Measure AQ-4. The proposed project would not result in a cumulatively considerable contribution to NOA impacts, and the cumulative impact would be less than significant.

Biological Resources

As described in the *Aesthetics* discussion above, the El Dorado National Forest generally limits the eastward expansion of mixed-use development that is occurring and is likely to occur within the western portion of the County. Since the National Forest to the east would remain largely undeveloped, the cumulative context for biological resources would include only western El Dorado County, which comprises the region of the County slated for the most development. The projects occurring in the western County include those identified in the County General Plan planning horizon (Table 5-1) and other projects (Table 5-2). In combination, these projects could affect sensitive biological resources within the western County. Cumulative impacts for biological resources would occur where a project, when combined with cumulative projects, would contribute to a substantial loss of a sensitive biological resource, including sensitive natural communities, waters of the United States, and special-status species. Substantial loss can occur due to removing vegetation, filling drainages and wetlands, removing special-status plants, and take of special-status wildlife.

The project would result in removal of vegetation and grading of portions of the site, thereby creating the potential to contribute to the cumulative loss of sensitive biological resources in the region. Therefore, combined with other past, present, and probable future projects and programs in the region, construction associated with the project could result in a cumulative impact on oak woodland, riparian woodland, waters of the United States, and special-status species and their habitats. However, as described below, the project's contribution to cumulative impacts would not be cumulatively considerable. Cumulative biological resources impacts would be less than significant. Further, the project is an infill site surrounded by urban development and is not connected to any regional open space or large-scale natural habitat areas.

Simultaneous construction of other development projects in the vicinity of the project site could result in significant impacts on oak woodland habitat and the common wildlife that use this habitat.

Considering past, present, and future development in this region and the expected loss of several acres of oak woodlands due to projects in the western County, there would be cumulative impacts on oak woodland, and the proposed project could result in a considerable contribution to cumulative impacts on oak woodlands in the region. However, oak woodland and the common wildlife species that utilize these areas are not particularly rare in the state, and the proposed project would remove approximately 14 acres of oak woodland, retain 85% of the oak canopy acreage of the site (roughly 80 acres), and plant an additional 14 acres with oaks, as required under the County General Plan oak woodland policies. Therefore, project compliance with CEQA Section 21083.4 pertaining to oak woodlands and the County General Plan Policy 7.4.4.4 Option A, which would be ensured through implementation of Mitigation Measures BIO-1a through BIO-1d, would reduce the project's contribution to cumulative effects on oak woodlands and the associated wildlife species supported by oak woodland habitat. Development of the Serrano Westside planning area would result in less loss of oak woodland habitat as it would under approved development under the El Dorado Hills Specific Plan associated with Lots C and D of Serrano Village D-1.

The proposed project would result in the removal of 2.4 acres of riparian woodland, which provides habitat for nesting birds, tree-roosting bats, and other native wildlife species; however, avoidance, minimization, and compensatory mitigation for this impact would reduce the project impact to a less-than-significant level. Many of the past, present, and future development projects would also result in loss of riparian habitat, resulting in a cumulative impact. However, because the project would affect a relatively small acreage of riparian habitat and mitigation measures have been identified that would fully compensate for the loss (mitigation measure BIO-2), the project would not make a considerable contribution to this cumulative impact.

Cumulative projects could result in the loss of jurisdictional wetlands and waters of the U.S/waters of the State. Direct and indirect impacts on these features are regulated by the U.S. Army Corps of Engineers and Regional Water Quality Control Board, requiring permits under Clean Water Act Sections 404 and 401, respectively. The proposed project would avoid many wetland and water features through project design, in accordance with CEDHSP policies 5.7 through 5.10. However, some impacts would occur, and the proposed project would mitigate its direct permanent impacts on wetlands through implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-3a, BIO-3b, and BIO-4, which would ensure no net loss. Therefore, the project would not result in a cumulative contribution and the impact would be less than cumulatively considerable.

Onsite and offsite project construction could affect special-status plants and could remove breeding and upland habitat for California red-legged frog, and result in potential mortality or disturbance of listed vernal pool branchiopods, valley elderberry longhorn beetle, Pacific pond turtle, Blainville's horned lizard, nesting birds, and tree-roosting bats. The avoidance and minimization measures and compensatory mitigation for California red-legged frog habitat would reduce these project impacts to a less-than-significant level. Many of the past, present, and future development projects in the western County would also result in impacts on California red-legged frog habitat and mortality or disturbance of special-status wildlife species, resulting in a cumulative impact. Because Mitigation Measures BIO-5 through BIO-10 would avoid or minimize impacts resulting from construction of the proposed project to less-than-significant levels, and the project would not affect the recovery of any special-status species, the project would not make a considerable contribution to this cumulative impact. The proposed project is located within an area of existing development and is not adjacent to any designated important biological corridors or ecological preserves, so no impact on migratory corridors for larger wildlife species would occur as a result of project development. The past, present, and future development projects in the area would restrict wildlife movement and result in

a cumulative impact. However, the project would not make a considerable contribution to this cumulative impact by providing 169 acres of open space (168 acres of natural open space and a 1-acre neighborhood park), retaining large areas of oak woodland, and replacing oak woodland that would need to be removed (Mitigation Measure BIO-1d). In addition, under CEDHSP Policy 5.31, the project applicant has committed to preparing an open space management plan (OSMP) that guides the conservation and protection of oak woodland and wildlife uses within designated open space in the project area in perpetuity

Cultural Resources

The area considered for cumulative impacts on cultural resources is based on past cultural boundaries and can vary depending upon the period. Generally, for prehistoric resources, the area examined for cumulative impacts can be defined as the ethnographic area of the Native American groups most likely associated with potential resources. For this project, the ethnographic area consists of the drainages of the lower Feather, Yuba, Bear, and American Rivers, between the Sacramento River and the crest of the Sierra Nevada Mountains. For historic resources, the cultural area could be somewhat narrower, comprising the foothills of the Sierra Nevada Mountains, extending to the City of Sacramento.

There are no built environment resources that are historical resources located in the project area. As such, the project would not impact built environment historical resources and could not contribute to a cumulative impact.

Implementation of the project would potentially result in direct impacts on three known archaeological resources, including a prehistoric period district (the Pedregal Archaeological District or PAD). In addition, there is the potential for currently unknown cultural resources to be adversely affected by the project. These impacts, however, would be avoided or minimized through project design and implementation of mitigation measures that would reduce these project-level impacts to a less-than-significant level.

Construction of other development projects in the vicinity of the project site could potentially result in significant impacts on archaeological resources that meet the criteria for historical resources and human remains, should they be present within the project site or the vicinity of the project site. Based on the landscape of the cumulative projects and their undeveloped nature, and the presence of a known similar archaeological district within the Village of Marble Valley project area, it is likely that additional resources similar to the PAD, or elements that make up the PAD, would be located within the boundaries of these projects. Although each project would seek to identify and evaluate cultural resources and implement mitigation measures designed to reduce project-level effects to a less-than-significant level, a cumulative impact would still result. Though direct impacts would be minimized, it is likely that similar indirect effects on the integrity of the resources would result through impacts on setting, feeling, and association. Therefore, a cumulative impact on prehistoric cultural resources exists in this area of the foothills.

Despite the implementation of mitigation required by state law and protection measures for cultural resources in the County General Plan and Zoning Ordinance, there would be a cumulative impact on cultural resources because of the size and scope of the cumulative projects and the largely undisturbed nature of their locations, and the likelihood of resources similar to the PAD and impacts on them. Though the contributing elements of the PAD would be preserved, the area between and around them that provides the setting, feeling, and association for the National Register of Historic

Places (NRHP)-eligible district would be affected. Even with the implementation of mitigation measures to reduce the CEDHSP's impacts to a less-than-significant level, the project would result in a considerable contribution to a cumulative impact on cultural resources, and the cumulative impact would remain significant and unavoidable.

Geology, Soils, Minerals, and Paleontological Resources

Geology and Soils

The proposed project has a variety of site-specific geological and soil concerns. These include seismicity, soil erosion, expansive soils, and potentially fracturing bedrock to create appropriate conditions for construction and foundations. All of these individual impacts can be reduced to a less-than-significant level by project-specific geotechnical investigation, seismic design standards promulgated by the County building codes and ordinances, and mitigation measures. For cumulative projects, as in the proposed project, the geology and soil impacts are specific to the geographic location of the physical resource and can be mitigated depending on those site-specific conditions. However, because these impacts are specific to their geographic locations, they typically do not combine to create a cumulative impact. Past, present, and future development impacts would not accumulate with the site-specific impacts of the proposed project.

For individual projects, site-specific soil erosion would be reduced to a less-than-significant level by development and implementation of a stormwater pollution prevention plan (SWPPP), adherence to the applicable El Dorado County Grading Ordinance, Subdivision Ordinance, Design and Improvement Standards Manual, and Drainage Manual requirements, and adherence to the recommendations to minimize erosion, runoff, and sedimentation contained in the required site-specific geotechnical report. See *Hydrology, Water Quality, and Water Resources* below for additional information. The cumulative impact would be less than significant.

Minerals

Implementation of the proposed project would not result in the loss of availability of important mineral resource sites designated in a land use plan. Implementation of the proposed project could potentially affect known important mineral resources of value to the region or residents of the state, although at a less-than-significant level. Effects of future development on mineral resources that are currently in operation are unlikely, as these sites are identified in the County General Plan and have established buffer zones. New mineral resources might be found in mineral resource zone (MRZ)-3 and MRZ-4 designations where new and unanticipated mineral development could be proposed. New mineral resource development would undergo environmental and public review, which might prevent or substantially reduce their development. Consequently, there is the potential for a cumulative impact relative to the availability of important mineral resources. However, the potential for the project to impede access to important mineral resources is minimal because there is no known information that would suggest the project area has recently been under consideration for resources of value. Therefore, the proposed project would not result in a considerable contribution to a cumulative impact. The cumulative impact would be less than significant.

Paleontological Resources

Implementation of the proposed project could contribute to regional impacts on paleontological resources. Construction would take place in geologic units sensitive for paleontological resources, such as Quaternary alluvium, which is the unit of highest sensitivity in the project area. This unit, however, is the least extensive unit at the project site and is associated only with drainages. Three records of vertebrate fossils are known from Quaternary units in El Dorado County (University of California Museum of Paleontology 2013). This likely indicates that past development has encountered paleontological resources. Future development in the County can be reasonably expected to disturb additional fossils where sensitive geologic units are present because even localized excavation could damage or destroy important paleontological resources. The greater the extent of excavation, the greater the potential impact on paleontological resources.

The project would result in grading and excavation of portions of the site, thereby creating the potential to contribute to the cumulative damage or destruction of important paleontological resources in the region, if drainages are altered or modified in a manner that would involve substantial disturbance. Therefore, combined with other past, present, and probable future projects and programs in the region, construction associated with the project could result in a cumulative impact on paleontological resources. However, implementation of the mitigation measures to protect paleontological resources identified in this EIR (Mitigation Measures GEO-9a and GEO-9b) would ensure that the project's contribution to the cumulative impact would not be considerable. The cumulative impact would be less than significant.

Greenhouse Gas Emissions

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.

As discussed in Impacts GHG-1 and GHG-2, construction and non-mobile source operational emissions would not violate Sacramento Area Regional draft GHG thresholds, which have been established consistent with the state's 2020 Assembly Bill (AB) 32 reduction goals. The project is also consistent with SACOG's MTP/SCS and, as such, non-mobile source GHG emissions would result in a less-than-significant impact on global climate change. Accordingly, the project's incremental contribution to cumulative GHG impacts is not cumulatively considerable, and the cumulative impact would be less than significant.

Hazards and Hazardous Materials

Construction of development projects requires use of heavy construction equipment (e.g., excavators, backhoes, grading machines, asphalt machines), the operation and maintenance of which would involve the use and handling of hazardous materials, including diesel fuel, gasoline, lubricants, and solvents. Simultaneous construction of the proposed project and other development projects in the vicinity of the project site could potentially result in significant hazards to the public through the routine transport, use, or disposal of hazardous materials, or the release of hazardous

materials into the environment. However, compliance with best management practices (BMPs), and federal, state, and county regulations regarding hazardous materials would minimize the potential for an accidental release of hazardous materials during construction or operation. With the implementation of standard safety measures, the cumulative impact would be less than significant (i.e., the project's contribution to any cumulative impact is not considerable).

The El Dorado Hills area is at a moderate to high risk for wildland fire hazards. Although the proposed project and the cumulative projects would introduce new structural fire hazards to people in the project area, it would not contribute to wildland fire risk because the proposed project would be infill to existing developed areas. Additionally, existing regulations would be in place to minimize fire hazards. To comply with the County General Plan and Fire Hazard ordinances, development projects are required to take steps to minimize fire risk. These include defensible space and fire code requirements, as well as ensuring adequate water supply and preparing a wildfire safety plan. Because the proposed project, along with all other development projects, would be required to satisfy all fire-related policies and ordinances, cumulative impacts would be less than significant, and the project's contribution to cumulative fire impacts is not considerable.

Hydrology, Water Quality, and Water Resources

The cumulative context for hydrology, water quality, and water resources effects (both construction and long-term effects) is the greater Cosumnes and American River watersheds for drainage, flooding, and water quality effects, and the South American and Cosumnes River subbasins for groundwater. Most of the approved specific plans and other projects drain to creeks that are tributary to the Cosumnes River. The Promontory Specific Plan and the Dixon Ranch residential project are drained by creeks that are tributary to the American River.

Hydrology

Cumulative development would alter drainage patterns through the conversion of undeveloped land to developed uses. This would result in an increase in impervious surfaces, which would change the rate and volume of stormwater runoff across project site, as well as contribute flows to local creeks and streams that drain the various locations. Increased water levels in local creeks and streams resulting from stormwater runoff have the potential to cause flooding. In locations where a 100-year flood hazard risk exists, flooding could be exacerbated. The County's Subdivision Ordinance requires drainage plans be submitted prior to the approval of tentative maps. The drainage analysis must include an analysis of upstream, onsite, and downstream facilities, and offsite drainage facilities. Tentative maps must include details on the location and size of proposed drainage structures. The County's Drainage Manual provides standards for design of drainage improvements. As a performance standard, measures must be implemented to provide for no net increase in peak stormwater discharge relative to current conditions to ensure that 100-year flooding and its potential impacts are maintained at or below current levels and that people and structures are not exposed to additional flood risk. The County also regulates development within the 100-year floodplain under its Flood Damage Prevention Ordinance to ensure development does not increase flood risk or expose new uses to flood hazards. All cumulative projects would be required to comply with these requirements and standards.

For the proposed project, the project's drainage analysis (Appendix I) shows that existing culverts at Serrano Parkway and US 50 attenuate 100-year storm flows from the Serrano Westside planning area, and that a detention basin will be needed within the Pedregal planning area to attenuate post-

development flows. There is sufficient capacity in the drainage system provided by the Town Center East development ponds to attenuate flows, as noted in Impacts WQ-4 and WQ-5. Because the proposed project would not increase peak flow rates or volumes compared to existing conditions, it would not contribute to cumulative conditions that could result in onsite or offsite flooding or cumulative hydromodification effects. Cumulative hydrology impacts would be less than significant.

Water Quality

Construction activities in the creek watersheds that drain to the Cosumnes and American Rivers could cumulatively increase sediment loading, thereby negatively affecting water quality if measures are not implemented to control the amount of sediment potentially carried to waterways. Cumulative development, including the proposed project, would involve soil disturbance through such activities as vegetation removal, grading, and excavation. These disturbances would expose the native soil to wind- and water-generated erosion, most likely at accelerated rates. As such, surface runoff could transport increased sediment loads. Sediment from erosion can have short- and long-term water quality effects including increased turbidity, which could result in adverse impacts on fish and wildlife habitat, reduced efficacy of diversion structures, impaired recreation and aesthetic values, and increased downstream flood hazards due to a decrease in channel capacity. Erosive conditions created during grading activities can persist well into the post-construction timeframe. The amount and rate of erosion is variable and depends on a variety of factors, including soil characteristics (e.g., susceptibility to erosion), the time of year of construction activities, the intensity and duration of precipitation, the amount of vegetative cover, and other variables. Another potential source of water quality impairment during construction activities is the accidental release of petroleum-based fluids used in heavy equipment and machinery or from construction materials that contain hazardous materials and/or heavy metals.

Post-construction cumulative water quality effects could be expected from continued development in the creek subwatersheds that drain to the Cosumnes and American Rivers. Cumulative development, including the proposed project, would result in increased impervious surfaces that increase the rate and amount of runoff which, in turn, could increase urban contaminant loading, which could adversely affect existing water quality. The primary sources of pollution include runoff from roadways and parking lots, runoff from landscaped areas, commercial development, non-stormwater connections to local drainage systems, accidental spills, and illegal dumping.

All project applicants under existing approved plans and other projects would be required to apply for coverage and comply with the various federal, state, and local permit requirements described in the Regulatory Setting section of Section 3.8, *Hydrology, Water Quality, and Water Resources*. Among these is the *General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ)* (Construction General Permit), which requires the development and implementation of a SWPPP. The project applicant would be required to prepare and retain a SWPPP at each construction site, describing the characteristics of the site, erosion and sediment control strategies, means of waste disposal, implementation of approved local plans and permit requirements, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non-stormwater management controls. In addition, other federal and state permit requirements (including a *Waste Discharge Requirements [WDRs] for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems General Permit No. CAS000004 [Order 2013-001-DWQ]* [Small MS4 Permit]) regulate water quality impacts. Other cumulative projects would be "Regulated Projects" as defined in Section E.12.c of the Order and would be required to comply with the standards provided

in the Order. Before approving any tentative map, the County (as permittee) will be responsible for ensuring the site design of cumulative projects includes measures required under Sections E.12.a (Site Design Measures), E.12.d (Source Control Measures), E.12.e (LID Design Standards), and E.12.f (Hydromodification Measures). Other sections of E.12 address the County's responsibilities for documenting compliance with the MS4 Permit. Finally, local ordinances (including the County Grading, Erosion, and Sediment Control Ordinance [Grading Ordinance]) require minimization of impacts from site modification activities. The County's authority to enforce the requirements of the Small MS4 permit is established in the Stormwater Quality Control Ordinance No. 5022, adopted in May 2015.

The CEDHSP contains several policies that require measures be implemented during construction and operation to minimize the potential for adverse water quality impacts, as described in Impacts WQ-1 and WQ-5. Implementation of these policies, along with the County's requirements described above, would reduce the proposed project's contribution to potential water quality impacts to a level that would be less than cumulatively considerable.

Water Resources

Water supply for cumulative projects would be served by the El Dorado Irrigation District (EID), which currently does not use groundwater as a supply source. There would be no depletion of groundwater supplies or interference with groundwater recharge because the proposed project area is underlain by bedrock and groundwater recharge potential would be limited. In addition, the proposed project would not construct or utilize groundwater resources. There would be no cumulative impact on groundwater resources. For the analysis of cumulative water supply effects associated with surface water supplies, see *Public Services and Utilities*.

Land Use Planning and Agricultural Resources

Buildout of the CEDHSP would result in the development of urban uses on a presently undeveloped site largely surrounded by existing urban development. As noted in Section 3.9, *Land Use Planning and Agricultural Resources*, the proposed project would rearrange the types of planned land uses on the project site and would, rather than divide an established community, enhance the connections between existing urban uses. Development of the project site would not constitute a cumulative contribution to the division of any community.

As described in Section 3.9, the proposed project includes amendments to the County General Plan that would change the designation of lands now identified for open space in the adopted El Dorado Hills Specific Plan (EDHSP) to urban development (approximately 6 acres), and change the designation of undeveloped lands now designated for development in the EDHSP to open space (approximately 50 acres), with no reduction of the overall amount of land preserved in open space. The ridgeline north of Serrano Parkway would be designated for open space, and the golf course would be designated for residential development and a public park. As described in Impact BIO-1 and Impact BIO-13, elements of the project to conserve oak woodlands in combination with mitigation measures to reduce t effects on oak woodlands (Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d), would reduce this impact, resulting in a less than cumulatively considerable contribution.

The project site is not subject to any habitat conservation plan or natural community conservation plan; therefore, the proposed project would not contribute to cumulative conflicts with applicable habitat conservation plans or natural community conservation plans.

The project site contains no farmland, including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and no portion of the site is zoned for agricultural use or subject to a Williamson Act contract. The project would, therefore, not contribute to the cumulative loss of any farmland, including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Further, it would not contribute to cumulative conflicts with existing zoning for agricultural use or Williamson Act contracts.

No forest land or timberland exists on the project site or vicinity. The proposed project would not contribute to the cumulative loss or conversion of forest land to non-forest uses.

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.

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). 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 not be perceptible because it is just over one tenth of the perceptibility threshold. Because the project-related increase is 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. As shown in Table 5-3, noise from the new roadway would be approximately 62.4 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	64.4	-0.2
	Francisco to Harvard	72.0	71.9	-0.1
	Harvard to Wilson	73.2	73.1	-0.1
	Wilson to Serrano	74.0	74.1	0.1
	Serrano to US 50	72.8	73.2	0.4
Latrobe Road	US 50 to Town Center	75.2	75.3	0.1
	Town Center to White Rock Road	73.4	73.6	0.2
	White Rock to Golden Foothill Pkwy	72.5	72.4	-0.1
	Golden Foothill Pkwy to Sun Ridge Meadow Road	70.2	70.2	0.0
	Sun Ridge Meadow Road to S. Shingle Road	67.3	67.3	0.0
White Rock Road	Scott Road to Four Seasons Drive	73.8	74.2	0.4
	Four Seasons Drive to Latrobe Road	73.8	74.1	0.3
	Latrobe Road to Vine Street	70.8	70.8	0.0
	Vine Street to US 50	74.5	74.5	0.0
Silva Valley Pkwy	Green Valley to Glenwood Way	67.9	67.8	-0.1
	Glenwood Way to Appian Way	67.9	67.7	-0.2
	Appian Way to Harvard Way	68.3	68.3	0.0
	Harvard Way to Serrano Pkwy	70.9	71.0	0.1
	Serrano Pkwy to US 50	72.2	72.2	0.0
Serrano Pkwy	EDH Blvd to Silva Valley Pkwy	67.8	67.8	0.0
	Silva Valley to Villagio Drive	70.2	70.3	0.1
	Villagio Drive to Bass Lake Road	68.0	68.1	0.1
Saratoga Way	EDH to Arrowhead	67.0	67.1	0.1
Wilson Blvd	EDH Blvd to Ridgeview Drive	63.8	63.9	0.1
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	64.8	0.0
US 50	West of Latrobe/El Dorado Hills	83.8	83.8	0.0
	Between EDH and Silva Valley	83.3	83.4	0.1
	Between Silva Valley and Bass Lake	83.6	83.5	-0.1
	Between Bass Lake and Cambridge	82.9	82.9	0.0
Park Drive	Extension – West of Silva Valley Parkway	–	62.4	N/A

Population and Housing

Buildout of the CEDHSP would result in development of up to 1,000 residential units, housing approximately 2,618 residents. Under existing entitlements and approved land uses, the population would be approximately 873 people. The proposed project would result in a net increase in

population of 1,745 people.[1] The other cumulative projects would be expected to increase the County's population by up to approximately 16,633additional residents (accounting for the net dwelling units for the proposed Village of Marble Valley Specific Plan). With the proposed project's additional 1,745 people, the cumulative population growth would be approximately 18,400. As noted in Impact POP-1, El Dorado County's population is anticipated to increase by over 20,000 between the years 2010 and 2020, and by over 67,000 between 2010 and 2035. The cumulative total population would be within the near-term and long-term projections. Further, the proposed project's contribution to cumulative population growth would represent approximately 2.6% of the projected growth by 2035. Accordingly, the proposed project would not result in a considerable contribution to cumulative population growth in El Dorado County.

Population growth in and of itself does not constitute a physical environmental impact. However, cumulative development, in combination with the proposed project, could result in cumulative environmental impacts, which are described in this chapter. The project's contribution to most cumulative environmental impacts would be less than cumulatively considerable or less than cumulatively considerable with mitigation. However, there would be cumulative air quality impacts associated with combined operational and criteria air pollutant emissions, cultural resources impacts, and water supply (post year 2035) that cannot be reduced to less-than-significant levels even with mitigation.

The project area currently contains no housing units. Therefore, development of the project as proposed would not contribute to the cumulative displacement of any existing housing units or people, or necessitate the construction of replacement housing elsewhere that would result in cumulative environmental effects. The total number of dwelling units for other cumulative projects is 5,864 (Table 5-2).[2] Combined with the proposed project's additional 688 units, the total cumulative housing units would be 6,552, which would be within the anticipated number of new dwelling units the County anticipates over the 20-year planning horizon through 2035.

Public Services and Utilities

Fire and Police Protection, Schools, and Libraries

The area considered for cumulative impacts for public services and utilities is the service area for these providers. Buildout of the proposed project would result in the construction of up to 1,000 housing units, including both single-family and multifamily units. The project would not result in substantial adverse physical impacts associated with new governmental facilities or a need for new governmental facilities, including potential impacts on fire and police protection, schools, and libraries.

The proposed project would consist of infill to existing development, and would not create a need for new fire or sheriff protection facilities. In accordance with Policies 5.7.1.1, 5.7.3.1, and 5.7.4.1 of the County General Plan, prior to approval of all new development, the applicant must obtain review and approval of development plans by emergency service providers to ensure adequate levels of

[1] Due to slope and oak canopy limitations, the allocation of units in the Pedregal planning area under existing land use and zoning is 33 single-family residential at <1 Du/Ac and 144 multifamily residential. The allocation of units in the Serrano Westside planning area is 135 single-family residential at 1-5 du/ac. The population under existing land use and entitlements for 312 units would be: 168 low-density single-family units*3.06 + 144 multifamily units*2.49 = 873 (rounded). Project population (2,618) – current entitlements/approved use (873) = 1,745.

[2] Total reflects subtraction of 398 approved units in Marble Valley Master Plan.

service and access. Additionally, sheriff and fire services are regional and the same stations that serve the proposed project would not serve all the other projects. For instance, the proposed project would be served by Fire Station 85, which would also serve Dixon Ranch and Rancho Dorado, but would not serve the other projects. Therefore, because all new development in the county must comply with the policies noted above and because multiple existing facilities serve the existing and projected population, there would be no cumulative impact to which the project could contribute.

The proposed project is expected to result in 1,000 households, which could generate approximately 677 school-age children, as described in Chapter 3.12, *Public Services and Utilities*. While other anticipated projects would also result in an increase in population within the school district, which would likely include school-age children, all development incurs taxes to compensate for increased population and expansion of school facilities as necessary. The El Dorado Union High School District and the Buckeye Union School District collect taxes via the El Dorado Schools Financing Authority Community Facilities District in addition to development impact fees, which provides funds for capital facilities to serve students generated from the new development (SchoolWorks 2014:53). California Government Code 65996 states that development impact fees will be the exclusive method of considering and mitigating environmental impacts of school facilities that result from planned development as a result of the addition of students. All projects are subject to this law and therefore, there is no cumulative impact related to increases in school enrollment to which the project could contribute that would result in the need to construct new facilities, the construction of which could result in significant environmental effects.

The cumulative impact area for libraries is the community of El Dorado Hills, as library use is generally local. As described in Section 3.12, *Public Services and Utilities*, the typical standard threshold used for planning purposes is a minimum of 0.5 sf of library space per capita (El Dorado County 2003; Amos pers. comm.). Within the project vicinity of El Dorado Hills, the library square footage per capita of 0.56 exceeds the planning standard of 0.5. The proposed project would decrease the standard library planning ratio from a current ratio of 0.56 sf per capita to 0.52 sf per capita, which still exceeds the ratio for El Dorado Hills. With cumulative projects, including the El Dorado Hills Specific Plan, the ratio would likely be reduced below 0.5. However, the reduction of library square footage does not constitute an environmental impact. The project area is located close to the El Dorado Hills Library, a relatively new facility. The proposed project and other development projects within El Dorado Hills would not likely result in the physical degradation of library facilities, and therefore no cumulative impact is anticipated.

Water Supply

As shown in Table 3.12-7, the proposed project is expected to require 450 acre-feet of water per year at buildout. The proposed project, combined with other existing and proposed development in the EID service area, would result in a total projected demand for 67,295 acre-feet of water in 2035. Excluding recycled supplies, EID's secured water rights and entitlements available for the proposed project total 67,190 acre-feet, which would be insufficient to serve the future demand of the proposed project and all planned future projects. However, in addition to the secured water rights and entitlements, EID has planned water assets. These consist of two additional water supplies for use within the service area to make the following available for the proposed project: (1) water under the El Dorado–SMUD Cooperation Agreement, and (2) a Central Valley Project (CVP) water service contract derived from EDCWA Fazio water supply. Upon State Water Board approval, the El Dorado–SMUD Cooperation Agreement would provide EID with 30,000 AFY of water through 2025 and 40,000 AFY thereafter. The EDCWA Fazio water would provide EID with an additional 7,500 AFY of

water from Folsom Reservoir and is expected to be available in 2015 (Appendix K:4-8). These planned water assets, although partially secured, are not yet fully available for EID's use. In normal years, the water supplies under these planned assets total 37,500 AFY. In dry years, the water supplies under these planned assets total 10,625 AFY (Appendix K:4–15). EID's water supplies associated with the entire secured and planned water assets total 110,290 acre-feet per year. (See the *Water Supply, Conservation, and Wastewater Service* section of Section 3.12, *Public Services and Utilities* for additional details about EID's existing and planned water supplies.) Therefore, with the planned water assets, the water supply assessment (WSA) (Appendix K of this Draft EIR) concludes that EID should have sufficient water available to meet the needs of the proposed project and all other demands in its service area through 2035, and no new or expanded entitlements would be needed. Project impacts related to sufficient water supplies would be less than significant. Therefore, in concert with the cumulative projects, the project's contribution to cumulative impacts on water supply in the EID service area would not be cumulatively considerable to the year 2035.

Wastewater

EID would provide wastewater service for the project site and therefore, the cumulative analysis focuses on proposed development within the EID service area, which corresponds to the central portion of west slope El Dorado County served by the El Dorado Hills Wastewater Treatment Plant (WWTP). EID projects that the El Dorado Hills WWTP will approach permitted capacity in 2026 based on the County General Plan planning horizon (2025) and estimates of areas for future known and unknown densities (El Dorado Irrigation District 2013:150–151). The EID has determined a capacity of 5.45 million gallons per day (mgd) for the El Dorado Hills WWTP will be necessary to accommodate future flows (to 2040) and plans to have the expanded facility operational by 2026 (El Dorado Irrigation District 2013:151).

The expected flow into the El Dorado Hills WWTP in 2025 is 5.45 mgd, which accounts for future planned and unplanned densities, as identified in the Wastewater Facilities Master Plan (WWFMP). The proposed project is expected to generate average dry weather flow of 0.21 mgd (Table 3.12-10), and other cumulative projects that would be served by the El Dorado Hills WWTP are expected to generate average dry weather flow of 0.22 mgd. The total projected wastewater that would be generated and treated at the El Dorado Hills WWTP could total 5.88 mgd (depending on rate of growth and future wastewater flows) (Table 5-4). This could exceed the planned future capacity of 5.45 mgd if all projects are built out at that time. As an industry standard practice, EID monitors growth and plans to meet future demands generated by authorized development. If the CEDHSP is approved by the County Board of Supervisors, the next revisions to the EID WWFMP will reflect updated future demand calculations, and general plan amendments will be reviewed and used as a basis for analysis of future needs to identify what improvements would be required to accommodate additional flows and the timing for when such improvements would be necessary. The types of improvements would depend on regulatory requirements and could involve wastewater process upgrades. These future improvements are currently unknown, but would likely be made on the existing WWTP site and environmental impacts would likely consist of construction-related environmental impacts (construction noise, air quality, and traffic) and potential impacts on the water quality and habitat conditions along Carson Creek. The project's contribution to the demand for wastewater facilities would not be the sole reason for WWTP expansion and would be less than cumulatively considerable.

Table 5-4. Future Wastewater Generation for El Dorado Hills WWTP

Land Use	Wastewater for El Dorado Hills WWTP (mgd)
Existing ADWF	2.65
Future unplanned density ADWF	0.88
Future planned density ADWF	1.92
Expected total for 2025	5.45
Proposed CEDHSP (1,000 EDUs) (as described in Table 3.12-10)	0.21
Expected total with CEDHSP	5.66
Other projects[a]	0.22
Total expected wastewater in 2025	5.88

Source: El Dorado Irrigation District 2013b:93.
ADWF = average dry weather flow.
EDU = equivalent dwelling unit.
[a] Dixon Ranch (605 units) + Saratoga Estates (316 units)* 240 gpd = 0.22 mgd.

Solid Waste

The area examined for cumulative conditions for solid waste is El Dorado County. Construction of cumulative projects and the proposed project would result in solid waste generation. The County's existing Construction and Demolition Debris Diversion Ordinance requires project applicants and their construction contractors to reuse or recycle a minimum of 50% of the construction and demolition debris, and Policy 6.21 of the CEDHSP requires project applicants and their construction contractors to reuse or recycle a minimum of 65% of their construction and demolition debris.

As described in Impact PSU-8 in Section 3.12, *Public Services and Utilities*, the proposed project could generate a total of 3,355 tons of solid waste per year (or approximately 9.2 tons per day), which would be diverted to the Diamond Springs Material Transfer Facility in El Dorado County, with the remaining waste that could not be diverted sent to either Lockwood or Potrero Landfill. The Diamond Springs material recovery facility can process 400 tons of waste per day, and currently processes approximately 70 tons per day (Ross pers. comm.). Therefore, the additional 36 tons expected from proposed and expected projects would still be well below capacity for this facility. The Potrero Hills Landfill can accept 4,330 tons per day. In 2012, it processed an average of 1,096 tons per day (Potrero Hills Landfill 2013). The additional 36 tons expected from anticipated projects would still be well below that capacity. The Lockwood Landfill processes about 5,000 tons of waste per day (Nevada Division of Environmental Protection 2013). It is permitted for a capacity of approximately 265 million cubic yards, or between 371 and 530 million tons (Eckert pers. comm.). As of May 2014, it had approximately 268 million cubic yards remaining, or between 375 and 536 million tons (Eckert pers. comm.). Therefore, the additional 36 tons per day or 13,098 tons per year would, would not exceed the landfill's capacity. In summary, solid waste generated from the proposed project, when combined with other anticipated projects, will not result in a cumulative impact.

Electricity/Natural Gas and Energy Conservation

Since energy legislation adopted by California and local governments is intended to conserve statewide and regional energy consumption, projects that conflict with applicable plans and policies would contribute to a cumulative energy impact. Accordingly, for the purposes of this analysis, the proposed project would result in a significant cumulative impact if it conflicts with applicable state or local energy standards or results in increased per-capita energy consumption. As such, the project-level and cumulative impact determinations are identical. As discussed in Section 3.12, *Public Services and Utilities,* the proposed project would incorporate energy-saving measures required by state and local energy policies, including CalGreen and Title 24, enacted since the 1970s to improve energy efficiency and reduce waste. Because the project is consistent with and would go above and beyond state and local energy policies enacted to reduce energy consumption (See CEDHSP Policies identified in Appendix J), would result in lower per-capita energy consumption than the current El Dorado County average, and would also help the County in meeting zone net energy (ZNE) requirements, the project would not result in a wasteful, inefficient, and unnecessary usage of energy that would be cumulatively considerable. In addition, the proposed project's effects on local and regional energy supplies and on requirements for additional capacity, peak and base period demand for electricity and other forms of energy, and other energy resources are expected to reduce the requirement for additional capacity and therefore would not result in a cumulatively considerable contribution to future capacity demands.

Recreation

The area examined for purposes of analyzing cumulative impacts on parks and recreational facilities consists of the area within the El Dorado Hills Community Services District (CSD). As described in Section 3.13, *Recreation*, the El Dorado Hills CSD provides parks and recreation facilities and services to residents of the El Dorado Hills area, including the CEDHSP.

The El Dorado County General Plan EIR states that projected residential development in conformance with the County General Plan would increase demand for parks and recreation facilities, constituting a significant impact on the deterioration of such facilities. Mitigation included in the General Plan EIR, and adopted and incorporated into the 2004 County General Plan, consists of Policy 9.2.2.2 and Policy 9.2.2.5, which ensure funding mechanisms for the development, operation, and maintenance of park facilities. Implementation of these policies reduces the stated impact to a less-than-significant level and requires, in addition to Quimby Act obligations, that new development funds park and recreation improvements and acquisition of parklands to meet minimum neighborhood, community, and regional park standards.

Construction of the other projects that comprise the remainder of the cumulative development conditions would add 5,483 housing units to those anticipated under the County General Plan, as well as approximately 100 acres of parkland (Table 5-2). Compliance with County General Plan Policies 9.2.2.2 and 9.2.2.5, as well as Quimby Act requirements as implemented by County Code Section 120.12.090, would be required of these projects; this compliance would ensure that the individual projects meet minimum park standards and result in less-than-significant impacts on the physical deterioration of parks and recreational facilities.

Implementation of the proposed project would result in the construction of up to 1,000 housing units, including both single-family and multifamily units, increasing the population in an area that is expected to be deficient in recreational resources by 2020 and triggering Quimby Act, County

General Plan, and El Dorado Hills CSD requirements as described in Section 3.13, *Recreation*, of this EIR. However, the CEDHSP also includes development of parkland in excess of those requirements, as well as additional open space, Class I bikeways, and paved and unpaved trails. Because the proposed project would establish open space and active recreational opportunities that exceed the parkland dedication requirements of the Quimby Act, the County General Plan, and the El Dorado Hills CSD, implementation of the CEDHSP would help alleviate the projected parkland deficiency and would not be expected to contribute to the less-than-significant cumulative deterioration of existing park facilities.

The proposed project would not require the construction of additional parks and recreational facilities and, therefore, would not result in a considerable contribution to cumulative impacts related to construction of park facilities.

Traffic and Circulation

Under cumulative conditions, traffic associated with the project will contribute to regional traffic and circulation impacts.

Travel Demand Forecasts

The El Dorado County travel demand forecasting model was used to develop forecasts in the study area for the purposes of cumulative impact analysis. However, as is standard practice with large area travel demand models, a thorough model review was completed and the model was refined to ensure that it produced reasonable results in the study area. The following refinements were implemented in the study area.

- Added roadway network detail.
- Updated land use to reflect 2012 conditions.
- Refined the traffic analysis zones (TAZs) in order to get more refined loading of trips in the study area.
- Updated network attributes in the study area to reflect existing conditions (e.g., verified roadway network speeds, number of lanes on the roadway, and roadway capacities to reflect existing conditions).
- Updated the future year roadway network in the study area to only reflect the SACOG MTP constrained roadway network, which is consistent with the County's Capital Improvement Program (2015 CIP).
- Updated the future land use information to reflect approved and reasonably foreseeable projects in the study area.
- Added peak hour assignment functionality.

Specific information related to the model's performance is described below.

Base Year Model Validation

Before any model can be applied for use in a major specific plan application, it must first satisfy specific validation criteria identified by Caltrans, the Federal Highway Administration (FHWA), and the California Transportation Commission (CTC). These criteria were developed to ensure that a model is developed such that it can accurately forecast existing conditions based on land use and roadway network information, which improves the model's ability to accurately forecast future conditions. The state-of-the-practice for developing defensible forecasts for changes in the roadway network and/or changes in proposed land use is to use a valid base year model.

The first step of any model validation is to ensure that the model generally produces similar results to existing counts. Because the model was used to generate A.M. peak hour and P.M. peak hour forecasts, the model must be valid for both time periods.

The model validation statistics are summarized in Appendix L, Table 13. As shown in Table 13, the model meets or exceeds the identified model validation statistics in the study area. As such, the model is deemed appropriate for use in this assessment.

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 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, Table 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 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)
- 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)
- 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)
- Saratoga Way Extension – Phase 1 (#71324; by 2035)

- Saratoga Way Extension – Phase 2 (#GP147; by 2035)
- Silva Valley Parkway/Serrano Parkway Traffic Circulation Improvement (#72141, by 2016)
- Silva Valley Parkway/Golden Eagle Lane – Signalization (#GP182; by 2035)
- Silver Springs Parkway to Bass Lake Road (South Segment) (#76108; by 2019)
- 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 (#53115; by 2035)
- US 50 Auxiliary Lane Eastbound – Cambridge Road to Ponderosa Road (#GP150; 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)
- 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)
- 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] 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 – 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,

[3] 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.

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.

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.

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

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 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.

Traffic and Circulation Impacts

Intersections

Analysis results for intersections, presented in Table 5-5, indicate that most study intersections 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)

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/47	D/41	D/46
2	Green Valley Road/El Dorado Hills Blvd/Salmon Falls Road	Signal	D/50	E/56	D/52	D/53
3	Green Valley Road/Silva Valley Pkwy	Signal	D/40	C/26	D/39	C/26
4	Francisco Drive/El Dorado Hills Blvd	Signal	C/27	B/19	C/27	B/19
5	Silva Valley Pkwy/Appian Way	AWSC	**F/>180**	**F/105**	**F/>180**	**F/113**
6	El Dorado Hills Blvd/Harvard Way	Signal	C/31	C/22	C/32	C/23
7	Silva Valley Pkwy/Harvard Way	Signal	**F/93**	C/33	**F/97**	C/35
8	El Dorado Hills Blvd/Olson Lane	Signal	B/13	A/10	B/13	A/10
9	El Dorado Hills Blvd/Wilson Blvd	Signal	D/52	D/39	E/63	E/62
10	El Dorado Hills Blvd/Serrano Pkwy/Lassen Lane	Signal	E/58	C/24	E/64	C/31
11	Serrano Pkwy/Penela Way	SSSC	E/38	C/21	E/37	C/22
12	Serrano Pkwy/Silva Valley Pkwy	Signal	**F/99**	**F/82**	**F/98**	**F/88**
13	El Dorado Hills Blvd/Park Drive/Saratoga Way	Signal	C/34	**F/112**	D/45	**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/46	D/43	D/47	D/43
16	Latrobe Road/US 50 eastbound ramps	Signal	C/24	D/34	C/22	C/33
17	Latrobe Road/Town Center Blvd	Signal	E/76	**F/173**	**F/86**	**F/166**
18	Latrobe Road/White Rock Road	Signal	D/42	E/69	D/42	E/78
19	White Rock Road/Post Street	Signal	C/29	C/34	C/30	C/34
20	White Rock Road/Valley View Drive/Vine Street	Signal	B/19	D/37	B/19	D/37
21	El Dorado Hills Blvd/Project Driveway North	SSSC	Does not exist		B/11	A/9
22	El Dorado Hills Blvd/Project Driveway South	SSSC	Does not exist		A/9	B/13
23	Serrano Pkwy/Project Driveway	SSSC	Does not exist		C/17	B/14
24	Wilson Blvd/Pedregal Driveway	SSSC	Does not exist		B/11	B/11
25	Silva Valley Pkwy/US 50 westbound ramps	Signal	C/20	B/14	C/25	C/21
26	Silva Valley Pkwy/US 50 eastbound ramps	Signal	A/5	A/9	A/5	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.

Silva Valley Parkway/Appian Way (Intersection 5)

Under cumulative conditions, this intersection is projected to operate unacceptably at level of service (LOS) F without the project during both 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 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 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-A would reduce the cumulative impact to less than significant.

Mitigation Measure CUM-A: Improve the Silva Valley Parkway/Appian Way intersection

- Implementation of the following improvements 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: Table 20).
    - 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.
- 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.

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	450/0.27/C[a]	460/0.28/C[a]	440/0.28/C[a]	420/0.27/C[a]
	Francisco Drive to Governor Drive	2-lane arterial	1,515/0.92/D	1,564/0.95/E	1,535/0.93/D	1,554/0.94/E
	Governor Drive to Wilson Blvd	4-lane divided arterial	2,260/0.69/D	2,290/0.70/D	2,300/0.70/D	2,290/0.70/D
	Wilson Blvd to Serrano Pkwy	4-lane divided arterial	2,640/0.80/D	2,790/0.85/D	2,740/0.83/D	2,840/0.86/D
	Serrano Pkwy to Saratoga Way	5-lane divided arterial	3,170/0.77/D	3,400/0.83/D	3,310/0.81/D	3,520/0.86/D
	Saratoga Way to US 50	7-lane divided arterial	2,700/0.50/C[a]	2,900/0.54/C[a]	2,700/0.50/C[a]	3,050/0.56/C[a]
Latrobe Road	US 50 to Town Center Blvd	7-lane arterial	4,360/0.80/D	5,080/0.94/D	4,380/0.81/D	5,110/0.94/D
	Town Center Blvd to White Rock Road	6-lane divided arterial	3,090/0.66/D	3,340/0.71/D	3,110/0.66/D	3,440/0.71/D
	White Rock Road to Golden Foothill Pkwy	6-lane divided arterial	2,270/0.48/C[a]	2,660/0.56/C[a]	2,300/0.49/C[a]	2,670/0.57/C[a]
	Golden Foothill Pkwy to Sun Ridge Meadow Road	4-lane arterial undivided	1,600/0.51/C[a]	1,590/0.51/C[a]	1,600/0.51/C[a]	1,590/0.51/C[a]
	Sun Ridge Meadow Road to S. Shingle Road	2-lane arterial	590/0.36/C[a]	610/0.37/C[a]	590/0.36/C[a]	600/0.36/C[a]
White Rock Road	Scott Road to Four Seasons Drive	4-lane divided arterial	1,570/0.48/C[a]	2,010/0.61/D	1,560/0.47/C[a]	2,040/0.62/D
	Four Seasons Drive to Latrobe Road	4-lane divided arterial	1,650/0.50/C[a]	1,980/0.60/D	1,640/0.50/C[a]	2,000/0.61/D
	Latrobe Rd to Vine Street	6-lane divided arterial	1,480/0.31/C[a]	1,730/0.37/C[a]	1,490/0.32/C[a]	1,780/0.38/C[a]
	Vine Street to US 50	6-lane divided arterial	1,740/0.37/C[a]	2,240/0.48/C[a]	1,730/0.37/C[a]	2,260/0.48/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
Silva Valley Pkwy	Green Valley Road to Glenwood Way	2-lane arterial	930/0.56/D	900/0.55/D	920/0.56/D	910/0.55/D
	Glenwood Way to Appian Way	2-lane arterial	780/0.47/C[a]	900/0.55/D	770/0.47/C[a]	900/0.55/D
	Appian Way to Harvard Way	2-lane arterial	1,090/0.66/D	1,030/0.62/D	1,110/0.67/D	1,010/0.61/D
	Harvard Way to Serrano Pkwy	4-lane divided arterial	2,130/0.65/D	1,880/0.57/D	2,160/0.66/D	1,900/0.58/D
	Serrano Pkwy to US 50	4-lane arterial	2,650/0.81/D	2,590/0.79/D	2,660/0.81/D	2,610/0.79/D
Serrano Pkwy	El Dorado Hills Blvd to Silva Valley Pkwy	2-lane arterial	1,010/0.61/D	920/0.56/D	1,000/0.61/D	920/0.56/D
	Silva Valley Pkwy to Villagio Drive	4-lane divided arterial	1,830/0.56/C[a]	1,720/0.52/C[a]	1,800/0.55/C[a]	1,750/0.53/C[a]
	Villagio Drive to Bass Lake Road	2-lane arterial	1,010/0.61/D	1,100/0.67/D	1,100/0.61/D	1,100/0.67/D
Saratoga Way	El Dorado Hills Blvd to Arrowhead Drive	2-lane arterial	1,050/0.64/D	1,540/0.94/E	1,110/0.67/D	1,560/0.95/E
Wilson Blvd	El Dorado Hills Blvd to Ridgeview Drive	4-lane undivided arterial	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	1,370/0.44/C[a]	830/0.27/C[a]	1,380/0.44/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 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

			Cumulative Density[a]/LOS		Cumulative + Project Density[a]/LOS	
Freeway	Segment	Facility Type	A.M.	P.M.	A.M.	P.M.
US 50 eastbound	Latrobe Rd off-ramp	Diverge	28/C	35/D	28/ C	35/D
	El Dorado Hills Blvd off-ramp	Diverge	20/C	31/D	20/C	31/D
	El Dorado Hills Blvd on-ramp to Silva Valley Pkwy off-ramp	Weave (HCM)[b]	22/C	37/E	23/C	21/C
		Weave (Leisch)	–/B	–/D	–/B	–/D
		Basic[c]				
	Silva Valley Pkwy loop on-ramp	Merge	19/B	27/C	19/B	27/C
	Silva Valley Pkwy slip on-ramp	Merge	19/B	32/D	20/B	32/D
	Silva Valley Pkwy on-ramp to Bass Lake Rd off-ramp	Basic	21/C	32/D	21/C	34/D
	Bass Lake Road off-ramp	Diverge	26/C	**36/E**	26/C	***37/E***
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Weave (HCM)	30/D		31/D	
		Weave (Leisch)[c]				
		Basic[c]	16/B	22/C	17/B	23/C
	Cambridge Road on-ramp to Cameron Park Drive off-ramp	Basic[c]	21/C	26/C	21/C	26/D
US 50 westbound	Cameron Park Drive on-ramp to Cambridge Road off-ramp	Weave (HCM)	42/E		43/E	
		Basic[c]	21/C	23/C	21/C	25/C
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic[c]	19/C	20/C	19/C	20/C
	Bass Lake Road on-ramp to Silva Valley Pkwy off-ramp	Basic[c]	29/D	24/C	29/D	24/C
	Silva Valley Pkwy loop on-ramp	Merge	16/B	14/B	16/B	14/B
	Silva Valley Pkwy slip on-ramp to El Dorado Hills Blvd off-ramp	Weave (HCM)	37/E	26/C	37/E	27/C
		Weave (Leisch)	–/C		–/C	
		Basic[c]		15/B		16/B
	El Dorado Hills Blvd on-ramp to Empire Ranch Road off-ramp	Weave (HCM)	43/E	34/D	44/E	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.

Queuing

As described in Appendix L, Section 8.3, two intersections were also evaluated for potential cumulative impacts related to increased vehicle queuing lengths. Available storage at both intersections (stop-controlled project access intersections on El Dorado Hills Boulevard) would accommodate estimated vehicle queues under cumulative conditions. Impacts would be less than significant.

Five freeway facilities were also evaluated for potential cumulative impacts related to increased vehicle queuing lengths. Proposed storage at these facilities (the US 50 eastbound off-ramps at Latrobe Road, El Dorado Hills Boulevard, and Silva Valley Parkway; and the US 50 westbound off-ramps at El Dorado Hills Boulevard and Silva Valley Parkway) would accommodate estimated vehicle queues under cumulative conditions. For the US 50/El Dorado Hills Boulevard interchange, the results indicate that traffic operations on El Dorado Hills Boulevard would not cause vehicles to back onto US 50 and impact freeway operations.

Pedestrian and Bicycle Circulation

Implementation of the proposed project, along with other nearby projects, will increase demand for pedestrian and bicycle facilities. Bicycle network improvements are planned within the study area. Figure 3.14-4 identifies planned bikeways presented in the El Dorado Bicycle Transportation Plan, 2010 Update and the MTP/SCS for 2035. In addition to these improvements in the area, the proposed project includes a number of additional bicycle and pedestrian facilities, as shown in Figure 2-7, that will integrate with existing and planned facilities in the study area.

- Relocate the existing Class I (off-street) bike path east separated from El Dorado Hills Boulevard to the existing drainage channel, extending from just south of the fire station to US 50 at the community park.
- Connect the bike path to the exiting undercrossing of Serrano Parkway.
- Relocate the planned bicycle/pedestrian crossing of US 50 to connect the off-street bike path at the planned community park to El Dorado Hills Town Center (overcrossing to be constructed by the County).
- Connection between the project site and the Raley's and La Borgata shopping centers.
- Connection to a potential Class I bike path between project boundary and Silva Valley Parkway. This would complete the connection to the planned Country Club Drive extension between Silva Valley Parkway and Bass Lake Road as identified in the County General Plan Circulation Element.

These improvements will connect and integrate with existing and planned facilities adjacent to the project. In addition, elements of the proposed project will complete planned pedestrian and bicycle facilities. However, pedestrian traffic associated with the Pedregal planning area may experience a

gap in accessing areas to the east and south, as the sidewalk along the north side of Wilson Boulevard ends approximately 500 feet west of El Dorado Hills Boulevard. Such a gap could create unsafe conditions for residents of the Pedregal planning area and would conflict with the County General Plan Goal TC-4, to "provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes." Therefore, this represents a significant cumulative impact, and implementation of the proposed project would result in a considerable contribution to this cumulative impact. Implementation of Mitigation Measure TRA-1c would reduce the proposed project's contribution to this impact.

Mitigation Measure TRA-1c: Extend sidewalk from Wilson Boulevard to Pedregal planning area

The applicant will construct a sidewalk along the north side of Wilson Boulevard, which connects the Pedregal subdivision to the existing sidewalk stub in front of the Sterling Ranch Apartments. This will give Pedregal homeowners a dedicated and safer pedestrian path from their homes to the El Dorado Hills Class I path.

Transit

The CEDHSP provides for a Park-and-Ride location in the Serrano Westside planning area, as a joint-use facility between El Dorado Transit and the El Dorado Hills CSD. As many as 50 parking stalls within the VP land use designation may be reserved for park-and-ride use during weekday business hours when park activities are minimal. The details of the park-and-ride facility will be determined at the time the community park (VP area) is developed. In addition, opportunities exist to accommodate a bus stop (turnout and shelter) on the east side of El Dorado Hills Boulevard next to the Serrano Westside Planning Area, provided the existing Class I bike path is relocated to the east side of the drainage channel. An additional bus stop (turnout and shelter) may be accommodated on the future extension of Park Drive near the community park. Based on ridership data presented in the *El Dorado Hills Community Transit Needs Assessment* and *US 50 Corridor Transit Operations Plan, Final Report*, 41,760 annual commute trips are made by El Dorado Hills residents using El Dorado Transit Commuter Service. Residents of El Dorado Hills account for about 72% of boardings at the El Dorado Hills park-and-ride lot, which includes riders that park in the lot and riders that use other means to access the service (i.e., walk, bike, and drop-off).

Based on this information, about one annual commute trip is generated per El Dorado Hills resident, assuming a population of 42,100 (2010 Census) in El Dorado Hills. As described above, build out of the County General Plan could result in construction of 78,692 new housing units. Therefore, cumulative conditions could result in demand of about 204,600 annual commute trips (assuming a household population of 2.6 persons), or about 787 commute trips per weekday.

The growth in these trips would not likely exceed the ability to serve this ridership growth through existing funding sources for transit that are tied to population growth. However, this increase in commuter trips will increase demand for the El Dorado Hills park-and-ride lot, which operates at capacity. This is a significant cumulative impact. Because additional commuters associated with the CEDHSP are projected to add about 10 commute trips per weekday, implementation of the proposed project would result in a considerable contribution to this cumulative impact. However, as described above, the Specific Plan provides for a park-and-ride location in the Serrano Westside portion of the project area, in proximity to US 50 and as a joint-use facility between El Dorado Transit and the El Dorado Hills CSD. As many as 50 parking stalls within the VP land use designation may be dedicated

to park -and-ride use during weekday business hours when park activities are minimal. Provision of this park-and-ride capacity prior to the creation of additional project-induced transit demand or implementation of Mitigation Measure TRA-1d would reduce the proposed project's contribution to the cumulative impact.

Mitigation Measure TRA-1d: Provide alternative park-and-ride facilities

If the proposed park-and-ride facility at the Village Park is not completed or does not provide five dedicated parking stalls for park-and-ride users prior to the construction of the 500th unit (the half-way point of the proposed project development), the applicant will provide for or contribute to the provision of five parking stalls to serve park-and-ride uses within the project area.

Emergency Access

The portion of the Serrano Westside planning area north of Serrano Parkway and east of El Dorado Hills Boulevard will connect to the east leg of Wilson Boulevard for access at the El Dorado Hills Boulevard/Wilson Boulevard intersection, which is also used by the El Dorado Hills Fire Department. The intersection is equipped with emergency vehicle signal preemption, which is designed to give priority to emergency vehicles during emergencies. The project will add traffic to and increase delay at this intersection. However, the intersection will operate acceptably under cumulative conditions with and without the project. Therefore, there would not be a significant cumulative impact associated with emergency access.

5.3 Growth-Inducing Impacts

Section 21100(b)(5) of CEQA requires an EIR to discuss how a project, if implemented, may induce growth and the impacts of that induced growth (see also State CEQA Guidelines Section 15126). CEQA requires the EIR to discuss specifically "the ways in which the Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (State CEQA Guidelines Section 15126.2[d]). The State CEQA Guidelines do not provide specific criteria for evaluating growth inducement and state that growth in any area is not "necessarily beneficial, detrimental, or of little significance to the environment" (State CEQA Guidelines Section 15126.2[d]). CEQA does not require separate mitigation for growth inducement as it is assumed that these impacts are already captured in the analysis of environmental impacts (see Chapter 3, *Impact Analysis*). Furthermore, Section 15126.2(d) of the State CEQA Guidelines requires that an EIR "discuss the ways" a project could be growth inducing and to "discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment."

According to the State CEQA Guidelines, a project would have potential to induce growth if it would do either of the following.

- Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or general plan land use designation.
- Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

In general, a project could be considered growth inducing if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way. However, the State CEQA Guidelines do not require a prediction or speculation of where, when, and in what form such growth would occur (State CEQA Guidelines Section 15145).

5.3.1 Remove Obstacles to Growth or Provide New Access

The proposed project includes an amendment of the County General Plan and the EDHSP and rezoning of areas within the project site and would connect the project area to existing public services, including sewer and water service, through improvements, some of which would be immediately adjacent to the project area and some that would be offsite. It would also construct connections to existing roadways that provide direct access to the site (El Dorado Hills Boulevard, Wilson Boulevard, and Serrano Parkway) and extend/reconstruct one roadway (Park Drive). These infrastructure improvements, combined with the project's County General Plan amendment and rezoning, would remove an existing obstacle to growth at the project site and would allow the conversion of more acreage to urban use than is currently allowed under the County General Plan. However, the project site is largely surrounded by existing urban uses, is currently designated, in part, for residential development and, as an infill project, is already accessible and close to services and utilities. The project would amend the EDHSP, redesignating Serrano Westside Village D-1, lots C and D as open space and transferring that acreage to the CEDHSP, resulting in open space along the hillside and residential development nearer to existing commercial space. 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. Connections to services and facilities constructed to connect the proposed project to existing facilities or accommodate the addition of the proposed project would generally be proportionate to the level necessary to accommodate the project and would not, in themselves, increase the development potential of properties outside of the project site that were not planned for development in the project description or the County General Plan. However, some offsite improvements could provide additional capacity. For instance, EID's planned wastewater collection system upgrade south of White Rock Road (CIP #14002) could be constructed to have capacity greater than that required by the proposed project. However, this sewer improvement would be constructed to accommodate the needs assessed by EID in its WWFMP. As such, this improvement is a programmed improvement that accommodates planned growth, but it would not be a direct impact of the proposed project. The sewer upgrade at Serrano Parkway is an improvement to conform a segment of pipeline to existing sizing along the line to the north and south. The pipeline sizing overall would not be increased, so it would not be growth inducing. The two water lines to serve the Pedregal planning area would be connected to existing water lines serving adjacent developed areas and would be sized to accommodate demand for the Pedregal planning area. The recycled water line expansion to serve the Serrano Westside planning area would provide a source of non-potable water for irrigation. This would not remove an obstacle to growth because other infrastructure would also need to be provided to serve development.

The potential extension of Park Drive from the Serrano Westside roundabout to Silva Valley Parkway 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 LOS operations. As noted in Impact TRA-7, it would provide redundancy in the circulation network and reduce volumes on segments of El Dorado Hills Boulevard, Silva Valley Parkway (P.M. peak hour), and Serrano Parkway (A.M. peak hour). This connection would also benefit bicycle and pedestrian circulation by providing

a shorter, lower volume east-west connection. This potential connection would be growth accommodating, but it would not be growth inducing. The roadway improvements that were identified to mitigate cumulative impacts, to which the proposed project traffic volumes would incrementally contribute, would involve measures to relieve congestion at intersections such as additional turn lanes/approaches and signal timing. These would not be new roadways that could be a catalyst for new growth, rather these improvements would accommodate planned growth.

5.3.2 Population and Housing Growth

The proposed project would directly affect population and housing growth in the area by increasing the number of housing units in the area 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. El Dorado County's population is anticipated to increase by over 20,000 between the years 2010 and 2020, and by over 67,000 between 2010 and 2035; these projections indicate a trend of continuing growth within unincorporated El Dorado County. Although not a substantial increase, the additional 688 housing units and population (1,745 additional people) associated with the proposed project would directly contribute to population growth in El Dorado County, but it would not in and of itself cause the growth projections to be exceeded and would represent only a small percentage of anticipated future growth, as noted in the *Population and Housing* section.

The small amount of additional employment associated with the proposed project, 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 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.

5.4 Significant and Unavoidable Impacts

Section 21100(b) of CEQA and Section 15126(b) of the State CEQA Guidelines require that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less-than-significant level. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should also be described.

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. Most of the impacts of the proposed project would be less than significant or would be mitigated to a less-than-significant level. The impacts below are those that would remain significant and unavoidable after mitigation.

Air Quality

- Impact AQ-1 and AQ-1 CUM: Conflict with or obstruct implementation of the applicable air quality plan
- Impact AQ-2b and AQ-2b CUM: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operation.
- Impact AQ-2c and AQ-2c CUM: Violate any air quality standard or contribute substantially to an existing or projected air quality violation during combined construction and operation
- Impact AQ-3 and AQ-3 CUM: 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).

Cultural Resources

- Impact CUL-1 CUM: Cause a substantial adverse change in the significance of an archaeological resource that is a historical resource as defined in Section 15064.5.

Noise

- 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.
- 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.
- 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.

5.5 Significant Irreversible Environmental Changes

Section 15126.2 (c) of the State CEQA Guidelines requires that an EIR address any significant irreversible changes that would result from a proposed project, and provides the following direction for the discussion of irreversible changes.

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that current consumption is justified.

The State CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations to specific uses; irreversible changes from environmental actions; and consumption of nonrenewable resources.

The transfer of open space and residential development areas would result in the development of undeveloped land, which is a long-term commitment. Though more than half of the project area would remain in open space, 134 acres of currently undeveloped land would be developed in low-, medium- and high-density residential uses, another 26 acres in parks and civic-limited commercial uses, and 12 acres in roads and landscaped lots. Therefore, a total of 172 acres of previously undeveloped land would be developed. Due to the large commitment of capital and infrastructure necessary for site development, it is improbable that the site, once developed, would revert to its current, primarily undeveloped, open space use in the future.

Irreversible environmental changes would result from the actions associated with the conversion of a largely undeveloped site to urban uses. Implementation of the proposed project would include construction of structures, roads, and other infrastructure, which would be composed of a variety of nonrenewable (metal, gravel, concrete) or slowly renewable resources (wood), and would be fueled using primarily non-renewable fossil fuel sources. In addition, consumption of resources would continue in association with the land uses allowed under the CEDHSP. Residential, park, and civic-limited commercial uses would use energy and public utilities. However, the Sustainability Element of the CEDHSP outlines, and requires the execution of, a number of sustainable development strategies. These strategies include recycling and reuse of construction materials, exceeding energy efficiency standards for building, encouraging alternate means of transportation through design, and incorporating energy and water conservation techniques. Implementation of these strategies would minimize the proposed project's consumption of nonrenewable resources.

5.6 Mitigation Measures with the Potential for Environmental Effects under CEQA

Section 15126.4(a)(1)(D) of the CEQA Guidelines provides that, "[i]f a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." For each impact considered significant in this EIR, mitigation measures have been designed that would reduce the severity of the impact. However, some of these mitigation measures could have the potential themselves to result in significant impacts. In general, these measures require construction activities and/or ground disturbance. The following sections provide an impact analysis of those commitments and mitigation measures.

5.6.1 Noise Mitigation Measures

Mitigation Measure NOI-1b: Prepare and implement an operational noise control plan to reduce noise at sensitive land uses

Under this measure, it may be necessary to construction solid noise barriers and/or landscaped earthen berms between noise sources and receivers.

Potential Environmental Effects of Noise Mitigation Measures

Construction of noise barriers under Mitigation Measure NOI-1b could, if the barriers are designed without aesthetic consideration, result in negative visual impacts by degrading the quality of views from local roadways and surrounding area and by installing a visual barrier. Implementation of

Mitigation Measure AES-4 would minimize aesthetic effects of NOI-1b by improving noise barrier aesthetics and ensuring that the appearance of noise barriers is consistent with the surrounding project vicinity, where existing noise barriers utilize a combination of solid barriers, earthen berms, and landscaping to mitigate the effects of noise and improve site aesthetics.

5.6.2 Traffic Mitigation Measures

Mitigation Measure TRA-1c: Extend sidewalk from Wilson Boulevard to Pedregal Planning Area

Under this measure, a new segment of sidewalk would be constructed along the north side of Wilson Boulevard to avoid creating a gap in the pedestrian network.

Mitigation Measure TRA-1d: Provide alternative park-and-ride facilities

If the proposed park-and-ride facility at the Village Park is not completed or does not provide five dedicated parking stalls for park-and-ride users prior to the construction of the 500th unit (the half-way point of project development), the applicant will provide for or contribute to the provision of five parking stalls to serve park-and-ride users within the project area.

Mitigation Measure CUM-A: Improve the Silva Valley Parkway/Appian Way intersection

Under this measure, the following improvements that could result in environmental impacts would be implemented:

- 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.

Mitigation Measure CUM-B: Improve the Silva Valley Parkway/Harvard Way intersection

Under this measure, the following improvements that could result in environmental impacts would be implemented:

- 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.

Mitigation Measure CUM-C: Improve the Serrano Parkway/Silva Valley Parkway intersection

Under this measure, one of the following options, which could result in environmental impacts, would be implemented:

- Option 1 – Construct a separate right-turn lane at the Serrano Parkway/Silva Valley Parkway intersection; OR
- 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; OR
- Option 3 – Construct two-lane extension of Russi Ranch Drive from Village Green Drive to Silva Valley Parkway.

Mitigation Measure CUM-D: Improve the El Dorado Hills Boulevard/Park Drive/ Saratoga Way intersection

Under this measure, the following improvements that could result in environmental impacts would be implemented:

- 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

Mitigation Measure CUM-E: Improve the Latrobe Road/Town Center Boulevard intersection

Under this measure, the following improvements that could result in environmental impacts would be implemented:

- 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

Mitigation Measure CUM-F: Improve the US 50 Eastbound Off-Ramp to Bass Lake Road

Under this measure, one of the following options, which could result in environmental impacts, would be implemented:

- Option 1 – CIP improvements will include ramp widening, roadway widening, and the addition of a westbound auxiliary lane between Bass Lake Road and Silva Valley Parkway.
- 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.

Potential Environmental Effects of Traffic Mitigation Measures

Activities associated with these mitigation measures, such as grading along roadways or installing new or reconstructed surface treatments, could cause environmental effects through ground disturbance, noise, air emissions, and traffic disruptions. Ground disturbances would result from activities such as grading and reconstruction. Most improvements would be located along existing roadways and would likely be within existing rights-of-way; therefore, they would not be anticipated to require substantial disturbances, but some improvements could involve new alignments in previously undisturbed areas. These ground-disturbing activities, depending on their location and magnitude, could create short-term or long-term adverse effects related to species habitats; cultural resources; geology, soils, and paleontological resources; or developed and undeveloped land uses. Disturbances would be minimized by implementing Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-2, BIO-3a, BIO-3b, CUL-1b, CUL-3, CUL-4, GEO-3, GEO-9a, and GEO-9b. Increased noise would result from road grading and reconstruction, which would have the potential to expose sensitive receptors and noise-sensitive land uses to excessive noise. However, construction-related noise impacts would be minimized and reduced through implementation of Mitigation Measure NOI-1a and by adopting practices to reduce effects on noise-sensitive land uses. Increased criteria pollutants and GHGs would result from the operation of excavation equipment, both at the excavation site and the application site, as well as from use of trucks hauling materials. Mitigation Measures AQ-2a, AQ-2b, AQ-2c, and AQ-4 would be available to address emissions associated with implementing these improvements. Traffic may also be disrupted as a result of lane and road closures caused by associated roadwork. As described in Impact TRA-5 in Section 3.14, Mitigation Measure TRA-5 would be available to reduce the severity of this impact. Overall, impacts associated with implementation of these mitigation measures would be less than significant.

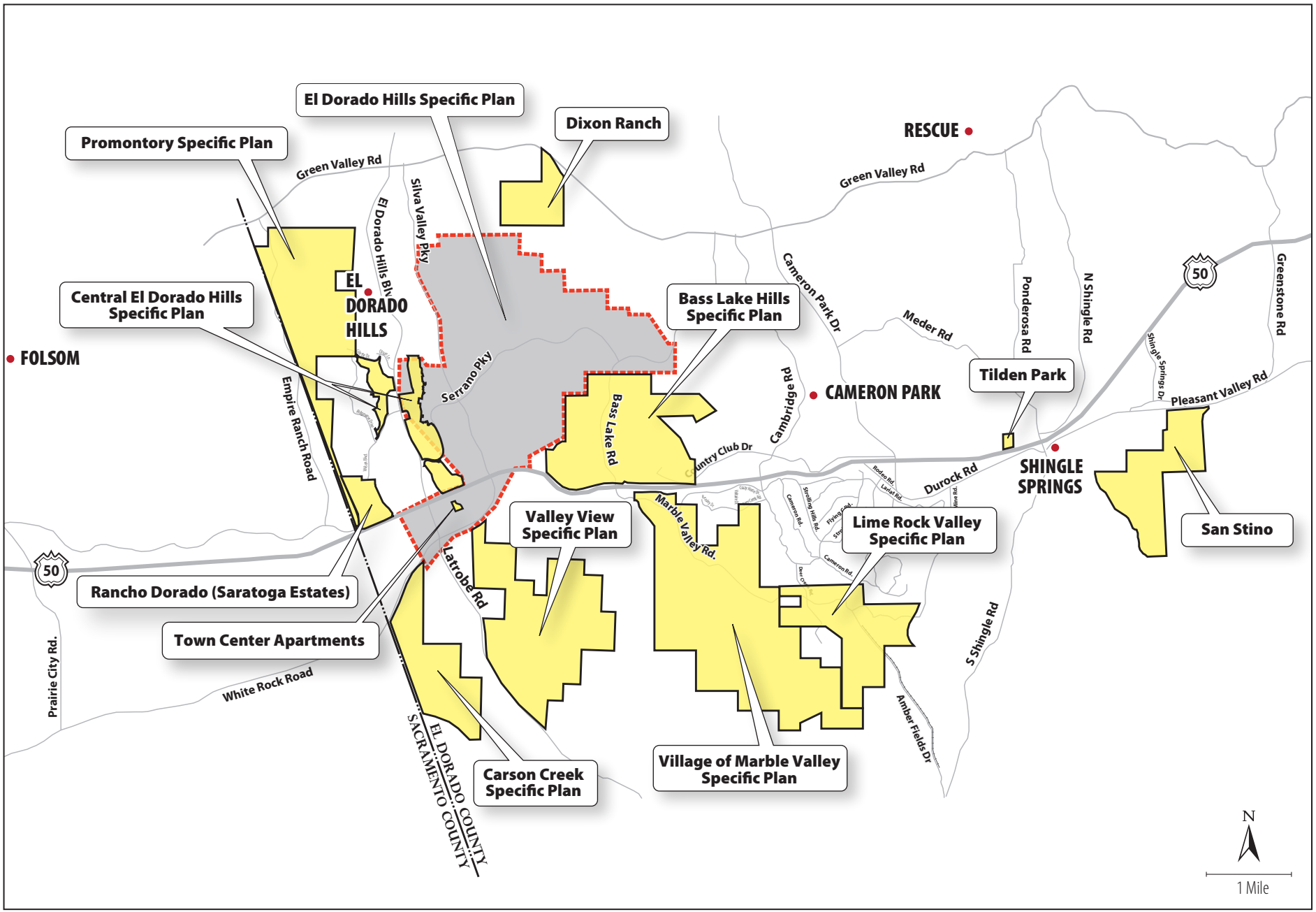

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Figure 5-1
Locations of Cumulative Projects
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Chapter 6
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Chapter 7
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