

Draft Environmental Impact Report Saratoga Estates Project

State Clearinghouse # 2015032058



March 2016



PREPARED FOR:
County of El Dorado
Development Services Division
2850 Fairlane Court
Placerville, CA 95667



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1 INTRODUCTION

This environmental impact report (EIR) describes the potential consequences of developing the Saratoga Estates Project. The purpose of an EIR is to evaluate the project's effects on environmental resources, both singularly and in a cumulative context, to examine alternatives to the project as proposed, and identify mitigation measures to reduce or avoid potentially significant effects. This document has been prepared in compliance with the California Environmental Quality Act (CEQA; Sections 21000-21189 of the Public Resources Code [PRC]) and the State CEQA Guidelines (Title 14, Sections 15000-15387 of the California Code of Regulations).

1.1 SUMMARY OF THE PROPOSED PROJECT

The Saratoga Estates Project is a 317-unit residential development proposed near the western boundary of El Dorado County in the community of El Dorado Hills. The project site is approximately 121 acres located adjacent to Highway 50 and generally surrounded by established residential developments. A Planned Development Combining Zone is proposed for the property, with a mix of base zone districts that would allow for residential uses and open space. The proposed project also includes the extension of Saratoga Way along the southern boundary of the site to connect to Iron Point Road in the City of Folsom (Sacramento County) and improvements to Wilson Boulevard, which transects the project from the north to the south. Primary access to the site would be provided at the intersection of the Saratoga Way and Wilson Boulevard extensions, near the southern end of the project site. The proposed project is described in detail in Chapter 3, "Project Description," of this EIR.

1.2 LEAD AND RESPONSIBLE AGENCIES

The lead agency is the public agency with the principal responsibility for carrying out or disapproving a project. The lead agency is also responsible for scoping the analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to making a decision to approve a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects its independent judgment. El Dorado County is the lead agency for the evaluation of the Saratoga Estates Project.

Responsible agencies are public agencies that have discretionary approval power over the project. The following agencies are anticipated to have approval authority over some aspect of the project: El Dorado Irrigation District, El Dorado Hills Community Services District, El Dorado Hills Fire Department, El Dorado County Water Agency, El Dorado County Resource Conservation District, El Dorado County Local Agency Formation Commission, Central Valley Regional Water Quality Control Board, and California Department of Fish and Wildlife.

1.3 FEATURES OF THE DRAFT EIR

1.3.1 Purpose of the Draft EIR

In accordance with CEQA, public agencies must prepare an EIR to evaluate the potential consequences of development and operation of projects that could significantly affect the environment. The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a proposed project; to identify alternatives that reduce or eliminate a project's significant effects; and to identify feasible measures that mitigate significant environmental effects. In

addition, CEQA requires that an EIR identify those adverse impacts that remain significant after mitigation. The purpose of an EIR is not to recommend approval or denial of a project, but to provide decision-makers, public agencies, and the general public with information about the project.

1.3.2 Type of EIR

This document is a Project EIR. As described in Section 15161 of the CEQA Guidelines, this type of EIR is used to evaluate the physical changes that would result from all phases (including planning, construction, and operation) of a project.

1.3.3 Scope of the Draft EIR

Pursuant to CEQA and the State CEQA Guidelines, a lead agency shall focus the EIR's discussion on significant environmental effects and may limit discussion of other effects to brief explanations about why they are not significant (PRC Section 21002.1, State CEQA Guidelines Section 15143). Furthermore, the EIR must also discuss the manner in which significant impacts can be feasibly mitigated or avoided.

This EIR addresses the following technical issue areas:

- ▲ Land Use Compatibility;
- ▲ Population, Employment, and Housing;
- ▲ Hydrology and Water Quality;
- ▲ Biological Resources;
- ▲ Cultural Resources;
- ▲ Aesthetic and Visual Resources;
- ▲ Transportation and Circulation;
- ▲ Air Quality;
- ▲ Climate Change;
- ▲ Noise;
- ▲ Geology and Soils;
- ▲ Hazards and Hazardous Materials;
- ▲ Public Services; and
- ▲ Public Utilities.

1.3.4 Organization of the Draft EIR

The remainder of this document includes a detailed description of the proposed project, analysis of potential environmental impacts that could result from project implementation, discussion of cumulative and growth-inducing impacts, and evaluation of potential alternatives to the proposed project. This information is organized as detailed below.

Chapter 2: Summary of Environmental Effects provides an overview of the environmental evaluation, including impact conclusions and recommended mitigation measures.

Chapter 3: Project Description describes the location of the project, the project background, existing conditions on the project site, and the nature and location of specific elements of the proposed project.

Chapter 4: Affected Environment, Environmental Consequences, and Mitigation Measures includes a topic-by-topic analysis of impacts that would or could result from project implementation. The analysis is organized

in 14 topical sections. Each section includes a discussion of the environmental and regulatory setting, impact analysis, and mitigation measures.

Chapter 5: Other CEQA Considerations includes a discussion of cumulative impacts, growth inducement, and unavoidable adverse impacts.

Chapter 6: Project Alternatives describes feasible alternatives to the proposed project, including the no project alternative, describing the consequences of taking no action.

Chapter 7: References lists all resources used throughout the Draft EIR.

Chapter 8: Report Preparation identifies preparers of the Draft EIR.

Chapter 9: Acronyms and Abbreviations provides definitions for acronyms and abbreviations used throughout the Draft EIR.

The **Appendices** contain a number of reference items providing support and documentation of the analyses performed for this report.

1.3.5 Baseline Conditions

According to Section 15125 of the State CEQA Guidelines, baseline conditions are normally defined as the physical environmental conditions in the vicinity of the project as they exist at the time that the Notice of Preparation (NOP) is published. Therefore, for the purposes of this document, the baseline conditions are the conditions that existed in the project vicinity as of March 25, 2015. This baseline condition was used as the basis for determining the significance of impacts.

1.3.6 Significance Criteria

The significance criteria used in Chapter 4, “Affected Environment, Environmental Consequences, and Mitigation Measures,” to evaluate potential impacts of the proposed project are derived from the questions presented in Appendix G, “Environmental Checklist Form,” of the State CEQA Guidelines.

1.3.7 Definition of Terms

To assist in the understanding of this report, the following definitions, as found in Article 20 of the State CEQA Guidelines, are provided:

- ▲ “Project” means the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment directly or ultimately.
- ▲ “Significant effect on the environment” means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- ▲ “Environment” means the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of

historical or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly as a result of the project. The “environment” includes both natural and man-made conditions.

- ▲ “Effects” and “impacts,” as used in this document, are synonymous. Effects analyzed under CEQA must be related to a physical change. Effects include:
 - direct or primary effects that are caused by the project and occur at the same time and place, and
 - indirect or secondary effects that are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.
- ▲ “Mitigation” includes:
 - avoiding the impact altogether by not taking a certain action or parts of an action;
 - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
 - rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
 - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
 - compensating for the impact by replacing or providing substitute resources or environments.
- ▲ “Cumulative impacts” refers to two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact is the change in the environment that results from the incremental impact of the project when added to 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.

This Draft EIR uses a variety of terms to describe the level of significance of adverse impacts identified during the course of the environmental analysis. These terms are defined below.

- ▲ A “less-than-significant impact” is an impact that is adverse but that does not exceed the defined standards of significance. Less-than-significant impacts do not require mitigation.
- ▲ A “significant impact” is an impact that exceeds the defined standards of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less-than-significant level.
- ▲ A “potentially significant impact” is an impact for which there is not enough information to definitively conclude the impact would be significant, but based on reasonable expectations, the impact is considered significant. A potentially significant impact is equivalent to a significant impact and requires the identification of feasible mitigation measures or alternatives.
- ▲ A “significant and unavoidable impact” is an impact that exceeds the defined standards of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

1.4 PROJECT REVIEW AND CEQA PROCESS

Public input is an important aspect of the County's environmental review process. In accordance with State CEQA Guidelines Section 15083, the County provides opportunities for individual members of the public, as well as organization and agency representatives, to consider proposed actions and provide input and recommendations concerning the content of an EIR. The following sections summarize the public involvement efforts conducted by the County.

1.4.1 EIR Scoping

El Dorado County prepared and distributed an NOP for this EIR on March 25, 2015. The NOP provided a brief description of the project, a map of the project location, and an overview of the environmental review process. The purpose of the NOP was to provide notification that an EIR for the project would be prepared and to solicit guidance on the scope and content of the document. The NOP invited all interested parties to provide comments during a 30-day period. The NOP was mailed to several thousand individuals and organizations, including property owners and/or residents within the vicinity of the project site. The NOP was also filed with the State Clearinghouse and County Recorder-Clerk's Office, and was posted on El Dorado County's website. A public notice announcing the NOP's availability and scoping meeting was posted in the Mountain Democrat newspaper on March 25, 2015.

The scoping meeting was held on April 9, 2015 from 6:00 p.m. to 7:30 p.m. at El Dorado Hills Fire Department Station 85. Responsible agencies and members of the public were invited to provide input on the scope of the EIR. The comments received on the NOP and at the scoping meeting are addressed, as applicable, in each technical section of this EIR. Appendix A contains a copy of the NOP and comment letters received on the NOP.

1.4.2 Public Review of the Draft EIR

The County will provide public notice of the availability of the Draft EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties through submittal of a Notice of Availability to the State Clearinghouse and County Recorder-Clerk's Office. Copies of the Draft EIR will be available at the following locations:

- ▲ County of El Dorado, Community Development Agency, 2850 Fairlane Court, Building C, Placerville
- ▲ County of El Dorado Library, Placerville Branch, 345 Fair Lane
- ▲ County of El Dorado Library, El Dorado Hills Branch, 7455 Silva Valley Pkwy.
- ▲ County of El Dorado Library, Cameron Park Branch, 2500 Country Club Dr.

The Draft EIR will also be available electronically at:

<http://edcapps.edcgov.us/Planning/ProjectInquiryDisplay.asp?ProjectID=20149>

The public review and comment period will be 45 days, from March 24 to May 7, 2016. Written comments on the Draft EIR must be submitted prior to the close of the comment period. All comments or questions regarding the Draft EIR should be addressed to:

Jennifer Franich
County of El Dorado Community Development Agency
Planning Services Division
2850 Fairlane Court
Placerville, CA 95667
Email: jennifer.franich@edcgov.us

Following the public review period, a Final EIR will be prepared that will include comments on the Draft EIR received during the public review period and the County's responses to those comments. The Final EIR will address any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will comprise the EIR for the proposed project.

1.4.3 Final EIR Certification Process

Before El Dorado County can approve the project, it must first certify that the EIR was completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the County. The County will also be required to adopt Findings of Fact describing the disposition of each significant impact and alternatives. For any impacts determined to be significant and unavoidable, the County will be required to adopt a Statement of Overriding Considerations. Certification of the EIR does not approve the project and the County will consider permitting and construction of the project separately. If the EIR is certified, the County would adopt and implement a Mitigation Monitoring and Reporting Plan that specifies the methods for monitoring mitigation measures required to eliminate or reduce the project's significant effects on the environment.

1.5 DISCRETIONARY ACTIONS AND USE OF THIS EIR

A number of permits and approvals, including discretionary actions, are listed in Table 1-1 and would be required before development of the project could proceed. As lead agency for the proposed project, the County of El Dorado would be responsible for the majority of approvals required for the development. Where other agencies have authority related to the project and its approvals, these agencies may use this EIR when considering required permits and approvals. In addition, the County and applicant would enter into a development agreement for reimbursement of costs associated with certain infrastructure of area-wide benefit (Saratoga Way improvements and right of way), park dedication requirements, and various other agreements. It is anticipated that any such reimbursement would utilize fee credits against applicable fees otherwise due.

Table 1-1 Required Permits and Approvals	
Agency	Permit/Approval
El Dorado County Community Development Agency	Zone Change Planned Development Tentative Map Design Waivers Construction Drawings and associated permits Final Subdivision Maps Building Permits Grading Permits Encroachment Permits Development Agreement
El Dorado County Air Quality Management District	Fugitive Dust Control Plan Asbestos Dust Mitigation Plan
El Dorado Irrigation District	Approval of utility connections/improvements Offsite sewer easements, if applicable
El Dorado Hills Community Service District	Approval of park designs
El Dorado Hills Fire Department	Wildland Fire Safety Plan Approval of Road and Utility Improvements
El Dorado County Resources Conservation District	Erosion Control Plan
Central Valley Regional Water Quality Control Board	Stormwater Pollution Prevention Plan
California Department of Fish and Wildlife	Streambed Alteration Agreement
Source: Data Compiled by Ascent Environmental	

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2 SUMMARY

2.1 AREAS OF POTENTIAL CONTROVERSY

Comments raised during the scoping period were primarily related to the following issue areas: availability of water and the effects of additional water demand; traffic effects, including offsite effects along Wilson Boulevard and Saratoga Way; consistency with the character of existing subdivisions; and the density of the proposed development. The Notice of Preparation (NOP) and comments received in response to the NOP are included in Appendix A of this draft EIR, and summarized below in Table 2.1-1. Comments received at the scoping meeting were similar to, and are encapsulated by, the written comments provided in Appendix A.

Table 2.1-1 Summary of Comments on the Notice of Preparation			
Commenter	Affiliation	Date	Areas of Concerns
Armer, John	—	3.30.2015	Effects on water supply and flooding
Bae, Kyong	—	4.9.2015	Access to, and potential enhancement of, existing open space; noise and air quality effects of construction; privacy concerns; analysis of biological resources
Batt, AJ	—	4.24.2015	Aesthetics; grading plans and effects of grading on noise environment
Benz, Mimi	—	4.23.2015	Increased traffic and crime; asbestos; wetlands
Browning, Nathaniel	—	4.8.2015	Request for trails and open space; use of drought-resistant, native landscaping; increased traffic; support for project
Carlson, Bernard Jordan, Dennis	Friends of El Dorado County	4.27.2015	Need to extend Saratoga Way as a four lane road; need for new Park and Ride
Cullivan, Sylvia	—	3.30.2015	Water availability; concern about density of development
Ferry, Steve	—	4.9.2015	Inclusion of community gathering space and pool
Flood, Dale	—	4.10.2015	Concern about density of development
Forbes, Michael Forbes, Melissa	—	3.29.2015	Need for stop signs and sidewalks on Saratoga Way east of the project site; trail development; use of drought-resistant landscaping
Forbes, Michael Forbes, Melissa	—	3.31.2015	Effects on water supply; housing depreciation; strains on public services
Gatewood, Clinton Gatewood, Rita	—	4.28.2015	Support for extension of Saratoga Way, and concern about managing traffic flow and effects from new commercial development along the corridor; pedestrian safety; effects on schools and utilities; aesthetics; housing depreciation
Habersack, Brian	—	4.25.2015	Effects on birds and wildlife movement; management of open space as habitat; obstruction of views from existing homes; consistency with design of existing homes; light and glare generated by development; managing traffic flow on Saratoga Way east of the project site; effects on water supply; mitigating effects of naturally-occurring asbestos
Harris, Richard Krogh, Hilary Dollins, Brandy Malacara, Mayda McAdon, Gloria	El Dorado Hills Townhouses Association	4.16.2015	Analysis of traffic, noise, home depreciation; effects of widening existing Saratoga Way (not proposed); need for analysis of effects on aesthetics and air quality, and cumulative impacts
Johnstone, Tyler	—	4.9.2015	Surface hydrology and increased runoff into the Promontory Open Space; increase in traffic; effects of grading; aesthetics; effects on biological resources; water availability and use of water for dust control; demand on public services; project layout; study of historical artifacts; aesthetic effects of fire setbacks

Table 2.1-1 Summary of Comments on the Notice of Preparation			
Commenter	Affiliation	Date	Areas of Concerns
Kinger, Aaron	—	4.7.2015	Support for project
Krogh, Hillary	—	4.18.2015	Traffic impacts on neighborhood streets; effects of noise on existing residences; extending study area to include adjacent land uses
Layton, Jennifer	—	4.7.2015	Traffic control - offsite stop sign
Layton, Jennifer	—	4.9.2015	Traffic control - offsite stop signs and speed bumps
Magnusson, Melissa	—	4.13.2015	Availability of water
Manchester, Warren	—	4.9.2015	Effects on water supply; traffic effects related to air quality, noise, and level of service; density of development; support for open space
Manchester, Warren	—	4.1.2015	Presence of wetlands on the project site
Marlink, Terry Marlink, Carol	—	4.10.2015	Use, and quality, of water during construction; need for water conservation and energy efficiency; offsite (Empire Ranch Road and Highway 50) traffic impacts; accessibility for fire department; police service; need for study of biological resources; construction vehicle access; cumulative effects of construction
Molyn, Michael	—	4.9.2015	Suggested sound wall along existing Wilson Boulevard (offsite)
Nunn, Raelene	—	4.7.2015	Availability of water
Oglesby, Sandra Oglesby, Doug	—	4.27.2015	Offsite traffic, safety, air quality, and noise effects of extending Saratoga Way; effects on water supply; potential for increased taxes
Patane, Lenny	—	4.9.2015	Availability of water, traffic
Peacock, Philip Peacock, Sugar	—	4.26.2015	Construction-generated traffic and dust, effects of traffic on Wilson Boulevard (offsite); timeline for buildout of parks; school capacity; effects on water supply and use of recycled water; density of development; plan for abatement of naturally-occurring asbestos
Peter, Shiny	—	5.4.2015	Development plan - avoidance of oak trees and sloped areas; drought and wildfire potential
Ray (Last name omitted)	—	4.1.2015	Consistency with the general plan; availability of water; traffic effects
Ritchie, Michelle Ritchie, Ben	—	4.22.2015	Questions about project description details; suggested project alternatives; content of the draft EIR; construction traffic, air quality, noise, and pest management impacts; aesthetics; school capacity; public access to recreational resources; availability of water; need for geotechnical investigation; land use compatibility; cumulative analysis
Robinson, Tim Robinson, Mary	—	3.29.2015	Availability of water; traffic; public services; potential for increase in crime; traffic effects
Shepard, Richard	—	1.15.2005	2005 comments on project timeline
Shultz, Kim	—	4.7.2015	Traffic control - offsite stop signs or lights on Saratoga Boulevard
Silva, Lorri	—	4.9.2015	Density of development; home depreciation; traffic, effects on the watershed and wetlands; loss of habitat; asbestos; noise; crime increase and effect on Sheriff's Department; public access to parks; effects on schools; air quality; aesthetics and light pollution; loss of open space
Skube, Lisa	—	4.9.2015	Effects of traffic on Wilson Boulevard (offsite); aesthetics; availability of water
Speelman, Walter	—	—	Availability of water
Sugihara, Diana	—	—	Asbestos exposure; traffic; hillsides and habitat; housing density; school capacity; parks; home depreciation; crime increase and effect on Sheriff's Department
Thompson, Matthew	—	4.15.2015	Effects of traffic on Wilson Boulevard (offsite); availability of water
Williamson, Don	—	4.9.2015	Noise; construction traffic; safety of bicyclists and pedestrians; home depreciation; effect on taxes

Table 2.1-1 Summary of Comments on the Notice of Preparation			
Commenter	Affiliation	Date	Areas of Concerns
Woods, John Woods, Janet	—	—	Availability of water; consistency with design of existing homes; home depreciation; traffic
Woodworth, Eirc	—	4.24.2015	Need for sports fields
Fredericks, Eric	Caltrans	4.27.2015	Permit requirements for work in state right of way; summary of comments submitted on the Traffic Impact Analysis; effects on surface hydrology and drainage; noise assessment should assume that Caltrans will not be constructing sound walls in the project area
Cleak, Trevor	Central Valley Regional Water Quality Control Board	4.27.2015	General permit requirements
Schaeffer, Kristen	El Dorado Irrigation District	4.27.2015	Include on and offsite water and sewer facilities in analysis

2.2 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project. This draft EIR evaluates impacts to environmental resources that could result from implementation of the Saratoga Estates Project, and discusses mitigation measures that could be implemented by El Dorado County to reduce potential adverse impacts to a level that is considered less than significant (see Table 2.2-2). The impacts and mitigation measures are identified Chapter 4, “Affected Environment, Environmental Consequences, and Mitigation Measures,” and are summarized at the end of this chapter. The mitigation measures presented in this draft EIR will form the basis of the Mitigation Monitoring Program.

2.2.1 Less-Than-Significant Impacts

A number of impacts identified in the draft EIR were found to be less than significant, requiring no mitigation. These include all impacts to the following resources:

- ▲ Land Use Compatibility
- ▲ Population, Employment, and Housing
- ▲ Aesthetic and Visual Resources
- ▲ Public Services
- ▲ Utilities and Energy Conservation

2.2.2 Significant Impacts

IMPACTS REQUIRING MITIGATION

Section 15126.4 of the State CEQA Guidelines requires that an EIR describe feasible mitigation measures that could minimize significant adverse impacts. Impacts in the following areas would be significant without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures recommended in this report are implemented:

- ▲ Hydrology and Water Quality

- ▲ Biological Resources
- ▲ Transportation and Circulation
- ▲ Air Quality
- ▲ Climate Change
- ▲ Geology and Soils
- ▲ Hazards and Hazardous Materials
- ▲ Cultural Resources

SIGNIFICANT AND UNAVOIDABLE IMPACTS

An impact that remains significant after mitigation is considered an unavoidable adverse impact of the project. Implementation of the proposed project would result in significant and unavoidable impacts in the following resource area:

- ▲ Noise

2.2.3 Cumulative Impacts

CEQA requires that an EIR examine the cumulative impacts of a project. As discussed in Section 15130(a)(1) of the State CEQA Guidelines, a cumulative impact “consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.” The potential for the project to have a cumulatively considerable contribution to a cumulative environmental impact is evaluated in Chapter 5, “Other CEQA Considerations.” The analysis determined that the project impacts would not result in a cumulatively considerable contribution to impacts from other past, present or reasonably foreseeable projects and no significant cumulative impacts have been identified for the project.

2.3 ALTERNATIVES TO THE PROPOSED PROJECT

The following summary describes the alternatives to the proposed project that are evaluated in this EIR. For a complete discussion of alternatives, see Chapter 6, “Project Alternatives.”

2.3.1 Summary of Project Alternatives

Pursuant to Section 15126.6(c) of the State CEQA Guidelines, this draft EIR includes a reasonable range of alternatives to the proposed project that meet most of the objectives of the project and avoid or substantially lessen the identified likely environmental impacts. The following summary describes the alternatives to the proposed project that are evaluated in this draft EIR.

Chapter 6, “Project Alternatives,” evaluates four alternatives to the proposed project in detail:

- ▲ **No Project, No Development**—assumes that no development (including roadways) occurs on the project site and that the site remains in its current condition in perpetuity.
- ▲ **No Project, Saratoga Way Extension Only**—assumes construction of the Saratoga Way extension, consistent with the County’s transportation plan, but includes no other development on the project site.
- ▲ **Reduced Density**—assumes development of the project site with single-family residential dwelling units at the lowest density allowed by the current General Plan designation (High Density Residential): one dwelling unit per acre.

- ▲ **Maximum General Plan Buildout**—assumes development of the project site with the maximum residential development allowed under the current General Plan land use designation.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Aside from the No Project, No Development Alternative, the Reduced Density Alternative would be environmentally superior to the proposed project, although it would likely place demand for additional housing units elsewhere which could result in unknown environmental impacts.

2.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The following table summarizes the impacts identified in the Chapter 4, “Affected Environment, Environmental Consequences, and Mitigation Measures,” of this draft EIR. The level of significance of each impact, any mitigation measures required for each impact, and the resultant level of significance after implementation of mitigation measures, are provided in the table. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter 4.

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.1 Land Use Compatibility			
Impact 4.1-1: Divide an established community. The majority of the project site is currently undeveloped. The proposed residential development would not create a physical barrier within the project site, nor would it remove existing means of access to and through existing nearby neighborhoods.	LTS	No mitigation is required.	LTS
Impact 4.1-2: Conflict with applicable land use plans or policies. The proposed project includes rezoning from R and OS to R-PD and OS-PD to allow for the development of 317 residential units and associated infrastructure and amenities on the site. Application of the PD Combining Zone District would be consistent with the County's general plan land use designation. In addition, all standards, densities, and other requirements are required to conform to the current base zone of R1 and OS.	LTS	No mitigation is required.	LTS
Impact 4.1-3: Compatibility with surrounding land uses. The project would be similar in scale to existing and planned residential developments within the vicinity. In addition, open space areas would generally surround the perimeter of the site, providing a buffer from surrounding land uses and a transition from adjacent communities to the proposed residential subdivision.	LTS	No mitigation is required.	LTS
4.2 Population, Employment, and Housing			
Impact 4.2-1: Directly or indirectly induce substantial population growth during construction. During the five-year construction period, the project would require approximately 140 workers for peak construction. Because the project site is located in an urban area with a substantial construction workforce, it is expected that workers would be drawn from the local labor pool and that a sufficient number of construction workers are available in the county and adjacent communities to meet this demand. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of workers to the area is not anticipated.	LTS	No mitigation is required.	LTS
Impact 4.2-2: Directly or indirectly induce substantial population growth during operation. The Saratoga Estates project would provide housing for an estimated 929 individuals. These additional residences would accommodate population growth in the unincorporated community of El Dorado Hills that is consistent with the growth projections in the <i>El Dorado County General Plan</i> and related planning documents.	LTS	No mitigation is required.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.3 Hydrology and Water Quality			
Impact 4.3-1: Short-term construction-related water quality degradation. Soils onsite have a high potential for erosion. Project construction activities would involve extensive grading and movement of soil, which could result in erosion and sedimentation, and discharge of other nonpoint source pollutants in onsite stormwater that could then drain to offsite areas and degrade local water quality.	PS	Mitigation Measure 4.3-1: Prepare and implement a stormwater pollution prevention plan. The applicant shall prepare and implement a SWPPP that complies with the SWRCB Statewide Construction General Permit. The SWPPP must identify BMPs that will protect water quality from polluted stormwater runoff.	LTS
Impact 4.3-2: Increase in surface water runoff potentially exceeding the capacity of existing or planned stormwater drainage systems. The proposed development would add additional impervious surfaces at the project site, which would increase surface runoff on an ongoing basis. This increase could result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and could result in exceeding the capacity of onsite stormwater systems and greater potential for on- and offsite flooding.	PS	Mitigation Measure 4.3-2: Complete final drainage plan and provide adequate onsite storm drainage facilities. The applicant shall prepare a Final Drainage Analysis conforming to the County’s Drainage Manual and the County’s West Slope Storm Water Management Plan (SWMP) with each final map (phase) of the project. The Final Drainage Analysis shall be submitted to the County along with the Improvement Plans for each phase. The Final Drainage Analysis shall identify project drainage facilities and design features that ensure runoff from the project site will not exceed pre-development levels. The identified drainage facilities and design features shall be included in the Improvement Plans for each phase. At a minimum, the necessary drainage facilities and design features constructed with each phase of development shall be sufficient to mitigate post-development runoff to pre-development levels for each phase. Drainage facilities and design features for later phases of the project may be constructed with earlier phases of the project. The Final Drainage Analysis for each phase shall include evaluation of the final design for the 85th percentile storm (water quality storm), the tenth percentile storm (10-year storm) and the one percentile storm (100-year) storm. The Final Drainage Analysis for each phase shall include a discussion of that phase set in the context of the overall project, considering prior and future phase drainage facilities and design features. Maintenance of the project drainage facilities and design features shall be the responsibility of the Home Owner’s Association (HOA). A provision for maintenance and management of the drainage facilities and design features shall be included in the Codes, Covenants and Restrictions for the project. A separate Maintenance Program shall be developed in accordance with the County’s SWMP to guide the long term maintenance and management of the systems by the HOA. The Maintenance Program shall be submitted to the County for review and approval prior to recordation of the first final map.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 4.3-3: Long-term water quality degradation. The conversion of undeveloped land to urban uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Overall, the project could cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, trace metals and organics, trash) into the stormwater drainage system compared with existing conditions if the system is not properly designed.</p>	PS	<p>Mitigation Measure 4.3-1: Prepare and implement a SWPPP. Implement Mitigation Measure 4.3-1, as described above.</p> <p>Mitigation Measure 4.3-2: Complete final drainage plan and provide adequate onsite storm drainage facilities. Implement Mitigation Measure 4.3-2, as described above.</p>	LTS
4.4 Biological Resources			
<p>Impact 4.4-1: Disturbance to or loss of special-status wildlife species and habitat during construction activities. Implementation of the project could result in the degradation of habitat and loss of several special-status species, including nesting birds, amphibians, and reptiles. Special-status species are protected under ESA, CESA, California Fish and Game Code, CEQA, or other regulations. Ground-disturbing activities during construction such as vegetation removal, grading, and excavation could result in a substantial adverse effect on these species.</p>	PS	<p>Mitigation Measure 4.4-1a: Avoid or minimize effects to valley elderberry longhorn beetle. If rough grading and/or removal of onsite elderberry shrubs do not occur by May 2016, a qualified biologist shall conduct surveys for VELB according to the USFWS protocol outlined in USFWS' <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (1999) (or other USFWS conservation guidelines in effect at the time these activities are implemented) before any ground disturbing construction activities. The biologist shall, at a minimum, identify and map all elderberry shrubs with stems measuring 1 inch or greater in diameter at ground level on and within 100 feet of the project site, take stem counts, and document any exit holes. If no exit holes are found, no additional mitigation is required.</p> <p>If exit holes are identified during the survey, the applicant shall implement all take avoidance measures identified by the USFWS, including, but not limited to the following measures (as updated or amended by USFWS at the time the above-described construction activities are implemented):</p> <ul style="list-style-type: none"> ▲ Impacts to VELB will be avoided and minimized by following the Conservation Guidelines for cases where elderberry shrubs can be retained and protected within 100 feet of the project footprint. ▲ If elderberry shrubs are 100 feet or more from project activities, no direct or indirect impacts are expected. Shrubs will be protected during construction by establishing and maintaining a high visibility fence at least 100 feet from the drip line of each elderberry shrub with stems 1 inch in diameter or greater. ▲ If elderberry shrubs can be retained within the project footprint, project activities may occur up to 20 feet from the dripline of elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts. Specifically, these minimization measures include: <ul style="list-style-type: none"> ▼ A minimum setback of at least 20 feet from the dripline of each elderberry plant with stems greater than 1-inch diameter at ground level will be 	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>maintained to avoid direct impacts. The buffer area will be fenced with high visibility construction fencing before commencement of ground-disturbing activities and will be maintained for the duration of construction activities. The project applicant will ensure that ground-disturbing activities on the project site do not alter the hydrology of the site or otherwise affect the likelihood of vigor or survival of elderberry shrubs.</p> <ul style="list-style-type: none"> ▼ The project proponent will ensure that project activities, such as truck traffic or other use of machinery, do not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs is adversely affected. Enforcement of a speed-limit and watering dirt roadways are potential methods to ensure that excessive dust is not created. ▼ Areas that are disturbed temporarily will be restored to pre-disturbance conditions. Erosion control measures will be implemented to restore areas disturbed within 100 feet of elderberry shrubs. ▼ No insecticides, herbicides, fertilizers, or other chemicals will be used within 100 feet of elderberry shrubs. Herbaceous vegetation may be mowed or removed using hand tools within 100 feet, but not within 20 feet of the elderberry shrubs. ▼ If new permanent development is to occur within the 100-foot buffer (but outside the 20-foot buffer), the potential for indirect effects will be evaluated by a qualified biologist. If indirect effects are likely to occur, the project applicant will consult with USFWS to determine the appropriate conservation measures. If indirect effects are not likely to occur, then no additional minimization measures would be required. ▲ For elderberry shrubs that cannot be avoided by at least 20 feet or impacts to the beetle minimized through the measures listed above, consultation with USFWS in compliance with the ESA will be carried out to seek incidental take authorization. ▲ No elderberry shrub will be removed or transplanted without prior coordination with USFWS and assurance that the project proponent has abided by all pertinent conditions of any applicable incidental take authorization. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area. 	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>▲ Relocation of existing elderberry shrubs and planting of new elderberry seedlings and associated riparian species and/or the purchase of mitigation credits at an approved mitigation bank will be implemented according to the Conservation Guidelines (USFWS 1999) or other applicable USFWS conservation guidelines in effect at the time of construction implementation. The current Conservation Guidelines use stem count data, presence or absence of exit holes, and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected VELB habitat. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within suitable areas of the project site, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable offsite location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings will be placed in the on- or offsite conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas will be preserved in perpetuity as habitat for VELB. The final VELB mitigation plan, including transplanting procedures, long-term protection, management of the mitigation areas, and monitoring procedures will be consistent with the <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS 1999), or other USFWS guidelines in effect at the time the construction activities are implemented.</p> <p>Mitigation Measure 4.4-1b: Avoid or minimize effects to western pond turtle.</p> <p>▲ Within 24 hours before beginning construction activities within 200 feet of suitable aquatic habitat for western pond turtle, a qualified biologist will inspect areas of anticipated disturbance for the presence of western pond turtle. The construction area will be re-inspected whenever a lapse in construction activity of two weeks or more has occurred. The monitoring biologist will be available thereafter; if a turtle is encountered during construction activities, the monitoring biologist will have the authority to stop construction activities until a qualified biologist can relocate the western pond turtle to the nearest suitable aquatic habitat outside the area of disturbance.</p> <p>Mitigation Measure 4.4-1c: Avoid or minimize the loss of special-status bird nests. The project applicant will implement the following measures to avoid or minimize the loss of nests of golden eagle, white-tailed kite, and other raptors and special status birds:</p>	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ To the extent feasible, vegetation (including tree) removal, grading, and other ground disturbing activities will be carried out during the nonbreeding season (September 1 through February 14) for migratory birds. ▲ If construction activity is scheduled to occur during the nesting season (February 15 to August 31), the project applicant shall utilize a qualified biologist to conduct preconstruction surveys for all potential special-status bird species (golden eagle, white-tailed kite, burrowing owl, and tricolored blackbird) and suitable habitat onsite and within 500 feet of the project site to identify active nests that could be affected by project construction. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction in a particular area. If no nests are found, no further mitigation is required. ▲ If active nests are found, impacts on nesting birds, including golden eagle, white-tailed kite, burrowing owl, and other raptors, as well as tricolored blackbirds shall be avoided by establishment of appropriate buffers around the nests. No project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged or the nest is no longer active. A 500-foot buffer around raptor nests, burrows, and/or colonies are generally adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with CDFW depending on site-specific conditions. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. <p>Mitigation Measure 4.4-1d: Avoid or minimize loss of protected bat species. Prior to construction, suitable roosting habitat (assumed to be trees on the project site) for roosting bats on the project site will be surveyed by a qualified biologist. Surveys will consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and may also include an evening emergence survey to note the presence or absence of bats, if warranted. The type of survey will depend on the condition of the potential roosting trees. If no bat roosts are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts, but are not required.</p>	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>If roosts of pallid or silver-haired bats are determined to be present and must be removed, the bats will be excluded from the roosting site before the tree is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with CDFW and may require construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. If determined necessary during consultation with CDFW, replacement roosts will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the roost trees may be removed.</p> <p>Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element). Prior to any ground disturbing activities that would affect riparian or aquatic habitats, a qualified biologist shall conduct an education program for all persons employed or otherwise working on the project. The program shall consist of a presentation from the biologist that includes a discussion of the biology of the habitats and species potentially affected by project development. The biologist shall also include as part of the education program information about the distribution and habitat needs of any special-status species that may be present, legal protections for those species, penalties for violations, and project-specific protective measures identified by regulatory authorizations. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to their performing work onsite. The permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains relevant biological data for workers to carry onsite. Upon completion of the education program, employees shall sign a form stating they attended the program and understand all protection measures.</p>	
<p>Impact 4.4-2: Loss and/or modification of riparian habitat and fill or other disturbance of waters of the United States during construction. Proposed structures, utilities, roads, and trails are designed to avoid permanent fill of waters of the United States including wetlands and riparian habitat. However, because grading and excavation would occur</p>	PS	<p>Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element). Implement Mitigation Measure 4.4-1e, as described above.</p>	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>close or adjacent to these areas, they could be affected through either minor inadvertent removal of vegetation, excessive ground disturbance to the bed and bank causing erosion into waterways, or inadvertent placement of fill materials in waters of the United States, wetlands, and/or riparian areas.</p>		<p>Mitigation Measure 4.4-2a: Avoid effects to sensitive natural communities by fencing resources. Before construction activities commence, all sensitive areas will be flagged or fenced with brightly visible construction flagging and/or fencing under the direction of the qualified biologist to ensure that grading, excavation, or other ground-disturbing activities will not occur within these areas. This delineation shall be consistent with and incorporate the USACE-approved preliminary jurisdictional determination or verified jurisdictional determination. Foot traffic by construction personnel will also be limited in these areas to prevent the introduction of invasive or weedy species. Periodic inspections during construction will be conducted by the monitoring biologist to ensure the integrity of exclusion fencing/flagging is maintained throughout the period of construction involving ground disturbance.</p> <p>Mitigation Measure 4.4-2b: Obtain all required regulatory authorizations if project development would result in the fill of Waters of the United States. Prior to any grading or construction activities within waters of the United States., the appropriate Section 404 permit will be obtained for any project-related impacts. Any waters of the United States that would be affected by project development shall be replaced or restored on a “no-net-loss” basis in accordance with USACE mitigation guidelines (or the applicable USACE guidelines in place at the time of construction). In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the Regional Water Quality Control Board shall be obtained.</p> <p>Mitigation Measure 4.4-2c: Obtain all required regulatory authorizations if project development would result in impacts to aquatic or riparian habitats within CDFW jurisdiction. If it is determined that project development would affect the bed, bank, channel, or associated riparian habitat subject to CDFW jurisdiction under Fish and Game Code Section 1602, a Streambed Alteration Notification shall be submitted to CDFW, pursuant to Section 1600 et seq. of the California Fish and Game Code. If proposed activities are determined to be subject to CDFW jurisdiction, the project proponent shall abide by the conditions of any executed agreement prior to the issuance of a grading permit by El Dorado County.</p>	
<p>Impact 4.4-3: Conflict with County policies related to required setbacks from wetland features. El Dorado County General Plan Policy 7.3.3.4 and the Interim Interpretive Guidelines for that Policy (adopted June 22, 2006) require a minimum setback of 50 feet from intermittent streams and wetlands. An alternative setback can be approved</p>	PS	<p>Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element). Implement Mitigation Measure 4.4-1e, as described above.</p>	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>when the applicant demonstrates that the alternative setback would still provide sufficient protection to the affected biological resources and avoid or minimize impacts as required by the general plan, or if the alternative setback is necessary to allow “reasonable use” of an existing legal parcel and appropriate mitigation measures and/or best management practices are incorporated into the project.</p>		<p>Mitigation Measure 4.4-2a: Avoid effects to sensitive natural communities by fencing resources. Implement Mitigation Measure 4.4-2a, as described above.</p> <p>Mitigation Measure 4.4-2b: Obtain all required regulatory authorizations if project development would result in the fill of Waters of the United States. Implement Mitigation Measure 4.4-2b, as described above.</p> <p>Mitigation Measure 4.4-2c: Obtain all required regulatory authorizations if project development would result in impacts to aquatic or riparian habitats within CDFW jurisdiction. Implement Mitigation Measure 4.4-2c, as described above.</p> <p>Mitigation Measure 4.4-3a: Implement additional actions to further reduce impacts to wetland features due to alternate minimum setback during construction. The following actions shall be implemented during grading and other ground-disturbing construction activities within 100 feet of the onsite wetland features:</p> <ul style="list-style-type: none"> ▲ A qualified biologist shall be onsite during all initial vegetation clearing and grading activities. ▲ High-visibility orange fencing shall be installed 10 feet from the edge of aquatic features and riparian habitat or at the edge of the grading/construction footprint, whichever is greater. The fencing shall be installed at the edge of the construction footprint around all aquatic features, as directed by the monitoring biologist. The fencing shall be installed prior to ground-disturbing activities and shall remain throughout the duration of construction activities. The fencing shall be checked daily by the superintendent or foreman to ensure that the fencing remains intact. ▲ Excavation and ground disturbance within 100 feet of any aquatic feature (excluding removal of trees) shall be limited to dry periods (generally between April 15 and October 15). ▲ Within identified wetland features, the top 4 inches of topsoil within the temporary disturbance area shall be stripped and stockpiled onsite. Once construction of the lots is complete, the topsoil shall be returned to the permanent buffer areas to maintain an existing seed bank and promote rapid re-establishment of vegetative cover. ▲ If rain is forecasted to occur, all bare soil shall be covered with plastic sheeting, or equivalent, 24 hours prior to an anticipated precipitation event. 	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Mitigation Measure 4.4-3b: Provide permanent design features and monitoring to further reduce impacts to wetland features due to alternate minimum setback during operation.</p> <ul style="list-style-type: none"> ▲ The applicant shall hire a qualified biologist to prepare a revegetation plan and submit to the County’s Community Development Department prior to the start of construction. The plan shall include information on planting, maintenance, monitoring, and adaptive management strategies. For all disturbed areas within 40 feet of aquatic features and riparian habitat, the revegetation plan shall specify revegetation with native plant material, including native shrubs and trees to improve bank stability and habitat values. ▲ To ensure establishment of native habitat, a monitoring plan prepared by a qualified biologist shall be submitted to the County’s Community Development Department that includes monitoring of the habitat within the open space buffers for a minimum of five years after the final certificate of occupancy is issued. The plan shall include adaptive management responses to implement if habitat quality is declining. ▲ The Covenants, Conditions, and Restrictions (CC&R) for the development shall discourage residents from using species considered invasive by the California Invasive Plant Council (CAL-IPC) in landscaping throughout the development. This restriction should be enforced by the Home-owners Association for the development. ▲ Informational signs informing residents about impacts that domestic animals can have on wildlife shall be installed in parks and trail corridors. 	
4.5 Cultural Resources			
<p>Impact 4.5-1: Disturb archaeological resources. Implementation of the proposed project could cause a substantial change in the significance of an archaeological resource. One archaeological resource (P-9-822) has been recommended eligible for listing in the CRHR. The proposed project has been designed to avoid this resource; however, mitigation measures are needed to ensure the resource is avoided. Also, project-related ground-disturbing activities could cause a substantial change in the significance of an as yet undiscovered archaeological resource as defined in State CEQA Guidelines Section 15064.5.</p>	S	<p>Mitigation Measure 4.5-1a: Avoid impacts to P-9-822. Construction activities occurring within the boundaries of P-9-822 shall not include any scarification or excavation activities. Any construction proposed within the boundaries of P-9-822 shall only include covering the site with layer(s) of chemically compatible soil prior to construction of any physical structures or other improvements. A qualified archaeologist shall be onsite continuously to monitor all ground disturbing activities within 100 feet of P-9-822 and all soil capping activities. The qualified archaeologist shall have the authority to stop work if necessary to protect the integrity of the site.</p>	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Mitigation Measure 4.5-1b: Develop and implement a Worker Environmental Awareness Program (heritage and cultural resources element). The project applicant shall submit to the El Dorado County Planning Department a Worker Environmental Awareness Program, prepared by a qualified archaeologist that will be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. The topics to be addressed in the Worker Environmental Awareness Program will include, at a minimum:</p> <ul style="list-style-type: none"> ▲ types of heritage and cultural resources expected in the project area; ▲ types of evidence that indicates heritage or cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters); ▲ what to do if a worker encounters a possible resource; ▲ what to do if a worker encounters bones or possible bones; and ▲ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act. <p>Mitigation Measure 4.5-1c: Stop work and implement recommendations in the event of an archaeological discovery. In the event that evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. If an archeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, and a data recovery plan shall be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the project applicant to avoid disturbance to the resources, and if completed avoidance is not possible, follow accepted professional standards in recording any find including submittal of the standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area (the NCIC).</p>	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.5-2: Accidental discovery of human remains. Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains.	PS	Mitigation Measure 4.5-2: Stop work and implement recommendations if human remains are discovered. If human remains are discovered during any demolition/construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the project applicant shall notify the El Dorado County coroner and the NAHC immediately, according to Section 5097.98 of the PRC and Section 7050.5 of California’s Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. Following the coroner’s and NAHC’s findings, the archaeologist, and the NAHC-designated Most Likely Descendant shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.	LTS
Impact 4.5-3: Destroy a unique paleontological resource. The project site is considered to have a low paleontological sensitivity because the site rests on soils that are predominantly igneous (volcanic). No paleontological resources are known to occur within the project site or a 1-mile radius of the site.	LTS	No mitigation is required.	LTS
4.6 Aesthetic and Visual Resources			
Impact 4.6-1: Scenic vista impacts. Development of the proposed project would not obstruct views of existing scenic vistas or important scenic resources, as no such views are currently available from public vantage points surrounding the site.	LTS	No mitigation is required.	LTS
Impact 4.6-2: Visual character and quality impacts. Existing topographical and landscape features would be maintained where feasible and open space buffers would visually separate the new development from existing adjacent developments. Most onsite rock outcroppings would be removed from the site, but they are not considered significant geologic or visual features and are commonly found throughout El Dorado County. Although some trees would be removed, most of the existing oak trees located in proposed open space areas, along the stream corridor, in the northwest corner of the site, and along the eastern project boundary would be retained, and trees would be planted throughout the site, consistent with surrounding neighborhood and park	LTS	No mitigation is required.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
landscaping. The change in character of the project site, once developed, would be visually compatible with surrounding existing residential neighborhoods to the north, east, and west. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.			
Impact 4.6-3: Light and glare impacts. The proposed residential development would include indoor lighting and outdoor lighting for safety purposes. The proposed roadways, parks, and pathways would also include outdoor safety lighting. These new sources of light would be visible from a distance at night. The new light sources would be consistent with the surrounding suburban development. Compliance with general plan Policy 2.8.1.1 and Section 130.14.170 of the Zoning Ordinance before building permit issuance would ensure that light and glare created by the proposed development would be the minimum required, and comparable to that of surrounding residential neighborhoods.	LTS	No mitigation is required.	LTS
4.7 Transportation and Circulation			
Impact 4.7-1: Existing plus project intersection LOS impacts. Under the existing plus project conditions, operation of the study intersections range from LOS C to LOS F during the a.m. and p.m. peak hours. The freeway facilities are shown to operate from LOS A to LOS E during peak hours. Segments would operate at LOS D and E. Intersection operations associated with El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard would operate at LOS F, and the project would result in more than 10 additional vehicle trips per peak hour.	S	Mitigation Measure 4.7-1a: Pay TIM Fees. The applicant shall pay fair share fees to El Dorado County to address the project's contribution to traffic at the El Dorado Hills Boulevard at Saratoga Way/Park Drive Intersection. Fee amount shall be determined by the County. All fees shall be paid at the time of issuance of building permits. Mitigation Measure 4.7-1b: Complete a Signal Timing Plan. The project applicant shall prepare and implement a signal timing plan for the intersections along El Dorado Hills Boulevard/Latrobe Road corridor from Saratoga Way/Park Drive through Town Center Boulevard to provide acceptable LOS in the a.m. and p.m. peak hours. The plan for signal optimization shall be prepared by a California-licensed civil engineer or traffic engineer obtained by the project applicant, and shall be submitted to the County Transportation Division and Caltrans, as appropriate. Prior to issuance of occupancy certificates, the applicant shall ensure the signal timing improvements are completed in coordination with the County Transportation Division and Caltrans.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 4.7-2: Near Term (2024) plus proposed project conditions intersection LOS impacts. Under Near Term (2024) conditions, operation of the study intersections would range between LOS B and LOS F during the a.m. and p.m. peak hours. The study freeway facilities would range from LOS A to LOS E during peak hours. The study roadway segments would operate acceptably at LOS E or better. The El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard intersections would operate unacceptably at LOS F.</p>	S	<p>Mitigation Measure 4.7-2: Road and intersection improvements. Prior to issuance of occupancy permits, the applicant shall coordinate with the County to improve the El Dorado Hills at Saratoga Way/Park Drive intersection by adding a southbound right-turn lane and re-allocating the traffic signal green time, and improve the Latrobe at Town Center Drive intersection by restriping of the westbound Town Center Boulevard approach to include one shared through/left-turn lane and two right-turn lanes, adding a right-turn overlap signal phase for the westbound right-turn, and adding a component of Phase 2B improvements at the adjacent Highway 50 interchange with El Dorado Hills Boulevard/Latrobe Road. As determined by the County’s Community Development Agency (CDA), the project applicant shall pay TIM fees to satisfy the project’s fair share obligation towards these improvements, if they are included in the 10-Year CIP. Alternatively, as determined by the CDA, the project applicant may construct the improvements if they are needed, but not included in future updates to the 10-Year CIP, and may be eligible for either reimbursement or fee credit for costs that exceed the project’s proportional share.</p>	LTS
<p>Impact 4.7-3: Cumulative (2035) plus proposed project conditions intersection LOS impacts. Under the cumulative (2035) conditions, the study intersections would operate between LOS B and LOS F during the a.m. and p.m. peak-hours. Segments would operate at A and B LOSs. The freeway facilities would operate from LOS B to LOS D during peak-hours. The result indicates inadequate LOS at the intersections of El Dorado Hill Boulevard and Saratoga Way/Park Drive, and Latrobe Road and Town Center Boulevard. These intersections would continue to experience LOS F conditions and contribute more than 10 peak-hour trips.</p>	S	<p>Mitigation Measure 4.7-1a: Pay TIM Fees. Implement Mitigation Measure 4.7-1a, as described above.</p> <p>Mitigation Measure 4.7-1b: Complete a Signal Timing Plan. Implement Mitigation Measure 4.7-1b, as described above.</p> <p>Mitigation Measure 4.7-2: Road and intersection improvements. Implement Mitigation Measure 4.7-2 as described above.</p>	LTS
<p>Impact 4.7-4: Construction-related traffic impacts. Construction of the project would result in temporary construction traffic and temporary disruption to traffic circulation along roadways near the project site. The amount of construction activity would vary depending on the particular type, number, and duration of usage for the varying equipment, and the phase of construction.</p>	PS	<p>Mitigation Measure 4.7-4: Prepare and implement a construction traffic management plan. The applicant (or designated construction manager) shall prepare a construction Traffic Management Plan (TMP) in consultation with the El Dorado County Transportation Division, as well as all other applicable transportation entities, including Caltrans for state roadway facilities and City of Folsom for city roadway facilities. The TMP will ensure that construction traffic does not result in exceedance of peak-hour LOS at existing affected transportation facilities beyond baseline conditions. The County will ensure implementation of the construction TMP during all applicable construction phases. The TMP would address the following, as needed:</p>	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ scheduling for oversized material deliveries to the work site and haul routes, including flagging, scheduling off-peak deliveries (recognizing applicable noise standards may limit early morning/evening deliveries); ▲ coordination of construction traffic with other concurrent, major construction projects in the same local transportation network; ▲ 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. Such actions could include offering a ride-sharing program for construction workers, offering some flexibility for start and end-work times, and even restricting peak hour construction trips, if necessary. <p>The TMP would include an up-to-date evaluation of current operational characteristics of the roadways to verify that the plan is successful, or to identify whether additional measures should be added (as described above).</p>	
<p>Impact 4.4-5: Pedestrian, bicycle, and transit facilities impacts. The project would be required to construct onsite roadway and pedestrian facilities in accordance with County design guidelines. These onsite pedestrian and bicycle facilities would connect the project with the future adjacent Class II bike lanes along Saratoga Way. Through this connection to the proposed bike lane network, the project would provide continuity with adjacent projects, schools, parks, and other public facilities.</p>	LTS	No mitigation is required.	LTS
<p>Impact 4.7-6: Access and circulation impacts. Based on a review of general access and onsite circulation conducted by a traffic engineer, adequate access to/from Saratoga Way and the surrounding transportation network would be provided.</p>	LTS	No mitigation is required.	LTS
<p>Impact 4.7-7: Traffic safety impacts. Several intersections in the project area have been identified as areas prone to vehicle accidents. Although the project is consistent with the amount of development contemplated in the County's recent travel demand model and land use update, it would result in introduction of additional people to unsafe intersections and roadway segments. However, existing safety issues in the project vicinity have either recently been corrected, or improvements are imminent.</p>	LTS	No mitigation is required.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.8 Air Quality			
Impact 4.8-1: Short-term, construction-generated emissions of criteria air pollutants and precursors. Short-term, construction-generated emissions would exceed EDCAQMD's significance threshold for ROG, but would not exceed thresholds for mass emissions of NOX, PM10, and PM2.5 for all years of construction.	S	Mitigation Measure 4.8-1a: Use architectural coatings with low-VOC content. During construction, architectural coatings with an average VOC content of 150 grams per liter or less shall be used. Mitigation Measure 4.8-1b: Apply Rule 403 from SCAQMD, as adopted by EDCAQMD. During construction, implement SCAQMD's Best Available Fugitive Dust Control Measures and Best Available Fugitive Dust Control Measures for High Wind Conditions as adopted by EDCAQMD.	LTS
Impact 4.8-2: Long-term, operation-related emissions of criteria air pollutants and precursors. Long-term, operational emissions would not exceed significance thresholds for ROG, NOx, PM2.5, and PM10. Thus, long-term operational emissions of precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts.	LTS	No mitigation is required.	LTS
Impact 4.8-3: Mobile-source CO concentrations. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Short-term construction and long-term operation of the proposed project would not result in increases in traffic such that the adopted screening criteria would be triggered. Therefore, the project would not result in increased concentrations of CO that would expose sensitive receptors to unhealthy levels.	LTS	No mitigation is required.	LTS
Impact 4.8-4: Exposure of sensitive receptors to TACs. Construction activities would result in substantial emissions of diesel PM and NOA and would take place near offsite receptors. During operations, diesel powered equipment would not be as prominent and diesel PM emissions would be limited to emissions from on-road diesel vehicles. The project would not be a major source of other TACs, as these are primarily associated with industrial operations. However, the project is located in close proximity to Highway 50 and could expose sensitive receptors to substantial health risks from roadway emissions.	S	Mitigation Measure 4.3-1: Prepare and implement a SWPPP. Implement Mitigation Measure 4.3-1, as described above. Mitigation Measure 4.8-4a (NOA during construction): Comply with Applicable Recommendations in the Geotechnical Engineering Study. A professional geologist shall be retained by the project applicant. As determined necessary by the geologist, grading activities shall be observed to identify materials likely to contain NOA. Collection of soil/rock samples for analyses for NOA shall be conducted where recommended by the onsite geologist. An asbestos dust mitigation plan shall be prepared by the applicant and submitted to EDCAQMD that includes: ▲ Provisions for testing of all soils to be exported from the project site during construction. At least one sample per 1,000 tons of material shall be required. ▲ Prohibition of rock crushing where materials may contain asbestos.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ Track-out control measures. ▲ Prohibition of fugitive dust that extends beyond the project site. ▲ Specifications for the depth to which NOA-containing materials will be used as fill. NOA shall be used only in deep fills to avoid contact during future excavations (i.e., for pools or maintenance of utilities). ▲ A contingency under which the Buckeye Union School District (which includes William Brooks Elementary School) and the Folsom Cordova Unified School District (which includes Russell Ranch Elementary School) shall be notified if there is a release, or suspected release, of asbestos in fugitive dust that extends beyond the project site. <p>Coordinate with EDCAQMD to determine if air monitoring for NOA is necessary during construction.</p> <p>Following construction, finished lot testing for NOA shall be completed, as recommended by EDCAQMD.</p> <p>Mitigation Measure 4.8-4b (diesel PM during construction): Use Tier 3 construction equipment. To reduce diesel PM emissions during construction, limit construction equipment to those that comply with Tier 3 emission control standards.</p> <p>Mitigation Measure 4.8-4c (diesel PM during operation): Implement measures to reduce health risks from Highway 50.</p> <ul style="list-style-type: none"> ▲ Houses located within 500 feet of Highway 50 shall include air filtration systems that have a minimum efficiency reporting value of 13 and mechanical airflow and ventilation systems that are equipped to handle necessary air flow needs, as determined by a specialist certified by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers. (Note: the minimum efficiency reporting value rates the effectiveness of air filters. A rating of 13 indicates that particles between 0.3 and 1 micrometers are removed 75 percent of the time.) ▲ To filter outdoor air and minimize TAC concentrations, the project applicant shall fund the planting of trees in the open space along the southern boundary of the project site. The plantings shall be located on the northern side of Saratoga Way, adjacent to the soundwalls shown on Exhibit 3-3 in Chapter 3, "Project Description." Trees shall consist of evergreen species, so that the potential for particle deposition and filtration is relatively consistent year-round. Two contiguous rows of trees will be planted, with individual plantings not more than 15 feet apart. The plantings in one row shall be staggered relative to the 	

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>plantings in the other row. All trees shall be planted prior to occupancy of homes within 500 feet of Highway 50.</p> <p>The specific tree species selected for the site shall be suited to the site conditions and constraints. All trees shall be planted in accordance with the planting standards established by the Western Chapter of the International Society of Arboriculture’s <i>Guideline Specifications for Selecting, Planting, and Early Care of Young Trees</i> (Kempf and Gilman 2011), including standards for root ball management, root pruning, staking, mulching, and irrigation. The trees will be maintained in perpetuity by the EDHCS, a landscape and lighting district, or by the HOA. As part of the ongoing maintenance, trees lost to disease, age, or other cause shall be replaced with the same tree species to maintain the screening.</p>	
<p>Impact 4.8-5: Exposure of sensitive receptors to odors. Neither construction nor operation of the project would create objectionable odors affecting a substantial number of people, because the proposed development does not include construction and operation of the types of facilities that are known to produce odors and any diesel exhaust odors generated by construction equipment would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance.</p>	LTS	No mitigation is required.	LTS
4.9 Climate Change			
<p>Impact 4.9-1: Construction-generated greenhouse gas emissions. Construction-generated GHG emissions would not exceed EDCAMQD’s recommended GHG emissions threshold.</p>	LTS	No mitigation is required.	LTS
<p>Impact 4.9-2: Operational greenhouse gas emissions. The project would be consistent with SACOG’s MTP/SCS because it would be located in the area designated “Established Community” in the MTP/SCS, and proposed land use would be consistent with the overall land use, density, and intensity information provided for this community type in the MTP/SCS. However, GHGs associated with operation of the proposed project would exceed the Tier I mass-emission threshold of 1,100 MT CO_{2e}/year and operational GHGs would exceed the GHG efficiency-based Tier II threshold developed for the project based on statewide reduction targets and post-2020 conditions.</p>	S	<p>Mitigation Measure 4.9-2: Reduce operational GHG emissions</p> <p>Prior to issuance of certificates of occupancy, the project applicant shall incorporate mitigation measures into the project to reduce operational GHG emissions to levels that do not exceed the identified performance standard, that is, the GHG efficiency target. The following measures are recommended given the state of the science today. However, in consideration of new and advanced technologies that may be introduced, other feasible, enforceable measures that result in emissions reductions additional to regulatory requirements and that would also achieve the performance standard may be substituted, with prior approval by El Dorado County.</p>	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Transportation</p> <p>All single family homes shall include adequate electric wiring and infrastructure to support a 240-Volt electric vehicle charger in the garage or off-street parking area to allow for the future installation of electric vehicle chargers. This connection should be separate from the connection provided to power an electric clothes dryer.</p> <p>Energy</p> <ul style="list-style-type: none"> ▲ All houses shall be designed to exceed the 2013 Title 24 standards by a minimum of 25 percent. Title 24 regulates energy uses including space heating and cooling, hot water heating, and ventilation. Therefore, potential options to meet the 25 percent improvement goal could include, but not be limited to, high-efficiency HVAC systems, efficient hot water heaters (e.g., tankless or solar), and insulation requirements that exceed Title 24 standards. ▲ Energy Star appliances (including clothes washers, dish washers, fans, and refrigerators) shall be installed in all residential units. ▲ The project shall achieve reductions in onsite electricity and natural gas use through a combination of on-site renewable energy (e.g., solar photovoltaic panels) and elimination of fireplaces in specified number of units. The pathway to achieving this reduction would be flexible, as long as the specified reductions in GHGs are achieved. <ul style="list-style-type: none"> ▼ For example, the project could include solar photovoltaic panels, or an equivalent mode of on-site renewable energy generation, with all houses to offset 30 percent of net annual electricity demand by single family residences. Based on the projected electricity consumption for the project (2.3 million kWh annually), this would amount to a total system size of 500 kilowatts. The total area required for the photovoltaic panels is expected to be approximately 40,000 square feet and the total number of solar panels required would range from approximately 2,000-2,500 depending upon the panel wattage. The project would have the flexibility to meet this requirement by installing an average number of panels on all homes (example, 6-8 panels on each home) or larger systems on a portion of the homes, as long as the 30 percent net annual electricity demand is met through onsite renewable energy. (Note that the values provided here are preliminary estimates. The actual system size and design would be determined at the project's design stage.) 	

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Table 2.2-2 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation														
		<p>➤ Alternatively, the project could include various combinations of solar photovoltaic panels and elimination of fireplaces in the units as follows:</p> <table border="1" data-bbox="1108 378 1755 649"> <thead> <tr> <th>Number of solar panels per unit</th> <th>Number of units with fireplaces</th> </tr> </thead> <tbody> <tr> <td>6-8</td> <td>317</td> </tr> <tr> <td>4-6</td> <td>269</td> </tr> <tr> <td>3-4</td> <td>254</td> </tr> <tr> <td>2-3</td> <td>238</td> </tr> <tr> <td>1-2</td> <td>222</td> </tr> <tr> <td>0</td> <td>159</td> </tr> </tbody> </table> <p>Note: The data presented in the section assumes one natural gas fireplace per single family unit in the unmitigated condition.</p> <p>➤ Building design, landscape plans (tree placement), and solar panel installation shall take into account solar orientation to maximize solar exposure.</p> <p>Area Sources</p> <ul style="list-style-type: none"> ▲ Electrical outlets shall be provided on the exterior of project buildings to allow sufficient powering of electric landscaping equipment. <p>Water Conservation</p> <ul style="list-style-type: none"> ▲ The project shall include the following measures related to water conservation: <ul style="list-style-type: none"> ➤ Install low-flow kitchen faucets that comply with CALGreen residential voluntary measures (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi). ➤ Install low-flow bathroom faucets that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi) ➤ Install low-flow toilets that exceed the CALGreen residential mandatory requirements (maximum flush volume less not to exceed 1.28 gallons per flush) 	Number of solar panels per unit	Number of units with fireplaces	6-8	317	4-6	269	3-4	254	2-3	238	1-2	222	0	159	
Number of solar panels per unit	Number of units with fireplaces																
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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ✔ Install low-flow showerheads that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 2 gallons per minute at 80 psi) ✔ Install a “Smart” irrigation control system that uses weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Appropriate systems that could be installed to comply with this measure include Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners. <p>Waste Diversion/Recycling</p> <ul style="list-style-type: none"> ▲ The project shall comply with the following performance measure related to reducing solid waste disposal: Achieve a 20 percent reduction in the generation of solid waste, relative to baseline waste disposal rates. This performance standard may be achieved through a combination of actions. Strategies to reduce landfill waste include increasing recycling, reuse, and composting. The project can achieve this reduction by providing a recycling collection service and providing separate recycling and waste containers to future residents. The project may also include provisions to divert all green waste from the park and landscape lots and recycle it as mulch. It should be noted that this list of measures is not intended to be all-inclusive. If it can be demonstrated that other measures or technologies achieve an equivalent reduction, these may be implemented with County authorization. 	
<p>Impact 4.9-3: Impacts of climate change on the project. Climate change is projected to result in a variety of effects that would influence conditions in the project area including increased temperatures, leading to increased wildfire risk; and changes to timing and intensity of precipitation, resulting in increased stormwater runoff and flood risk. However, there are numerous programs and policies in place to protect against and respond to wildfire.</p>	LTS	No mitigation is required.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.10 Noise			
<p>Impact 4.10-1: Construction noise impacts. The project is anticipated to be built out over approximately five years. Construction would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. Night construction is not proposed. Worst-case construction-related activities could result in noise levels of up to 86 dBA Leq and 91 dBA Lmax, which could exceed El Dorado County daytime (i.e., 7:00 a.m. to 7:00 p.m.) noise standards (i.e., 55 dBA Leq / 75 dBA Lmax) at or within 855 feet of proposed construction activity. A majority of the project site and potential construction locations are located over 855 feet from surrounding existing sensitive land uses. However, some existing residences on the northern edge of the project site are located directly adjacent to (and thus within 855 feet of) potential construction areas and, therefore, could potentially be exposed to noise levels above applicable El Dorado County standards (i.e., 55 dBA Leq / 75 dBA Lmax).</p>	S	<p>Mitigation Measure 4.10-1: Implement construction-noise reduction measures. To minimize noise levels during construction activities, construction contractors shall comply with the following measures during construction:</p> <ul style="list-style-type: none"> ▲ All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses, and/or located such that existing topography blocks line-of-site from these land uses to the staging areas. ▲ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ▲ Where feasible and consistent with building codes and other applicable laws and regulations, individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite). ▲ All construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. The self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. In addition to the use of backup alarms, the construction contractor shall consider other techniques such as observers and the scheduling of construction activities such that alarm noise is minimized. ▲ When future noise sensitive uses are within close proximity to prolonged construction noise, noise attenuating buffers such as structures, truck trailers, temporary noise curtains or sound walls, or soil piles shall be located between noise sources and the receptor to shield sensitive receptors from construction noise. ▲ The applicant or construction contractors shall post visible signs along the perimeter of the construction site that disclose construction times and duration. A contact number for an El Dorado County enforcement officer shall be included where noise complaints can be filed and recorded. The applicant will be informed of any noise complaints and will be responsible for 	SU

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		investigating complaints and implementing feasible and appropriate measures to reduce noise at receiving land uses. These may include: <ul style="list-style-type: none"> ➤ Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). ➤ For construction activity that occurs within 855 feet of existing sensitive land uses, install temporary noise curtains that meet the following parameters: <ul style="list-style-type: none"> ▪ temporary noise curtains shall be installed as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s). ▪ temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least 1 pound per square foot. 	
Impact 4.10-2: Short-term construction vibration impacts. Site preparation could require the use of blasting to remove potential rock outcroppings, if discovered. Ground vibration levels associated with blasting could result in structural damage to nearby structures if it were to occur within 75 feet. Blasting could also result in disturbance/annoyance to occupied structures within 230 feet of blasting activities. Specific locations where blasting could occur are not known at this time and would depend on specific soil/ground conditions. However, construction activities would occur as close as 50 feet to existing residences and, therefore, blasting could potentially also occur within 50 feet of existing residences, resulting in annoyance to residents and potentially damaging structures.	S	Mitigation Measure 4.10-2: Reduce blasting-related vibration. For any proposed blasting that would occur within 230 feet from any existing occupied structure, alternatives to traditional blasting (silent demolition), such as non-explosive chemical agents, expansive grout, or any other non-explosive technology, shall be used to eliminate vibration and noise from blasting.	LTS
Impact 4.10-3: Long-term operational noise impacts to existing receptors. Implementation of the project would result in the extension of Saratoga Way and Wilson Boulevard, thus resulting in new noise sources at these new roadways. In addition, existing traffic patterns would be diverted because of these new roads, resulting in traffic-noise increases. Traffic-noise increases were modeled for all roadways potentially affected by construction of the project. Traffic-noise levels on Saratoga Way between El Dorado Hills Boulevard and Arrowhead Drive would result in an 11.9 dB increase at 100 feet from the centerline. Maximum noise levels on	S	No feasible mitigation measures have been identified.	SU

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Saratoga Way would reach 56.7 dB, accounting for noise reduction from the existing sound wall along Saratoga Way, which is considered a substantial long-term increase in noise (i.e., 5 dB or more).			
Impact 4.10-4: Long-term operational noise impacts to proposed sensitive receptors. Implementation of the project would result in development of new sensitive receptors located in close proximity to existing and future roadways including Highway 50, Saratoga Way, and Wilson Boulevard. Noise increases on Wilson Boulevard would not exceed applicable El Dorado County noise standards. Noise Levels from Saratoga Way would exceed El Dorado County noise standards of 60 dBA L _{dn} (exterior) at proposed receptors located adjacent and to the north of Saratoga Way. Noise levels from Highway 50 would exceed El Dorado County noise standards of 60 dBA L _{dn} (exterior) and 45 dBA L _{dn} (interior) as residences located directly to the north of Highway 50.	S	Mitigation Measure 4.10-4: Implement building design measures to reduce interior noise levels at proposed residences. To reduce interior noise levels at all elevated south, east, and west-facing properties located adjacent to Saratoga Way, the following design standard shall be met. Refer to Figure 2 of Appendix D for properties requiring these design measures. ▲ An exterior-to-interior noise reduction of at least 30 dB shall be achieved. This level of noise reduction can be achieved with incorporation of the following measures: ▸ All windows and doors shall meet a minimum sound transmission class rating of 33; ▸ Air conditioning shall be provided to allow occupants to close doors and windows; and ▸ Additional insulation designed specifically for noise reduction shall be used in walls facing Saratoga Way and Highway 50.	LTS
4.11 Geology and Soils			
Impact 4.11-1: Expose people or structures to substantial adverse effects involving rupture of a known earthquake fault, ground shaking, liquefaction, or slope failure. Due to the relatively shallow depth to bedrock and the relatively low seismicity of the area, the potential for damage because of site liquefaction, slope instability, and surface rupture are considered negligible.	LTS	No mitigation is required.	LTS
Impact 4.11-2: Result in substantial soil erosion or the loss of substantial topsoil. The soils on the project site are susceptible to erosion, particularly during grading and excavation activities.	PS	Mitigation Measure 4.3-1: Prepare and implement a SWPPP. Implement Mitigation Measure 4.3-1, as described above.	LTS
Impact 4.11-3: Construction on expansive soils and potential for settling. The project would be built on fill material. Grading would generally eliminate the expansive qualities of the clay materials on the site through mixing. However, if not sufficiently compacted, these materials can settle under the weight of project structures.	PS	Mitigation Measure 4.11-1: Evaluate soil compaction and implement recommendations during grading. The applicant shall employ a qualified engineer to observe the stripping of deleterious material and over excavation of any unsuitable materials, and provide consultation and supplemental recommendations, as field conditions dictate, to the grading contractor in the field.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Fill soil compaction shall be evaluated through means of in-place density tests performed during fill placement so that adequacy of soil compaction efforts may be determined. This will likely include the periodic excavation of test pits within the fill materials to observe and document that a uniform over-optimum moisture condition, and absence of large and/or concentrated voids has been achieved before additional fill placement.</p> <p>If large quantities of expansive soils are encountered at the project site, recommendations shall be made by a qualified engineer based on observations at the time of construction and the proper disposition of clays on site shall be observed and documented by a qualified third party monitor.</p>	
4.12 Hazards and Hazardous Materials			
<p>Impact 4.12-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The project would require transport, use, and disposal of hazardous materials during construction and operation in quantities typical of single-family residential development. The potential for such activities to result in a significant hazard to the public or the environment would be effectively managed through adherence to existing regulations and compliance with the safety procedures mandated by applicable federal, state, and local laws and regulations.</p>	LTS	No mitigation is required.	LTS
<p>Impact 4.12-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes, within 0.25 mile of an existing or proposed school. No significant emissions of hazardous materials are anticipated during construction or operation of the proposed project. However, construction of the project could result in the disturbance of naturally occurring asbestos.</p>	PS	Mitigation Measure 4.8-4a: Limit potential for release of asbestos to affect sensitive receptors. Implement Mitigation Measure 4.8-4a, as described above.	LTS
<p>Impact 4.12-3: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Project implementation would not impair implementation of, or interfere with, the County Multi-Jurisdictional Hazard Mitigation Plan. Adequate road design for emergency vehicle access and private vehicle evacuation would be provided, as required under El Dorado County General Plan Policy 6.2.3.2.</p>	LTS	No mitigation is required.	LTS
<p>Impact 4.12-4: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires. The project would not expose people or structures to a significant risk of loss, injury, or death because the site is not in an area of high fire</p>	LTS	No mitigation is required.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
potential, and the site would be graded and appropriate building standards and setbacks would be maintained.			
4.13 Public Services			
Impact 4.13-1: Impact on fire facilities. The project would include development that would increase demand for fire protection and emergency medical services. However, the site is approximately 1 mile from the nearest fire station and EDHFD has adequate equipment and staff to maintain acceptable fire service ratios, response times, and other performance objectives with implementation of the project. No additional facilities would be needed to serve the project site, and the project would be required to pay impact fees and comply with all conditions of approval.	LTS	No mitigation is required.	LTS
Impact 4.13-2: Impact on law enforcement facilities. The project would include development that would increase demand for law enforcement services. While average response times in 2014 met County requirements for most call priority categories, Priority 4 (i.e., lowest priority) response times may not meet minimum standards. Development of the proposed project would have the potential to exacerbate this condition. The applicant for the Saratoga Estates Project may be required to pay impact fees as required by the County.	LTS	No mitigation is required.	LTS
Impact 4.13-3: Impact on schools. Development of the proposed project could result in issues related to school capacity. Payment of school facility mitigation fees, which have been deemed by the State legislature (per Government Code Section 65995(h)) to constitute full and complete mitigation of impacts of a development project on the provision of adequate school facilities, would be required.	LTS	No mitigation is required.	LTS
Impact 4.13-4: Impact on parks and recreation facilities. The Saratoga Estates Project includes new recreation and park facilities, the potential effects of which are addressed throughout this EIR and, by providing parkland onsite, would not increase the use of existing park and recreation facilities in the area such that they would experience deterioration, or require improvement or expansion.	LTS	No mitigation is required.	LTS

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Table 2.2-2 Summary of Impacts and Mitigation Measures			
Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
4.14 Utilities and Energy Conservation			
Impact 4.14-1: Water supply and infrastructure impacts. The project would require approximately 325 EDUs of water supply, which have been requested from EID. As stated in the FIL, and verified through the July 2015 Water Resources and Service Reliability Report, sufficient water supply exists to serve buildout of the project. Several nearby connections to the water supply system are available to accommodate the project.	LTS	No mitigation is required.	LTS
Impact 4.14-2: Wastewater treatment capacity availability. The project site is located within EID's service area, but does not currently have any connection to the existing collection and conveyance infrastructure. The connection would be made in accordance with the County's and EID's ordinances and requirements. The project would require approximately 317 EDUs of sewer service. EID provided a FIL to the applicant on January 20, 2015, which confirmed that adequate wastewater treatment capacity is available.	LTS	No mitigation is required.	LTS
Impact 4.14-3: Solid waste disposal capacity. The El Dorado Disposal Service provides solid waste collection, disposal, and recycling services to the project site. The project would generate approximately 3,160 pounds of waste per day. This increased amount of solid waste would not result in the need to expand or construct new landfill facilities. In addition, this project would adhere to all required State and County waste management ordinances and requirements.	LTS	No mitigation is required.	LTS
Impact 4.14-4: Electricity and natural gas service. Development of the proposed project would occur in a location with immediate access to electricity, natural gas, and telecommunications services. The project would not result in energy demands that would require the development of new energy sources or affect service to existing customers.	LTS	No mitigation is required.	LTS

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3 PROJECT DESCRIPTION

3.1 INTRODUCTION

The project applicant, Renasci Development, proposes to construct a 317-unit residential development on a 121-acre site in the community of El Dorado Hills. The single-family, detached residential units would be constructed on individual lots generally ranging in size from approximately 6,000 to 9,000 square feet. Larger lots (up to approximately 19,000 square feet) would be located at the eastern project site boundary. The project would include extension of Saratoga Way to Iron Point Road and extension of Wilson Boulevard to Saratoga Way, thus completing the east-west road connection between El Dorado Hills Boulevard and East Bidwell Street in the City of Folsom. Approximately 42 acres of public parks, trails, landscaping, and open space are proposed; as well as preservation of the existing perennial drainage at the center of the site.

3.2 PROJECT SITE

3.2.1 Location and Surrounding Land Uses

The Saratoga Estates Project is proposed on Assessor's Parcel Number 120-070-02, in the unincorporated community of El Dorado Hills in western El Dorado County (Exhibit 3-1). The property is immediately north of Highway 50, and is generally bounded on the north, east, and west by existing residential development (Exhibit 3-2). South of Highway 50, the land use is also primarily residential. A designated open space area (part of the Promontory Specific Plan) abuts the western boundary of the project site, separating it from the Empire Ranch development in the City of Folsom. The project site is located approximately 23 miles east of downtown Sacramento, and 60 miles southwest of Lake Tahoe. Folsom Lake is located approximately 3.5 miles northwest of the project site.

3.2.2 Site Characteristics

There is no development on the project site; although there are dirt roads that are used by hikers, vehicles, and cyclists. The site has been used for grazing in the past, but is not currently used for agricultural activities.

The topography of the site is undulating, with elevations varying from 790 feet above mean sea level in the northwest portion of the site to 630 feet above mean sea level in the southeast portion of the site. It is generally comprised of two northwest-southeast trending hillsides bisected by a distinct perennial drainage that flows north-to-south through the site. Perennial marsh habitat and riparian vegetation are associated with the perennial drainage. In addition, there are a number of seeps and ephemeral drainages, most of which drain into the perennial drainage, on sloped areas of the site. The primary land cover on the site is non-native, annual grassland. There are mature blue oak trees in the northwestern portion of the project site and a few large oaks lining the eastern property boundary. The project site contains less than 1 percent oak canopy cover.

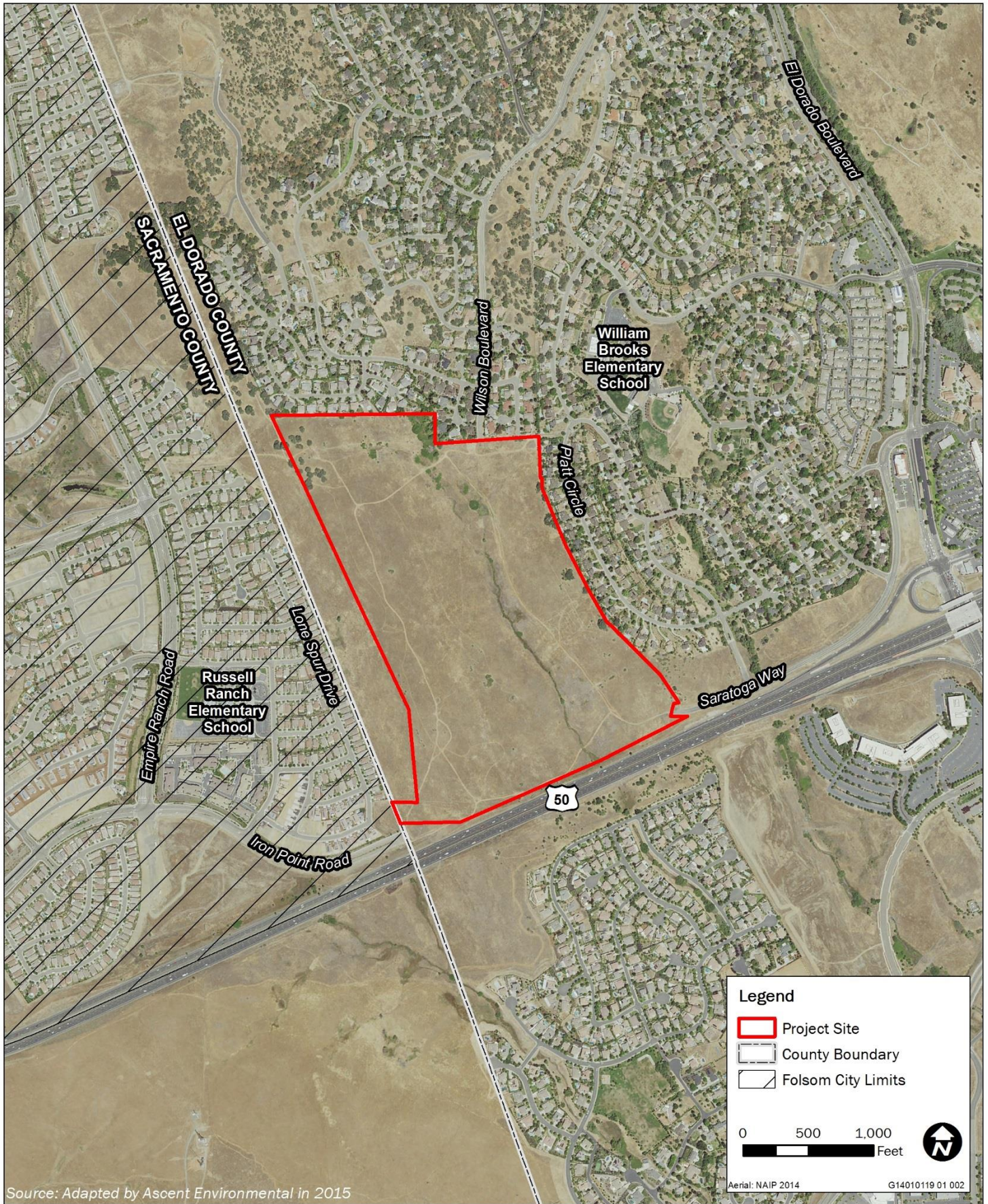


Source: Adapted by Ascent Environmental in 2015

Exhibit 3-1

Project Vicinity





Source: Adapted by Ascent Environmental in 2015

Exhibit 3-2

Project Location



3.2.3 Land Use Designation and Zoning

The project site is in the El Dorado Hills Community Region, as defined in *the El Dorado County General Plan* (El Dorado County 2004). The project site is designated High Density Residential in the *El Dorado County General Plan* and is currently zoned R1 (one-family residential district) and OS (open space district). Accordingly, the project is consistent with both the General Plan and zoning on the property. The purpose of the proposed rezoning is to expand the amount of open space and conform the boundaries of the portions of the project area currently zoned OS with the boundaries shown on the site plan (See Exhibit 3-3).

The project proposes a Planned Development (PD) combining zone for the property. As such, land use types would be limited to those listed within the basic zones currently established for the property: R1 and OS. However, all other provisions of the basic zones would be superseded by the provisions of the development plan (El Dorado County Code Section 130.04.080). PD districts (which are established in Chapter 130.50 of the El Dorado County Code) permit flexibility and allow for more efficient utilization of land and public services by providing for a combination of different land uses that may not, in all aspects, conform to the existing zoning regulations. However, the proposed project is consistent with the zoning regulations of the R1 district.

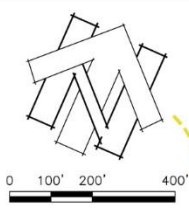
The R1 zoning district allows for development of single-family detached residential uses with a minimum lot size of 6,000 square feet (when served with public water supply and sewage system). Lot sizes proposed would be consistent with this zoning designation, and the density proposed is within the maximum allowed density. The remainder of the site, 30 percent minimum, would be zoned OS to create maintained open space (parks and landscaping lots), preserve existing natural areas associated with the perennial drainage, and to provide a buffer to neighboring uses, consistent with the intent of this zone district. The required development plan would set other development standards for the project site, including the maximum density and number of units, minimum lot size, landscape and open space requirements, maximum building heights, setback requirements, and lot coverage.

Planned residential developments allow for innovative planning to fulfill the development strategies of the *El Dorado County General Plan* by encouraging balanced growth that reflects the character and scale of the community. Under the PD zoning district, the general plan encourages uses that provide a public benefit through clustering intensive land uses to minimize impacts to natural resources, cultural resources, and visual resources while also promoting public health, safety, and welfare in the community.

3.3 PROPOSED PROJECT

The applicant proposes to construct a 317-unit residential development that incorporates approximately 41 acres of open space areas, which would include public parks, a trail system, landscaping, and other open space areas (Exhibit 3-3). The project would also include onsite and offsite infrastructure to serve the development. Table 3-1 summarizes the proposed land use types and acreages.

Lot Type	Acreage	Portion of Project Site
Residential	58	48%
Open Space	27	22%
Parks	8	7%
Landscape Lots	6	5%
Roadway	22	18%
Total	121	100%



LEGEND	
	PROJECT BOUNDARY
	6,000-9,000 SF LOTS
	7,700-19,000 SF LOTS
	OPEN SPACE (27.4 AC)
	PARKS (8.3 AC)
	LANDSCAPE LOTS (6.2 AC)
	(E) DRAINAGE
PEDESTRIAN CIRCULATION	
	ATTACHED 6' SIDEWALK
	(E) PEDESTRIAN FACILITIES
	OPEN SPACE TRAIL
	FUTURE TRAIL
	DETACHED 6' SIDEWALK
	SOUND WALL
TOTAL RESIDENTIAL UNITS - 317	



Source: CTA Engineering & Surveying 2015

X14010119 01 012

Exhibit 3-3

Conceptual Site Plan



The design concept for the proposed residences would include varied architectural finishes, including siding, stone veneers, and stucco. Decorative elements, including shutters and finials, would be incorporated to add visual interest. Building materials would be non-reflective. The proposed residences would not include wood burning fire places. Examples of typical residences that exemplify the architecture under consideration are included in Exhibit 3-4.

SOUND WALL

To reduce traffic-noise exposure from Highway 50 and Saratoga Way at the new proposed residences, a sound wall would be constructed (see Exhibit 3-3) that meets the following criteria:

- ▲ the structure would be located at the property line of residences within Lot A, Lot D, Lot E, and Lot J that are directly adjacent to Saratoga Way;
- ▲ height of the barrier would be at least 8 feet to achieve projected noise attenuation;
- ▲ the barrier would be constructed of masonry/concrete block or earth material, or a combination of the two; and
- ▲ the design of the sound wall would be such that it would result in a 12 decibel reduction (i.e., a minimum transmission loss rating of 22 decibels) at the non-road side of the barrier.

SETBACKS FROM WETLANDS AND WATERS

The project proposes minimum setbacks of 10 feet from the edge of existing wetlands during construction and permanent open space buffers of at least 40 feet. These setback distances have been determined to be consistent with Policy 7.3.3.4 of the *El Dorado County General Plan* and the Interim Interpretive Guidelines, which provide for exception to the standard minimum setbacks where the applicant demonstrates that the alternative setback would provide sufficient protection to the affected biological resources and avoid or minimize impacts (Foothill Associates 2014). See Section 4.4, “Biological Resources,” for more details.

3.3.1 Recreation, Open Space, and Landscaped Amenities

Approximately 27 acres of open space and 8 acres of parks, plus another 6 acres of trail, landscaping, and other open space areas, are included in the proposed project. The open space lots would encompass existing natural and proposed drainage features, as well as areas near the proposed extension of Saratoga Way and land within the Pacific Gas and Electric (PG&E) right-of-way (associated with the existing 115-kilovolt power line that crosses the northern end of the site). Trails would be provided across the northern portion of the site, and a small trail would be constructed at the southwest corner of the project site. Several trails (one to the north and two to the south of the project) would provide connection to the trail leading to Platt Circle and the future trail that passes through the open space area identified in the approved Promontory Specific Plan.



Source: Renasci Development 2015

X14010119 01 016

Exhibit 3-4

Residential Concept



3.3.2 Infrastructure

ROADWAYS AND CIRCULATION

Site Access

Wilson Boulevard, Saratoga Way, and Iron Point Road currently terminate at the project site (see Exhibit 3-2). The project proposes extension of Saratoga Way along the southern boundary of the project site to connect the existing two lane road from just west of the Finders Way intersection to Iron Point Road in the City of Folsom (Exhibit 3-5). Wilson Boulevard would extend south through the project site and connect to the new portion of Saratoga Way. Primary access to the site would be provided at the intersection of the Saratoga Way and Wilson Boulevard extensions at the southern end of the project site.

Wilson Boulevard would serve as the primary internal roadway. A secondary, right-in/right-out driveway would also be provided along Saratoga Way, west of Wilson Boulevard. Several smaller roadways and courts would provide access to individual residences. The perennial drainage would be spanned by the Saratoga Way extension and by one additional internal roadway at the northern end of the project site.

Wilson Boulevard would be a two-lane road with a 60-foot right-of-way. A 6-foot-wide sidewalk would parallel the west side of the road. Saratoga Way would also be two lanes, but would be separated by 16 feet of median. A 4-foot-wide sidewalk would be setback 5 feet from the north side of the roadway, and the right-of-way would be 100 feet wide to accommodate the potential for expansion in the future. The road would taper to four lanes near Iron Point Road. Typical internal subdivision streets would have 40-foot rights-of-way and would be flanked by 4.5-foot-wide sidewalks, as shown on Exhibit 3-3. It should be noted that an existing cultural resource exists in the vicinity of the proposed Wilson Boulevard alignment. Engineering and construction specifications in the vicinity the resource would implement earthen capping and would avoid any ground-disturbing activities that could otherwise affect the resource. Ground disturbance would be avoided by placing the site into a dedicated open space lot and elevating Wilson Boulevard in the vicinity of the site by placement of fill and a short retaining wall. See Section 4.5 “Cultural Resources” for more detail.

Pedestrian Trails and Bike Paths

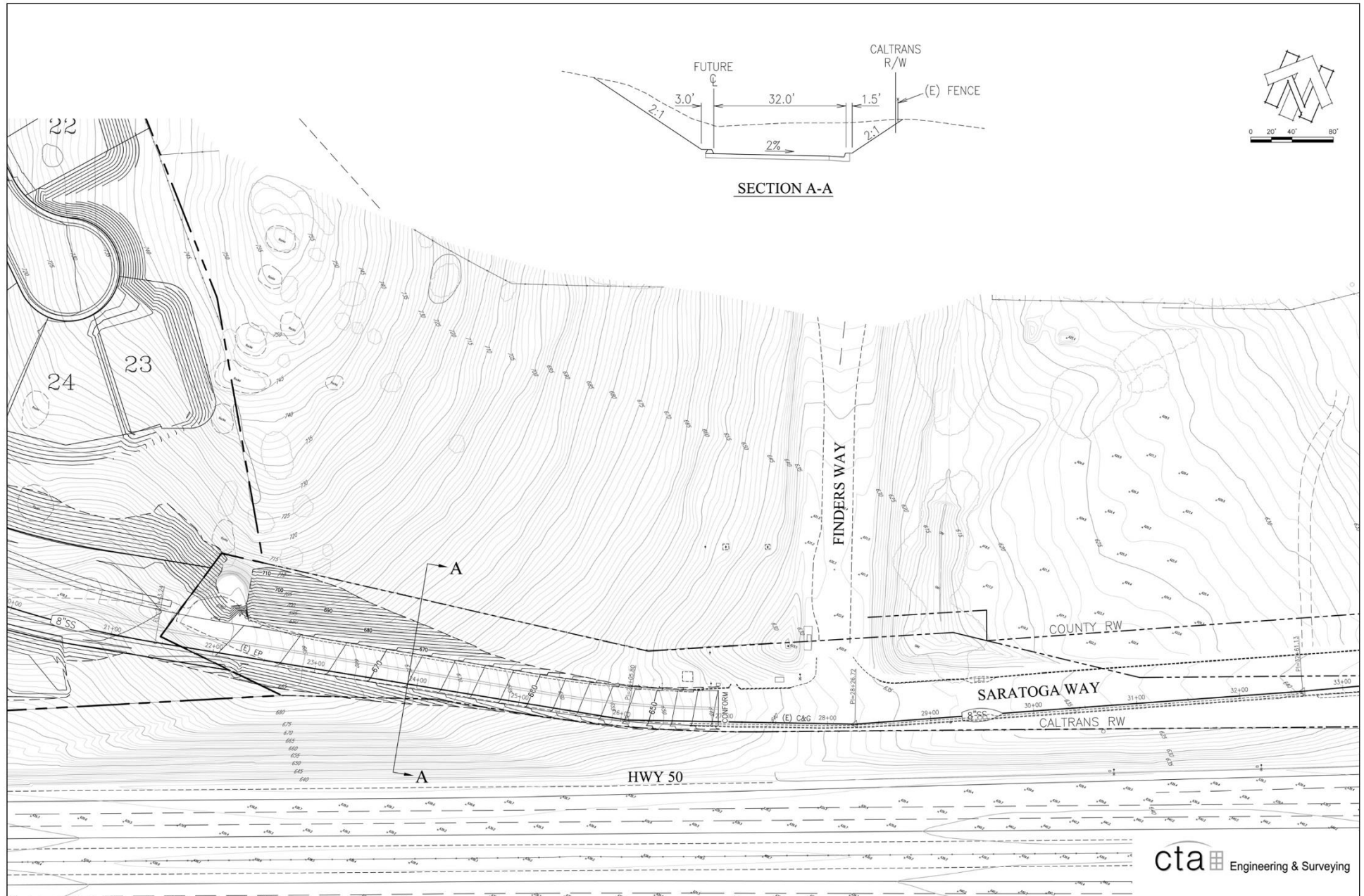
Sidewalks would be included along all local residential streets, and along the west side of proposed Wilson Boulevard and the north side of proposed Saratoga Way, as shown on Exhibit 3-3. Trails would pass through the band of open space along the north side of the site connecting to an existing sidewalk to the east and the future trail to the west, which would connect with the regional trail network.

WATER AND SEWER SERVICE

Water and sewer lines would be installed in the rights-of-way of the internal road network and would connect to existing, offsite service lines at Saratoga Way (see Exhibit 3-6). The project would not require offsite extension of utilities.

GAS AND ELECTRICAL SERVICE

Electric and gas services would be provided by PG&E. New utilities would be installed underground, and no offsite extensions would be needed. Although the specific demand for electricity and natural gas has not been defined, coordination with PG&E would occur to ensure that the project site is adequately served. In the case that upgrades are required, PG&E would coordinate, fund, and implement all necessary improvement (Sweeney, pers. comm., 2015).



Source: CTA Engineering & Surveying 2015

cta Engineering & Surveying

X14010119 01 022

Exhibit 3-5

Offsite Saratoga Way Alignment





Exhibit 3-6

Proposed Utilities



OUTDOOR LIGHTING

Outdoor lighting would be in conformance with Section 130.14.170 of the County Zoning Ordinance. Lighting would be installed at major intersections and mid-block pedestrian crossings, as appropriate for public safety, and along vertical curves where lighting is needed for public safety because of topographic constraints. Limited safety and security lighting and indirect shielded lighting would also be provided along trail corridors.

DRAINAGE

Surface water runoff on the project site contributes to two watershed areas: the western portion of the project site drains west to the City of Folsom and the Humbug-Willow Creek basin, while the eastern portion drains into an unnamed perennial drainage near the center of the site that is tributary to Carson Creek.

Existing onsite drainages would be preserved to the extent practicable. A drainage conveyance system including buried pipelines and open ditches that would generally convey project site drainage to the existing onsite perennial drainage is proposed. The project includes two water quality retention ponds, a 2.9 acre-foot detention pond near the center of the site, and a 0.5 acre-foot water quality pond adjacent to the drainage and immediately east of Wilson Boulevard. Bio swales would be constructed at the toe of fill slopes throughout the project site to capture and direct stormwater runoff to these basins and to the perennial drainage.

3.3.3 Construction

The following discussion provides more detail regarding the specific construction activities and the proposed construction phasing, including timing and duration.

GRADING

The project would require site grading on approximately 80 acres. The project site would be “balanced,” meaning that cut soil would be used onsite for fill, and minimal, if any, soil import or export would be needed.

The onsite portion of Saratoga Way would be graded to accommodate the proposed road (i.e., two lanes, 16-foot-wide median, and a 6-foot-wide sidewalk at the northern side of the road) and future improvements (i.e., ultimate widening to four lanes). The offsite portion would be graded for two lanes only within the existing, paved right-of-way to connect to the existing Saratoga Way in the vicinity of Finders Way.

SCHEDULE AND PHASING

Construction is anticipated to occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. Night construction is not proposed.

Timing of construction of the Saratoga Estates project would be affected by the entitlement process, market demand, and other factors. For the purposes of this analysis, construction is assumed to occur between 2017 and 2022. As described below, construction would consist of four basic phases: rough grading, infrastructure improvements, home construction, and installation of park and open space improvements.

PHASE I - Rough Grading: The site would be rough graded, which includes building pad preparation, grading of proposed roadways, and construction of erosion and sediment control features. Construction staging for materials and equipment would occur within the project site. The anticipated duration of this activity is approximately nine months.

PHASE II - Infrastructure Improvements: This phase includes construction of proposed public roadways. Under this phase, the Saratoga Way extension would be mostly constructed but may not yet connect to the existing roadway at the County line. Activities would include installation of wet utilities, dry utilities, and roadway surface improvements on- and offsite. The anticipated duration of this activity is approximately nine months. This phase may occur concurrently with Phase I and/or Phase IIIa, below.

PHASE III – Home Construction: Activities include construction of new homes and associated privacy fences, driveways, and private landscaping. Construction staging for materials and equipment would occur within the project site. The timing of this activity would be market driven and may be accelerated or delayed from what is shown below.

PHASE IIIa: Construction of the first 100 units would begin in late 2017, and the units would be occupied in late 2018 or early 2019.

PHASE IIIb: Construction of the second 100 units would begin in late 2018, and the units would be occupied in late 2019 or early 2020. Prior to construction of these units, Saratoga Would be connected to the existing Iron Point Road at the County line.

PHASE IIIc: Construction of the third 100 units would begin in late 2019, and the units would be occupied in late 2020 or early 2021.

PHASE IIId: Construction of the last 17 units would begin in late 2020, and the units would be occupied in late 2021 or early 2022.

PHASE IV - Parks and Open Spaces: This phase includes construction of new park and open space areas. Activities include finish grading and installation of irrigation, planting, hardscape, and new park structures. It is possible that Phase IV activities may occur earlier in the process.

CONSTRUCTION WORKERS AND EQUIPMENT

Up to 138 construction workers would be on the site during the most labor-intensive phase of construction, which would generate approximately 240 one-way vehicle trips per day (assumes vehicle occupancy of 1.15 workers per vehicle). Up to 44 vendor trucks would access the site in a day, which would generate 87 one-way trips.

Equipment that would be used during project construction may include: graders, dozers, excavators, scrapers, other tractors, cranes, forklifts, generator sets, curb equipment, pavers, paving equipment, rollers, welders, and air compressors. The proposed project may include some blasting to establish the proposed grades.

ACCESS AND STAGING

Most construction traffic would access the site via Iron Point Road in Folsom or the existing segment of Saratoga Way. Limited access may occur from Wilson Boulevard. Construction staging for materials and equipment would occur within the project site.

3.4 PROJECT OBJECTIVES

CEQA requires that an EIR include a statement of objectives for the project, and that the objectives include the underlying purpose of the project. These objectives help the lead agency determine the alternatives to evaluate in the EIR (see CEQA Guidelines Section 15124[a]). The purpose of the Saratoga Estates project is to develop a carefully segmented residential project that will provide market rate housing and increase housing supply in El Dorado County while delivering single family homes to a wide range of buyer profiles

including young families with small children, mature couples with high school aged children, and/or retirees. The following is a list of objectives for the project that supports the fundamental underlying purpose:

- ▲ Implement the County's general plan by directing growth to areas with moderate topography, located amongst already developed lands, with access to services, schools, and transportation systems.
- ▲ Implement the County's general plan by directing higher density residential development to Community Regions and Rural Centers and encouraging the enhancement of residential environments to include access to parks and trails.
- ▲ Implement the County's general plan by providing urban/suburban type development within lands designated for urban development to ensure the preservation of large expanses of open space and agricultural lands within the county.
- ▲ Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's general plan.
- ▲ Provide a broad range of residential product types.
- ▲ Offer a range of designs and amenities to meet the needs of the changing demographics of the county, including families, empty nesters, and active adults.
- ▲ Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- ▲ Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- ▲ Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- ▲ Improve emergency access and circulation by providing the connecting segment of Saratoga Way to Iron Point Road and extending Wilson Boulevard.
- ▲ Implement the general plan strategies and methods for achieving its vision and goals of sustainable growth and economic development.

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4 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

This chapter includes sections devoted to specific resource areas. Each section begins with a description of the environmental and regulatory setting, which provides a point of reference for assessing the environmental impacts of the proposed project and alternatives. The setting description in each section is followed by an impacts and mitigation discussion. As required by Section 15126.2(a) of the State CEQA Guidelines, direct, indirect, short-term, long-term, on-site, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed.

Each impact is summarized in a numbered impact statement, followed by a more detailed discussion of the potential impacts. The impact number consists of the section of the EIR in which that impact is identified followed by a “-” to indicate the number of the impact in that section. For example, Impact 4.1-1 is the first impact identified in Section 4.1.

The impact discussion concludes with a statement regarding whether the impact would be less than significant, potentially significant, or significant prior to mitigation. For impacts found to be potentially significant or significant, feasible mitigation measures that could reduce the severity of the impact are identified. Mitigation measures are numbered to correspond with the assigned impact number (e.g., the mitigation for Impact 4.1-1 would be Mitigation Measure 4.1-1). Where mitigation measures are identified, the significance of the impact following implementation of the prescribed measures is provided.

It is assumed that the project applicant would comply with all applicable local, state, and federal laws and regulations. Similarly, established design guidelines or other requirements that El Dorado County regularly recognizes and follows for development projects are also considered part of the project description. In this draft EIR, such requirements are identified and considered in the impact assessment prior to the identification of additional project-specific mitigation measures that would reduce the significance of impacts.

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4.1 LAND USE COMPATIBILITY

This section describes existing land uses on the project site and the surrounding area, defines the existing regulatory context, identifies potential land use and policy impacts, and recommends mitigation measures, where appropriate.

This section also contains a discussion of relevant land use policies. However, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Potential conflicts are considered to be environmental impacts only when they would result in physical impacts. Therefore, land use policies are discussed in this section for informational purposes only. All other associated physical impacts are discussed in this Draft EIR in specific topical sections.

Land-use-related comments received in response to the Notice of Preparation, generally express concerns of compatibility with surrounding uses, such as effects of traffic, noise, increased light, and scenic impacts. These effects are discussed in detail below under Impact 4.1-4. For detailed discussions related to traffic, noise, and aesthetic impacts, please see Section 4.7, "Traffic and Circulation"; Section 4.10, "Noise"; and Section 4.6, "Aesthetic and Visual Resources."

4.1.1 Environmental Setting

EXISTING LAND USES

Regional and Local Setting

The project site is located in western El Dorado County, north of Highway 50, approximately 23 miles east of downtown Sacramento and 60 miles southwest of Lake Tahoe. Folsom Lake is located approximately 3.5 miles to the northwest. The project site is generally bound on the north, east, and west by existing residential development. A designated open space area abuts the western boundary of the project site, separating it from Empire Ranch in the Folsom city limits. Land uses south of Highway 50 consist primarily of residential and commercial uses. Undeveloped land is located approximately 1 mile east, 1.6 miles south, and immediately southwest of Highway 50. The vacant land southwest of Highway 50 is in the City of Folsom and is planned for urban development under the Folsom South of 50 Specific Plan.

Project Site

The Saratoga Estates Project is proposed on an approximately 121-acre undeveloped parcel of land (Assessor's Parcel Number 120-070-02) within the unincorporated community of El Dorado Hills in western El Dorado County (Exhibit 4.1-1). A perennial drainage with associated marsh and riparian vegetation, runs north-to-south through the center of the site. The site ranges from 630 feet to 790 feet in elevation, with ridges along the eastern and western boundaries.

The project site was previously used for grazing, but is not currently used for agricultural activities. Dirt roads within the project site are used illicitly by hikers and off-road bicyclists.

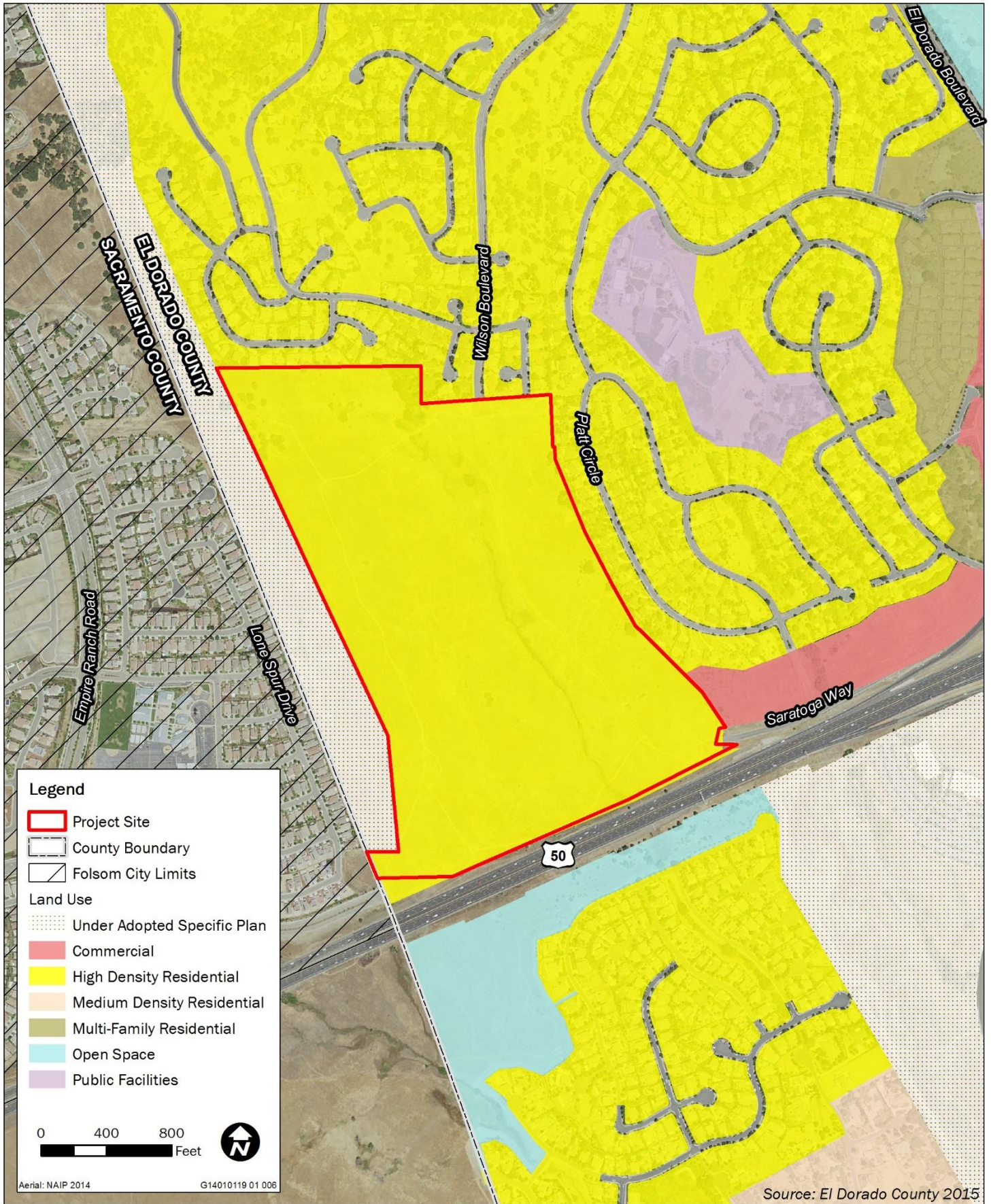


Exhibit 4.1-1

Land Use Designations



4.1.2 Regulatory Setting

FEDERAL

There are no federal land use regulations or policies applicable to the project.

STATE

There are no state land use regulations or policies applicable to the project.

LOCAL

El Dorado County General Plan

The *El Dorado County General Plan* provides a blueprint for growth within the unincorporated areas of the county. The County Board of Supervisors adopted the most recent general plan on July 19, 2004; the Land Use Element, Transportation and Circulation Element, and Health, Safety, and Noise Element have since been amended. The general plan contains the following topical elements: Land Use; Transportation and Circulation; Housing; Public Services and Utilities; Public Health, Safety, and Noise; Conservation and Open Space; Agriculture and Forestry; Parks and Recreation; and Economic Development. Each element establishes goals and policies to guide future land use activities and development within the general plan boundaries.

The Land Use Element sets forth specific goals, objectives, and policies to guide the intensity, location, and distribution of land uses. The General Plan Land Use Diagram is also a part of this element and graphically represents the County's goals, objectives, and policies. The General Plan Land Use Diagram delineates areas where future higher density growth and urban/suburban activities are anticipated and/or will be directed. The Land Use Element establishes an appropriate range of land use designations that guides growth and development in a manner that maintains the rural character of the county, utilizes infrastructure in an efficient, cost-effective manner, and furthers the implementation of the Community Region, Rural Center, and Rural Region concept areas. The project site is designated High Density Residential (HDR), as depicted in Exhibit 4.1-1.

The Land Use Element recognizes three types of planning concept areas within the county: Community Regions, Rural Centers, and Rural Regions. The project site is located within the Community Region boundary of El Dorado Hills. The purpose of the Community Region is to provide opportunities for continued population growth and economic expansion within the urban limit line (the urban limit line demarcates appropriate areas for urban/suburban development) while preserving the character and extent of existing rural centers and urban communities, emphasizing both the natural setting and built design elements that contribute to the quality of life and economic health of the county.

High Density Residential is defined as follows in the *El Dorado County General Plan*: the HDR designation is for areas with intensive single-family residential development at densities from one to five dwelling units per acre. Allowable residential structure types include single-family attached (i.e., air-space condominiums, townhouses) and detached dwellings and manufactured homes. Except as provided in general plan Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers. Standard residential subdivisions are required to maintain a density range from one to two dwelling units per acre; however, when utilizing the planned development concept, new subdivisions may maintain a density range from one to five dwelling units per acre.

General plan land use policies applicable to the proposed project are outlined below. Policies related to other topics are evaluated in the other topical sections within Chapter 4, "Affected Environment, Environmental Consequences, and Mitigation Measures," of this EIR.

- ▲ **Policy 2.1.1.7:** Development within Community Regions, as with development elsewhere in the county, may proceed only in accordance with all applicable general plan policies, including those regarding infrastructure availability as set forth in the Transportation and Circulation and the Public Services and Utilities Elements. Accordingly, development in Community Regions and elsewhere will be limited in some cases until such time as adequate roadways, utilities, and other public service infrastructure become available and wildfire hazards are mitigated as required by an approved Fire Safe Plan.
- ▲ **Policy 2.2.3.1:** The Planned Development (PD) Combining Zone District, to be implemented through the zoning ordinance, shall allow residential, commercial, and industrial land uses consistent with the density specified by the underlying zoning district with which it is combined. Primary emphasis shall be placed on furthering uses and/or design that provide a public or common benefit, both on- and offsite, by clustering intensive land uses to minimize impact on various natural resources, avoid cultural resources where feasible, minimize public health concerns, minimize aesthetic concerns, and promote the public health, safety, and welfare. A goal statement shall accompany each application specifically stating how the proposed project meets these criteria.

 - A. The major components of a Planned Development in residential projects shall include the following:
 1. Commonly owned or publicly dedicated open space lands of at least 30 percent of the total site. Within a community area, the commonly owned open space can be developed for recreational purposes such as parks, ball fields, or picnic areas. Commonly owned open space does not include space occupied by infrastructure (e.g., roads, sewer, and water treatment plants).
 2. Clustered housing units or lots designed to conform to the natural topography.
 - B. Non-residential planned developments shall be accomplished through the zoning ordinance.
- ▲ **Policy 2.2.5.2:** All applications for discretionary projects or permits including, but not limited to, general plan amendments, zoning boundary amendments, tentative maps for major and minor land divisions, and special use permits shall be reviewed to determine consistency with the policies of the general plan. No approvals shall be granted unless a finding is made that the project or permit is consistent with the general plan. In the case of general plan amendments, such amendments can be rendered consistent with the general plan by modifying or deleting the general plan provisions, including both the land use map and any relevant textual policies, with which the proposed amendments would be inconsistent.
- ▲ **Policy 2.2.5.4:** All development applications which have the potential to create 50 parcels or more shall require the application of the PD Combining Zone District. However, in no event shall a project require the application of the PD Combining Zone District if all of the following are true: (1) the project does not require a general plan amendment; (2) the project has an overall density of two units per acre or less; and (3) the project site is designated High-Density Residential.
- ▲ **Policy 2.2.5.21:** Development projects shall be located and designed in a manner that avoids incompatibility with adjoining land uses that are permitted by the policies in effect at the time the development project is proposed. Development projects that are potentially incompatible with existing adjoining uses shall be designed in a manner that avoids any incompatibility or shall be located on a different site.

Zoning Ordinance

The County's zoning ordinance is included in Title 130 of the El Dorado County Code. The zoning ordinance sets forth regulations to ensure that development and land use activities protect and promote the health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the county. The County approved a comprehensive update to the zoning ordinance, which became effective January 2016. Because the project application was deemed complete prior to the effective date of the zoning ordinance, the applicable zoning for the project site and analysis provided in this EIR reflects the zoning designations

and regulations as set forth in the previously adopted zoning ordinance in effect at the time of application completion. However, it should be noted that the project is also consistent with the current zoning ordinance update. The applicable zoning districts within the project site are shown in Exhibit 4.1-2.

The project site is currently zoned as one-family residential (R1) and open space (OS). The existing and proposed zoning districts applicable to the project site are described below.

One-Family Residential. The R1 district applies to development of single-family detached residential uses with a minimum lot size of 6,000 square feet (when served by public water supply and sewer systems). Maximum lot coverage is 35 percent and the maximum building height is 40 feet. It is used to promote and regulate the development of higher density, single-unit dwellings, and accessory structures and uses. Minimum lot size designations are applied to this zone based on surrounding use compatibility, and physical and infrastructural constraints.

Open Space. The purpose of the OS district is to provide for the open space needs of the County and applies to parcels or areas of land which are generally unimproved and devoted to and essential for: natural resource preservation; preservation of agricultural production; preservation of recreational enjoyment areas; prime or critical wildlife or habitat preservation; protection from seismic hazard areas; and protection of unusual or unique scenic values as determined by the Board of Supervisors. Single-family dwellings and agricultural production are permitted by right within the OS district.

Planned Development. The purpose of the PD Combining Zone is to allow use of modern planning and development techniques, effect more efficient utilization of land, and to allow flexibility of development. The PD Combining Zone may be combined with any of the base zoning districts as part of a comprehensive development plan. The PD Combining Zone provides for flexibility in development standards, which may not in all aspects conform to the existing zoning regulations. The permitted uses are limited to those listed within the base zoning district with which the PD Combining Zone is combined.

4.1.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ 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 the general plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- ▲ place incompatible land uses adjacent to existing land uses.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

According to the California Department of Conservation, there are no lands considered to be important farmland on the project site (DOC 2014) or lands subject to a Williamson Act contract (DOC 2013). No agricultural operations exist on or adjacent to the site. Thus, the project alternatives would not convert important farmland, conflict with Williamson Act contracts, or otherwise affect agricultural land or agricultural operations. There would be no impacts related to agricultural resources. This topic is not discussed further in this EIR.

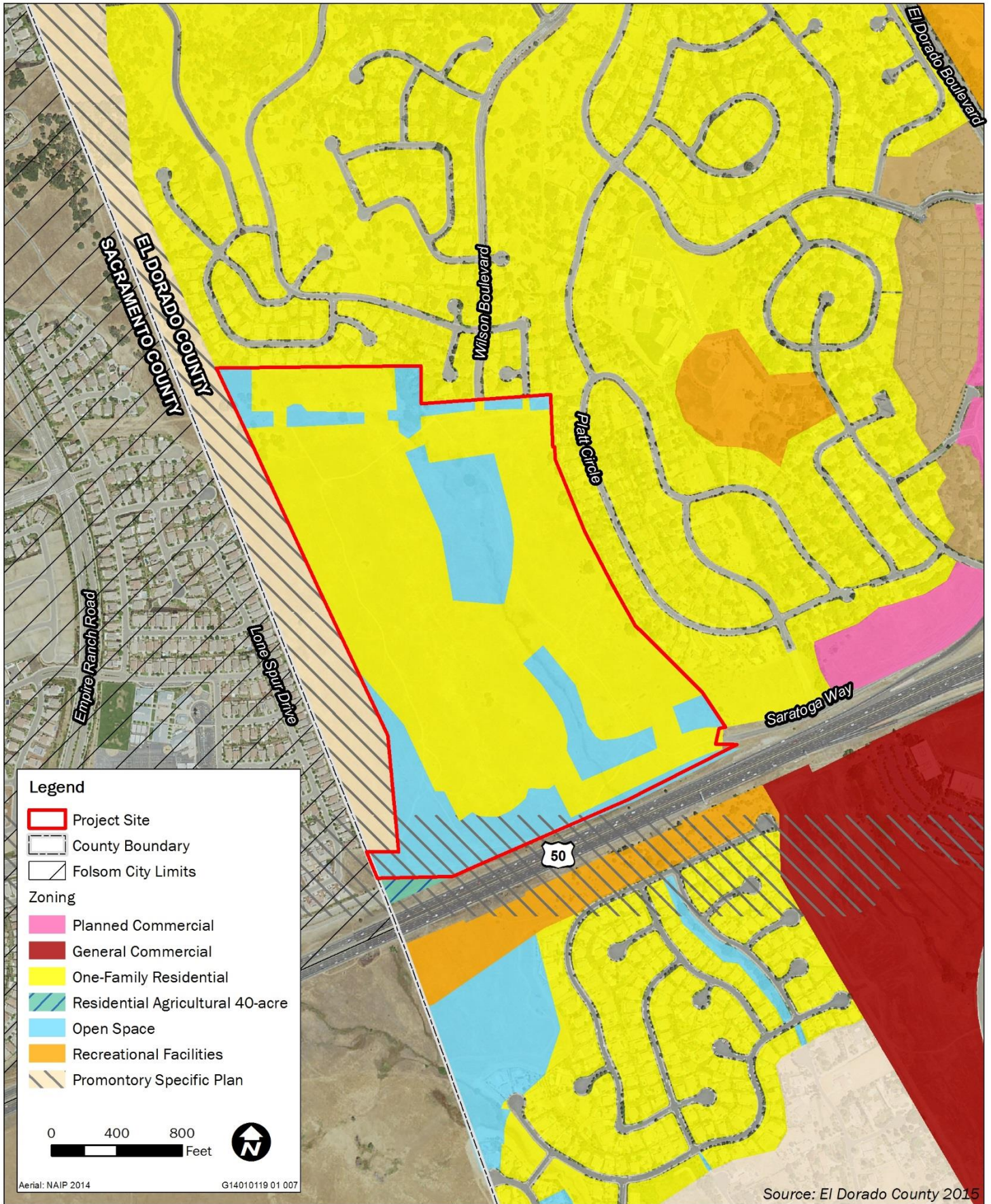


Exhibit 4.1-2

Existing Zoning Districts



METHODS OF ANALYSIS

Evaluation of potential land use impacts is based on a review of planning documents, including the *El Dorado County General Plan* and zoning ordinance. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant federal, state, and local ordinances and regulations, as well as the relevant *El Dorado County General Plan* and zoning ordinances presented above.

IMPACTS AND MITIGATION MEASURES

Impact 4.1-1: Divide an established community.

The majority of the project site is currently undeveloped. The proposed residential development would not create a physical barrier within the project site, nor would it remove existing means of access to and through existing nearby neighborhoods. Therefore, the proposed project would result in a **less-than-significant** impact related to the physical division of an established community.

The physical division of an established community typically refers to the construction of a physical feature (such as a highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair the mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The proposed project would result in the development of residential uses and preservation of open space on the privately-owned, undeveloped project site. Access to the site would be provided via extensions of Saratoga Way from the east, Iron Point Road from the west, and Wilson Boulevard from the north. These roadways would provide access to the internal circulation system within the subdivision. Further, proposed trails would provide pedestrian connection to existing neighborhoods and future trails. The proposed residential development would not create a physical barrier to travel around or within the project site or remove existing means of access to and through existing nearby neighborhoods. Therefore, the proposed project would result in a **less-than-significant** impact related to the physical division of an established community.

Please see Section 4.7, "Transportation and Circulation," for information related to roadway operations within and near the project site.

Mitigation Measures

No mitigation is required.

Impact 4.1-2: Conflict with applicable land use plans or policies.

Land uses within the site are designated as HDR and OS. The proposed project includes rezoning from R1 and OS to R1-PD and OS-PD to allow for the development of 317 residential units and associated infrastructure and amenities on the site. Application of the PD Combining Zone District would be consistent with the County's general plan land use designation. In addition, all standards, densities, and other requirements are required to conform to the current base zone of R1 and OS. Thus, the proposed project would be consistent with the *El Dorado County General Plan* and zoning ordinance. This impact would be **less than significant**.

Appendix G of the State CEQA Guidelines suggests consideration of whether a proposed project may conflict with applicable land use plans, policies, or regulations (including the general plan, specific plan, or zoning ordinance). This analysis is specific to policies adopted for the purpose of avoiding or mitigating potential

environmental effects. Consistency of the proposed project with these types of policies is discussed in this EIR under specific topical section, such as noise, air quality, and transportation and circulation, as appropriate. This environmental determination is limited to a review and analysis of whether the inconsistency would likely result in a significant adverse effect on the environment, and differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. This determination is made by the decision-making body of the jurisdiction based on their broad discretion to assess whether a proposed project conforms to the policies and objectives of its general plan as a whole.

The proposed project includes development of 317 residential units and associated infrastructure and amenities on the site. The proposed project would generally conform to the intent of the general plan and zoning ordinance as described below.

General Plan

As discussed under Section 4.1.2, "Regulatory Setting," the existing HDR land use designation allows single-family residential development at densities from one to five dwelling units per acre. Individual lots range between approximately 6,000 to over 9,000 square feet (up to approximately 19,000 square feet) within 58 acres of the project site. Policy 2.2.3.1 states that implementation of the PD Combining Zone District allows for the density specified by the underlying zoning district to be implemented. The project site would remain zoned as R1, which would allow for lot sizes to be a minimum of 6,000 square feet. Thus, development within areas designated as HDR would be consistent with the general plan.

Approximately 41 acres of the project site would include public parks, a trail system, and landscaping, and open space areas surrounding the creek corridor. Areas along and adjacent to the existing creek would remain undeveloped, consistent with the purpose of maintaining natural features within clustered development. Open space areas would also function as a buffer to adjacent developments. These uses would be consistent with the general plan designation of OS, and would meet Policy 2.2.3.1 requirements to dedicated at least 30 percent of the total site for commonly owned or publicly dedicated open space lands when applying the PD Combining Zone District.

Zoning Ordinance

The proposed project includes a PD Combining Zone District with a mix of base zone districts that allow for residential uses and open space. These base zones consist of R1 and OS. The R1 zoning district is consistent with HDR land use designations in the general plan. This zoning designation allows for development of single-family detached residential uses with a minimum lot size of 6,000 square feet (when served by public water supply and sewer systems). Lot sizes proposed would be consistent with this zoning designation. The remainder of the site would be zoned OS to preserve existing natural areas associated with the creek and to provide a buffer to neighboring uses, consistent with the intent of this zone district.

The PD Combining Zone District allows flexibility in development standards that may not, in all aspects, conform to the existing zoning regulations. The project is required to conform to the standards, densities, and other requirements of the base zone of R1 and OS. Thus, the proposed project would be consistent with the El Dorado County Zoning Ordinance.

Summary

The proposed project includes the development of 317 residential units and associated infrastructure and amenities on the site. The project is consistent with the existing land use designation and zoning for the property. The purpose of the rezone application is to align the residential and open space zoning boundaries with the proposed site plan. Because the proposed project would conform to the intent of the general plan and zoning ordinance, the potential for impacts related to conflict with plans or policies would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.1-3: Compatibility with surrounding land uses.

The majority of the site is currently undeveloped; however, the project would be similar in scale to existing and planned residential developments within the vicinity. In addition, open space areas would generally surround the perimeter of the site providing a buffer from surrounding land uses and a transition from adjacent communities to the proposed residential subdivision. Thus, the project would have a **less-than-significant** impact related to land use compatibility.

The proposed project would introduce residential and recreational uses onto the undeveloped project site. Residential uses on the project site would be similar in scale to existing and planned residential developments in the vicinity, particularly the high-density residential development immediately north and east, as well as developments in the City of Folsom west of the site, and residential development south of Highway 50. Open space areas would generally surround the perimeter of the site providing a buffer from surrounding land uses and a transition from adjacent communities to the proposed residential subdivision. In addition, a perennial drainage running through the project site would be preserved as open space. Therefore, the proposed project would be compatible with existing and planned land uses in the vicinity and would have a **less-than-significant** impact related to land use compatibility.

Mitigation Measures

No mitigation is required.

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4.2 POPULATION, EMPLOYMENT, AND HOUSING

This section describes current conditions relative to population, employment and housing in El Dorado County through information gathered from the U.S. Census, the State of California Department of Finance, and the *El Dorado County General Plan*. Potential effects on population growth and employment, and impacts associated with displacement of housing or populations, are evaluated.

4.2.1 Environmental Setting

The El Dorado Hills community is the most rapidly developing region of the county. It is characterized by suburban development and dominated by high-end housing that serves, primarily, residents commuting to the Sacramento region. The El Dorado Hills Business Park is one of the largest employment centers in the county (El Dorado County 2003: 5.1-7).

POPULATION

El Dorado County

The U.S. Census Bureau estimates that the population of El Dorado County was 183,087 in July of 2014, a growth of 1.1 percent since April of 2010 (U.S. Census Bureau 2015). Between 2014 and 2019, the population of the county is expected to grow by an average of 0.6 percent annually; 87 percent of this growth is expected from an annual average net migration of 930 individuals into the county (California Department of Transportation 2014). By 2030, the California Department of Finance (DOF) predicts the population of the county will be 201,508 (see Table 4.2-1).

	2015	2020	2025	2030
Total Population	184,754	190,850	196,978	201,508
Total Households ¹	72,857	76,535	80,248	83,388
Persons Per Household	2.55	2.51	2.47	2.40

Source: DOF 2015

Note: Based on Baseline 2013 Population Projection Series

¹ "Households" are occupied housing units.

El Dorado Hills

At the time of the 2010 Census, the population of El Dorado Hills was 42,108 (U.S. Census Bureau 2010). The U.S. Census Bureau *2009-2013 5-Year American Community Survey* estimated that the population of El Dorado Hills was 44,206 in 2013 (U.S. Census Bureau 2014). This is an average population increase of 500 individuals annually.

EMPLOYMENT

In February of 2015, El Dorado County had a labor force of 89,000 and an unemployment rate of 6.1 percent (California Employment Development Department [EDD] 2015a). Major employers in El Dorado Hills include: Blue Shield of California (insurance), Cemex (construction materials), DST Output (direct mail services), Holiday Inn Express (hotel), Raley's (retail grocery), and Spare Time Inc. (health club) (EDD 2015b).

In December of 2013, there were 3,400 individuals living in El Dorado County employed in the construction industry (EDD 2015c).

HOUSING

El Dorado County

As of 2014, there were 88,950 housing units in El Dorado County (DOF 2014). Approximately 12 percent of the total housing units are multi-unit structures (U.S. Census Bureau 2015). In 2014, there were 67,885 households (i.e., occupied housing units) in the county, and the average household size (i.e., the persons per occupied unit) was 2.55 (DOF 2014). The number of households in El Dorado County is projected to increase to 83,388 in 2030, and the average household size is expected to decrease to 2.40 persons per household (see Table 4.2-1).

El Dorado Hills

The 2010 Census recorded 14,994 housing units in El Dorado Hills, 96 percent of which were occupied. The U.S. Census Bureau *2009-2013 5-Year American Community Survey* estimated that there were 15,263 total housing units in 2013, an addition of 269 housing units over a four-year period (U.S. Census Bureau 2014). The average household size in El Dorado Hills was 2.93 individuals per household in 2010 (U.S. Census Bureau 2010).

Regional Housing Needs

As required by State law, the Housing Element of the *El Dorado County General Plan* discusses the County's "fair share allocation" of regional housing need by income group, as projected by the Sacramento Area Council of Governments (SACOG). The SACOG *Regional Housing Needs Plan* allocated housing into income groups to ensure adequate housing opportunities for all income groups. The plan divides unincorporated El Dorado County into the East Slope (which includes Tahoe National Forest and the Lake Tahoe Basin) and the West Slope (which consists of the remainder of the county, including the project site). SACOG's determination of the local share of regional housing needs takes into consideration the following factors: market demand for housing, employment opportunities, availability of suitable sites and public facilities, loss of existing affordable units, transportation, and special housing needs (El Dorado County 2013). The housing allocations for the West Slope of unincorporated El Dorado County from 2013 to 2021 are presented by income group in Table 4.2-2.

Income Category	West Slope	Unincorporated Countywide Total	Portion of Total Allocation
Very Low	954	1,086	25%
Lower	669	762	17%
Moderate	734	823	19%
Above Moderate	1,591	1,757	40%
Total	3,948	4,428	100%

Source: El Dorado County 2013

4.2.2 Regulatory Setting

FEDERAL

There are no federal population, employment, or housing regulations or policies applicable to the proposed project.

STATE

There are no state population, employment, or housing regulations or policies applicable to the proposed project.

LOCAL

El Dorado County General Plan

The general plan establishes the distribution of land uses (e.g., residential, commercial, agricultural, open space) and the maximum intensity and density of future development within the unincorporated areas under the County's jurisdiction. This includes identifying the maximum allowed residential densities.

Forecasts of residential growth conducted as part of the general plan process projected demand for an additional 32,000 homes by 2025. Most of this growth was expected to occur in the El Dorado Hills market area (El Dorado County 2003: 4-14). The general plan accommodates the addition of 32,491 new residences between 1999 and the 2025 planning horizon, but could theoretically accommodate 78,692 new residences between 1999 conditions and full build out of the plan (El Dorado County 2003: 4-16).

The Housing Element of the general plan includes the following housing-related policies applicable to development of the project site:

Goal HO-1: To provide for housing that meets the needs of existing and future residents in all income categories.

- ▲ **Policy HO-1.1:** When adopting or updating programs, procedures, or Specific Plans or other planning documents, the County shall ensure that the goals, policies, and implementation programs are developed with the consideration of achieving and maintaining the County's regional housing allocation.
- ▲ **Policy HO-1.5:** The County shall direct higher density residential development to Community Regions and Rural Centers.

4.2.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ Induce substantial population growth in an area, either directly or indirectly;
- ▲ Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- ▲ Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

There are no residences on the project site, and the project would not displace existing housing or people such that replacement housing would be necessary. No employment opportunities would be displaced by the project, nor would the project create permanent employment opportunities that could generate additional population or need for additional housing. These issues are not discussed further.

METHODS OF ANALYSIS

This analysis compares the additional residences and associated population growth potentially accommodated by the project to the projections used in applicable planning documents to determine if the project would induce substantial population growth.

IMPACTS AND MITIGATION MEASURES

Impact 4.2-1: Directly or indirectly induce substantial population growth during construction.

During the five-year construction period, the project would require approximately 140 workers for peak construction. Because the project site is located in an urban area with a substantial construction workforce, it is expected that workers would be drawn from the local labor pool and that a sufficient number of construction workers are available in the county and adjacent communities to meet this demand. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of workers to the area is not anticipated. This impact would be **less than significant**.

The Saratoga Estates project is anticipated to employ a maximum of 140 workers during the peak construction period. The existing number of residents in the county who are employed in the construction industry (approximately 3,400) would be sufficient to meet the needed number of construction workers for the project. Further, construction employees could commute from other nearby communities outside El Dorado County, including communities in Sacramento County (i.e., Folsom, Rancho Cordova, Fair Oaks, Orangevale, and City of Sacramento.). Therefore, the project's anticipated construction labor force would be fulfilled by residents currently living in the region and would not result in substantial increased housing demand in the region. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of these workers to the area is not anticipated. Therefore, the project would not be expected to generate the need for substantial additional housing in El Dorado County during construction. Because of these conditions, the impact related to population growth and housing demand associated with project construction would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.2-2: Directly or indirectly induce substantial population growth during operation.

The Saratoga Estates project would provide housing for an estimated 929 individuals. These additional residences would accommodate population growth in the unincorporated community of El Dorado Hills that is consistent with the growth projections in the *El Dorado County General Plan* and related planning documents. As such, the project would not induce substantial population growth. This impact would be **less than significant**.

The proposed project would generate housing-related population growth by adding 317 new market-rate residential units to the County's housing stock. Based on the average persons per household in El Dorado Hills,

this would result in an addition of approximately 929 residents (assuming 317 units and 2.93 individuals per unit). This represents approximately 0.5 percent of the estimated population of the County as a whole (184,754) in 2015 and roughly 2.1 percent of the population of the El Dorado Hills (44,206) in 2013. The estimated population generated by the project would represent approximately 7.6 percent of the 12,224 population increase forecast for El Dorado County between 2015 and 2025.

A proposed development can cause indirect population growth when it increases demand for services in an area that is currently underserved by such services. For example a major residential subdivision developed in a rural area could indirectly induce additional population growth by increasing demand for nearby commercial and retail facilities (e.g., supermarkets, gas stations, restaurants, entertainment, employment centers), as well as public services (e.g., police stations, fire stations, schools, libraries, and water and sewer treatment facilities). All of these support uses require employees, which require additional housing, which further increases population. A project can also induce indirect population growth by removing existing obstacles to development. An example would be extension of an oversized pipeline through vacant land, such that utility service is possible where it previously did not exist.

Because the project would be developed in a location where convenient access to commercial/retail and public services already exists, the project would not indirectly induce growth. In addition, because the project site is already surrounded by existing residential development, proposed utilities connections and extensions would serve only the proposed development and would not contribute to, or cause, additional growth to occur outside of the Community Region boundaries or elsewhere within the vicinity of the project site.

The project would provide critical roadway connections for the community—which is a consideration when evaluating the growth-inducing potential of a project—however, these roadway connections were already identified in the County’s circulation element and would primarily support existing development, and to a lesser degree, future development identified in the *El Dorado County General Plan* and the *City of Folsom General Plan* (City of Folsom 1993). Development of the proposed roadway facilities would therefore not indirectly induce any population growth that is not already anticipated in the County and City general plans.

The general plan anticipates the construction of 32,491 residential units between 2000 and 2025, 14,580 of which have been built. The 317 units proposed represent 1.8 percent of the remaining 17,917 units and are within the SACOG housing allocations for the West Slope.

As described in Section 4.1, “Land Use Compatibility,” the project site is zoned R1 (one-family residential district). The general plan identifies the site as a location appropriate for the development of residential uses and the project would contribute a relatively small percentage of the quantity of housing units anticipated to be built within the planning horizon of the general plan. The project is consistent with the County’s general plan and its growth projections and would not induce substantial indirect population growth. Therefore, project implementation would result in a **less-than-significant** impact related to population growth.

Mitigation Measures

No mitigation is required.

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4.3 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrologic and water quality setting for the project site, including runoff, storm drainage, flooding, and water quality. Applicable regulations and policies regarding hydrology and water quality are discussed, and impacts that may result from project implementation are identified. Mitigation measures are recommended to reduce potential impacts, where appropriate.

Comment letters pertaining to hydrology and water quality were received in response to the Notice of Preparation for the proposed project from the California Department of Transportation, the Central Valley Regional Water Quality Control Board (RWQCB), and members of the public. The comment letters raised issues regarding drainage and flooding, water quality and compliance with water quality regulations, and increasing the amount of impervious surfaces. Several comment letters raised concerns about water supply and drought conditions. Impacts associated with water supply (including drought preparedness) are discussed in Section 4.14, "Public Utilities."

4.3.1 Environmental Setting

REGIONAL SETTING

Climate

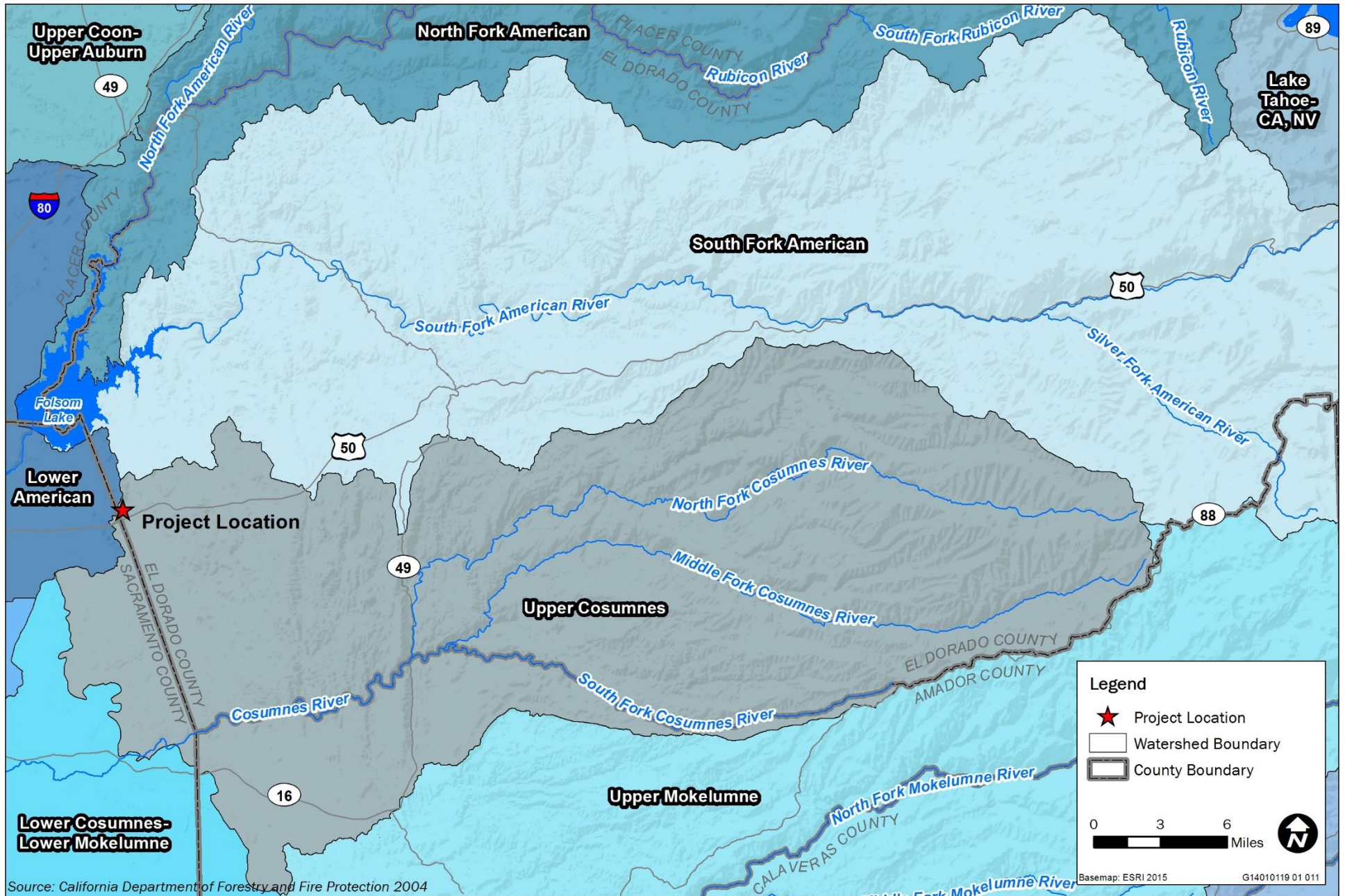
The climate of the El Dorado Hills area is Mediterranean, with cool wet winters and warm dry summers. The mean annual precipitation in the project vicinity, for the period between 1893 and 2012, was approximately 23 inches, the majority of which occurred from October through April. During the period of record, annual precipitation has varied from 8 inches (1976) to 47 inches (1983), with a one-day high of 6 inches of precipitation on February 25, 2007 (Western Climate Center 2012).

Hydrology

El Dorado County contains four major watersheds: the Tahoe Watershed, the Middle Fork American River, the South Fork American River, and the Cosumnes River. The project site is located within the South Fork American River Watershed, and drains into the Cosumnes River Watershed (Exhibit 4.3-1). The South Fork American River watershed encompasses the central portion of the county, and extends from the Echo Summit west to Folsom Reservoir. Major tributaries within the South Fork American River Watershed include Silver Fork American River, Silver Creek, Slab Creek, Rock Creek, and Weber Creek. Other water features within the watershed include Caples Lake, Silver Lake, Lake Aloha, Weber Reservoir, Ice House Reservoir, Union Valley Reservoir, Junction Reservoir, Camino Reservoir, Brush Creek Reservoir, Slab Creek Reservoir, and Chili Bar Reservoir (El Dorado County 2003).

The Cosumnes River watershed is within the southern portion of El Dorado County and south of the South Fork American River Watershed. The Cosumnes River Watershed extends from Iron Mountain Ridge west to where the Cosumnes River enters Sacramento County. Tributaries to the Cosumnes River include the South, Middle, and North Fork Cosumnes Rivers, Canyon Creek, Deer Creek, and Carson Creek. Bass Lake and Sly Park Reservoir are also located in the Carson Creek watershed, which is tributary to the Cosumnes River watershed (El Dorado County 2003).

Hydrology in the area is dominated by irrigation runoff and seasonal stormwater runoff from surrounding residential developments and direct precipitation. Precipitation primarily occurs as snowfall in the upper elevations of the watershed and rainfall in the lower elevations (El Dorado County 2003).



Source: California Department of Forestry and Fire Protection 2004

Exhibit 4.3-1

Watersheds



Geologic conditions and associated fragmented/fractured rock groundwater systems limit access to groundwater within the county. Recharge, movement, and storage of water in rock fractures are also limited. As such, the long-term reliability of groundwater within the county is difficult to estimate (El Dorado County 2003).

Drainage

As discussed above, the west slope of El Dorado County drains into three major rivers: the Middle Fork American River, the South Fork American River, and the Cosumnes River. These watersheds are further divided into smaller drainage basins that feed the tributaries of these rivers. Developed drainage infrastructure also exists throughout the county (El Dorado County 2003).

Flooding

El Dorado County's flood potential is primarily determined by the physical topography of the county and the runoff characteristics of the watersheds. The county ranges from approximately 200 to 10,900 feet above mean sea level (amsl). Because of the high elevation of much of the county, precipitation in these higher elevations is often in the form of snowfall, which melts over a long duration. Most of the watersheds within the county are dammed in the lower elevations. Because of a lack of extensive low-lying areas and a great deal of upland areas, the majority of El Dorado County is not subject to flooding (El Dorado County 2003).

Water Quality

Surface water quality on the west slope of El Dorado County is generally very good; however, both the Cosumnes River and South Fork American River are included on the state's list of "impaired water bodies" under Section 303(d) of the federal Clean Water Act (CWA). The lower Cosumnes River below Michigan Bar is listed as water quality impaired for *Escherichia coli* (E. coli), invasive species, and sediment toxicity and the upper Cosumnes River above Michigan Bar is listed as water quality impaired for invasive species. The South Fork American River is included on the 303(d) list as water quality impaired for mercury (EPA 2010). Activities within the county that have been identified to contribute to water quality degradation include grading and other construction activities, agricultural uses, confined animals, urban runoff, sewage and other wastewater from treatment plants, industrial sources, and recreation (El Dorado County 2003).

LOCAL SETTING

Hydrology

The primary hydrologic feature within the project site is an unnamed perennial drainage that transects the site and flows from north to south. The perennial drainage is tributary to Carson Creek, which flows into Deer Creek. Deer Creek then flows into the Cosumnes River. The perennial drainage receives water from groundwater, year-round irrigation runoff, and seasonal stormwater runoff. Perennial marsh habitat and riparian vegetation are associated with the drainage. In addition, five seeps are located on sloped areas of the site where groundwater intersects the soil surface. There are also two ephemeral drainages, primarily fed by stormwater runoff, that drain into the perennial drainage onsite. Groundwater is above the stream bed of the onsite perennial drainage for most of the year (USACE 2014).

Runoff and Drainage

The topography of the project site is undulating, with elevations ranging from 630 feet amsl in the southeast portion of the site to 790 feet amsl in the northwest portion of the site. The site is generally comprised of two steep northwest/southeast trending ridges bisected by the perennial drainage; however, most of the site has slopes of less than 20 percent. Steeper slopes occur in the northwest corner, southeast corner, and center of the southern half of the site (CTA Engineering & Surveying 2014).

Surface water runoff on the project site currently contributes to two watershed areas: runoff from the western portion of the project site drains west to the City of Folsom and the Humbug-Willow Creek basin, while the eastern portion drains into the unnamed drainage that transects the site that is tributary to Carson

Creek. Humbug Creek and Willow Creek both drain into the Lower American River (City of Folsom 2014). Carson Creek drains into Deer Creek and then the Cosumnes River. According to the *Carson Creek Regional Drainage Study*, there is little infiltration into area soils within the Carson Creek watershed and a high proportion of rainfall results in direct runoff to the main channel and its tributaries (CTA Engineering & Surveying 2005).

Flooding

The 100-year flood refers to the flood resulting from a storm event which has a probability of occurring once every 100 years, or a 1 percent chance of occurring in any given year. Areas mapped in the 100-year floodplain area are subject to inundation during a 100-year storm event. The project site lies outside of the designated 100-year floodplain. In addition, according to the FEMA flood insurance rate map (FIRM), the project site is not located within the 100-year or 500-year floodplain and the nearest area within the 100-year floodplain is located along New York Creek, approximately 1.8 miles north of the project site.

Water Quality

The unnamed drainage onsite is not listed under Section 303(d) as water quality impaired; however, Carson Creek, which is downstream of the project site is listed as water quality impaired for aluminum and manganese. The segment of Carson Creek that is listed as water quality impaired is approximately 12 miles in length and extends from the Wastewater Treatment Plant to Deer Creek (EPA 2010).

4.3.2 Regulatory Setting

FEDERAL

Clean Water Act

The CWA is the primary federal statute governing the protection of water quality and was established to provide a comprehensive program to protect the nation's surface waters. U.S. Environmental Protection Agency (EPA) is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA. The basis of the CWA consists of the federal Water Pollution Prevention and Control Act (Water Pollution Act) passed in 1948. The Water Pollution Act was substantially reorganized and expanded in subsequent amendments passed in 1972 and in 1977, when "Clean Water Act" became its common name. The Water Pollution Act required the EPA to establish nationwide effluent standards on an industry-by-industry basis. The 1972 amendment established the National Pollutant Discharge Elimination System (NPDES) program. As a result of the reauthorization of the CWA in 1987, Sections 402(p) through 405 were added. One of the results of the new sections was the creation of a framework for regulating discharges under the NPDES permit program, which is discussed later in this section.

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. EPA has designated the State Water Resources Control Board (SWRCB) and its nine RWQCBs with the authority to identify beneficial uses and adopt applicable water quality objectives. EPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The Federal Emergency Management Agency (FEMA) administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA also issues FIRMs that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. FEMA has established a minimum level of flood protection for new development as the 1-in-100 Annual Exceedance Probability (i.e., 100-year flood event). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The project site is not within a 100-year floodplain.

STATE

State Water Resources Control Board

In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Health Services, the California Department of Pesticide Regulation, the California Department of Fish and Wildlife, and the Office of Environmental Health and Hazard Assessment. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Central Valley RWQCB is responsible for water resources in the project vicinity.

On January 20, 2005, the SWRCB adopted the Low Impact Development (LID) Policy, which promotes “sustainability” as a key parameter to be considered during the design and planning process for future development. The sustainability practice promotes LID to benefit water supply and contribute to water quality protection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management. It is necessary to incorporate LID into the design of proposed projects to meet the Maximum Extent Practicable standard of the Phase II General Permits (see discussion of NPDES permits, below). LID practices include measures such as reducing impervious surface area, using natural drainage systems, and designing development to correspond to existing terrain.

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Act is California’s statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state’s waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update basin plans. Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, and other approvals. The RWQCBs also have the authority to issue waivers to reports of waste discharge/waste discharge requirements for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

National Pollutant Discharge Elimination System Permit System and Waste Discharge Requirements for Construction

The federal NPDES permit program in California has been delegated to the SWRCB and RWQCBs. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving

waters to the “maximum extent practicable” through the use of best management practices (BMPs). Compliance with the NPDES General Construction Permit requires that any construction activity affecting 1 acre or more obtain the General Construction Activity Storm Water Permit. Permit applicants are required to submit a notice of intent to the SWRCB and to prepare a stormwater pollution prevention plan (SWPPP), which identifies BMPs that will be implemented to reduce construction effects on receiving water quality. The BMPs include sediment and erosion control measures and other measures to control potential chemical contaminants. Examples of construction BMPs identified in SWPPPs include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw wattles or silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of postconstruction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

The General Permits also require permittees to develop a Construction Site Storm Water Runoff Control Program and a Post Construction Storm Water Management Program.

State Nondegradation Policy

In 1968, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

LOCAL

El Dorado County General Plan

Goals, objectives, and policies included in the *El Dorado County General Plan* (El Dorado County 2004a) that are relevant to the proposed project including the following:

Goal 5.4: Storm Drainage. Manage and control stormwater runoff to prevent flooding, protect soils from erosion, prevent contamination of surface waters, and minimize impacts to existing drainage infrastructure.

- ▲ **Policy 5.4.1.1:** Require storm drainage systems for discretionary development that protect public health and safety, preserve natural resources, prevent erosion of adjacent and downstream lands, prevent the increase in potential for flood hazard or damage on either adjacent, upstream or downstream properties, minimize impacts to existing facilities, meet the NPDES requirements, and preserve natural resources such as wetlands and riparian areas.

- ▲ **Policy 5.4.1.2:** Discretionary development shall protect natural drainage patterns, minimize erosion, and ensure existing facilities are not adversely impacted while retaining the aesthetic qualities of the drainage way.

Goal 7.3: Water Quality and Quantity. Conserve, enhance, and manage water resources and protect their quality from degradation.

- ▲ **Policy 7.3.1.1:** Encourage the use of BMPs, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.
- ▲ **Policy 7.3.1.2:** Establish water conservation programs that include both drought tolerant landscaping and efficient building design requirements as well as incentives for the conservation and wise use of water.
- ▲ **Policy 7.3.2.1:** Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity, provided for horticultural and grazing activities on agriculturally zoned lands that utilize “best management practices (BMPs)” as recommended by the County Agricultural Commission and adopted by the Board of Supervisors. Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue. For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.
- ▲ **Policy 7.3.2.2:** Projects requiring a grading permit shall have an erosion control program approved, where necessary.
- ▲ **Policy 7.3.3.1:** For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers’ Wetland Delineation Manual.
- ▲ **Policy 7.3.3.4:** The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas and wetlands. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas.
- ▲ **Policy 7.3.3.5:** Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.
- ▲ **Policy 7.3.4.1:** Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.

Design and Improvement Standards Manual

The purpose of the Design and Improvement Standards Manual is to standardize development practices used in the hillside environment that is prevalent in El Dorado County and to minimize the environmental effects of construction. Volume II of the manual includes drainage and design criteria for stormwater and Volume III of the manual provides guidance on how to implement the erosion and sediment control standards in Chapter 110.14 of the *El Dorado County Code of Ordinances*.

Drainage Manual

The *El Dorado County Drainage Manual* (Drainage Manual) establishes guidelines for the design of stormwater drainage facilities and the performance of hydraulic and hydrologic analyses. This manual is designed to supplement El Dorado County ordinances and the provisions defined in the Design and Improvement Standards Manual. For example, the Drainage Manual requires that potential downstream impacts to water quality and flow regimes be taken into account when designing stormwater drainage systems and that mitigation measures be included as part of drainage analyses. Drainage facilities for areas larger than 100 acres are required to accommodate runoff from a 100-year storm.

Western El Dorado County Storm Water Management Plan

The purpose of the Construction Site Runoff Control Program of the SWMP is to control the discharge of pollutants from all construction sites greater than or equal to 1 acre. The SWMP requires full compliance with the Construction General Permit and El Dorado County's Grading, Erosion and Sediment Control Ordinance, Design and Improvement Standards Manual, and Drainage Manual.

The Construction Site Runoff Control Program also describes the typical construction site practices expected to be implemented for common construction activities, as well as the minimum construction site practices required to protect water quality. The minimum measures include scheduling, preservation of existing vegetation, stockpile management, non-stormwater management, and disturbed soil area management. The purpose of the Post Construction Runoff Control Program of the SWMP is to protect water quality and control runoff from all development or redevelopment projects greater than or equal to 1 acre during the operation period of the developments. This is achieved through the construction, implementation, and long-term operation and maintenance of BMPs. The SWMP states that a site specific Storm Water Mitigation Report documenting permanent stormwater quality mitigation measures must be developed during the planning/design stage of a proposed project; however, for practical purposes, the documentation of these measures is included in the project drainage study, rather than in the Storm Water Mitigation Report.

El Dorado County Code

The purpose of the Grading, Erosion and Sediment Control Ordinance (Chapter 110.14) is to regulate grading within the unincorporated areas of El Dorado County, to prevent the pollution of surface water, and to ensure that the intended use of the site is consistent with all applicable local and state plans and standards, including the *El Dorado County General Plan*, SWMP, and El Dorado County ordinances. This ordinance also establishes the procedures for the issuance of permits, approval of plans, and inspection of construction sites. The Grading, Erosion and Sediment Control Ordinance requires that waterways and adjacent properties be protected from erosion, flooding, or sediment deposits that could result from grading activities. It also states that the discharge of sediments to any waterway, drainage system, or adjacent property remain at or below levels before grading activities.

El Dorado County has provided the following standard conditions of approval related to stormwater drainage and infrastructure that apply to the proposed project.

Grading Permit/Plan

A residential grading permit is required for the proposed project. The plan shall be in conformance with the El Dorado County Design and Improvement Standards Manual; the Grading, Erosion and Sediment Control Ordinance; and the Drainage Manual.

Grading and improvement plans shall be submitted to the El Dorado County Resource Conservation District (RCD) and the Transportation Division. The RCD shall review and make appropriate recommendations to the County. Upon receipt of the review report by the RCD, the Transportation Division shall consider imposition of appropriate conditions for reducing or mitigating erosion and sedimentation from the project. Grading plans shall incorporate appropriate erosion control measures as provided in the Grading, Erosion and Sediment Control Ordinance and El Dorado County SWMP. Appropriate runoff controls such as berms, storm gates, detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation, and the potential discharge of pollutants into drainages.

Resource Conservation District Coordination

The timing of construction and method of revegetation shall be coordinated with the El Dorado County RCD. If grading activities are not completed by September, the applicant shall implement a temporary grading and erosion control plan. Such temporary plans shall be submitted to the RCD for review and recommendation to the Transportation Division. The Transportation Division shall approve or conditionally approve such plans and cause the applicant to implement said plan on or before October 15.

Drainage Study/SWMP Compliance

The applicant shall provide a drainage report at time of improvement plans or grading permit application, consistent with the Drainage Manual and the SWMP, which addresses stormwater runoff increase, impacts to downstream facilities and properties, and identification of appropriate stormwater quality management practices to the satisfaction of the Transportation Division. The drainage study must demonstrate the subject property has adequate existing and proposed storm drainage facilities. At a minimum, the drainage study, plans, and calculations shall provide evidence of the following:

- ▲ The site can be adequately drained.
- ▲ The development of the site will not cause problems to nearby properties, particularly downstream sites.
- ▲ The onsite drainage will be controlled in such a manner as to not increase the downstream peak flow more than the pre-development 10-year storm event or cause a hazard or public nuisance. Detention shall be required if said condition is not met or the applicant shall demonstrate that there are no downstream impacts.
- ▲ The improvements to the drainage outfall shall be completed to the approval of the Transportation Division, before the filing of the final map or the applicant shall obtain an approved improvement agreement with security.

Drainage (Cross Lot)

Cross lot drainage should be avoided. When concentrated cross lot drainage does occur or when the natural sheet flow drainage is increased by the project, it should be contained within dedicated drainage easements and included in the County Service Area Zone of Benefit, Home Owners Association, or other entity acceptable to the County. Any variations shall be approved by the County Engineer. This drainage shall be conveyed via closed conduit or v-ditch, to either a natural drainage course of adequate size or an appropriately sized storm drain system. The site plans shall show drainage easements for all onsite drainage facilities. Drainage easements shall be provided where deemed necessary before the filing of the final map.

National Pollutant Discharge Elimination System Permit

At the time that an application is submitted for improvement plans or a grading permit, and if the proposed project disturbs more than 1 acre of land area, the applicant shall file a notice of intent to comply with the Statewide General NPDES Permit for stormwater discharges associated with construction activity with the SWRCB. This condition is mandated by the CWA and the California Water Code. A filing form, a filing fee, a location map, and a SWPPP are required for this filing. A copy of the application shall be submitted to the County, before building permit issuance, and by state law must be done before commencing construction.

Storm Water Drainage Best Management Practices

Storm drainage from on- and offsite impervious surfaces (including roads) shall be collected and routed through specially designed water quality treatment facilities (i.e., BMPs) for removal of pollutants of concern (e.g., sediment, oil/grease), as approved by the Transportation Division. This project is located within the area covered by El Dorado County's municipal stormwater quality permit, pursuant to the NPDES Phase II program. Project-related stormwater discharges are subject to all applicable requirements of said permit. BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat, depending onsite conditions) stormwater runoff in accordance with Attachment 4 of El Dorado County's NPDES Municipal Storm Water Permit (SWRCB NPDES General Permit No. CAS000004). The applicant shall verify that the proposed BMPs are appropriate to treat the pollutants of concern from the project.

El Dorado County Multi-Jurisdiction Hazard Mitigation Plan

The *El Dorado County Multi-Jurisdictional Hazard Mitigation Plan* (Hazard Mitigation Plan) recommends specific actions to combat the forces of nature and protect its residents from hazard losses. The purpose of this Hazard Mitigation Plan is:

- ▲ to protect life, safety and property by reducing the potential for future damages and economic losses that result from natural hazards;
- ▲ to qualify for additional grant funding, in both the pre-disaster and post-disaster environment;
- ▲ to speed recovery and redevelopment following future disaster events;
- ▲ to demonstrate a firm local commitment to hazard mitigation principles; and
- ▲ to comply with both state and federal legislative requirements for local hazard mitigation plans.

The plan includes goals to help ensure effective emergency response to significant hazards including minimizing the threat to lives and property posed by the possibility of flooding (El Dorado County 2004b).

Carson Creek Regional Drainage Study

The *Carson Creek Regional Drainage Study* was completed in 1996 and updated in 2005 for the 15-square-mile Carson Creek watershed, most of which is located in the southwestern portion of El Dorado County. The purpose of this drainage study was to provide a unified plan for stormwater management in the El Dorado County portion of the watershed. The study recognizes the drainage needs of individual projects, assesses the impacts of the proposed drainage improvements on the entire catchment area, and satisfies the requirements of the Drainage Manual.

The *Carson Creek Regional Drainage Study* uses results from previous drainage studies within the watershed, as well as land use information and drainage improvements included in the previous studies, to develop a regional drainage model. The 2005 update to the study incorporated revised parameters into the regional drainage model to reflect additional development in the lower watershed. The study concluded that runoff for the 100-year storm would result in minor downstream impacts in Sacramento County and that the increase in existing flood inundation areas would be negligible. The 2005 update to the study concluded that 100-year flows at key points along Carson Creek were substantially unchanged by the development in the lower watershed. The study recommended that future drainage improvements be designed and analyzed in context of the regional drainage model. Specific drainage improvements, such as culvert upgrades, channel improvements, and construction of a regional detention storage facility were also recommended (CTA Engineering & Surveying 2005).

4.3.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a hydrology and water quality impact would be significant if implementation of the proposed project would do any of the following:

- ▲ violate any water quality standards or waste discharge requirements;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- ▲ 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 on- or offsite erosion or siltation;

- ▲ 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 which would result in on- or offsite flooding;
- ▲ 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 or FIRM or other flood hazard delineation map;
- ▲ place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- ▲ 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; or
- ▲ result in inundation by seiche, tsunami, or mudflow.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The proposed project would not use groundwater for its water supply needs. The applicant has proposed that potable water be supplied to the project site by El Dorado Irrigation District (EID) (see Section 4.14, “Public Utilities,” for a discussion of the proposed project’s impact on water supply). EID’s existing water supplies include surface water and recycled water; EID does not use groundwater. Although project construction would result in new impervious surfaces (see Impact 4.3-2), approximately 42 acres of the site would remain as open space that would allow infiltration. In addition, the onsite drainage would not be disturbed as part of the project and two water quality retention ponds would be constructed onsite. These water features would continue to contribute to groundwater recharge following construction of the project. Furthermore, the project is not anticipated to significantly affect groundwater quality because sufficient stormwater infrastructure would be constructed as part of project to detain and infiltrate stormwater runoff and prevent long-term water quality degradation. Therefore, project construction and operation would not substantially deplete or interfere with groundwater supply or quality, and these issues are not discussed further in this Draft EIR.

The project site is not located in a flood hazard area or area subject to dam failure (El Dorado County 2003). In addition, according to the FEMA FIRM for the project vicinity, the project site is not located within the 100-year or 500-year floodplain. Therefore, project implementation would not place housing in a 100-year flood hazard area or place structures in a 100-year flood hazard area that would redirect flood flows. Furthermore, the project would not 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. Thus, these issues are not discussed further in this Draft EIR.

Because of the distance from the nearest open waterbody, the Pacific Ocean (more than 80 miles to the west), and the elevation of the site (approximately 630–790 feet amsl), the proposed project would not be affected by inundation as a result of seiche or tsunami. In addition, the project site would be graded as part of the project and there would be no steep areas that would have the potential to generate mudflows during operation. Therefore, these issues are not addressed further in this Draft EIR.

METHODS OF ANALYSIS

Evaluation of potential hydrologic and water quality impacts was based on a review of existing information from previously completed documents that address water resources in the project vicinity, including the *El Dorado County General Plan (2004a)*, *El Dorado County General Plan Draft Environmental Impact Report*

(2003), and *Carson Creek Regional Drainage Study* (2005). The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this chapter. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local ordinances and regulations (see Section 4.3.2, “Regulatory Setting”).

Water quality impacts associated with temporary construction activities were assessed in a qualitative manner. The potential short-term, construction-related effects of grading and land disturbance were assessed based on the probability of seasonal exposure to rainfall and runoff, routes of exposure for contaminants to enter surface water, and the magnitude and duration of construction relative to the potential water quality parameters expected to be affected by the activity.

As El Dorado County is the lead agency for the project, project implementation would comply with the applicable County Code sections, stormwater management programs, and regulations. In particular, project construction activities would be conducted in compliance with the County’s SWMP, and the SWRCB NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. The General Construction NPDES Permit requires the preparation and implementation of a SWPPP that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related water quality effects.

IMPACTS AND MITIGATION MEASURES

Impact 4.3-1: Short-term construction-related water quality degradation.

Project construction activities would involve extensive grading and movement of soil, which could result in erosion and sedimentation, and discharge of other nonpoint source pollutants in onsite stormwater that could then drain to offsite areas and degrade local water quality. To avoid or minimize the potential for adverse construction-related effects on water quality, the project would be required to comply with stream setback requirements in the general plan and Central Valley RWQCB and County regulations that protect water quality and minimize erosion. However, because soils onsite have a high potential for erosion that could affect water quality this impact would be **potentially significant**.

This impact would be reduced to a **less-than-significant** level with implementation of Mitigation Measure 4.3-1.

Project construction would involve extensive ground-disturbing activities over approximately 80 acres, including grading, trenching, and facility construction activities. Construction is proposed to occur in several phases between 2017 and 2022. Depending on scheduling, construction could potentially occur during multiple rainy seasons (October 1 through April 30). Because of the increase in exposed surfaces and the earth-moving activities, the potential for erosion and sedimentation is higher during the rainy season.

Construction activities would create the potential for soil erosion and sedimentation of stormwater drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of other pollutants to surface waters, including oil and gas, chemical substances used during construction, waste concrete, and wash water. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Proposed construction activities, if not properly implemented, could violate water quality standards or cause direct harm to aquatic organisms.

The proposed project includes setbacks from the edges of aquatic features as close as 10 feet. Although General Plan Policy 7.3.2.1 calls for minimum 50-foot setback from intermittent streams and wetlands, the Policy also provides that such setbacks may be reduced upon determination that the development is planned in a manner to protect those aquatic features. The proposed project is designed to avoid these

features. Please see Section 4.4 “Biological Resources” for a more detailed discussion, which includes additional mitigation measures to further reduce potential conflict with this policy.

Because the project site has some steep slopes and the soils onsite are susceptible to erosion, project implementation could cause localized erosion hazards (see Section 4.11, “Geology and Soils”). Intense rainfall and associated stormwater runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could cause sedimentation and blockage of onsite or offsite waterways. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion. Stormwater runoff could also wash construction materials into receiving waterbodies and negatively impact water quality. Non-stormwater discharges could result from activities such as discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, solvents, cleaners, or other construction materials.

Construction activities would be set back at least 10 feet from the perennial drainage and would be required to comply with State and County regulations pertaining to the control of onsite stormwater, including requirements of the Central Valley RWQCB. However, because the project has a high potential to result in erosion, which could degrade water quality, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.3-1: Prepare and implement a stormwater pollution prevention plan.

The applicant shall prepare and implement a SWPPP that complies with the SWRCB Statewide Construction General Permit. The SWPPP must identify BMPs that will protect water quality from polluted stormwater runoff.

Significance after Mitigation

Implementation of Mitigation Measure 4.3-1 would reduce construction-related water quality impacts and ensure compliance with General Plan Policy 7.3.2.1 by requiring the project applicant to incorporate appropriate BMPs into the design of the development to prevent water quality degradation. The plan would be designed to prevent increased discharge of sediment at all stages of construction, from initial ground disturbance to project completion. Adequate surface drainage control would be designed by the project civil engineer in accordance with the latest applicable edition of the California Building Code. All slopes should have appropriate drainage and vegetation measures to minimize erosion of soils. In addition, the project shall fully comply with El Dorado County’s SWMP, Grading, Erosion and Sediment Control Ordinance (Chapter 110.14), Design and Improvement Standards Manual, and Drainage Manual. Contract provisions would require compliance with the El Dorado County Grading Ordinance and SWMP and implementation of BMPs. With adherence to existing requirements, impacts related to water quality degradation as a result of soil erosion would be **less than significant**.

Impact 4.3-2: Increase in surface water runoff potentially exceeding the capacity of existing or planned stormwater drainage systems.

The proposed development would add additional impervious surfaces at the project site, which would increase surface runoff on an ongoing basis. This increase could result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and could result in exceeding the capacity of onsite stormwater systems and greater potential for on- and offsite flooding. Therefore, this impact would be **potentially significant**.

This impact would be reduced to a **less-than-significant** level through implementation of Mitigation Measure 4.3-2.

The site is currently undeveloped grassland, and construction of the proposed project would develop approximately 80 acres of the 122-acre site. Therefore, the project would substantially increase the amount of impervious surfaces onsite. To accommodate the increase, the project would include a drainage

conveyance system including buried pipelines and open ditches that would convey drainage to the existing onsite perennial drainage, which then flows into Carson Creek. The project would also include two water quality retention ponds: a 2.9 acre-foot detention pond near the center of the site, and a 0.5 acre-foot pond adjacent to the perennial drainage. The primary drainage would not be disturbed and other existing onsite drainages would be preserved to the extent practicable. Bio swales would be constructed at the toe of fill slopes throughout the project site to capture and direct stormwater runoff to these basins and to the perennial drainage.

In accordance with Central Valley RWQCB requirements, the project will consider and incorporate LID techniques to minimize runoff from the project site. LID methods to maintain pre-project runoff levels, including design considerations when planning roads, parking lots, buildings, and landscaping will be incorporated to the maximum extent practicable. The project's drainage system would be designed to appropriately accommodate the stormwater runoff generated from the project site to maintain pre-project conditions. With these standard measures, projects generally would not substantially increase the rate or amount of surface runoff in a manner that would result in on- or offsite flooding. However, because the project would substantially increase impervious surfaces onsite and final drainage design specifications have not been completed, including stormwater flow paths based on a finalized site plan, the project has the potential to cause an increase in surface runoff that would exceed the capacity of the stormwater drainage system, resulting in on- and offsite flooding. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.3-2: Complete final drainage plan and provide adequate onsite storm drainage facilities.

The applicant shall prepare a Final Drainage Analysis conforming to the County's Drainage Manual and the County's West Slope Storm Water Management Plan (SWMP) with each final map (phase) of the project. The Final Drainage Analysis shall be submitted to the County along with the Improvement Plans for each phase.

The Final Drainage Analysis shall identify project drainage facilities and design features that ensure runoff from the project site will not exceed pre-development levels. The identified drainage facilities and design features shall be included in the Improvement Plans for each phase. At a minimum, the necessary drainage facilities and design features constructed with each phase of development shall be sufficient to mitigate post-development runoff to pre-development levels for each phase. Drainage facilities and design features for later phases of the project may be constructed with earlier phases of the project.

The Final Drainage Analysis for each phase shall include evaluation of the final design for the 85th percentile storm (water quality storm), the tenth percentile storm (10-year storm) and the one percentile storm (100-year) storm. The Final Drainage Analysis for each phase shall include a discussion of that phase set in the context of the overall project, considering prior and future phase drainage facilities and design features.

Maintenance of the project drainage facilities and design features shall be the responsibility of the Home Owner's Association (HOA). A provision for maintenance and management of the drainage facilities and design features shall be included in the Codes, Covenants and Restrictions for the project. A separate Maintenance Program shall be developed in accordance with the County's SWMP to guide the long term maintenance and management of the systems by the HOA. The Maintenance Program shall be submitted to the County for review and approval prior to recordation of the first final map.

Significance after Mitigation

Implementation of Mitigation Measure 4.3-2 would reduce the significant impact associated with increased surface runoff that could exceed the capacity of the stormwater drainage system, resulting in on- and offsite flooding to a **less-than-significant** level by providing adequate onsite storm drainage facilities to accommodate the proposed project's stormwater demands and reducing runoff from the project site to rates not exceeding pre-project conditions. All plans are subject to review and approval by El Dorado County.

Impact 4.3-3: Long-term water quality degradation.

The conversion of undeveloped land to urban uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Overall, the project could cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, trace metals and organics, trash) into the stormwater drainage system compared with existing conditions if the system is not properly designed. This would be a **potentially-significant** impact.

This impact would be reduced to a **less-than-significant** level through implementation of Mitigation Measure 4.3-1 and Mitigation Measure 4.3-2.

The proposed development would alter land uses at the project site, which could potentially increase the level of urban contaminants discharged into the stormwater drainage system. Table 3-1 in Chapter 3, "Project Description," shows the amount and type of development proposed for the project site. The increase in proposed development has the potential to increase the pollutant load of stormwater discharges as a result of proposed land uses if the system is not properly designed. Anticipated pollutants associated with the project include trash, debris, heavy metals, and hydrocarbons from roads and driveways. Potential pollutants could also include sediment from pervious areas that would not be landscaped, pesticides from potential pest control activities, nutrients, fertilizers, oxygen-demanding substances from landscaped areas, and organic compounds from uncovered driveways and roadways.

There is potential for development of the project site to cause or contribute to a long-term increase in discharges of urban contaminants into the stormwater drainage system compared to existing conditions. In accordance with Central Valley RWQCB compliance guidelines, the applicant would be required to incorporate BMPs and LID stormwater management principles. In accordance with federal, State, and County stormwater management regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper BMPs when source control or exposure protection are insufficient for reducing runoff pollutant loads. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 4.3-1: Prepare and implement a SWPPP.

Implement Mitigation Measure 4.3-1, as described above.

Mitigation Measure 4.3-2: Complete final drainage plan and provide adequate onsite storm drainage facilities.

Implement Mitigation Measure 4.3-2, as described above.

Significance after Mitigation

While the potential for development of the project site to cause or contribute to long-term discharges of urban contaminants into the stormwater drainage system could increase compared to existing conditions, the applicant would be required to comply with federal, State, and County stormwater management regulations. Mitigation Measures 4.3-1 and 4.3-2 require the incorporation of appropriate BMPs into the design of the development to prevent long-term water quality degradation. The applicant would prepare a SWPPP that includes the incorporation of source control, site design, and treatment control BMPs to address anticipated and potential pollutants. This would be a **less-than-significant** impact.

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4.4 BIOLOGICAL RESOURCES

This section evaluates effects of the proposed project on biological resources within and near the project site. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the impacts associated with development of the proposed project, and the mitigation measures necessary to address significant or potentially significant impacts. Information for this section is based on the *Biological Resources Assessment: ±122-Acre Saratoga Estates Project El Dorado County, California* prepared by Foothill Associates (2015a), which included the following biological database searches:

- ▲ California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Database (CNDDDB) record search for the Buffalo Creek, Clarksville, Coloma, Folsom, Folsom SE, Latrobe, Pilot Hill, Rocklin, and Shingle Springs 7.5-minute quadrangles;
- ▲ Species lists for the “Clarksville” 7.5-minute quadrangle created by the U.S. Fish and Wildlife Service (USFWS); and
- ▲ California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants record search for the Buffalo Creek, Clarksville, Coloma, Folsom, Folsom SE, Latrobe, Pilot Hill, Rocklin, and Shingle Springs 7.5-minute quadrangles.

Information for this section is also based on the following technical reports:

- ▲ *Delineation of Waters of the United States Rancho Dorado Property* (Foothill Associates 2014a) verified by the U.S. Army Corps of Engineers (USACE) under a Preliminary Jurisdictional Determination August 6, 2014 (SPK-2014-00585);
- ▲ *Rancho Dorado Oak Woodland Canopy Assessment* (Foothill Associates 2014b);
- ▲ *Analysis of Design Setbacks to Wetlands and Waters for the Saratoga Estates Project, El Dorado County, California* (Foothill Associates 2014c);
- ▲ *California Red-Legged Frog (Rana draytonii) Survey Report: ±122-Acre Saratoga Estates Project El Dorado County, California* (Foothill Associates 2015b); and
- ▲ *Biological Resources Letter Report for the Saratoga Estates Offsite Improvements, El Dorado County, California* (Foothills Associates 2015c).

In response to the Notice of Preparation circulated on March 18, 2015, CDFW raised concerns related to potential impacts to Carson Creek and associated habitats, loss of golden eagle (*Aquila chrysaetos*) and tricolored blackbird (*Agelaius tricolor*) foraging habitat, and impacts to burrowing owl (*Athene cunicularia*) and other species that may occur in the project area (see Appendix A).

4.4.1 Environmental Setting

REGIONAL SETTING

El Dorado County’s diversity of native flora and fauna can be attributed to a combination of unique physical characteristics that have resulted in a wide diversity of habitats. These unique physical features include a wide range of elevations and varied terrain, diverse substrate material, large tracts of contiguous natural habitat, and a broad range of climatic conditions. Habitats are generally distributed in an integrated mosaic pattern across the county. Coniferous forest is dominant at higher elevations in the eastern half; oak and

hardwood habitats are found mostly in the central region; and annual grassland, chaparral, agriculture, and urban development are found primarily in the western third of the county (El Dorado County 2003).

LOCAL SETTING

The project area is bounded by residential development to the north and east, and by Highway 50 to the south. A designated open space area abuts the western boundary of the project site, separating it from Empire Ranch in the City of Folsom to the west.

According to biological surveys completed for the project site, the following biological communities occur within the project site (Foothill Associates 2015a): approximately 115.05 acres of annual grassland, 1.03 acre of blue oak woodland, 3.10 acres of riparian, 1.55 acres of disturbed/developed, and 1.14 acres of seep. The annual grassland acreage includes 0.03 acre of ephemeral drainages. The riparian habitat acreage includes 0.64 acres of perennial marsh and 1.44 acres of perennial drainage. These are shown in Exhibit 4.4-1. Dominant vegetation observed within each biological community is discussed in detail below.

California Annual Grassland Alliance

The majority of the project site is composed of California annual grassland alliance, which is characterized primarily by an assemblage of non-native grasses and herbaceous species. Dominant vegetation includes: soft chess (*Bromus hordeaceus*), riggut brome (*Bromus diandrus*), wild oat (*Avena barbata*), mouse-tail grass (*Vulpia myuros*), milk thistle (*Silybum marianum*), barley (*Hordeum murinum* ssp. *leporinum*), and winter vetch (*Vicia villosa*). Isolated trees and shrubs including blue oak (*Quercus douglasii*), Chinese tallowtree (*Triadica sebifera*), interior live oak (*Quercus wislizeni*), California coffeeberry (*Rhamnus californica*), and blue elderberry (*Sambucus mexicana*) occur within the annual grassland.

Two small ephemeral drainages are found in the annual grassland within the project site. These drainages are generally 1 to 2 feet wide and deep with a sandy or cobbled bottom. Dominant vegetation is composed primarily of upland herbaceous species including soft chess, riggut brome, wild oat, and barley.

Blue Oak Woodland

Two small areas of blue oak woodland are located in the northwest corner of the project site. This habitat type has a canopy of mature blue oaks with an understory of annual grassland.

Riparian

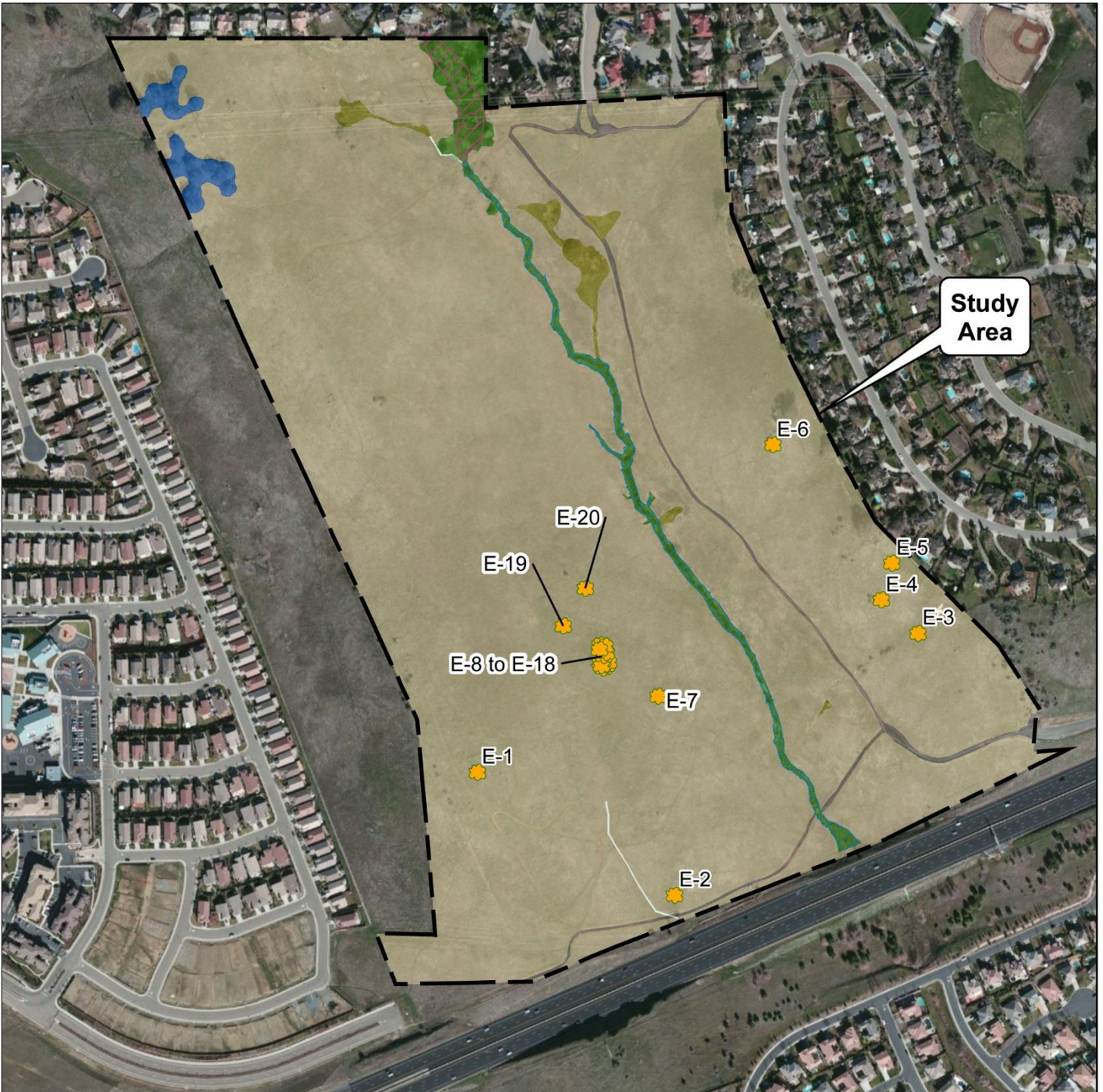
Riparian habitat occurs within the project site surrounding the perennial aquatic features. The riparian habitat is dominated by woody vegetation around the perennial marsh at the north end of the project site and has small groups of willows (*Salix* sp.) along the length of the perennial drainage. The majority of the riparian habitat is comprised of emergent hydrophytic vegetation (plant life that thrives in wet conditions) dominated by cattail (*Typha* sp.), Himalayan blackberry (*Rubus armeniacus*), perennial ryegrass (*Festuca perennis*), spikerush (*Eleocharis macrostachya*), cocklebur (*Xanthium strumarium*), and stachys (*Stachys* sp.).

Perennial Marsh

The perennial marsh receives water primarily from year round irrigation runoff and seasonal stormwater runoff from the development to the north of the project site. The perennial marsh is composed of dense hydrophytic vegetation, as identified under the riparian habitat. Overstory species include: black oak (*Quercus kelloggii*), locust (*Robinia* sp.), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), weeping willow (*Salix babylonica*), and willow.

Perennial Drainage

The perennial drainage begins at the south end of the perennial marsh. In addition to water from the perennial marsh, water flows into the perennial drainage from the end of Wilson Boulevard. Dominant hydrophytic vegetation within the bed and sporadically along the banks includes those identified under the riparian habitat. An isolated Fremont cottonwood and an ornamental tree occur along the perennial drainage.



Biological Communities		
Elderberry	Blue Oak Woodland (1.03 Acres)	Riverine Perennial Marsh (0.64 Acres)
Annual Grassland (115.05 Acres)	Riparian (3.10 Acres)	Perennial Drainage (1.44 Acres)
Disturbed/ Developed (1.55 Acres)	Seep (1.14 Acres)	Ephemeral Drainage (0.03 Acres)

Source: Foothill Associates 2015

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Exhibit 4.4-1

Biological Communities



Disturbed/Developed

Disturbed/developed areas occur throughout the project site. Disturbed and developed areas include graded roads. Sporadic vegetation including barley, soft chess, wild oat, and ripgut grass occur within these areas.

Seep

Five seeps occur within and drain into the perennial drainage running through the site. The seeps are composed of slope seeps that are dominated by herbaceous species including Himalayan blackberry, perennial ryegrass, spikerush, stachys, and cattail. A single Fremont cottonwood occurs within one of the seeps.

SPECIAL-STATUS SPECIES

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- ▲ officially listed by California or the federal government as endangered, threatened, or rare;
- ▲ a candidate for state or federal listing as endangered, threatened, or rare;
- ▲ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations Section 15380 of the State CEQA Guidelines;
- ▲ species identified by CDFW as Species of Special Concern;
- ▲ species listed as Fully Protected under the California Fish and Game Code;
- ▲ species afforded protection under local planning documents; and
- ▲ taxa considered by the CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:
 - CRPR 1A - Plants presumed to be extinct in California;
 - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
 - CRPR 2 - Plants that are rare, threatened, or endangered in California but more common elsewhere;
 - CRPR 3 - Plants about which more information is needed (a review list); and
 - CRPR 4 - Plants of limited distribution (a watch list).

All plants with a CRPR are considered “special plants” by CDFW. The term “special plants” is a broad term used by CDFW to refer to all of the plant taxa inventoried in CDFW’s CNDDDB, regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, and 2 may qualify as endangered, rare, or threatened species within the definition of State CEQA Guidelines, California Code of Regulations Section 15380. CDFW recommends, and local governments may require, that CRPR 1A, 1B, and 2 species be addressed in CEQA projects

The term “California species of special concern” is applied by CDFW to animals not listed under the federal Endangered Species Act (ESA) or the California Endangered species Act (CESA), but that are considered to be declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s fully protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any

time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Special-status species considered for this analysis are based on the CNDDDB, CNPS, and USFWS lists. Table 4.4-1 includes the common and scientific names for each species, regulatory status, habitat descriptions, and potential for occurrence on the project site. The following set of criteria has been used to determine each species potential for occurrence within the project site:

- ▲ **Present:** Species known to occur within the project site based on CNDDDB records and/or was observed within the project site during the biological surveys.
- ▲ **High:** Species known to occur on or near the project site (based on CNDDDB records within 5 miles and/or based on professional expertise specific to the project site or species), and there is suitable habitat within the project site.
- ▲ **Low:** Species known to occur in the vicinity of the project site, and there is marginal habitat within the project site, or species is not known to occur in the vicinity of the site, but there is suitable habitat on the site.
- ▲ **None:** Species is not known to occur on or in the vicinity of the project site and there is no suitable habitat within the project site, or species was surveyed for during the appropriate season with negative results, or species is not known in El Dorado County. Species with no potential to occur are not discussed further in this analysis.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site			
Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Plants			
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	-, -, 1B	Found in moist areas in valley and foothill grasslands and on the edge of vernal pools. Blooms April-August.	None; although the annual grassland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-, -, 1B	Chaparral, cismontane woodland, valley and foothill grassland, mixed oak woodland and forest, purple needlegrass grassland, and sometimes in serpentinite soils from 150 to 4,500 feet elevation. Blooms March-June.	None; although the annual grassland and oak woodland provide habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. One known occurrence in El Dorado County.
Brandegee's clarkia <i>Clarkia biloba</i> ssp. <i>biloba</i>	--- 4	Annual herb found often in roadcuts within chaparral, cismontane woodland, and lower montane coniferous forest from 246 to 3,002 feet. Blooms May-July.	None; although the oak woodland provides habitat, this species was not observed during the May and June surveys that were conducted within the evident and identifiable blooming period.
Brewer's calandrinia <i>Calandrinia breweri</i>	-, -, 4	Annual herb found on sandy or loamy, disturbed sites and burns within chaparral and coastal scrub from 33 to 4,003 feet. Blooms March-June.	None; there is no habitat for this species within the project site.
Boggs Lake hedge-hyssop <i>Griatiola heterosepala</i>	-, CE, 1B	Clay soils around the margins of marshes and swamps and in vernal pools. Blooms April-August.	None; although the margins of the riparian area surrounding the perennial marsh provide habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. CNDDDB shows one occurrence within 5 miles of the project site.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site

Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Dwarf downingia <i>Downingia pussilla</i>	-, -, 2	Moist valley and foothill grasslands and vernal pools. Blooms March–May.	None; although the annual grassland provides habitat, this species was not observed during the April and May surveys that were conducted within the evident and identifiable blooming period.
El Dorado bedstraw <i>Galium californicum</i> ssp. <i>sierrae</i>	FE, CR, 1B	Chaparral, cismontane woodland, and coniferous forest; associated with gabbro soils. Blooms May–June.	None; there is no gabbro soil habitat for this species within the project site.
El Dorado mule ears <i>Wyethia reticulata</i>	-, -, 1B	Chaparral, cismontane woodland, and lower montane coniferous forest on clay or gabbro soils. Blooms April–August.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. Two CNDDB occurrences within 5 miles of the project site.
Fresno ceanothus <i>Ceanothus fresnensis</i>	-, -, 4	Perennial evergreen shrub found in openings of cismontane woodland and lower montane coniferous forest from 2,953 to 6,900 feet. Blooms May–July.	None; although the oak woodland provides habitat, this species was not observed during the May and June surveys that were conducted within the evident and identifiable blooming period.
Hernandez bluecurls <i>Trichostema rubisepalum</i>	-, -, 4	Annual herb found on volcanic or serpentinite, gravelly substrate within broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and vernal pools from 984 and 4,698 feet. Blooms June–August.	None; although the oak woodland provides habitat, this species was not observed during the June surveys that were conducted within the evident and identifiable blooming period.
Humboldt lily <i>Lilium humboldtii</i> spp. <i>humboldtii</i>	-, -, 4	Perennial bulbiferous herb found in openings of chaparral, cismontane woodland, and lower montane coniferous forest from 295 to 4,199 feet. Blooms May–July.	None; although the oak woodland provides habitat, this species was not observed during the May and June surveys that were conducted within the evident and identifiable blooming period.
Jepson's onion <i>Allium jepsonii</i>	-, -, 1B	Serpentine or volcanic soils in chaparral, lower montane coniferous forest, and cismontane woodland. Blooms April–August.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period.
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	-, -, 4	Perennial herb sometimes found on serpentinite substrate within chaparral, cismontane woodland, and coastal scrub from 656 to 3,363 feet. Blooms April–June.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period.
Layne's butterweed (=ragwort) <i>Packera layneae</i>	FT, CR, 1B	Cismontane woodland or chaparral associated with serpentine or gabbro, rocky soils. Blooms April–August.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. Two CNDDB occurrences within 5 miles of the project site.
Legenere <i>Legenere limosa</i>	-, CT, 1B	Moist areas and vernal pools. Blooms April–June.	None; there is no habitat for this species within the project site.
Parry's horkelia <i>Horkelia parryi</i>	-, -, 1B	lone formation and other soils in chaparral and cismontane woodland. Blooms April–September.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period.
Pincushion namarretia <i>Navarretia myersii</i>	-, -, 1B	Vernal pools, which are often acidic. Blooms April–May.	None; there is no habitat for this species within the project site.
Pine Hill ceanothus <i>Ceanothus roderrickii</i>	FE, CR, 1B	Chaparral or cismontane woodland on serpentine or gabbro soils. Blooms April–June.	None; there is no gabbro or serpentine soil required for this species within the project site.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site

Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Pine Hill flannelbush <i>Fremontodendron decumbens</i>	FE, CR, 1B	Chaparral and cismontane woodland on rocky gabbro or serpentinite soils. Blooms April–June.	None; there is no gabbro or serpentine soil required for this species within the project site.
Red Hills soaproot <i>Chlorogalum grandiflorum</i>	–, –, 1B	Chaparral, cismontane woodland, or lower montane coniferous forest, usually on gabbro or serpentine soils. Blooms May–June.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. Two CNDDDB occurrences within 5 miles of the project site.
Sacramento orcutt grass <i>Orcuttia viscida</i>	FE, CE, 1B	Found in deep vernal pools. Populations known from eastern Sacramento County. Blooms April–September.	None; there is no habitat for this species within the project site.
Sanford's arrowhead <i>Sagittaria sandfordii</i>	–, –, 1B	Marshes and swamps in assorted shallow freshwater areas. Known elevation range is below 2,000 feet. Blooms May–October.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period. Two CNDDDB occurrences within 5 miles of the project site.
Sanford's onion <i>Allium sanbornii</i> var. <i>sanbornii</i>	–, –, 4	Perennial bulbiferous herb usually found on serpentinite, gravelly substrate within chaparral, cismontane woodland, and lower montane coniferous forest from 853 to 4,954 feet. Blooms May–September	None; although the oak woodland provides habitat, this species was not observed during the May and June surveys that were conducted within the evident and identifiable blooming period.
Slender orcutt grass <i>Orcuttia tenuis</i>	FT, CE, 1B	Vernal pools, which are often gravelly. Blooms May–October.	None; there is no habitat for this species within the project site.
Starved daisy <i>Erigeron miser</i>	–, –, 1B	Rocky ground in upper montane coniferous forest from 3,300 to 5,000 feet in elevation.	None; there is no habitat for this species within the project site.
Stebbins' morning glory <i>Calystegia stebbinsii</i>	FE, CE, 1B	Openings of chaparral and cismontane woodland on gabbro or serpentinite soils.	None; there is no gabbro or serpentine soil required for this species within the project site.
Streambank spring beauty <i>Claytonia parviflora</i> ssp. <i>grandiflora</i>	–, –, 4	Annual herb found on rocky substrate within cismontane woodland from 820 to 3,937 feet. Blooms February–May.	None; although the oak woodland provides habitat, this species was not observed during the April and May surveys that were conducted within the evident and identifiable blooming period.
Tuolumne button-celery <i>Eryngium pinnatisectum</i>	–, –, 1B	Cismontane woodland, lower montane coniferous forest, or vernal pools. Blooms May–August.	None; although the oak woodland provides habitat, this species was not observed during the April, May, and June surveys that were conducted within the evident and identifiable blooming period.
Wildlife			
Invertebrates			
California linderiella <i>Linderiella occidentalis</i>	–, CSC, –	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site. CNDDDB shows three occurrences within 5 miles of the project site.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT, –, –	Blue elderberry shrubs usually associated with riparian areas.	Low; there are several elderberry shrubs in upland habitat within the project site. CNDDDB shows two occurrences within 5 miles of the project site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, –, –	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site. CNDDDB shows two occurrences within 5 miles of the project site.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site

Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FT, —, —	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site. CNDDDB shows two occurrences within 5 miles of the project site.
Amphibians/Reptiles			
California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC, —	Requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation. Believed extirpated from the Central Valley floor since 1970s.	Low; although the perennial marsh and perennial drainage provide aquatic habitat, and the riparian habitat surrounding the perennial drainage provides upland habitat, the project site occurs outside of the geographical range for the species, and this species was not observed during breeding and non-breeding protocol-level surveys conducted within the project site (Foothill Associates 2015b).
California tiger salamander <i>Ambystoma californiense</i>	FT, CT, —	Ponded water required for breeding. Adults spend summer in small mammal burrows.	None; the species is not known to occur in El Dorado County, and there is no suitable breeding habitat within the project site.
Coast (California) horned lizard <i>Phrynosoma blainvillii</i>	—, CSC, —	Grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose sandy soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	Low; the project site provides marginal habitat within the annual grassland; however, the project site lacks suitable sandy washes. CNDDDB shows one occurrence within 5 miles of the project site.
Giant garter snake <i>Thamnophis gigas</i>	FT, CT, —	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November–mid March). This species is known from Sacramento, Sutter, Butte, Colusa, and Glenn counties.	None; the species is not known to occur in El Dorado County.
Foothill yellow-legged frog <i>Rana boylei</i>	—, CSC, —	Typically found in permanent slow-moving streams or channels with rocky or muddy bottoms within areas of chaparral, open woodland, and forest.	None; the project site does not occur within chaparral, open woodland, or forest.
Western pond turtle <i>Emys marmorata</i>	—, CSC, —	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	High; the perennial marsh and perennial drainage provide aquatic habitat. The annual grassland and riparian habitat provide upland habitat. However, this species was not observed during the biological surveys. CNDDDB shows three occurrences within 5 miles of the project site.
Western spadefoot <i>Spea hammondi</i>	—, CSC, —	Open grasslands and woodlands. Requires vernal pools or seasonal wetlands for breeding.	None; there is no breeding habitat for this species within the project site.
Fish			
Central Valley spring-run chinook salmon <i>Oncorhynchus tshawytscha</i>	FT, CT, —	Spawn in Mill, Deer, and Butte creeks and in Yuba River and Feather River watersheds. Juveniles may journey up to 5 miles upstream in Sacramento River tributaries.	None; the perennial drainage within the project site is not deep enough to provide fish passage.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site

Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Central Valley winter-run chinook salmon <i>Oncorhynchus tshawytscha</i>	FE, CE, —	Spawn in northern Sacramento River (Redding to Red Bluff) and its tributaries. Juveniles may journey up to 5 miles upstream in other tributaries.	None; the perennial drainage within the project site is not deep enough to provide fish passage.
Central Valley steelhead <i>Oncorhynchus mykiss</i>	FT, —, —	Rivers and streams tributary to the Sacramento-San Joaquin Rivers and Delta ecosystems.	None; the perennial drainage within the project site is not deep enough to provide fish passage.
Delta smelt <i>Hypomesus transpacificus</i>	FT, CE, —	Shallow fresh or brackish water tributary to the Delta ecosystem; spawns in freshwater sloughs and channel edgewater. Known almost exclusively in the Fresno-San Joaquin estuary.	None; the perennial drainage within the project site is not deep enough to provide fish passage.
Birds			
Bald eagle <i>Haliaeetus leucocephalus</i>	FD, CFP, —	Nesting restricted to the mountainous habitats near permanent water sources in the northernmost counties of California, the Central Coast Region, and on Santa Catalina Island. Winters throughout most of California at lakes, reservoirs, river systems, and coastal wetlands.	None; the project site is outside of the nesting range for this species and does not contain suitable foraging habitat. CNDDDB shows one occurrence within 5 miles of the project site.
Bank swallow <i>Riparia riparia</i>	—, CT, —	Nests in riverbanks and forages over riparian areas and adjacent uplands.	None; there is no nesting habitat for this species within the project site.
California black rail <i>Laterallus jamaicensis coturniculus</i>	—, CT, —	Saltwater, brackish, and freshwater marshes. This species is known from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, Placer, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, and Yuba counties, in California.	None; the species is not known to occur in El Dorado County.
Golden eagle <i>Aquila chrysaetos</i>	—, CFP, —	Open and semi-open areas up to 12,000 feet in elevation. Builds stick nests on cliffs, in trees, or on manmade structures.	High; the annual grassland provides foraging habitat for this species. An active nest was observed in 2015 approximately 1.4 miles north of the project site; however, this species was not observed foraging within the project site during the biological surveys. CNDDDB shows one occurrence within 5 miles of the project site.
Grasshopper sparrow <i>Ammodramus savannarum</i>	—, CSC, —	Frequents dense, dry, or well-drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California.	None; the species is not known to nest in El Dorado County.
Purple martin <i>Progne subis</i>	—, CSC, —	Often nests in tall, old trees near body of water in woodland and conifer habitats.	None; there is no nesting habitat for this species within the project site.

Table 4.4-1 Potential for Special-Status Species to Occur on the Project Site

Common Name <i>Scientific Name</i>	Regulatory Status (Federal, State, CNPS)	Habitat Requirements	Potential for Occurrence
Swainson's hawk <i>Buteo swainsoni</i>	–, CT, –	Nest peripherally to Valley riparian systems in lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. This species is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Napa, Placer, Plumas, Sacramento, San Bernardino, San Joaquin, San Luis Obispo, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties, in California.	Low; the trees provide potential nesting habitat and the annual grassland provides foraging habitat; however, this species is not known to occur in El Dorado County and was not observed during the biological surveys. CNDDDB shows two occurrences within 5 miles of the project site.
Tricolored blackbird <i>Agelaius tricolor</i>	–, CSC, – (nesting colony)	Nests in dense blackberry, cattail, tule, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	Low; the riparian vegetation surrounding the perennial marsh provides nesting habitat for this species; however, the patch sizes are most likely not of sufficient size to support a breeding colony and this species was not observed during the biological surveys. CNDDDB shows six occurrences within 5 miles of the project site.
Western burrowing owl <i>Athene cucularia</i>	–, CSC, – (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel or badger burrows, within open dry grassland and desert habitat.	Low; the annual grassland provides habitat; however, suitable burrows were not observed during biological surveys. CNDDDB shows three occurrences within 5 miles of the project site.
White-tailed kite <i>Elanus leucurus</i>	–, CFP, – (nesting)	Nests in isolated trees or woodland areas with suitable open foraging habitat.	Low; the trees within the riparian habitat provide nesting habitat for this species. Three CNDDDB occurrences within 5 miles of the project site.
Mammals			
American badger <i>Taxidea taxus</i>	–, CSC, –	Found in a variety of grasslands, shrublands, and open woodlands throughout California.	Low; the annual grassland provides habitat; however, suitable burrows were not observed during biological surveys.
Fisher <i>Martes pennanti</i>	FC, CSC, –	Occurs in intermediate- to large-tree stages of coniferous and deciduous forests.	None; there is no habitat for this species within the project site.
Pallid bat <i>Anrozous pallidus</i>	–, CSC, –	Most abundant in oak woodland, savannah, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	Low; potential roosting habitat is present in the trees within the riparian habitat and annual grassland.
Silver-haired bat <i>Lasionycteris noctivagans</i>	–, CSC, –	Temperate, northern hardwoods and conifers with ponds or streams nearby. The typical day roost for the bat is behind loose tree bark.	Low; potential roosting habitat is present in the trees within the riparian habitat and annual grassland. CNDDDB shows one occurrence within 5 miles of the project site.
Federally listed species: FE = federal endangered FT = federal threatened FC = candidate PT = proposed threatened FPD = proposed for delisting FD = delisted Source: Foothill Associates 2015a		California State ranked species: CD = California state endangered CT = California state threatened CR = California state rare CSC = California species of special concern	CNPS CRPR rank categories: 1A = plants presumed extinct in California 1B = plants rare, threatened, or endangered in California and elsewhere 2 = plants rare, threatened, or endangered in California, but common elsewhere

4.4.2 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the ESA (16 U.S.C. Section 1531 et seq.), USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Two sections of the ESA address take. Section 10 regulates take if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. However, if a project would result in take of a federally-listed species and federal discretionary action (even if a non-federal agency is the overall lead agency) is involved (i.e., a federal agency must issue a permit), the involved federal agency consults with USFWS under Section 7 of the ESA. Because this project may involve federal permits, interagency cooperation under Section 7 of the ESA is required. Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS and the National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Bald and Golden Eagle Protection Act

Under the Bald and Golden Eagle Protection Act, it is illegal to take bald eagles, including their parts, nests, or eggs unless authorized. "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment (USFWS 2007: 31156). In addition to immediate impacts, this definition also addresses impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from USACE before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA

provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities.” A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations, Section 10.13. The list includes nearly all birds native to the United States.

STATE

California Endangered Species Act

Pursuant to CESA, a permit from CDFW is required for projects that could result in the “take” of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include “harm” or “harass,” like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Fish and Game Code

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take.

Section 1602 of the Fish and Game Code states that all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- ▲ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▲ deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB’s jurisdiction includes federally protected waters as well as areas that meet the definition of “waters of the state.” Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The

RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401 of the CWA, provided they meet the definition of waters of the state. Actions that affect waters of the state, including wetlands, must meet the RWQCB's waste discharge requirements. This issue is addressed comprehensively in Section 4.7, "Hydrology and Water Quality," as well as herein with respect to biological resources.

LOCAL

El Dorado County General Plan

Goal 7.3: Water Quality and Quantity. Conserve, enhance, and manage water resources and protect their quality from degradation.

- ▲ **Policy 7.3.1.1:** Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.
- ▲ **Policy 7.3.2.1:** Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity, provided for horticultural and grazing activities on agriculturally zoned lands that utilize "best management practices (BMPs)" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors. Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue. For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.
- ▲ **Policy 7.3.3.5:** Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.
- ▲ **Policy 7.3.4.1:** Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.
- ▲ **Policy 7.3.4.2:** Modification of natural stream beds and flow shall be regulated to ensure that adequate mitigation measures are utilized.

Goal 7.4: Wildlife and Vegetation Resources. Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

- ▲ **Policy 7.4.1.1:** The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 17.71 and the USFWS Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).
- ▲ **Policy 7.4.1.5:** Species, habitat, and natural community preservation/conservation strategies shall be prepared to protect special status plant and animal species and natural communities and habitats when discretionary development is proposed on lands with such resources unless it is determined that those resources exist, and either are or can be protected, on public lands or private Natural Resource lands.
- ▲ **Policy 7.4.1.6:** All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance

is not possible, the development shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall be defined in the Integrated Natural Resources Management Plan (INRMP) (see Policy 7.4.2.8 and Implementation Measure CO-M). The County Agricultural Commission, Plant and Wildlife Technical Advisory Committee, representatives of the agricultural community, academia, and other stakeholders shall be involved and consulted in defining the important habitats of the county and in the creation and implementation of the INRMP.

- ▲ **Policy 7.4.2.1:** To the extent feasible in light of other general plan policies and to the extent permitted by State law, the County of El Dorado will protect identified critical fish and wildlife habitat, as identified on the Important Biological Resources Map maintained at the Planning Department, through any of the following techniques: utilization of open space, Natural Resource land use designation, clustering, large lot design, setbacks, etc.
- ▲ **Policy 7.4.2.2:** Where critical wildlife areas and migration corridors are identified during review of projects, the County shall protect the resources from degradation by requiring all portions of the project site that contain or influence said areas to be retained as non-disturbed natural areas through mandatory clustered development on suitable portions of the project site or other means such as density transfers if clustering cannot be achieved. The setback distance for designated or protected migration corridors shall be determined as part of the project's environmental analysis. The intent and emphasis of the Open Space land use designation and of the non-disturbance policy is to ensure continued viability of contiguous or interdependent habitat areas and the preservation of all movement corridors between related habitats. The intent of mandatory clustering is to provide a mechanism for natural resource protection while allowing appropriate development of private property. Horticultural and grazing projects on agriculturally designated lands are exempt from the restrictions placed on disturbance of natural areas when utilizing "Best Management Practices" (BMPs) recommended by the County Agricultural Commission and adopted by the Board of Supervisors when not subject to Policy 7.1.2.7.
- ▲ **Policy 7.4.2.3:** Consistent with Policy 9.1.3.1 of the Parks and Recreation Element, low impact uses such as trails and linear parks may be provided within river and stream buffers if all applicable mitigation measures are incorporated into the design.
- ▲ **Policy 7.4.2.4:** Establish and manage wildlife habitat corridors within public parks and natural resource protection areas to allow for wildlife use. Recreational uses within these areas shall be limited to those activities that do not require grading or vegetation removal.
- ▲ **Policy 7.4.2.5:** Setbacks from all rivers, streams, and lakes shall be included in the Zoning Ordinance for all ministerial and discretionary development projects.
- ▲ **Policy 7.4.2.6:** El Dorado County Biological Community Conservation Plans shall be required to protect, to the extent feasible, rare, threatened, and endangered plant species only when existing federal or State plans for non-jurisdictional areas do not provide adequate protection.

Goal 7.6: Open Space Conservation. Conserve open space land for the continuation of the county's rural character, commercial agriculture, forestry and other productive uses, the enjoyment of scenic beauty and recreation, the protection of natural resources, for protection from natural hazards, and for wildlife habitat.

- ▲ **Policy 7.6.1.1:** The general plan land use map shall include an Open Space land use designation. The purpose of this designation is to implement the goals and objectives of the Land Use and the Conservation and Open Space Elements by serving one or more of the purposes stated below. In addition, the designations on the land use map for Rural Residential and Natural Resource areas are also intended to implement said goals and objectives. Primary purposes of open space include:

 - A. Conserving natural resource areas required for the conservation of plant and animal life including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, banks of rivers and streams and watershed lands;

- B. Conserving natural resource lands for the managed production of resources including forest products, rangeland, agricultural lands important to the production of food and fiber; and areas containing important mineral deposits;
- C. Maintaining areas of importance for outdoor recreation including areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes including those providing access to lake shores, beaches and rivers and streams; and areas which serve as links between major recreation and open space reservations including utility easements, banks of rivers and streams, trails and scenic highway corridors;
- D. Delineating open space for public health and safety including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs, and areas required for the protection and enhancement of air quality; and
- E. Providing for open spaces to create buffers which may be landscaped to minimize the adverse impact of one land use on another.

Oak Woodland Management Plan

In 2008, the County adopted the El Dorado County Oak Woodland Management Plan (OWMP) to implement the general plan oak woodland protection requirement in Policy 7.4.4.4. The County’s adoption of the OWMP was challenged in court. In 2012, the Appellate Court upheld the CEQA challenge to the OWMP and directed the County to prepare an Environmental Impact Report for the OWMP. Currently, a general plan amendment is being prepared to clarify and refine the County’s oak tree protection policies. As a result, only Option “A” of Policy 7.4.4.4 is applicable to oak woodland mitigation (see Table 4.4-2). Impacts to oak woodland canopy are currently assessed under the Interim Interpretive Guidelines amended October 12, 2007.

- Policy 7.4.4.4:** For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this general plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County’s Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

Table 4.4-2 Option A Tree Canopy Standards	
Percent Existing Canopy Cover	Canopy Cover to be Retained
80-100	60% of existing canopy
60-79	70% of existing canopy
40-59	80% of existing canopy
20-39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Policy 7.4.2.8. Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

4.4.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▲ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- ▲ have a substantial adverse effect on federally protected waters of the United States, including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- ▲ interfere substantially with the movement of any native resident or migratory 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 a tree preservation policy or ordinance;
- ▲ conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- ▲ substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

ISSUES NOT DISCUSSED FURTHER

No special-status plants were found on the project site or within the Saratoga Way disturbance area during protocol-level surveys conducted during the blooming period of species for which suitable habitat is present (See Table 4.4-1). Therefore, construction and operation of the project would not have an impact on special-status plants. This issue is not discussed further.

The project site provides limited value to wildlife species outside of riparian and wetland areas which are proposed to be preserved and incorporated into the project design as open space amenities. Development of the project and thus permanent loss of potential habitat would not eliminate any habitat important to the long-term survival of any species or community.

The project site contains less than 1 percent oak woodland canopy by area (Foothill Associates 2014b) and is, thus, exempt from *El Dorado County General Plan* Policy 7.4.4.4 regarding tree canopy preservation and mitigation. The natural resources onsite including perennial drainages are being incorporated into the design of the development and thus are consistent with the other general plan policies regarding preservation of natural resources. Therefore, there would be no conflict with local plans or policies.

The project site is bordered by residential development to the northeast and east and Highway 50 to the south, and does not connect to significant habitats, is not part of a major or local wildlife corridor/travel routes and would not substantially reduce the number or restrict the range of any species.

METHODS OF ANALYSIS

This analysis includes consideration of both temporary and long-term impacts. Potential temporary impacts associated with project development are primarily associated with construction activities and may include direct or indirect effects to occupied habitat and presence of individual special-status species or sensitive habitats. Construction-related impacts would include disturbances related to temporary construction staging, storage of construction materials and equipment, the use of vehicles, noise and physical disturbances that would occur during active construction, and vegetation removal or other ground disturbance in areas that would be restored once construction is complete.

Permanent or long-term impacts generally include effects associated with the project and “hardscape” features such as roads and homes, as well as impacts related to land use changes associated with development of recreational areas. The analyses presented within this section evaluate whether there would be a loss of potential habitat for special-status species within these areas. The grassland area described above in Section 4.4.1, “Environmental Setting,” is the most prevalent habitat type that would be affected by developed of the project. The analyses take into consideration the existing fragmented nature of the habitat, given surrounding development on all sides, and high level of disturbance by nearby residents utilizing the area as open space.

IMPACTS AND MITIGATION MEASURES

Impact 4.4-1: Disturbance to or loss of special-status wildlife species and habitat during construction activities.

Implementation of the project could result in the degradation of habitat and loss of several special-status species, including nesting birds, amphibians, and reptiles. Special-status species are protected under ESA, CESA, California Fish and Game Code, CEQA, or other regulations. Ground-disturbing activities during construction such as vegetation removal, grading, and excavation could result in a substantial adverse effect on these species. Therefore, the potential loss of special-status species is a **potentially significant** impact.

With implementation of the avoidance and minimization measures identified in Mitigation Measures 4.4-1a through 4.4-1d, these impacts would be **less than significant**.

Coast Horned Lizard

Coast horned lizard inhabits open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains from sea level to 8,000 feet above mean sea level. This species is found in grasslands, coniferous forests, woodlands, and chaparral with open areas and patches of loose soil and in lowlands along sandy washes with scattered shrubs and along dirt roads. There is one CNDDDB record of this species within five miles of the study area (Foothill Associates 2015a). The annual grassland provides habitat for this species; however, the likelihood for occurrence is low because of the lack of sandy washes. No coast horned lizards were observed during the biological surveys of the project site (Foothill Associates 2015a). This species has a low potential to occur within the project site and is not expected to occur because of the lack of habitat. Therefore this impact would be **less than significant**.

California Red-legged Frog

The project site is outside of the known elevation range inhabited by California red-legged frog, and the closest known CNDDDB occurrence is 24 miles away. Previous protocol-level surveys conducted on the project site in 2012, 2013, and 2015 did not detect red-legged frog. Additionally, the habitat onsite is only marginally suitable and no known nearby populations of California red-legged frog occur as confirmed by the USFWS in 2014 for a nearby project (as described in Biological Opinion 81420-2010-F-0620-1 [Foothill Associates 2015b]); therefore, it is unlikely the species occurs onsite and would be affected by project-related construction activities. This impact would be **less than significant**.

American Badger

American badgers are found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Breeding occurs in summer and early fall, with young being born from March to April. There are no CNDDDB records for this species within 5 miles of the study area. The annual grassland provides habitat for this species; however, the project site contains very few potential burrow sites that could be utilized by this species, and no badgers were observed during the biological surveys (Foothill Associates 2015a). This species has a low potential to occur within the study area and, given the lack of suitable habitat, is unlikely to occur during construction. This impact would be **less than significant**.

Valley Elderberry Longhorn Beetle

Botanical surveys on the project site were conducted in April through June 2014 and also in April and in June 2015. These surveys included existing elderberry shrubs and included counts and size classification of stems and documentation of presence or absence of exit holes (Foothill Associates 2015a). Valley elderberry longhorn beetles (VELB) typically utilize stems that are greater than 1 inch in diameter at ground level (USFWS 1994). The survey identified twenty elderberry shrubs present on the project site, the majority of which are growing individually on hillslopes within annual grassland. Seven of these did not have stems greater than 1 inch and are, therefore, not considered to be VELB habitat nor protected by the USFWS. In the remaining 13 shrubs, there were 66 stems 1 inch or greater in diameter which could provide suitable habitat for VELB. None of the shrubs exhibited any exit holes, nor were VELB observed in or around the shrubs. Because no exit holes were observed on any shrubs and no VELB were observed during surveys, it is unlikely that VELB are present within these shrubs. Furthermore, per recent USFWS consultations and technical assistance, elderberry shrubs are typically considered VELB habitat when associated with riparian areas; these shrubs are not located in a riparian zone (Foothill Associates 2015a). Therefore, these shrubs should not be considered VELB habitat. The removal of these shrubs would not result in a substantial adverse effect to VELB.

If, however, rough grading and/or removal of these shrubs does not occur by spring 2016 (i.e., plant growing season), there is potential for VELB to occupy these shrubs. If VELB are present (and/or exit holes are discovered), removal of these shrubs could constitute a substantial effect to the species and this impact would be **potentially significant**.

Western Pond Turtle

The western pond turtle is known to occur within 5 miles of the project site and could occur in perennial marsh, perennial drainage, and riparian habitat, all of which occur within the project site. Although no pond turtle were observed during 2014 surveys (Foothill Associates 2015a) within these habitats (or within the project site outside these habitats), individuals could move to the project site before construction and could, therefore, be directly harmed or otherwise affected by construction activities such as excavation and grading that would occur in and around the aquatic habitat that they inhabit. Any project-related activity that results in disturbance within or directly adjacent to aquatic or riparian habitat would have the potential to result in adverse effects to western pond turtle. This impact would be **potentially significant**.

Golden Eagle and Other Special-status Birds

As described above in Table 4.4-1, an active golden eagle nest was observed in 2015 approximately 1.4 miles north of the project site and suitable foraging habitat is located onsite. The extent of the nesting pair's territory and alternate nests are currently unknown. It is possible the annual grassland within the project site provides suitable foraging habitat for golden eagle. Therefore, project-related effects to annual grassland habitat (approximately 91 acres affected) would result in a permanent impact to potential foraging habitat. Approximately 4,622 acres of suitable foraging habitat exist within a 3-mile radius of the known nest location (Foothill Associates 2015a). Because substantial foraging habitat would continue to be available, loss of 91 acres (approximately 2 percent of suitable foraging habitat currently identified within a 3-mile radius) would not cause harm (direct or indirect) to golden eagles, or impair their reproductive ability or ability to care for their young.

Although not observed during previous onsite biological surveys, special-status birds including white-tailed kite, tricolored blackbird, and western burrowing owl have the potential to nest in trees, perennial marsh habitat, and annual grassland onsite. Although unlikely given the lack of previous observations, these species have potential to be present within the project during the nesting season (approximately February 15 to August 31 annually) in areas that would be disturbed by grading and/or excavation activities. As such, nesting species could be disturbed and nests could be affected by construction-related activities, including close proximity of construction workers, equipment, and by removal of nest trees and other habitat. Given this potential, if construction activities occur (or if equipment is staged) too close to the nests during breeding/rearing, these activities could affect or disturb the nesting pair(s), resulting in nest abandonment and potential mortality to chicks and/or eggs. This impact would be **potentially significant**.

Pallid and Silver-haired Bat

Trees on the project site could provide day roosts, maternity colony roosts, and/or hibernation roosts for several bat species. Bats with potential to roost within trees in the riparian habitat and annual grassland on site include pallid bat and silver-haired bat, both California species of concern. These species of bats are known to roost in enclosed spaces that provide thermal protection, such as large crevices and holes in tree trunks. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from early April until mid-October. Although no bats were observed during 2014 surveys, they could easily move into the area before construction. Removal of active roost trees or other disturbance of active roosts could affect the survival of adult or young bats if they are actively roosting onsite. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.4-1a: Avoid or minimize effects to valley elderberry longhorn beetle.

If rough grading and/or removal of onsite elderberry shrubs do not occur before May 2016, a qualified biologist shall conduct surveys for VELB according to the USFWS protocol outlined in USFWS' *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (1999) (or other USFWS conservation guidelines in effect at the time these activities are implemented) before any ground disturbing construction activities. The biologist shall, at a minimum, identify and map all elderberry shrubs with stems measuring 1 inch or greater in diameter at ground level on and within 100 feet of the project site, take stem counts, and document any exit holes. If no exit holes are found, no additional mitigation is required.

If exit holes are identified during the survey, the applicant shall implement all take avoidance measures identified by the USFWS, including, but not limited to the following measures (as updated or amended by USFWS at the time the above-described construction activities are implemented):

- ▲ Impacts to VELB will be avoided and minimized by following the Conservation Guidelines for cases where elderberry shrubs can be retained and protected within 100 feet of the project footprint.
- ▲ If elderberry shrubs are 100 feet or more from project activities, no direct or indirect impacts are expected. Shrubs will be protected during construction by establishing and maintaining a high visibility fence at least 100 feet from the drip line of each elderberry shrub with stems 1 inch in diameter or greater.
- ▲ If elderberry shrubs can be retained within the project footprint, project activities may occur up to 20 feet from the dripline of elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts. Specifically, these minimization measures include:
 - A minimum setback of at least 20 feet from the dripline of each elderberry plant with stems greater than 1-inch diameter at ground level will be maintained to avoid direct impacts. The buffer area will be fenced with high visibility construction fencing before commencement of ground-disturbing activities and will be maintained for the duration of construction activities. The project applicant will ensure that ground-disturbing activities on the project site do not alter the hydrology of the site or otherwise affect the likelihood of vigor or survival of elderberry shrubs.

- The project proponent will ensure that project activities, such as truck traffic or other use of machinery, do not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs is adversely affected. Enforcement of a speed-limit and watering dirt roadways are potential methods to ensure that excessive dust is not created.
- Areas that are disturbed temporarily will be restored to pre-disturbance conditions. Erosion control measures will be implemented to restore areas disturbed within 100 feet of elderberry shrubs.
- No insecticides, herbicides, fertilizers, or other chemicals will be used within 100 feet of elderberry shrubs. Herbaceous vegetation may be mowed or removed using hand tools within 100 feet, but not within 20 feet of the elderberry shrubs.
- If new permanent development is to occur within the 100-foot buffer (but outside the 20-foot buffer), the potential for indirect effects will be evaluated by a qualified biologist. If indirect effects are likely to occur, the project applicant will consult with USFWS to determine the appropriate conservation measures. If indirect effects are not likely to occur, then no additional minimization measures would be required.
- ▲ For elderberry shrubs that cannot be avoided by at least 20 feet or impacts to the beetle minimized through the measures listed above, consultation with USFWS in compliance with the ESA will be carried out to seek incidental take authorization.
- ▲ No elderberry shrub will be removed or transplanted without prior coordination with USFWS and assurance that the project proponent has abided by all pertinent conditions of any applicable incidental take authorization. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.
- ▲ Relocation of existing elderberry shrubs and planting of new elderberry seedlings and associated riparian species and/or the purchase of mitigation credits at an approved mitigation bank will be implemented according to the Conservation Guidelines (USFWS 1999) or other applicable USFWS conservation guidelines in effect at the time of construction implementation. The current Conservation Guidelines use stem count data, presence or absence of exit holes, and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected VELB habitat. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within suitable areas of the project site, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable offsite location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings will be placed in the on- or offsite conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas will be preserved in perpetuity as habitat for VELB. The final VELB mitigation plan, including transplanting procedures, long-term protection, management of the mitigation areas, and monitoring procedures will be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999), or other USFWS guidelines in effect at the time the construction activities are implemented.

Mitigation Measure 4.4-1b: Avoid or minimize effects to western pond turtle.

- ▲ Within 24 hours before beginning construction activities within 200 feet of suitable aquatic habitat for western pond turtle, a qualified biologist will inspect areas of anticipated disturbance for the presence of western pond turtle. The construction area will be re-inspected whenever a lapse in construction activity of two weeks or more has occurred. The monitoring biologist will be available thereafter; if a turtle is encountered during construction activities, the monitoring biologist will have the authority to stop construction activities until a qualified biologist can relocate the western pond turtle to the nearest suitable aquatic habitat outside the area of disturbance.

Mitigation Measure 4.4-1c: Avoid or minimize the loss of special-status bird nests.

The project applicant will implement the following measures to avoid or minimize the loss of nests of golden eagle, white-tailed kite, and other raptors and special status birds:

- ▲ To the extent feasible, vegetation (including tree) removal, grading, and other ground disturbing activities will be carried out during the nonbreeding season (September 1 through February 14) for migratory birds.
- ▲ If construction activity is scheduled to occur during the nesting season (February 15 to August 31), the project applicant shall utilize a qualified biologist to conduct preconstruction surveys for all potential special-status bird species (golden eagle, white-tailed kite, burrowing owl, and tricolored blackbird) and suitable habitat onsite and within 500 feet of the project site to identify active nests that could be affected by project construction. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction in a particular area. If no nests are found, no further mitigation is required.
- ▲ If active nests are found, impacts on nesting birds, including golden eagle, white-tailed kite, burrowing owl, and other raptors, as well as tricolored blackbirds shall be avoided by establishment of appropriate buffers around the nests. No project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged or the nest is no longer active. A 500-foot buffer around raptor nests, burrows, and/or colonies are generally adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with CDFW depending on site-specific conditions. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Mitigation Measure 4.4-1d: Avoid or minimize loss of protected bat species.

Prior to construction, suitable roosting habitat (assumed to be trees on the project site) for roosting bats on the project site will be surveyed by a qualified biologist. Surveys will consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and may also include an evening emergence survey to note the presence or absence of bats, if warranted. The type of survey will depend on the condition of the potential roosting trees. If no bat roosts are found, then no further study is required. If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts, but are not required.

If roosts of pallid or silver-haired bats are determined to be present and must be removed, the bats will be excluded from the roosting site before the tree is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with CDFW and may require construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. If determined necessary during consultation with CDFW, replacement roosts will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the roost trees may be removed.

Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element).

Prior to any ground disturbing activities that would affect riparian or aquatic habitats, a qualified biologist shall conduct an education program for all persons employed or otherwise working on the project. The program shall consist of a presentation from the biologist that includes a discussion of the biology of the habitats and species potentially affected by project development. The biologist shall also include as part of the education program information about the distribution and habitat needs of any special-status species that may be present, legal protections for those species, penalties for violations, and project-specific protective measures identified by

regulatory authorizations. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to their performing work onsite. The permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains relevant biological data for workers to carry onsite. Upon completion of the education program, employees shall sign a form stating they attended the program and understand all protection measures.

Significance after Mitigation

Mitigation Measure 4.4-1e would generally limit the potential for disturbance to, or loss of, special-status wildlife species and habitat during construction activities. In addition, Mitigation Measures 4.4-1a through 4.4-1d would provide protections to specific species of concern, as summarized below.

Through implementation of Mitigation Measure 4.4-1a, in consultation with and under approval of USFWS, the potential loss of elderberry shrubs and potential take of VELB would be offset by avoiding, minimizing, and if necessary, offsetting loss through compensatory mitigation in accordance with the Conservation Guidelines (USFWS 1999), or other USFWS conservation guidelines in effect at the time construction activities are implemented. Incidental Take authorization would be required for any shrubs deemed VELB habitat that would be affected by project development. The impact would be reduced to a **less-than-significant** level.

Implementation of Mitigation Measure 4.4-1b would reduce significant impacts to western pond turtle to a **less-than-significant** level by requiring worker awareness training and implementing pre-construction surveys for western pond turtle before ground-disturbing construction activities within 200 feet of aquatic or riparian habitats. If a western pond turtle is found during construction, impacts would be avoided by relocation of individual turtles by a qualified biologist to suitable habitat.

Implementation of Mitigation Measure 4.4-1c would reduce potentially significant impacts on special-status and otherwise protected bird species, including golden eagle and other raptors, to a **less-than-significant** level because it would require preconstruction surveys to identify active nests and measures to avoid or minimize disturbances of active nests so that project construction would not result in nest abandonment and loss of eggs or young.

Implementation of Mitigation Measure 4.4-1d would reduce significant impacts to bat individuals and colonies to a **less-than-significant** level by surveying for bats before disturbance to potential roosting habitat, and minimizing impacts if they are present by providing alternative roost habitat and excluding the bats from the roost habitat to be removed.

Impact 4.4-2: Loss and/or modification of riparian habitat and fill or other disturbance of waters of the United States during construction.

Proposed structures, utilities, roads, and trails are designed to avoid permanent fill of waters of the United States including wetlands and riparian habitat. However, because grading and excavation would occur close, or adjacent to, these areas, they could be affected through either minor inadvertent removal of vegetation, excessive ground disturbance to the bed and bank causing erosion into waterways, or inadvertent placement of fill materials in waters of the United States, wetlands, and/or riparian areas. This would be a **potentially significant** impact.

Avoidance and/or minimization of potential effects through contractor awareness education, clear delineation and avoidance of these areas, and, if necessary, obtaining all required regulatory authorizations as outlined in Mitigation Measure 4.4-2, would reduce potential impacts to a **less-than-significant** level.

The project has been designed to incorporate all waters of the United States and existing riparian corridors into the proposed open space area. However, construction of trail crossings within the open space areas would involve some minor grading and excavation, and other construction activities such as staging, in close proximity to sensitive habitats such as the wetlands and riparian areas. Although the trail alignments and

crossing features would be designed to avoid direct impacts to these resources to the maximum extent feasible, riparian and/or wetland vegetation may be inadvertently removed or otherwise affected during construction. Staging within, inadvertent grading or excavation of, and/or removal of vegetation from riparian habitat or waters of the United States would be subject to USACE jurisdiction under Section 404 of the CWA and would require Section 401 certification from RWQCB. In addition, the aquatic resources and surrounding riparian and wetland vegetation are regulated by CDFW under Section 1602 of the California Fish and Game Code, which provides for the protection of fish, wildlife, and native plant resources. Although this impact is expected to be minor because there would be no permanent impacts to riparian areas and/or waters of the United States including wetlands, these sensitive habitats could be inadvertently negatively affected. Temporary loss of and/or modification to riparian and wetland habitat would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element).

Implement Mitigation Measure 4.4-1e, as described above.

Mitigation Measure 4.4-2a: Avoid effects to sensitive natural communities by fencing resources.

Before construction activities commence, all sensitive areas will be flagged or fenced with brightly visible construction flagging and/or fencing under the direction of the qualified biologist to ensure that grading, excavation, or other ground-disturbing activities will not occur within these areas. This delineation shall be consistent with and incorporate the USACE-approved preliminary jurisdictional determination or verified jurisdictional determination. Foot traffic by construction personnel will also be limited in these areas to prevent the introduction of invasive or weedy species. Periodic inspections during construction will be conducted by the monitoring biologist to ensure the integrity of exclusion fencing/flagging is maintained throughout the period of construction involving ground disturbance.

Mitigation Measure 4.4-2b: Obtain all required regulatory authorizations if project development would result in the fill of Waters of the United States.

Prior to any grading or construction activities within waters of the United States, the appropriate Section 404 permit will be obtained for any project-related impacts. Any waters of the United States that would be affected by project development shall be replaced or restored on a “no-net-loss” basis in accordance with USACE mitigation guidelines (or the applicable USACE guidelines in place at the time of construction). In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the Regional Water Quality Control Board shall be obtained.

Mitigation Measure 4.4-2c: Obtain all required regulatory authorizations if project development would result in impacts to aquatic or riparian habitats within CDFW jurisdiction.

If it is determined that project development would affect the bed, bank, channel, or associated riparian habitat subject to CDFW jurisdiction under Fish and Game Code Section 1602, a Streambed Alteration Notification shall be submitted to CDFW, pursuant to Section 1600 et seq. of the California Fish and Game Code. If proposed activities are determined to be subject to CDFW jurisdiction, the project proponent shall abide by the conditions of any executed agreement prior to the issuance of a grading permit by El Dorado County.

Significance after Mitigation

Significant impacts associated with loss of riparian habitat and fill of waters of the United States would be reduced to a **less-than-significant** level by completely avoiding and/or minimizing potential direct and indirect effects to these areas during construction activities and/or obtaining all required regulatory authorizations.

Impact 4.4-3: Conflict with County policies related to required setbacks from wetland features.

El Dorado County General Plan Policy 7.3.3.4 and the Interim Interpretive Guidelines for that Policy (adopted June 22, 2006) require a minimum setback of 50 feet from intermittent streams and wetlands. An alternative setback can be approved when the applicant demonstrates that the alternative setback would still provide sufficient protection to the affected biological resources and avoid or minimize impacts as required by the general plan, or if the alternative setback is necessary to allow “reasonable use” of an existing legal parcel and appropriate mitigation measures and/or best management practices are incorporated into the project. Therefore, the potential loss of special-status species is a **potentially significant** impact.

With implementation of the avoidance and minimization measures identified in Mitigation Measures 4.4-2a through 4.4-2c above, and Implementation of Mitigation Measures 4.4-3a and 4.4-3b below, these impacts would be considered **less than significant**.

El Dorado County General Plan Policy 7.3.3.4 and the Interim Interpretive Guidelines for that Policy (adopted June 22, 2006) require a minimum setback of 50 feet from intermittent streams and wetlands. The Policy states that development must comply with these interim setback standards unless:

1. It is specifically exempted by this policy or it involves necessary development of utilities, wells, and lighting;
2. The project is within the joint jurisdiction of El Dorado County and Tahoe Regional Planning Agency (TRPA); or
3. The project is not located within a designated “Important Biological Corridor Overlay District” and an alternative setback is approved pursuant to the process described below.

Alternative Setbacks: An alternative setback can be approved when the applicant demonstrates that the alternative setback would still provide sufficient protection to the affected biological resources and avoid or minimize impacts as required by the General Plan or if the alternative setback is necessary to allow “reasonable use” of an existing legal parcel and appropriate mitigation measures and/or Best Management Practices are incorporated into the project.

The project is not located within the joint jurisdiction of the County and TRPA and is not located within an Important Biological Corridor Overlay District; therefore, it is eligible to request an alternative setback. During construction, the proposed project includes minimum setbacks of 10 feet from the edge of the existing wetlands. The project includes permanent minimum 40-foot open space buffers from the edge of wetlands (Foothill 2014).

The revised project has been designed to minimize impacts to water quality due to the new development. In addition to the large open space areas to be maintained on the site, several water quality improvements have been incorporated into the revised project design to minimize impacts associated with stormwater runoff, including the construction of a water quality retention pond and bio swales constructed at the toe of fill slopes throughout the project site to capture and direct stormwater runoff to these basins and to the perennial drainage. These features would minimize affects to onsite wetlands by reducing silt from stormwater runoff. However, while these features would minimize habitat impacts, the construction of residential development and implementation of reduced setbacks will permanently reduce the amount of upland habitat available to wildlife. Additionally, residential development may have a detrimental impact on the quality of the preserved habitat due to invasion by escaped exotic plant species and disturbance or killing of wildlife by domestic animals (Foothill 2014). In addition, temporary construction-related disturbance occurring as close as 10 feet to these features could result in conflict with the County’s setback policy. This is considered a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 4.4-1e: Implement a Worker Environmental Awareness Program (biological resources element).

Implement Mitigation Measure 4.4-1e, as described above.

Mitigation Measure 4.4-2a: Avoid effects to sensitive natural communities by fencing resources.

Implement Mitigation Measure 4.4-2a, as described above.

Mitigation Measure 4.4-2b: Obtain all required regulatory authorizations if project development would result in the fill of Waters of the United States.

Implement Mitigation Measure 4.4-2b, as described above.

Mitigation Measure 4.4-2c: Obtain all required regulatory authorizations if project development would result in impacts to aquatic or riparian habitats within CDFW jurisdiction.

Implement Mitigation Measure 4.4-2c, as described above.

Mitigation Measure 4.4-3a: Implement additional actions to further reduce impacts to wetland features due to alternate minimum setback during construction.

The following actions shall be implemented during grading and other ground-disturbing construction activities within 100 feet of the onsite wetland features:

- ▲ A qualified biologist shall be onsite during all initial vegetation clearing and grading activities.
- ▲ High-visibility orange fencing should be installed 10 feet from the edge of aquatic features and riparian habitat or at the edge of the grading/ construction footprint, whichever is greater. The fencing shall be installed at the edge of the construction footprint around all aquatic features, as directed by the monitoring biologist. The fencing shall be installed prior to ground-disturbing activities and shall remain throughout the duration of construction activities. The fencing shall be checked daily by the superintendent or foreman to ensure that the fencing remains intact.
- ▲ Excavation and ground disturbance within 100 feet of any aquatic feature (excluding removal of trees) shall be limited to dry periods (generally between April 15 and October 15).
- ▲ Within identified wetland features, the top 4 inches of topsoil within the temporary disturbance area shall be stripped and stockpiled onsite. Once construction of the lots is complete, the topsoil shall be returned to the permanent buffer areas to maintain an existing seed bank and promote rapid re-establishment of vegetative cover.
- ▲ If rain is forecasted to occur, all bare soil shall be covered with plastic sheeting, or equivalent, 24 hours prior to an anticipated precipitation event.

Mitigation Measure 4.4-3b: Provide permanent design features and monitoring to further reduce impacts to wetland features due to alternate minimum setback during operation.

- ▲ The applicant shall hire a qualified biologist to prepare a revegetation plan and submit to the County's Community Development Department prior to the start of construction. The plan shall include information on planting, maintenance, monitoring, and adaptive management strategies. For all disturbed areas within 40 feet of aquatic features and riparian habitat, the revegetation plan shall specify revegetation with native plant material, including native shrubs and trees to improve bank stability and habitat values.

- ▲ To ensure establishment of native habitat, a monitoring plan prepared by a qualified biologist shall be submitted to the County's Community Development Department that includes monitoring of the habitat within the open space buffers for a minimum of five years after the final certificate of occupancy is issued. The plan shall include adaptive management responses to implement if habitat quality is declining.
- ▲ The Covenants, Conditions, and Restrictions (CC&R) for the development shall discourage residents from using species considered invasive by the California Invasive Plant Council (CAL-IPC) in landscaping throughout the development. This restriction should be enforced by the Home-owners Association for the development.
- ▲ Informational signs informing residents about impacts that domestic animals can have on wildlife shall be installed in parks and trail corridors.

Significance after Mitigation

Significant impacts associated with conflicts to County's setback policy would be reduced to a **less-than-significant** level by implementing additional measures to minimize potential direct and indirect effects to wetland features during construction activities and by including additional features and maintenance activities into the project to improve revegetation, provide monitoring of habitat in open space areas, discouraging use of invasive plant species, and informing residents of effects to wildlife from domestic animals.

4.5 CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources (also known as heritage resources) and on unknown fossil deposits of paleontological importance. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges). Paleontological resources include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains that are more than 5,000 years old and occur mainly in Pleistocene (from 2.6 million to 11,700 years ago) or older sedimentary rock units.

The primary source of information for this section is the *Rancho Dorado Cultural Resources Assessment* prepared by Ric Windmiller (2014), the *Saratoga Way Extension Project Cultural Resources Assessment* prepared by North State Resources (2008), and the *El Dorado County General Plan Draft Environmental Impact Report* (El Dorado County 2003).

4.5.1 Environmental Setting

PALEONTOLOGICAL SETTING

Paleontological remains are found in sedimentary rock formations. El Dorado County's geology is predominantly igneous (volcanic) in nature and the type of sedimentary deposits where such remains might be present are virtually nonexistent. The project site is situated at the ecotone or "edge area" between the Sacramento Valley and the Sierra foothills within an area underlain by the Mesozoic Era (specifically Jurassic, from about 200 to 145 million years ago) Copper Hill Volcanics, a formation unlikely to contain paleontological resources.

REGIONAL PREHISTORY

Although the Sacramento Valley may have been inhabited by humans as early as 10,000 years ago, the evidence for early human use is likely buried by deep alluvial sediments that accumulated rapidly during the late Holocene epoch. Although rare, archaeological remains of this early period have been identified in and around the Central Valley. There is evidence for some use of the Mokelumne River area south of the project region, under what is now Camanche Reservoir, during the late Pleistocene epoch. Archaeologists working at Camanche Reservoir found a number of lithic cores and a flake that are associated with Pleistocene gravels. These archaeological remains have been grouped into what is called the Farmington Complex, which is characterized by core tools and large, reworked percussion flakes. The economy of this early period generally is thought to be based on exploitation of large game. Later periods are better understood because of more abundant representation in the archaeological record.

The taxonomic framework of the Sacramento Valley has been described in terms of archaeological patterns. A pattern is a general mode of life characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture. There are three general patterns of resource use for the period between 4500 before present (B.P.) and 200 B.P.: the Windmiller, Berkeley, and Augustine Patterns.

Windmill Pattern

The Windmill Pattern, which began approximately 4500 B.P., 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 also were used, as indicated by ground stone artifacts and clay balls that were used for boiling acorn mush. Settlement strategies during the Windmill period reflect seasonal adaptations: habitation sites in the valley were occupied during the winter months, but populations moved into the foothills during the summer. Previous finds of milling stones and Pinto-like projectile points at sites in Marble Valley, 4 miles east of the project site, could reflect Native American use of the area dating back 4000 to 7000 years. A study of Hawyer Cave located in the foothills near the American River revealed artifact types common in early Windmill levels of village mounds in the Sacramento Delta region.

Berkeley Pattern

The Windmill Pattern ultimately changed to a more specialized adaptation labeled the Berkeley Pattern, approximately 3500 B.P. A reduction in the number of *manos* and *metates* and an increase in mortars and pestles indicate a greater dependence on acorns. Bedrock mortars are common along the Sacramento Valley-Sierra foothills edge. Reliance on acorns as a staple is inferred from what is generally recognized as the first appearance of mortars and pestles in archeological sites dating to this period. Although gathered resources gained importance during this period, the continued presence of projectile points and atlatls (spear-throwing devices) in the archaeological record indicates that hunting was still an important activity.

Augustine Pattern

The Berkeley Pattern was superseded by the Augustine Pattern. The Augustine Pattern, which began approximately 1500 B.P., reflects a change in subsistence and land use patterns to those of the ethnographically known people (Nisenan) of the historic era. This pattern exhibits a great elaboration of ceremonial and social organization, including the development of social stratification. Exchange became well developed, and an even more intensive emphasis was placed on the use of the acorn, as evidenced by the presence in the archaeological record of shaped mortars and pestles and numerous hopper mortars. Other notable elements of the artifact assemblage associated with the Augustine Pattern are flanged tubular smoking pipes, harpoons, clam shell disc beads, and an especially elaborate baked clay industry, which included figurines and pottery vessels (Cosumnes Brownware). The presence of small projectile point types, referred to as the Gunther Barbed series, suggests the use of the bow and arrow. Other traits associated with the Augustine Pattern include the introduction of pre-interment burning of offerings in a grave pit during mortuary rituals, increased village sedentism, population growth, and an incipient monetary economy in which beads were used as a standard of exchange.

ETHNOGRAPHY

The project site is located within a boundary zone between traditional Nisenan and Miwok territories, located between Latrobe on the south and Folsom on the north. The Nisenan, together with the Maidu and Konkow, their northern neighbors, form the Maidu language family of the Penutian linguistic stock, of which there are three dialects: Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan.

In both Valley Nisenan and Plains Miwok groups, the tribelet, a loose political organization, controlled specific districts usually bounded by the land between drainages. Before the gold rush, villages were distributed along the banks and tributaries of major rivers such as the Sacramento, American, and Cosumnes.

Valley Nisenan communities ranged in size from small, extended families of 15 to 25 people to large villages with a population over 500. In the early 1800s, a large group could be found at a single village or a cluster of small camps around a large village. The Valley Nisenan built their villages on low, natural levees along rivers

and streams, or on gentle slopes with southern exposure. The post-Sutter Nisenan village of *Kadema* excavated in 1960 was situated on a low knoll along the American River 18 miles west of the project site.

Foothill Nisenan villages were located on ridges and large flats along major streams. These village sites were smaller than their valley counterparts. In the foothills, it was common for families to live away from the main village. Other sites included seasonal camps, quarries, ceremonial grounds, trading sites, fishing locales, cemeteries, river crossings, and battlefields. Archaeological excavations at two sites located 2 miles north of the project site revealed the presence of cremations, glass beads, and other historic artifacts.

The 1833 epidemic, probably malaria brought south from Oregon by a party of trappers, decimated an estimated 75 percent of California's native population. By the 1840s, a number of the remaining Nisenan people settled around Sutter's Fort and worked for Sutter until the gold rush. Others pressed into traditional Miwok territory.

The historical record illustrates a progressive movement of Nisenan southward, a movement that began during the Sutter period and was probably accelerated by the gold rush. Before 1843, it is likely that Valley Nisenan held the territory along the American River and Plains Miwok held the entire valley drainage of the Cosumnes River from its juncture with the Mokelumne River to about the 500-foot contour in the foothills. The area between the two drainages may have been used by both groups and possibly also by Hill Nisenan people.

REGIONAL HISTORY

Following the initial discovery of gold at Sutter's Mill, Coloma, in January 1848, two members of the disbanded Mormon Battalion found gold on the South Fork of the American River about a mile above its confluence with the North Fork. The March 1848 discovery at "Mormon Island" actually started the gold rush.

The discoveries spurred thousands of immigrants to California. By May 1848, there were only a few hundred working at shallow placer mines. By the end of 1848, there were 8,000 to 10,000. During 1849 and 1850, almost 40,000 followed routes by land and sea to the gold fields annually.

The early mining focused on the river placers. Deposits of gravel along the river meanders were an initial attraction. Mining camps arose at these river "bars." Early placer mining expanded from Coloma to Weber Creek and then to the rich creek gravels in the vicinity of present-day Placerville. Fueled by discoveries at Coloma, Placerville, and Folsom, soon nearly every ravine in the region was mined.

The route of immigrants bound for Sacramento and who entered California by way of Carson Pass in 1849 was a simple wagon road that followed the present-day Highway 50 corridor near the project site. In the early days, immigrants who came by ship to San Francisco and were headed to Weber Creek and Placerville traveled along the same route. Roadside inns and taverns were put up at numerous locations along the Sacramento to Placerville Road.

The earliest settlement in the vicinity was Mormon Tavern, about a mile east of the project site. Because of its strategic location at the intersection of the Sacramento-Placerville road and the stage road from Folsom and Mormon Island, the inn remained in business through the 1860s and 1870s. Clarksville, established 0.5 mile east of Mormon Tavern began as a mining camp and way station. By this time, ravines throughout the region were dotted with camps and cabins. Quartz veins were prospected from the Mother Lode westward to the foothills-valley edge. Rich pocket mines were located at Gray's Flat, around Shingle Springs, and as far down as Clarksville.

By the 1860s, most of the region surrounding Clarksville was dry farmed and winter grazed by sheep or cattle. The hills were rocky and clearing fields was necessary to allow the grass to grow and to relieve difficulty in mowing. In places where rock outcropped naturally, the ranchers would use the rock to build

fences at those locations. Ranchers would extend brush fences or, later, barbed wire from the rock walls to create acreage. The fences functioned as field divisions, section lines, and corrals. Armin Winje, an elderly Gold Hill resident, once stated that rocks were abundant in the Clarksville area and fences were made out of whatever was handy and cheap. Winje recalled that fences were built as high as they could be built, then a strand or more of barbed wire was placed along the top of the rock fence to make it higher.

Sheep were introduced to the semi-arid foothills around Clarksville in the 1850s. The peak of sheep raising was probably reached by the 1860s and 1870s. The California Trespass Act of 1850 required farmers to fence their crops to keep out grazing animals. By the late 1860s, however, the burden of fencing was placed on the ranchers who kept livestock. Many of the rock fences found in the region may date to this period and later.

In its heyday, Clarksville was a bustling mining and way-station with a post office (established in 1855), blacksmith and wagon shops, Wells Fargo express office, a five stamp quartz mill, the inns and a number of single-story residences. As the mining frenzy settled down, the town's commerce became more focused on the general trade for the agricultural region surrounding it, including the ranches between Folsom and what is now El Dorado Hills. By 1890, Clarksville had, in the words of one of its residents, "...dwindled down to a commonplace country village, with one store, two saloons, a blacksmith shop, and one hotel" (Wilson 1986: 18, as cited in Windmiller 2014).

During the gold rush and before the railroads, agriculture in western El Dorado County depended mainly on the home demand, which was regulated by the mining industry. After the gold rush, land ownership in the locality surrounding the project site was dominated by few families: the McCombers, Broders, Euers, Joergers, and Porters. On the Sacramento County side of the county line, Porter named his ranch, "Empire Ranch." Later in 1920, Empire Ranch was sold to the Russells.

The period of 1870 to 1960 was characterized by a consolidation of land holdings and the transhumance or seasonal movement of livestock to greener pastures in the Sierra. Despite glowing appraisals of farming and ranching found in occasional letters to the editor of the Folsom newspaper, the land around Clarksville (and El Dorado Hills) had little agricultural value, except for stock raising and dairying. By the early 1870s, it was virtually impossible to earn a living from the smaller parcels of land that once dotted the countryside between Folsom and Clarksville. The early mixed economy of mining, ranching and other activities was replaced by the focused strategy of large-scale cattle and sheep ranching. Mining remained a viable second income up to World War II, when most gold mining in the country was stopped by the War Production Board.

RECORDS SEARCH

Paleontology Records Search

A search of the University of California, Museum of Paleontology (UCMP) database was conducted on June 20, 2014. The database did not list any paleontological resources from the Copper Hill Volcanics. The UCMP database did not list any paleontological localities of any kind in the entire U.S. Geological Survey Clarksville quadrangle.

NCIC Records Search

Staff members at the North Central Information Center (NCIC) conducted a confidential records search for the project site and a surrounding 0.25-mile radius on April 28, 2014. Within the records search area, staff reported 15 previous cultural resource studies. Four of the previous studies encompassed portions of the project site. However, only one study encompassed the entire project site: Report #3687, an archaeological survey conducted in 1990. The report identified four rock fence remnants as isolates, two bedrock mortar sites, and one site that was described as both a midden and a lithic scatter.

NCIC staff also searched the Historic Property Data File for El Dorado County, Archaeological Determinations of Eligibility, the California Inventory of Historical Resources and local inventories and found no relevant

listings. Three historic maps were also reviewed. The 1856 General Land Office plat illustrated an east-west road located near, if not slightly within the southeast corner of the project site. The Sacramento to Placerville road is illustrated 0.5 mile to the southeast of the project site. Another incompletely illustrated road lies within 0.25 mile northwest of the project site.

Native American Consultation and Other Interested Parties

On April 29 2014, the Native American Heritage Commission (NAHC) completed a search of its sacred lands database for the project site. The search did not indicate the presence of Native American cultural resources in the immediate project vicinity. Staff enclosed a list of Native American organization that may have knowledge of cultural resources in the area. The twelve individuals included representatives from the Shingle Springs Band of Miwok Indians, United Auburn Indian Community of the Auburn Rancheria, T'Si-Akim Maidu, and the Colfax-Todds Valley Consolidated Tribe.

The above individuals were contacted in a letter dated June 19, 2014 that was transmitted via U.S. Postal Service. The letter indicated that NAHC recommended contacting each individual for information he or she may have regarding specific knowledge of cultural resources. The letter included a brief description of the proposed project and included a location map. No response has been received to date (Windmiller 2014).

Pedestrian Surveys

On June 3, 2014, archaeologists conducted a field survey and revisited the previously documented cultural resources from the 1990 report, noting present condition on Department of Parks and Recreation (DPR) forms and including one or more digital color photographs. Only one previously documented archaeological resource, one of the bedrock milling stations, could not be relocated. No historical built-environment resources were encountered.

Prehistoric Archaeological Resources

P-9-821

This resource is a bedrock milling station with two shallow mortar cups (1 inch and 3 inches, respectively). The rock is apparently greenstone. No associated artifacts or non-artifact constituents were noted. The bedrock milling station remains in much the same condition as originally documented in 1990.

P-9-822

This resource was originally recorded both a midden and a lithic scatter, measuring 377 feet north-south by 45 meters east-west. Site depth was not determined, although stone flakes were found in rodent back dirt. Among the site's constituents were fire-fractured rock, cores, a pestle, parts of a cast iron stove and a milk glass screw-top square jar. Chipped stone materials recorded in 1990 included quartz, unspecified igneous rock and green metavolcanic rock. During the current survey, a single shovel test excavation was tested with muriatic acid to determine if the site was midden. Because there was no reaction (no effervescence), it is likely that the site is not midden. Instead, the site is a lithic scatter yielding evidence that Native Americans prospected locally for toolstone and probably processed acorns judging from the presence of fire broken rock and a stone pestle.

Historic-era Archaeological Resources

P-9-58

This resource was recorded in 1990 as rock fence isolates found in two separate locations. The resource was revisited in 1998 and 2006, and the description was updated as a series of rock walls on an existing barbed wire and post fence line, extending north-south for approximately 0.5 mile. During the current survey, the remnants of the rock fence were found to be in much the same condition as seen back in 1998 and 2006.

P-9-59

This resource was recorded in 1990 as part of a group of remnants (along with P-9-58, and P-9-61) described simply as insignificant rock fence isolates. Upon revisiting P-9-59 during the present study, it was noted that the remnant was collapsed ruins. The absence of recent disturbances suggested that the fence remnant is probably unchanged from what it was when originally recorded.

P-9-61

This resource was recorded in 1990 as the southern portion of another rock fence ruins (P-9-58). If judgment of relative age can be made on the relative condition of each fence remnant, then P-9-61 would probably be older than P-9-58. The rocks of P-9-61 are largely missing except for the foundation stones. The absence of recent disturbances suggested that the fence remnant is probably unchanged from what it was when originally recorded.

Field No. RD-1

This resource is a pair of two rectangular concrete spring boxes. The first spring box is approximately 5 feet by 8 feet, 10 feet deep, dry and partly filled with modern trash. The second spring box is about 5 feet by 15 feet, filled with water and surrounded by a dense thicket of cattails. A certified concrete inspector estimated the concrete spring boxes to date back to the early 1950s.

4.5.2 Regulatory Setting

FEDERAL

Section 106 of the National Historic Preservation Act

Federal protection of cultural resources is legislated by (a) the National Historic Preservation Act of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP).

Section 106 of the National Historic Preservation Act and accompanying regulations (36 Code of Federal Regulations Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and requires consideration of effects on properties that are listed in, or may be eligible for listing in, the NRHP. The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural value.

The formal criteria (36 Code of Federal Regulations 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:
 - a. Association with events that have made a significant contribution to the broad patterns of history (events);
 - b. Association with the lives of persons significant in the past (persons);
 - c. Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture); or

- d. Has yielded, or may be likely to yield, information important to prehistory or history (information potential).

STATE

California Register of Historical Resources

All properties listed in or formally determined eligible for listing in the NRHP are eligible for the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope and with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria for listing eligibility. A resource may be eligible if it:

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. Is associated with the lives of persons important to local, California, or national history;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity.

California Environmental Quality Act

CEQA (Public Resources Code [PRC] Section 21000, *et seq.*) and the State CEQA Guidelines (California Code of Regulations, Section 15000, *et seq.*) are the principal regulatory controls addressing impacts on historical and paleontological resources in California. Projects with the potential to adversely affect significant cultural resources must be reviewed through the CEQA process. As the designated CEQA lead agency for approval of the project, the County of El Dorado is responsible for complying with CEQA's requirements regarding the identification of feasible measures to mitigate significant adverse changes to historical and paleontological resources and ensuring that the measures are enforceable through permit conditions, agreements, or other measures.

Whenever a resource cannot be avoided by project activities, impacts will be addressed and mitigated as outlined in Section 15331 of the State CEQA Guidelines.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner be notified. If the remains are of a Native American, the coroner must notify NAHC. The NAHC then notifies those persons most likely to be descended from the Native American's remains. This act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

California Health and Safety Code

Section 7050.5 (b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

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 Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning 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 Public Resources Code.

LOCAL

El Dorado County General Plan

The Conservation and Open Space Element of the *El Dorado County General Plan* contains goals, objectives, and policies related to the preservation of cultural resources that are applicable to the project.

Goal 7.5: Cultural Resources: Ensure the preservation of the County's important cultural resources.

Objective 7.5.1: Protection of Cultural Heritage. Creation of an identification and preservation program for the county's cultural resources.

- ▲ **Policy 7.5.1.1:** The County shall establish a Cultural Resources Ordinance. This ordinance shall provide a broad regulatory framework for the mitigation of impacts on cultural resources (including historic, prehistoric and paleontological resources) by discretionary projects. This Ordinance should include (but not be limited to) and provide for the following:

 - A. Appropriate (as per guidance from the Native American Heritage Commission) Native American monitors to be notified regarding projects involving significant ground-disturbing activities that could affect significant resources.
 - B. A 100-foot development setback in sensitive areas as a study threshold when deemed appropriate.
 - C. Identification of appropriate buffers, given the nature of the resources within which ground-disturbing activities should be limited.
 - D. A definition of cultural resources that are significant to the County. This definition shall conform to (but not necessarily be limited to) the significance criteria used for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) and Society of Vertebrate Paleontology.
 - E. Formulation of project review guidelines for all development projects.
 - F. Development of a cultural resources sensitivity map of the county.
- ▲ **Policy 7.5.1.3:** Cultural resource studies (historic, prehistoric, and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.

- ▲ **Policy 7.5.1.4:** Promote the registration of historic districts, sites, buildings, structures, and objects in the National Register of Historic Places and inclusion in the California State Office of Historic Preservation’s California Points of Historic Interest and California Inventory of Historic Resources.

Objective 7.5.3: Recognition of Prehistoric/Historic Resources. Recognition of the value of the County’s prehistoric and historic resources to residents, tourists, and the economy of the County, and promotion of public access and enjoyment of prehistoric and historic resources where appropriate.

4.5.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5;
- ▲ cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5;
- ▲ disturb any human remains, including those interred outside of formal cemeteries; or
- ▲ directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

As described above, no historic architectural resources were identified on the project site. Therefore, project construction and operation would have no impact on historical resources, and these issues are not discussed further in this EIR.

METHODS OF ANALYSIS

The impact analysis for prehistoric- and historic-period archaeological resources is based on the findings and recommendations of the report titled *Rancho Dorado Cultural Resources Assessment* (Windmiller 2014). The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources. The alignment of the proposed off-site extension of Saratoga Way was included in the *2008 Saratoga Way Extension Project Cultural Resources Assessment* prepared by North State Resources. Only one potential cultural resource (P-9-60-H) was identified in the study, which consists of a rock wall segment located 50 feet from the potential area of disturbance of the proposed off-site extension of Saratoga Way. This resource would not be disturbed and is not discussed further.

Application of NRHP and CRHR Criteria

CRHR criteria were used to evaluate the historic significance of the archeological resources on the project site. While these resources were not formally evaluated for NRHP eligibility, the criteria are nearly identical to those of the CRHR. The NRHP and CRHR are discussed in more detail above under “Regulatory Setting.” Eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible.

Prehistoric Archaeological Resources

Bedrock Milling Station (P-9-821)

To be eligible under Criterion 1, the isolated bedrock milling station must be associated with a clearly important event or trend outlined in the historic context. Such importance could not be established within the known culture sequence or aboriginal settlement systems of the locality or region. The site is not eligible under Criterion 2 as it is not associated with individual(s) whose specific contributions to history can be identified and documented. Criterion 3 applies to properties significant for their physical design or construction. Bedrock milling stations are ubiquitous in the Sierra foothills-valley edge and this site does not reflect any qualities that would promote eligibility under Criterion 3. Under Criterion 4, the bedrock milling site must clearly demonstrate or have the potential to yield information important in history or prehistory. Lacking any association with a cultural deposit and lacking a means of pinpointing any temporal association, the bedrock milling station cannot contribute to the goals of regional research regarding the understanding of settlement patterns and subsistence. Given the lack of important historical associations, the resource is recommended as non-eligible to the CRHR and would also be non-eligible for the NRHP; therefore, the resource is not considered to be significant for the purposes of CEQA.

Lithic Scatter (P-9-822)

Based on the evidence gathered to date, it is apparent that the site is a lithic scatter reflecting tool stone prospecting. The fire fractured rock and a stone pestle found at the site indicate it was possibly the location of acorn processing. To be eligible under Criterion 1, the archaeological site must be associated with a clearly important event or trend outlined in the historic context. Such importance could not be established within the known culture sequence or aboriginal settlement systems of the locality or region. The site is not eligible under Criterion 2 as it is not associated with individual(s) whose specific contributions to history can be identified and documented. This lithic scatter does not embody a specific significance in representing a type, period, or method of construction, nor does it reflect any of the other qualities that would promote eligibility under Criterion 3. However, because the site has yielded evidence of flint knapping and evidence of food processing, there is a potential for yielding temporally-diagnostic artifacts such as specific projectile point styles and, depending on the material(s) from which such artifacts were made, inter-regional trade. An understanding of the time period(s) in which the site was used may help historians to better understand the nature of settlements within one or more such periods, how the people adapted to the local environment. Therefore, the site is recommended eligible for CRHR listing under Criterion 4.

Historic-era Archaeological Resources

Rock Fence Remnants (P-9-58)

For eligibility under Criterion 1, the rock fence must be associated with one or more events important within the above historic context. However, the period to which the rock fence remnant belongs is unknown and therefore it lacks integrity of association and is therefore not eligible under Criterion 1. The rock fence is not eligible under Criterion 2, as it is not associated with individual(s) whose specific contributions to history can be identified and documented. Under Criterion 3, the fence must embody the distinctive characteristics of a type, period, or method of construction. As the fence could date to any of several periods and its integrity of materials is diminished, it is not eligible under Criterion 3. The fence is not the principal source of important information on such elements as historic use of local stone in fence building. Many historic ranches in northern California retain rock fence remnants. Therefore, the fence is not eligible under Criterion 4. Given the lack of important historical associations, the resource is recommended as non-eligible to the CRHR and would also be non-eligible for the NRHP; therefore, the resource is not considered to be significant for the purposes of CEQA.

Rock Fence Remnant (P-9-59)

For eligibility under Criterion 1, the rock fence must be associated with one or more events important within the above historic context. However, the period to which the rock fence remnant belongs is unknown and therefore it lacks integrity of association and is therefore not eligible under Criterion 1. The rock fence is not eligible under Criterion 2 as it is not associated with individual(s) whose specific contributions to history can be identified and documented. Under Criterion 3, the fence must embody the distinctive characteristics of a

type, period, or method of construction. As the fence could date to any of several periods it is not eligible under Criterion 3. For eligibility under Criterion 4, the fence must be or must have been the principal source of the important information. Interviews in the past with local ranchers have provided information on how, why, and during which periods such fences were built, which leave little information that can be provided by the fence itself. Therefore, the fence is not eligible under Criterion 4. Given the lack of important historical associations, the resource is recommended as non-eligible to the CRHR and would also be non-eligible for the NRHP; therefore, the resource is not considered to be significant for the purposes of CEQA.

Rock Fence Remnant (P-9-61)

For eligibility under Criterion 1, the rock fence must be associated with one or more events important within the above historic context. However, the period to which the rock fence remnant belongs is unknown and therefore it lacks integrity of association and is therefore not eligible under Criterion 1. The rock fence is not eligible under Criterion 2 as it is not associated with individual(s) whose specific contributions to history can be identified and documented. Under Criterion 3, the fence must embody the distinctive characteristics of a type, period or method of construction. As the fence could date to any of several periods it is not eligible under Criterion 3. For eligibility under Criterion 4, the fence must be or must have been the principal source of the important information. Interviews in the past with local ranchers have provided information on how, why and during which periods such fences were built, which leave little information that can be provided by the fence itself. Therefore, the fence is not eligible under Criterion 4. Given the lack of important historical associations, the resource is recommended as non-eligible to the CRHR and would also be non-eligible for the NRHP; therefore, the resource is not considered to be significant for the purposes of CEQA.

Concrete Spring Boxes (Field No. RD-1)

Under Criterion 1, the deep spring boxes must be associated with one or more events important within the above historic context. However, there is no physical association in evidence between the spring boxes and a destination for the water such as a trough or visible pipeline to a ranch or other feature. Under Criterion 2, the spring boxes can be eligible only if there is a direct association with an individual important in history; no such association could be made. It lacks distinctive characteristics of a type, period, or method of construction under Criterion 3. Under Criterion 4, the spring boxes must yield or have the potential to yield important information in history. No such potential could be determined and the structures are not eligible under Criterion 4. Given the lack of important historical associations, the resource is recommended as non-eligible to the CRHR and would also be non-eligible for the NRHP; therefore, the resource is not considered to be significant for the purposes of CEQA.

IMPACTS AND MITIGATION MEASURES

Impact 4.5-1: Disturb archaeological resources.

Implementation of the proposed project could cause a substantial change in the significance of an archaeological resource. One archaeological resource (P-9-822) has been recommended eligible for listing in the CRHR. The proposed project has been designed to avoid this resources; however, mitigation measures are needed to ensure the resource is avoided. Also, project-related ground-disturbing activities could cause a substantial change in the significance of an as yet undiscovered archaeological resource as defined in State CEQA Guidelines Section 15064.5. This would be a **significant** impact.

Mitigation Measure 4.5-1a includes specific requirements for location and type of construction activity, capping methods, and archaeological monitoring, which would reduce impacts to known archaeological resources. Mitigation Measures 4.5-1b and 4.5-1c include worker-awareness training and stopping construction in the event of an archaeological discovery and would reduce impacts to as yet undiscovered archaeological resources. Implementation of these mitigation measures would reduce the impact to a **less-than-significant** level.

The NCIC records search and pedestrian survey revealed six archaeological resources, only one of which was determined to be potentially eligible for listing in the CRHR. Resource P-9-822, a lithic scatter, was recommended eligible because the site has yielded evidence of flint knapping and evidence of food processing, and therefore there is potential for yielding temporally-diagnostic artifacts such as specific projectile point styles and, depending on the material(s) from which such artifacts were made, inter-regional trade. An understanding of the time period(s) in which the site was used may help historians to better understand the nature of settlements within one or more such periods, how the people adapted to the local environment. Any activity that would demolish or materially alter or adversely affect the physical characteristics that convey the historical significance of this resource and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources would be considered potentially significant.

Ric Windmiller (qualified archaeologist) reviewed the proposed grading plan and prepared a memorandum dated August 6, 2015 to determine if the proposed extension of Wilson Boulevard could damage Resource P-9-822. The memorandum states that alternative engineering design specifications are proposed for the segment of Wilson Boulevard crossing site P-9-822. Engineering and construction specifications in the vicinity of resource P-9-822 would implement earthen capping only within the boundaries of site P-9-822 where Wilson Boulevard is proposed and would avoid any ground disturbing activities that would otherwise impact the resource, thereby avoiding demolition or adverse modifications to the physical characteristics of the resource as defined for a significant impact under Public Resources Code Section 15064.5(b). Any activity that would demolish or materially alter or adversely affect the physical characteristics that convey the historical significance of this resource and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources would be considered potentially significant; however, under Public Resources Code Section 21083.2(b) treatments defined for “preservation in place” or resulting in a resource remaining in an “undisturbed” state include the following measures:

1. Planning construction to avoid archaeological sites;
2. Deeding archaeological sites into permanent conservation easements;
3. Capping or covering archaeological sites with a layer of soil before building on the sites; and/or
4. Planning parks, greenspace, or other open space to incorporate archaeological sites.

Engineering design specifications are proposed for the segment of Wilson Boulevard crossing site P-9-822. Engineering and construction specifications in the vicinity of P-9-822 would implement earthen capping only within the boundaries of P-9-822 and would avoid any ground-disturbing activities that could otherwise affect the resource, thereby avoiding adverse modifications to the physical characteristics of the resource. Ground disturbance would be avoided by placing the site into a dedicated open space lot and elevating Wilson Boulevard in the vicinity of the site by placement of fill and a short retaining wall. However, although the proposed project has been designed to avoid impacts to this resource, mitigation is required to ensure that development of the proposed project would not result in significant impacts as defined under Public Resources Code Section 15064.5(b).

The other five archaeological resources (bedrock milling station, three rock fences, concrete spring boxes) discussed previously were determined not to meet NRHP or CRHR criteria of significance and were recommended as non-eligible resources. Impacts to these resources would not be significant.

The potential exists to encounter previously undiscovered or unrecorded archaeological sites and materials during project-related preconstruction or construction-related ground disturbing activities. If such resources were to represent “unique archaeological resources” as defined by CEQA, any substantial change to or destruction of, these resources would be a potentially significant impact. Damage to a NRHP and/or CRHR-eligible archaeological resource would be a **significant** impact.

Mitigation Measures

Mitigation Measure 4.5-1a: Avoid impacts to P-9-822.

Construction activities occurring within the boundaries of P-9-822 shall not include any scarification or excavation activities. Any construction proposed within the boundaries of P-9-822 shall only include covering the site with layer(s) of chemically compatible soil prior to construction of any physical structures or other improvements. A qualified archaeologist shall be onsite continuously to monitor all ground disturbing activities within 100 feet of P-9-822 and all soil capping activities. The qualified archaeologist shall have the authority to stop work if necessary to protect the integrity of the site.

Mitigation Measure 4.5-1b: Develop and implement a Worker Environmental Awareness Program (heritage and cultural resources element).

The project applicant shall submit to the El Dorado County Planning Department a Worker Environmental Awareness Program, prepared by a qualified archaeologist that will be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. The topics to be addressed in the Worker Environmental Awareness Program will include, at a minimum:

- ▲ types of heritage and cultural resources expected in the project area;
- ▲ types of evidence that indicates heritage or cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters);
- ▲ what to do if a worker encounters a possible resource;
- ▲ what to do if a worker encounters bones or possible bones; and
- ▲ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act.

Mitigation Measure 4.5-1c: Stop work and implement recommendations in the event of an archaeological discovery.

In the event that evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. If an archeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, and a data recovery plan shall be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the project applicant to avoid disturbance to the resources and, if completed avoidance is not possible, follow accepted professional standards in recording any find including submittal of the standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area (the NCIC).

Significance after Mitigation

Implementation of Mitigation 4.5-1a would ensure that project development would not result in any activities within the boundaries of site P-9-822 that could result in significant impacts to the site as defined under Public Resources Code Section 15064.5(b). In addition, Mitigation Measure 4.5-1a requires that all construction activities in the vicinity of site P-9-822 would be overseen by a qualified archaeologist with stop-work authority in order to ensure the integrity of the resource is not inadvertently compromised.

Implementation of Mitigation Measures 4.5-1b and 4.5-1c would reduce potentially significant impacts to currently undiscovered archaeological resources because actions would be taken to avoid, move, record, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations. Implementation of these mitigation measures would reduce impact to a **less-than-significant** level.

Impact 4.5-2: Accidental discovery of human remains.

Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains, if they are present. This impact would be **potentially significant**.

Mitigation Measure 4.5-2 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered and reduced the impact to a **less-than-significant** level.

Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or unmarked human interments are present within or in the immediate vicinity of the project site. However, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site and could be uncovered by project-related construction activities.

The location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Construction activities could uncover previously unknown human remains, which could be archaeologically or culturally significant.

Although there are no known prehistoric or early historic interments on the project site, project-related construction activities could uncover or otherwise disturb previously undiscovered or unrecorded human remains. Because any disturbance of human remains would be a significant impact, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.5-2: Stop work and implement recommendations if human remains are discovered.

If human remains are discovered during any demolition/construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the project applicant shall notify the El Dorado County coroner and the NAHC immediately, according to Section 5097.98 of the PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. Following the coroner's and NAHC's findings, the archaeologist, and the NAHC-designated Most Likely Descendant shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

Significance after Mitigation

Implementation of Mitigation Measure 4.5-2 would reduce potentially significant impacts to human remains because actions would be implemented to avoid, move, record, or otherwise treat the remains appropriately, in accordance with pertinent laws and regulations. By providing an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered, this impact would be reduced to a **less-than-significant** level.

Impact 4.5-3: Destroy a unique paleontological resource.

The project site is considered to have a low paleontological sensitivity because the site rests on soils that are predominantly igneous (volcanic). No paleontological resources are known to occur within the project site or a 1-mile radius of the site. This impact would be **less than significant**.

Paleontological resources (such as fossils) are considered limited, nonrenewable, and sensitive scientific resources. Paleontological remains are found in sedimentary rock formations. El Dorado County's geology is predominantly igneous (volcanic) in nature and the type of sedimentary deposits where such remains might be present are virtually nonexistent. The Copper Hill Volcanics, on which the project site is situated, are composed of metamorphosed mafic pyroclastic rocks and pillow lava with minor felsic porphyrite.

A search of the UCMP database did not list paleontological localities of any kind in the entire U.S. Geological Survey Clarksville quadrangle. The closest paleontological resources in El Dorado County are located east of Pollock Pines, or in Sacramento County, near Elk Grove.

Because of the types of soil formations that underlay the project site are not considered sensitive for paleontological resources, the development of the proposed project would have a **less-than-significant** impact on paleontological resources.

Mitigation Measures

No mitigation is required.

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4.6 AESTHETIC AND VISUAL RESOURCES

This section describes the existing visual characteristics of the project area and evaluates the potential for the project to result in substantial adverse visual impacts. The visual impact analysis considers existing scenic resources and the potential for public views to be affected by the project. Public views are defined as views from public locations, such as roadways, scenic vista areas, parks, schools, or other public buildings.

This section is based on field surveys of the project site that were conducted by Ascent Environmental, Inc. in April 2015; review of aerial photographs of the project site and vicinity; site plans of the project provided by CTA Engineering and Surveying in May 2015; and visual simulations of the proposed project provided by Square One Productions in June 2015.

In response to the Notice of Preparation circulated on March 18, 2015, concerns were expressed regarding views of open natural ridgelines; existing character of the project site; gateway views from Highway 50 of El Dorado Hills when leaving Sacramento County; inconsistency with surrounding development densities, setbacks, and character; nighttime lighting.

4.6.1 Environmental Setting

The project site is located within the unincorporated community of El Dorado Hills in western El Dorado County. The visual character of the site is that of undeveloped rolling hills. However, the site's visual context is also greatly influenced by surrounding development as it is primarily surrounded by suburban elements. The following sections further describe the visual character of the project site and its surroundings, as well as views of the site within the project vicinity.

VISUAL CHARACTER OF THE PROJECT SITE

The visual character of the approximately 121-acre site is primarily characterized by non-native, annual grassland vegetation. A perennial stream runs north-to-south through the center of the site and trees are sparsely scattered throughout the site, with a few clusters of mature blue oak trees in the northwestern corner of the project site. The topography of the site undulates with elevations varying from 790 feet above mean sea level in the northwest portion of the site to 630 feet above mean sea level in the southeast portion of the site, and is generally comprised of two northwest/southeast trending hillsides bisected by a perennial drainage (Youngdahl 2014). Most of the site has slopes of less than 20 percent. Steeper slopes occur in the northwest corner, southeast corner, and center of the southern half of the site (CTA 2014). The center of the site is generally lower in elevation and is relatively flat compared to the periphery of the site. The hilly terrain limits direct and open views across the site from the lower-lying elevations, primarily along the western property line and within the center of the site along the perennial drainage. A number of seeps and ephemeral drainages, most of which drain into the perennial stream, are found on sloped areas of the site. The site is currently undeveloped, vacant land zoned as one-family residential (R1) and open space (OS) and designated as High Density Residential. A few unpaved dirt roads and trails cross the site.

VISUAL CHARACTER OF THE SURROUNDING AREA

The project is north of Highway 50, and is generally bound on the north, east, and west by existing single-family residential developments associated with Wilson Boulevard, Platt Circle, and Lone Spruce Drive, respectively. A designated open space area abuts the western boundary of the project site, separating it from the Empire Ranch subdivision located in the City of Folsom. Wilson Boulevard, Saratoga Way, and Iron Point Road currently terminate at the project site (refer to Exhibit 3-2 of this EIR for an aerial view of the site and surrounding area). Land uses south of Highway 50 consist primarily of residential and commercial uses.

Undeveloped land is located approximately 1 mile east, 1.6 miles south, and immediately southwest of Highway 50. The vacant land southwest of Highway 50 is in the City of Folsom and is planned for urban development under the Folsom South of 50 Specific Plan.

VIEWS OF THE PROJECT SITE

Because of the topography of the site and surrounding areas, available views of the site are generally limited to private properties that immediately border the site, to motorists on Highway 50, as well as to motorists on some nearby residential streets within the adjacent subdivisions, primarily where streets terminate at the project site (i.e., Wilson Boulevard, Saratoga Way, and Iron Point Road). Views of the site from the residential subdivision to the west (in the City of Folsom) are generally limited to the large hillside, which traverses the western edge of the project site and substantially obstructs the eastward views to the internal portion of the site. Beyond the immediately adjacent residential subdivisions, partial views of the site are also available from surrounding hilltops and ridgelines in the project vicinity, although views of the site from some of these locations are obstructed by existing structures, trees, and bushes, are distant, and generally blend with surrounding developed and undeveloped areas.

4.6.2 Regulatory Setting

FEDERAL

There are no federal programs or policies addressing visual resources that pertain to the project.

STATE

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation (Caltrans). The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view (Caltrans 2013).

The program includes a list of eligible highways and officially designated scenic highways, and includes a process for the designation of official State or County Scenic Highways. Highways closest to the project site that are designated as Eligible or Officially Designated State Scenic Highways include portions of Highway 50 and Highway 89, both located approximately 16 miles west of the project site (DOT undated).

LOCAL

El Dorado County General Plan

General plan Land Use Element policies that are applicable to visual resources within and in the vicinity of the site are outlined below.

- ▲ **Policy 2.3.1.1:** The County shall continue to enforce the tree protection provisions in the Grading Erosion and Sediment Control Ordinance and utilize the hillside road standards.
- ▲ **Policy 2.3.2.1:** Disturbance of slopes 30 percent or greater shall be discouraged to minimize the visual impacts of grading and vegetation removal.

- ▲ **Policy 2.5.1.1:** Low intensity land uses shall be incorporated into new development projects to provide for the physical and visual separation of communities. Low intensity land uses may include any one or a combination of the following: parks and natural open space areas, special setbacks, parkways, landscaped roadway buffers, natural landscape features, and transitional development densities.
- ▲ **Policy 2.8.1.1:** Development shall limit excess nighttime light and glare from parking area lighting, signage, and buildings. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, sport field lighting, and other significant light sources, that could reduce effects from nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features in rural areas to further reduce excess nighttime light.
- ▲ **Policy 7.3.3.5:** Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.
- ▲ **Policy 7.3.4.1:** Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.

4.6.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ have a substantial adverse effect on a scenic vista;
- ▲ substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▲ substantially degrade the existing visual character or quality of the site and its surroundings; or
- ▲ create a new source of substantial light or glare that would adversely affect day or night-time views in the area.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The project site is not visible from a designated state scenic highway or county scenic road. Officially designated scenic highways within El Dorado County include segments of Highway 50 and Highway 89, both east of Placerville and located approximately 16 miles east of the project site. In addition, the *El Dorado County General Plan* does not designate any roadways within the project vicinity as “county scenic roads” and there are no officially designated or eligible scenic highways within the vicinity of the site. Therefore, the proposed project would not result in damage to scenic resources within view of a state scenic highway or locally designated roadways. Impacts to scenic resources would not occur and are not discussed further in this EIR.

METHODS OF ANALYSIS

Evaluation of potential aesthetic and visual resource impacts are based on a review of visual simulations of the proposed project and documents pertaining to the project site, including the *El Dorado County General Plan*. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policies presented above.

IMPACTS AND MITIGATION MEASURES

Impact 4.6-1: Scenic vista impacts.

Development of the proposed project would not obstruct views of existing scenic vistas or important scenic resources, as no such views are currently available from public vantage points surrounding the site. Therefore, the proposed project would result in a **less-than-significant** impact to scenic vistas.

El Dorado County has not yet prepared or adopted a Scenic Corridor Ordinance (as outlined in *El Dorado County General Plan Policy 2.6.1.1*) to identify scenic routes and important viewsheds within the county. While Highway 50 east of Placerville and Highway 89 are officially designated as California State Scenic Highways, and Highway 49 is an eligible State Scenic Highway, but not officially designated, these routes are not visible from the project site, nor is the site visible from these highways.

Exhibit 5.3-1 of the El Dorado County General Plan EIR identifies scenic viewpoints. The project site is not designated as an important public viewpoint. The site is located approximately 2.5 miles east from Bass Lake Grade, a scenic viewpoint of the Sacramento Valley looking west on eastbound Highway 50. However, the view of the Sacramento Valley is located on the south side of Highway 50 and would, therefore, be unaffected by development of the project site. In addition, the project site is not located within a Design Review-Scenic Corridor combining district as identified by the County Zoning Map (El Dorado County 2003). Therefore, the proposed project would result in a **less-than-significant** impact to scenic vistas.

Mitigation Measures

No mitigation is required.

Impact 4.6-2: Visual character and quality impacts.

Existing topographical and landscape features would be maintained where feasible and open space buffers would visually separate the new development from existing adjacent developments. Most onsite rock outcroppings would be removed from the site, but they are not considered significant geologic or visual features and are commonly found throughout El Dorado County. Although some trees would be removed, most of the existing oak trees located in proposed open space areas, along the stream corridor, in the northwest corner of the site, and along the eastern project boundary would be retained, and trees would be planted throughout the site, consistent with surrounding neighborhood and park landscaping. The change in character of the project site, once developed, would be visually compatible with surrounding existing residential neighborhoods to the north, east, and west. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings and this impact would be **less than significant**.

The project site currently consists of hilly terrain covered by non-native grasslands, scattered stands of mature trees, dirt roads, and a perennial stream running through the center of the site. Development of the site with 317 new residential units along with associated open space areas, parks, landscaping and roadway improvements would alter the existing visual character of the site from an open, undeveloped landscape to suburban development.

Consistent with general plan Policy 2.5.1.1, low intensity land uses would be incorporated into the project design, providing for the physical and visual separation of the proposed development from adjacent residential communities to the north and east and Highway 50 to the south. Larger lots would be located along the eastern boundary of the project site, with smaller, higher density lots concentrated within the interior and western portion of the project site. With the exception of the eastern project boundary and a portion of the northern boundary, much of the site's perimeter would be maintained as open space or parks, preserving a natural buffer between existing residential subdivisions of similar residential densities and Highway 50. Parks would be located south of Saratoga Way, between Saratoga Way and Highway 50, and at

the northwest corner of Saratoga Way and Wilson Blvd. A large swath of open space would be preserved around the perennial stream that crosses north to south through the center of the project site. Internal roadways would also be landscaped. Pedestrian and circulation amenities would also contribute to the visual character and quality of the new development.

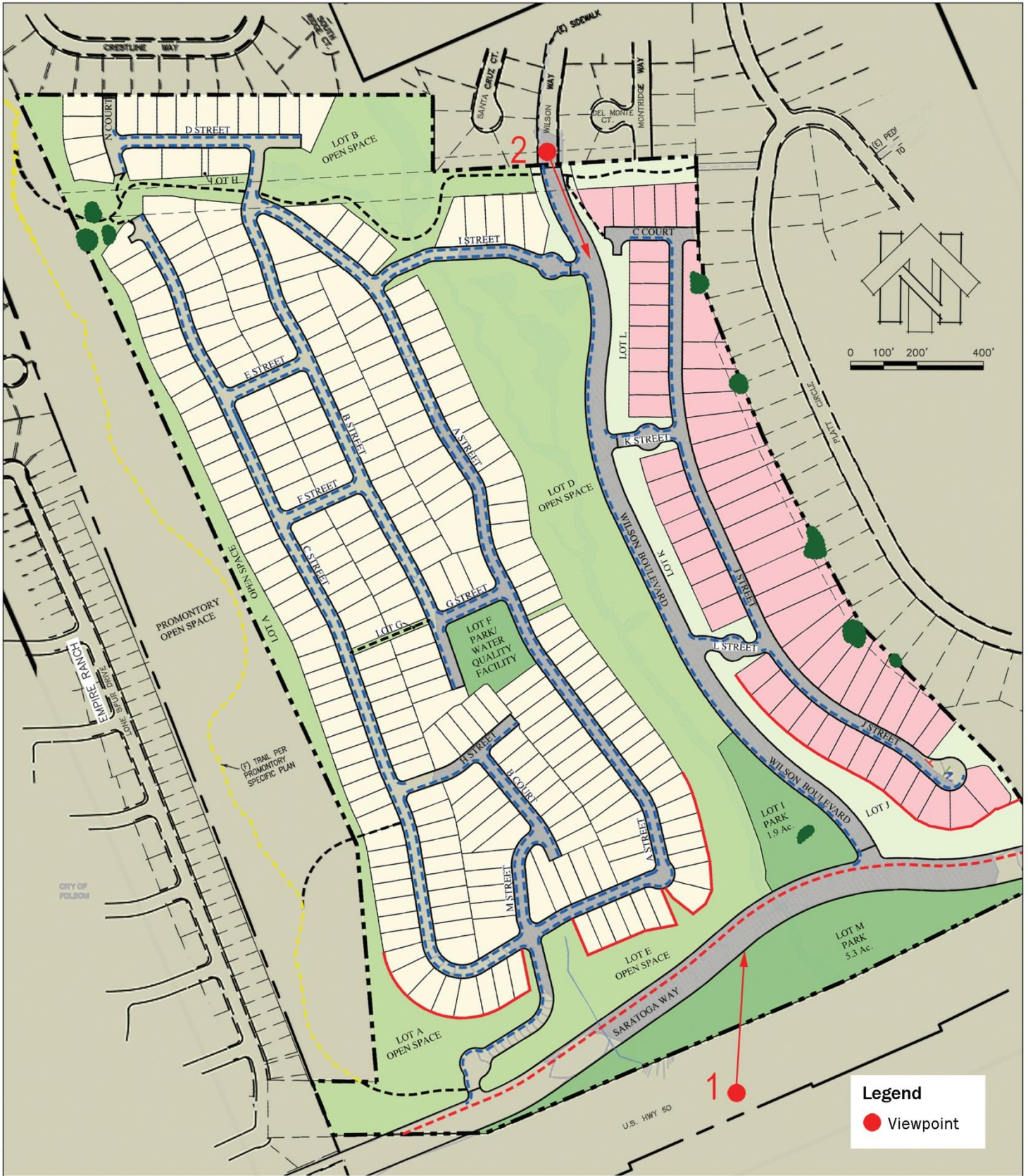
Two photosimulations are provided in Exhibits 4.6-1, 4.6-2, and 4.6-3 that show the change in the visual character of the site as represented by a conceptual computer-generated simulation of the proposed project. (Note that the photosims presented in this Draft EIR are conceptual and are intended to show the basic 3-D layout of the project from specific viewpoints. Specific design features shown in these models, such as structural elevations, building materials, paint color, and landscaping are generic or typical and are not intended to be representative of the actual specific design elements.) The viewpoints selected for the photosimulations represent two important views of the project site: from eastbound Highway 50 looking north, and from the existing terminus of Wilson Blvd. looking south onto the site. As shown in these photosimulations, the visual change to the project site would be consistent with the surrounding residential development.

Although tree removal would occur onsite, most of the existing trees located within proposed open space areas, along the stream corridor, northwest corner of the site, and eastern project boundary would be retained to maintain some of the existing natural character of the site and new trees would be planted throughout the site, consistent with surrounding neighborhood and park landscaping. Incorporation of existing natural elements (such as surface waters and natural vegetation) into project design as proposed by the project is typical of residential subdivisions in El Dorado Hills.

In addition, the existing topography on the site would be retained, where feasible. Cut and fill would be balanced on site and development on slopes greater than 30 percent would be minimized. Small areas with greater than 30 percent slopes are scattered throughout the project site, but are concentrated in the northwest corner of the project site adjacent to the Promontory Open Space. Overall, 3.45 acres, or 2.8 percent of the site is at a 30 percent to 40 percent natural slope, while 0.46 acre, or 0.4 percent of the site, is at 40 percent natural slope or greater. The proposed project would be consistent with general plan Policy 2.3.2.1, which discourages development of slopes 30 percent or greater to minimize the visual impacts of grading and vegetation removal. However, while the sloped area adjacent to the Promontory Open Space would not be developed, it would be graded to 2:1 slopes. Assuming all slopes over 30 percent are graded, as much as 3.91 acres of sloped terrain could be altered. Most onsite rock outcroppings would be removed from the site but are not considered significant geologic or visual features and are commonly found throughout El Dorado County.

Mitigation Measures

No mitigation is required.



Source: Square One 2015

X14010119 01 019

Exhibit 4.6-1

Viewpoint Locations



Viewpoint 1 Eastbound Highway 50 Looking North (Existing)



Viewpoint 1 Eastbound Highway 50 Looking North (Photosimulation)



Source: Square One 2015

X14010119 01 017

Viewpoint 2 Wilson Boulevard Terminus Looking South (Existing)



Viewpoint 2 Wilson Boulevard Terminus Looking South (Photosimulation)



Source: Square One 2015

X14010119 01 018

Exhibit 4.6-3

Viewpoint 2 Photosimulation



Impact 4.6-3: Light and glare impacts.

The proposed residential development would include indoor lighting and outdoor lighting for safety purposes. The proposed roadways, parks, and pathways would also include outdoor safety lighting. These new sources of light would be visible from a distance at night. Because the project site is located in an area with substantial, existing suburban development, the new light sources would be consistent with, and blend in with that of surrounding suburban development. Compliance with general plan Policy 2.8.1.1 and Section 130.14.170 of the Zoning Ordinance before building permit issuance would ensure that light and glare created by the proposed development would be the minimum required, and comparable to that of surrounding residential neighborhoods. The impact would be **less than significant**.

The project site is currently undeveloped and does not contain existing lighting. With development of the project, sources of nighttime lighting would be added and would moderately increase nighttime lighting in the area with a type and intensity of lighting consistent with residential neighborhoods located north, east, and west of the project site. When viewed from more distant areas, the lighting associated with the residential development could appear to increase skyglow in the area because the existing project site is currently dark. Because parks and open space would generally be located around the perimeter of the site, nighttime lighting in these locations would be limited.

Residential development and streets to the north, east and west currently produce a moderate amount of nighttime lighting from street lighting, residential interiors, and the like. Because light sources from the project would be consistent with the type and intensity of existing lighting, the existing, ambient condition would not substantially change. Further, proposed lighting would also be placed to ensure it illuminates only the intended areas and does not penetrate into residential communities. Development on the project site could also increase daytime glare because of an increase in the number of windows and use of certain types of building materials. However, use of non-reflective building materials is proposed as part of the project. Therefore, impacts associated with the creation of light or glare, such that it adversely affects daytime or nighttime views in the area, would be **less than significant**.

Mitigation Measures

No mitigation is required.

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4.7 TRANSPORTATION AND CIRCULATION

This section describes existing traffic and circulation in the project area. Regulations and policies affecting transportation and circulation are discussed, and impacts are identified that may result from project implementation. Mitigation measures are recommended to reduce potential impacts, where appropriate. This section was prepared based on a Traffic Impact Analysis for the proposed project prepared by Kimley-Horn and Associates (Appendix B).

In response to the Notice of Preparation, comment letters were submitted that expressed concerns related to increased traffic in the surrounding neighborhoods and along Highway 50; potential conflicts with pedestrians and motorists along Saratoga Way, Wilson Boulevard, and Finders Way; general traffic safety; conflicting trip counts associated with previous traffic studies; and construction-related traffic.

4.7.1 Environmental Setting

This section describes the existing transportation system in the vicinity of the proposed project. Existing roadway operations are described followed by an explanation of the methods used for the traffic analysis. The project study area, project site, and study intersections are illustrated in Exhibit 4.7-1. Existing roadway operation is expressed in a qualitative measure called level of service (LOS). LOS ranges from A (best), which represents minimal delay for motorists, to F (worst), which represents heavy delay for motorists and a facility that is operating at or near its functional capacity.

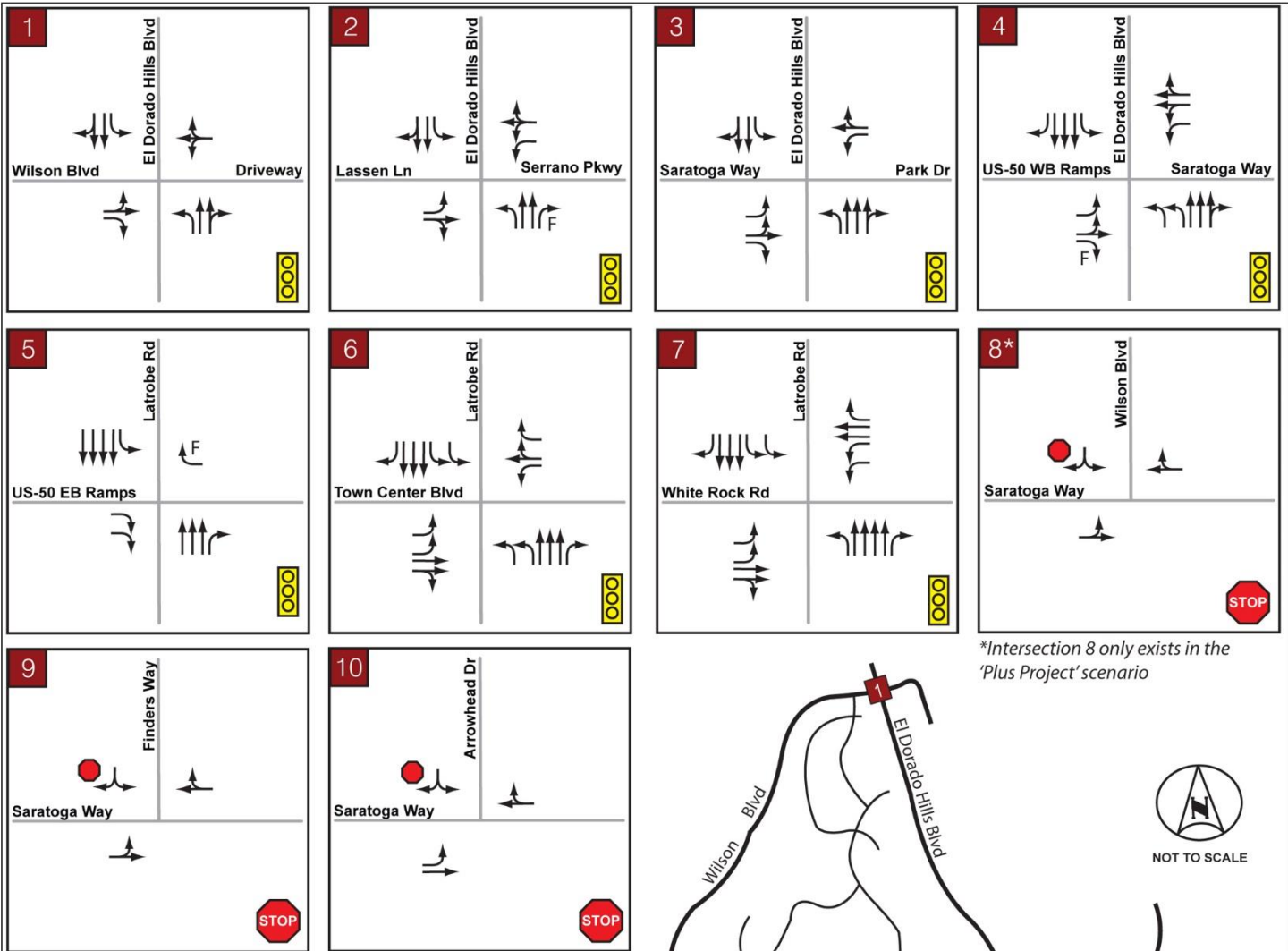
PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the project.

Highway 50 is an east-west freeway located south of the project site. Generally, Highway 50 serves all of El Dorado County's major population centers and provides connections to Sacramento County to the west and the State of Nevada to the east. Primary access to the project site from Highway 50 is provided at the El Dorado Hills Boulevard/Latrobe Road interchange. Within the general project area, Highway 50 currently serves approximately 90,000 vehicles per day (vpd) west of El Dorado Hills Boulevard/Latrobe Road.

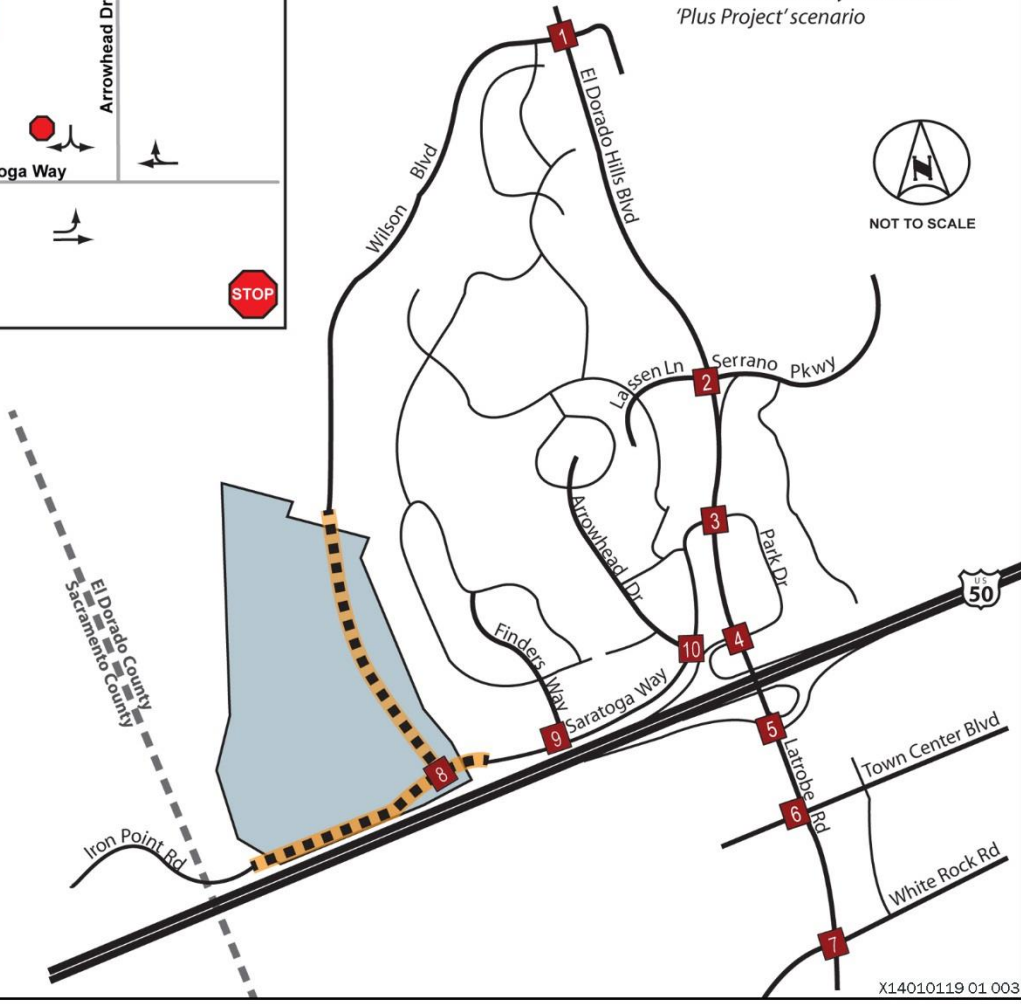
El Dorado Hills Boulevard is a north-south arterial roadway that provides a primary connection to Highway 50 for western El Dorado County. South of Highway 50, El Dorado Hills Boulevard becomes Latrobe Road. North of the Highway 50 interchange area, this roadway carries approximately 30,000 vpd with three through lanes in each direction. South of the interchange this roadway carries approximately 29,700 vpd, also with three travel lanes in each direction.

Saratoga Way is currently a two-lane roadway which parallels the north side of Highway 50 and terminates approximately 2,500-feet east of the El Dorado County/Sacramento County line. This roadway has long been planned as a four-lane divided facility (to be initially constructed as a two-lane roadway) providing vital connectivity between El Dorado Hills and Folsom, north of Highway 50. The proposed project includes the completion of this roadway whereby Saratoga Way would be extended west to the County line at which point it would connect with existing Iron Point Road in the City of Folsom. The extension of Saratoga Way to Iron Point Road is anticipated to alleviate traffic congestion along Highway 50 in western El Dorado County by providing a viable alternate route to the freeway for relatively short trips between these two communities.



LEGEND

- # Study Intersection
- STOP Stop Controlled
- Signalized
- F Free Right Turn
- Proposed Roadways
- Project Site



Kimley»Horn
Source: Kimley-Horn 2015

Exhibit 4.7-1

Traffic Study Area and Existing Lane Configurations



Similar to Saratoga Way, the proposed project would extend Wilson Boulevard from its existing terminus to provide connectivity to the aforementioned extension of Saratoga Way. This improved connectivity is anticipated to further alleviate traffic congestion in the area by providing an alternate route to El Dorado Hills Boulevard for traffic originating from or destined to points to the north. Wilson Boulevard currently carries approximately 5,000 vpd near El Dorado Hills Boulevard.

White Rock Road is an east-west arterial roadway that parallels Highway 50 to the south, connecting Rancho Cordova on the west with Latrobe Road in El Dorado County on the east. White Rock Road, which becomes Silva Valley Parkway north of Highway 50, accommodates approximately 10,500 vpd in the vicinity of Latrobe Road.

Potentially Affected Roads and Intersections

The transportation facilities selected for the analysis were based on coordination with the El Dorado County Community Development Agency and the City of Folsom Public Works Department. The following transportation facilities are analyzed in this evaluation:

Intersections:

1. El Dorado Hills Boulevard at Wilson Boulevard
2. El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane
3. El Dorado Hills Boulevard at Saratoga Way/Park Drive
4. El Dorado Hills Boulevard at Highway 50 Westbound Ramps
5. Latrobe Road at Highway 50 Eastbound Ramps
6. Latrobe Road at Town Center Boulevard
7. Latrobe Road at White Rock Road
8. Saratoga Way at Wilson Boulevard (*Future*)
9. Saratoga Way at Finders Way
10. Saratoga Way at Arrowhead Drive

Roadway Segments:

1. Saratoga Way, west of Wilson Boulevard
2. Saratoga Way, east of Wilson Boulevard

Freeway:

1. Highway 50 Mainline
 - a. Eastbound, west of El Dorado Hills Boulevard/Latrobe Road
 - b. Westbound, west of El Dorado Hills Boulevard/Latrobe Road
 - c. Eastbound, between Latrobe Road off-ramp and Latrobe Road on-ramp
 - d. Westbound, between El Dorado Hills Boulevard off-ramp and El Dorado Hills Boulevard on-ramp
 - e. Eastbound, east of El Dorado Hills Boulevard/Latrobe Road
 - f. Westbound, east of El Dorado Hills Boulevard/Latrobe Road
2. Highway 50 Ramps
 - a. Eastbound, diverge to Latrobe Road
 - b. Eastbound, diverge to El Dorado Hills Boulevard
 - c. Eastbound, merge from Latrobe Road
 - d. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
 - e. Westbound, merge from El Dorado Hills Boulevard/Latrobe Road

EXISTING CONDITIONS

Intersection and Freeway Operation

Operating conditions during the weekday a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project, as well as the highest volumes on the local transportation

network. These counts were conducted between the hours of 6:30 a.m. and 9:30 a.m., and 3:30 p.m. and 6:30 p.m.

Eight weekday a.m. and p.m. peak period intersection turning movement traffic counts were conducted in November 2014 for study intersections 1 through 6, and 9 and 10. Counts for study intersection 7 were completed in September 2014, and data for intersection 8 could not be collected as it does not currently exist. Freeway mainline volumes were obtained from the California Department of Transportation’s (Caltrans’) Performance Measurement System using data from September 2014.

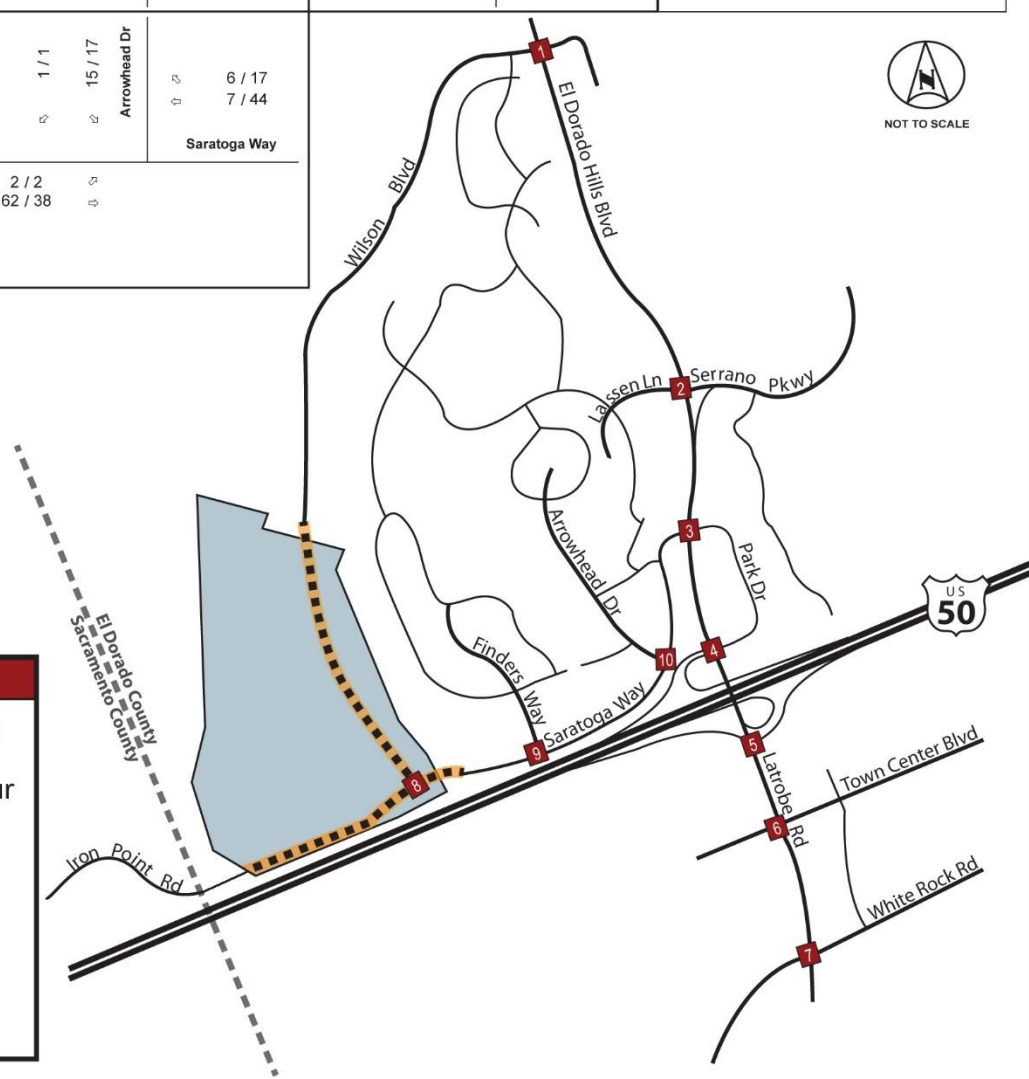
Intersection locations and existing (2014) peak-hour turn movement volumes are presented in Exhibit 4.7-2, and the traffic count data sheets are provided in Appendix B. Tables 4.7-1 and 4.7-2 present the peak-hour intersection and freeway operating conditions for this analysis scenario, and Table 4.7-3 presents roadway segment operating conditions. As indicated in these tables, the study intersections operate from LOS A to LOS E during the a.m. and p.m. peak hours. The freeway facilities are also shown to operate from LOS A to LOS E during the peak-hours. The study roadway segments operate at LOS A during peak a.m. and p.m. hours.

Table 4.7-1 Existing (2014) Intersection Levels of Service					
ID	Intersection	Control	Peak Hour	Existing (2014)	
				Delay (seconds)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	20.8	C
			PM	22.5	C
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	44.2	D
			PM	21.5	C
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	22.4	C
			PM	22.0	C
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	29.2	C
			PM	35.0	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	31.0	C
			PM	11.7	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	27.7	C
			PM	73.8	E
7	Latrobe Road at White Rock Road	Signal	AM	36.2	D
			PM	43.7	D
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ¹	AM	-	-
			PM	-	-
9	Saratoga Way at Finders Way	SSSC ¹	AM	7.7 (8.8 southbound)	A
			PM	4.3 (8.9 southbound)	A
10	Saratoga Way at Arrowhead Drive	SSSC ¹	AM	1.8 (9.1 southbound)	A
			PM	1.7 (9.2 southbound)	A

1: Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.

Source: Kimley-Horn 2015

<p>1</p> <table border="1"> <tr> <td>73 / 47 ↔ 1324 / 720 ↔ El Dorado Hills Blvd</td> <td>↔ ↔ ↔ ↔ 1 / 4 0 / 0 3 / 4</td> </tr> <tr> <td>Wilson Blvd</td> <td></td> </tr> <tr> <td>130 / 36 0 / 0 173 / 116</td> <td>↔ ↔ ↔ ↔ 57 / 181 522 / 1175 10 / 3</td> </tr> </table>	73 / 47 ↔ 1324 / 720 ↔ El Dorado Hills Blvd	↔ ↔ ↔ ↔ 1 / 4 0 / 0 3 / 4	Wilson Blvd		130 / 36 0 / 0 173 / 116	↔ ↔ ↔ ↔ 57 / 181 522 / 1175 10 / 3	<p>2</p> <table border="1"> <tr> <td>17 / 36 ↔ 1418 / 769 ↔ El Dorado Hills Blvd</td> <td>↔ ↔ ↔ ↔ 86 / 20 18 / 18 563 / 295</td> </tr> <tr> <td>Lassen Ln</td> <td>Serrano Pkwy</td> </tr> <tr> <td>22 / 28 18 / 15 70 / 62</td> <td>↔ ↔ ↔ ↔ 40 / 104 481 / 1311 163 / 452</td> </tr> </table>	17 / 36 ↔ 1418 / 769 ↔ El Dorado Hills Blvd	↔ ↔ ↔ ↔ 86 / 20 18 / 18 563 / 295	Lassen Ln	Serrano Pkwy	22 / 28 18 / 15 70 / 62	↔ ↔ ↔ ↔ 40 / 104 481 / 1311 163 / 452	<p>3</p> <table border="1"> <tr> <td>21 / 29 ↔ 1890 / 927 ↔ El Dorado Hills Blvd</td> <td>↔ ↔ ↔ ↔ 71 / 265 7 / 14 9 / 43</td> </tr> <tr> <td>Saratoga Way</td> <td>Park Dr</td> </tr> <tr> <td>22 / 50 15 / 23 116 / 71</td> <td>↔ ↔ ↔ ↔ 63 / 114 591 / 1552 21 / 67</td> </tr> </table>	21 / 29 ↔ 1890 / 927 ↔ El Dorado Hills Blvd	↔ ↔ ↔ ↔ 71 / 265 7 / 14 9 / 43	Saratoga Way	Park Dr	22 / 50 15 / 23 116 / 71	↔ ↔ ↔ ↔ 63 / 114 591 / 1552 21 / 67	<p>4</p> <table border="1"> <tr> <td>1064 / 524 ↔ 906 / 469 ↔ El Dorado Hills Blvd</td> <td>↔ ↔ ↔ ↔ 20 / 53 100 / 92 95 / 142</td> </tr> <tr> <td>US-50 WB Ramps</td> <td>Saratoga Way</td> </tr> <tr> <td>150 / 187 75 / 73 664 / 334</td> <td>↔ ↔ ↔ ↔ 452 / 1151 505 / 1493 109 / 283</td> </tr> </table>	1064 / 524 ↔ 906 / 469 ↔ El Dorado Hills Blvd	↔ ↔ ↔ ↔ 20 / 53 100 / 92 95 / 142	US-50 WB Ramps	Saratoga Way	150 / 187 75 / 73 664 / 334	↔ ↔ ↔ ↔ 452 / 1151 505 / 1493 109 / 283
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LEGEND

- # Study Intersection
- XX/YY AM/PM Peak-Hour Volumes
- Project Site
- New Roadway Connection
- County Line

Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 005

Exhibit 4.7-2 Intersection Locations and Existing (2014) Peak Hour Traffic Volumes



Table 4.7-2 Existing (2014) Freeway Facilities Levels of Service					
Highway 50				Existing (2014)	
Direction	Segment	Type	Peak Hour	Density ¹	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	12.7	B
			PM	21.2	C
	Latrobe Road southbound off ramp	Diverge	AM	22.8	C
			PM	32.3	D
	El Dorado Hills Boulevard northbound off ramp	Diverge	AM	126	B
			PM	26.5	C
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	5.2	A
			PM	11.7	B
	Latrobe Road on ramp	Merge	AM	13.4	B
			PM	24.2	C
East of Latrobe Road on ramp	Basic	AM	7.3	A	
		PM	16.3	B	
Westbound	East of El Dorado Hills Boulevard off ramp	Basic	AM	28.8	D
			PM	14.5	B
	El Dorado Hills Boulevard off ramp	Diverge	AM	35.2	E
			PM	21.2	C
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	19.2	C
			PM	10.1	A
	El Dorado Hills Boulevard on ramp	Merge	AM	35.7	E
			PM	26.8	C
	West of El Dorado Hills Boulevard on ramp	Basic	AM	41.2	E
			PM	25.3	C

Notes: **Bold** represents unacceptable operations
 1: Density measured in passenger cars/mile/lane
 Source: Kimley-Horn 2015

Table 4.7-3 Existing (2014) Roadway Segment Levels of Service					
Location	Peak-Hour	Analysis Direction	LOS	PFFS	v/c
Saratoga Way, East of Project	AM	WB	A	92.1	0.01
		EB	A	92.5	0.06
	PM	WB	A	91.9	0.05
		EB	A	91.9	0.04

Notes: PFFS=percent free-flow speed; LOS=level of service; v/c=volume to capacity
 Source: Kimley-Horn 2015

Non-Auto Transportation Facilities

Existing Pedestrian Facilities

Pedestrian facilities in the project vicinity include sidewalks, as well as mixed-use paths shared with bicycles (see below for descriptions and locations of bicycle facilities). Sidewalks are provided on:

- ▲ El Dorado Hills Boulevard,
- ▲ Wilson Boulevard,
- ▲ Iron Point Road, and
- ▲ Finders Way.

Existing Bicycle Facilities

The *Highway Design Manual* (Caltrans 2006) classifies bikeways into three categories:

- ▲ Class I Multi-Use Path: a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- ▲ Class II Bike Lane: a striped and signed lane for one-way bike travel on a street or highway.
- ▲ Class III Bike Route: signing only for shared use with motor vehicles within the same travel lane on a street or highway.

Bicycle Facilities within El Dorado Hills include:

- ▲ Class II bike lanes on Sophia Parkway.
- ▲ Class II bike lanes on White Rock Road from Joerger Cut-Off Road to Latrobe Road.
- ▲ Class II bike lanes on White Rock Road from Latrobe Road to Carson Crossing Road.
- ▲ Class II bike lanes on Latrobe Road from Golden Foothill Parkway to Town Center Drive.
- ▲ Class II bike lanes on Green Valley Road, 400 feet west of El Dorado Hills Boulevard to the county line.
- ▲ Class I bike path along El Dorado Hills Boulevard from near Serrano Parkway to St Andrews Drive.
- ▲ Class I bike path along Bass Lake Road from Silver Dove Way to Serrano Parkway.
- ▲ Three bike route signs, one at Harvard Way and two at Governor's Drive intersection.

Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area.

Existing Transit Services and Facilities

Transit Services

El Dorado Transit offers the following services:

- ▲ Sacramento Commuter: Weekday Commuter Service from Park & Ride locations throughout El Dorado County to worksites in downtown Sacramento.
- ▲ Iron Point Connector: Monday through Friday service between Placerville and the Iron Point Light Rail Station in Folsom. Also serves the Folsom Lake College main campus and Kaiser Folsom.
- ▲ Dial-A-Ride: Routes serving the western slope of El Dorado County Monday through Friday with limited Saturday service. Passengers can connect from one route to another in Placerville for travel within the county.

The project site is served by the Iron Point Connector with park-and-ride facilities and connections to local transit services. The closest park and ride lot is located less than 1 mile from the project site, south of Highway 50 at the northeast corner of the Latrobe Road/White Rock Road intersection.

FUTURE CONDITIONS

Near Term (2024) Conditions

Traffic volumes for the Near Term (2024) conditions were developed using the County's travel demand model (TDM) year 2035 and year 2010 land use conditions. Traffic volume estimates assume turn movements using 2010 and 2035 land use scenarios that both include a Saratoga Way extension (so that growth could be reasonably assessed on common links in the proximity of the project). A straight line analysis was conducted to establish year 2024 turn movement estimates. The difference between the resulting 2024 traffic estimate and the 2010 model results (the growth) was then added to Existing (2014) traffic volumes to establish base Near-Term (2024) traffic estimates for this study.

The Near Term scenario includes operation of the proposed extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange, which are both planned in the County’s Capital Improvement Program (CIP). Adjustment factors were developed based on draft Central El Dorado Hills Specific Plan intersection turning movement and freeway estimates. These factors were then applied to future traffic estimates for this project in an effort to maintain consistency between model post-processing completed for this project and other on-going project analyses in the county.

Near-Term (2024) peak-hour turn movement volumes are presented in Exhibit 4.7-3. Tables 4.7-4 and 4.7-5 present the peak-hour intersection and freeway operating conditions for this analysis scenario. As shown, LOS would range from LOS B to LOS F for intersections and LOS B to LOS E for freeway operating conditions.

Table 4.7-4 Near Term (2024) Intersection LOS					
ID	Intersection	Control	Peak Hour	Near Term (2024) ¹	
				Delay (sec)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	24.3	C
			PM	61.6	E
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	57.7	E
			PM	50.4	D
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	167.6	F
			PM	149.2	F
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	47.3	D
			PM	34.9	C
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	19.2	B
			PM	11.7	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	29.7	C
			PM	84.1	F
7	Latrobe Road at White Rock Road	Signal	AM	34.9	C
			PM	69.9	E
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ²	AM	-	-
			PM	-	-
9	Saratoga Way at Finders Way	SSSC ²	AM	1.3 (26.9 southbound)	D
			PM	1.3 (44.3 southbound)	E
10	Saratoga Way at Arrowhead Drive	SSSC ²	AM	0.4 (21.4 southbound)	D
			PM	0.4 (27.2 southbound)	D

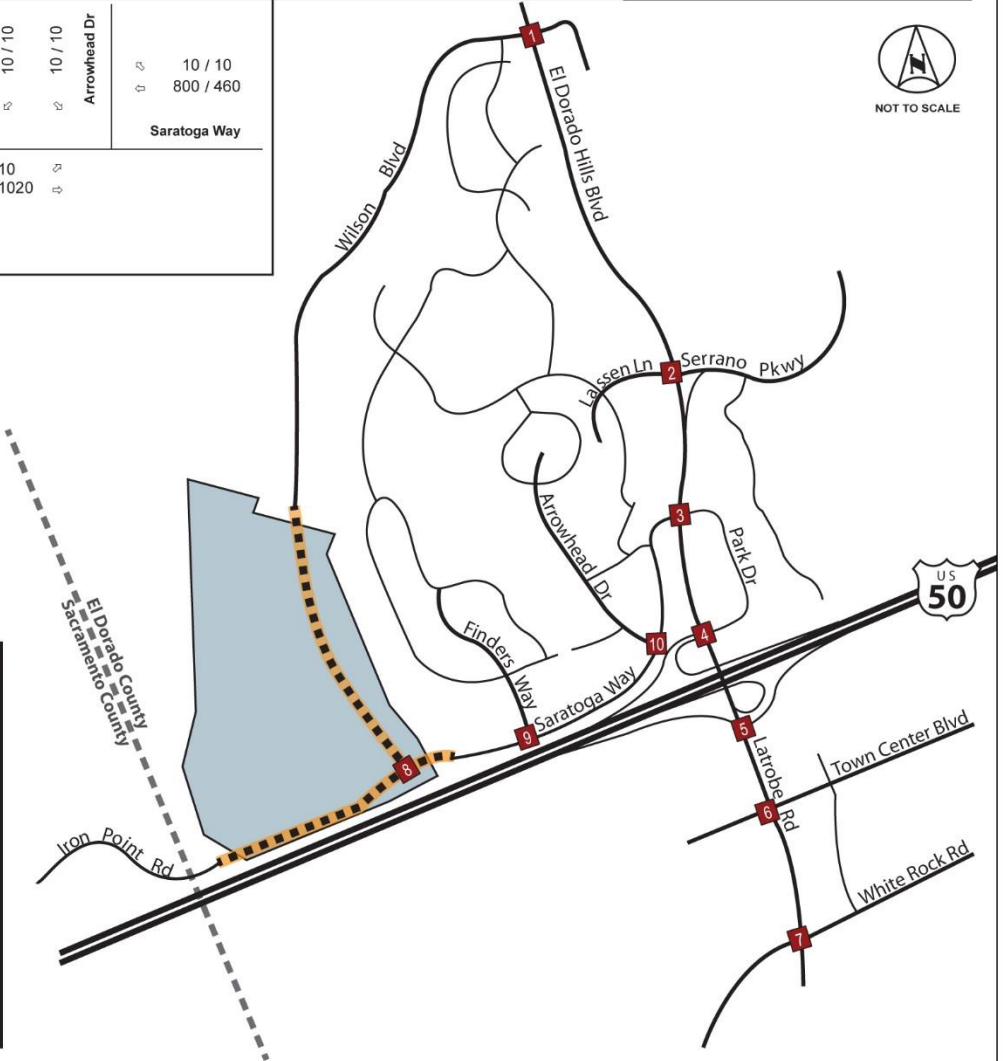
Notes: **Bold** represents unacceptable operations.
 1: Assumes operation of the proposed extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange.
 2: Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.
 Source: Kimley-Horn 2015

1 80 / 60 ↕ 1430 / 750 ↕ El Dorado Hills Blvd ↕ Wilson Blvd 10 / 10 0 / 10 60 / 70 130 / 50 0 / 0 230 / 130 ↕ 70 / 230 630 / 1410 100 / 70	2 20 / 40 ↕ 1620 / 850 ↕ El Dorado Hills Blvd ↕ Lassen Ln 90 / 30 20 / 20 660 / 240 30 / 20 20 / 20 70 / 70 ↕ 40 / 120 680 / 1660 160 / 490	3 610 / 220 ↕ 1660 / 800 ↕ El Dorado Hills Blvd ↕ Saratoga Way 70 / 220 80 / 120 70 / 80 160 / 500 110 / 120 100 / 390 ↕ 130 / 120 650 / 1550 50 / 120	4 740 / 270 ↕ 1040 / 940 ↕ El Dorado Hills Blvd ↕ US-50 WB Ramps 40 / 80 100 / 90 90 / 100 260 / 260 80 / 60 610 / 380 ↕ 610 / 1080 530 / 1450 120 / 250
5 1460 / 1190 ↕ 280 / 230 ↕ Latrobe Rd ↕ US-50 EB Ramps 220 / 720 1210 / 670 ↕ 1040 / 2060 380 / 670	6 470 / 40 ↕ 1650 / 1210 ↕ Latrobe Rd ↕ Town Center Blvd 310 / 740 50 / 10 100 / 60 30 / 330 10 / 60 10 / 130 ↕ 70 / 10 1080 / 1660 50 / 130	7 540 / 370 ↕ 1070 / 650 ↕ Latrobe Rd ↕ White Rock Rd 220 / 260 320 / 270 300 / 220 270 / 530 130 / 440 70 / 70 ↕ 50 / 70 710 / 1010 160 / 460	8 Plus Project Only
9 20 / 10 ↕ 40 / 30 ↕ Finders Way ↕ Saratoga Way 10 / 30 800 / 440 0 / 20 330 / 1000 ↕	10 10 / 10 ↕ 10 / 10 ↕ Arrowhead Dr ↕ Saratoga Way 10 / 10 800 / 460 0 / 10 370 / 1020 ↕		



LEGEND

- # Study Intersection
- XX/YY AM/PM Peak-Hour Volumes
- Project Site
- New Roadway Connection
- County Line



Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 020

Exhibit 4.7-3

Near Term (2024) Conditions Peak Hour Traffic Volumes



Table 4.7-5 Near Term (2024) Freeway Facilities LOS					
Highway 50				Near Term (2024) ¹	
Direction	Segment	Type	Peak Hour	Density ²	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	15.3	B
			PM	23.8	C
	Latrobe Road southbound off ramp	Diverge	AM	24.9	C
			PM	32.4	D
	El Dorado Hills Boulevard northbound off ramp	Diverge	AM	16.2	B
			PM	28.3	D
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	8.5	A
			PM	15.5	B
	Latrobe Road on ramp	Merge	AM	18.5	B
			PM	27.8	C
East of Latrobe Road on ramp	Weave ³	AM	-	A	
		PM	-	C	
Westbound	East of El Dorado Hills Boulevard off ramp	Weave ³	AM	-	B
			PM	-	A
	El Dorado Hills Boulevard off ramp	Diverge	AM	28.0	C
			PM	22.2	C
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	22.2	C
			PM	15.7	B
	El Dorado Hills Boulevard on ramp	Merge	AM	36.8	E
			PM	30.4	D
	West of El Dorado Hills Boulevard on ramp	Basic	AM	44.0	E
			PM	30.3	D

Notes: **Bold** represents unacceptable operations
 1: Assumes the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange.
 2: Density measured in passenger cars/mile/lane
 3: Weave segments are analyzed using the Leisch Method, which is not based on density.

Source: Kimley-Horn 2015

Near-term conditions on Saratoga Way were modeled assuming Saratoga Way could be constructed as a two-lane roadway separate from the proposed project. As indicated in Table 4.7-6, under these hypothetical conditions, Saratoga Way would operate at LOS D and E, depending on direction and peak hour.

Table 4.7-6 Near Term (2024) Roadway Segment Levels of Service					
Location	Roadway Segment		Near Term (2024) ¹		
	Peak-Hour	Analysis Direction	LOS	PFFS	v/c
Saratoga Way, West of Project	AM	WB	D	71.1	0.54
		EB	D	73.3	0.25
	PM	WB	D	68.8	0.31
		EB	E	66.5	0.67
Saratoga Way, East of Project	AM	WB	D	70.9	0.53
		EB	D	73.7	0.27
	PM	WB	D	68.1	0.33
		EB	E	65.9	0.68

Notes: PFFS=percent free-flow speed; LOS=level of service; v/c=volume to capacity
 1: Assumes operation of the proposed extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange.

Source: Kimley-Horn 2015

Cumulative (2035) Conditions

As previously stated, the County's 2035 model was modified to include known development projects to create comprehensive year 2035 land use conditions. The following projects were included in the 2035 TDM:

- ▲ Bass Lake Hills Specific Plan
- ▲ Carson Creek Specific Plan
- ▲ Dixon Ranch
- ▲ Promontory
- ▲ Ridgeview
- ▲ San Stino Residential
- ▲ Serrano
- ▲ Valley View Specific Plan
- ▲ Central El Dorado Hills Specific Plan
- ▲ Village of Marble Valley Specific Plan
- ▲ Lime Rock Specific Plan
- ▲ Spanos Apartments

Traffic volumes for this scenario were developed using a process similar to the previous analysis scenarios; the model-generated volume differences between year 2035 and year 2010 were added to existing (2014) volumes to establish conservative cumulative (2035) conditions for this study. These volumes were further refined based on the results of other relevant model results prepared during the course of this study and those provided by the County to reflect differences between 2035 and 2010 conditions. In order to maintain consistency between post-processing model assumptions reflecting the circulation impacts of specific land use and transportation improvements made for this project's analysis and other ongoing project analyses in the County, factors based on draft turn movement and freeway estimates provided by the County the Central El Dorado Specific Plan project were developed and applied to future traffic estimates for this project.

The following capital improvement projects in the immediate vicinity of the project site are anticipated to be completed before year 2035 and are included in this scenario:

- ▲ Saratoga Way (4-Lane) Extension,
- ▲ El Dorado Hills Boulevard at Saratoga Way Intersection Improvements,
- ▲ Highway 50/Silva Valley Parkway Interchange, and
- ▲ Highway 50/Empire Ranch Road Interchange.

Cumulative (2035) lane geometries and peak-hour turn movement volumes are presented in Exhibits 4.7-4 and 4.7-5, respectively. Table 4.7-7 and Table 4.7-8 present the peak-hour intersection and freeway operating conditions for this analysis scenario. As shown, under the Cumulative (2035) scenario, intersections would operate between LOS B and F, freeway facilities would operate between LOS B and D, and segments would operate at LOS A and B.

Cumulative conditions on Saratoga Way were modeled assuming the proposed Saratoga Way extension would be expanded to a four-lane roadway (not included as part of the proposed project). As indicated in Table 4.7-9, under these hypothetical conditions, LOS on Saratoga Way would be LOS A and B, depending on direction and peak hour.

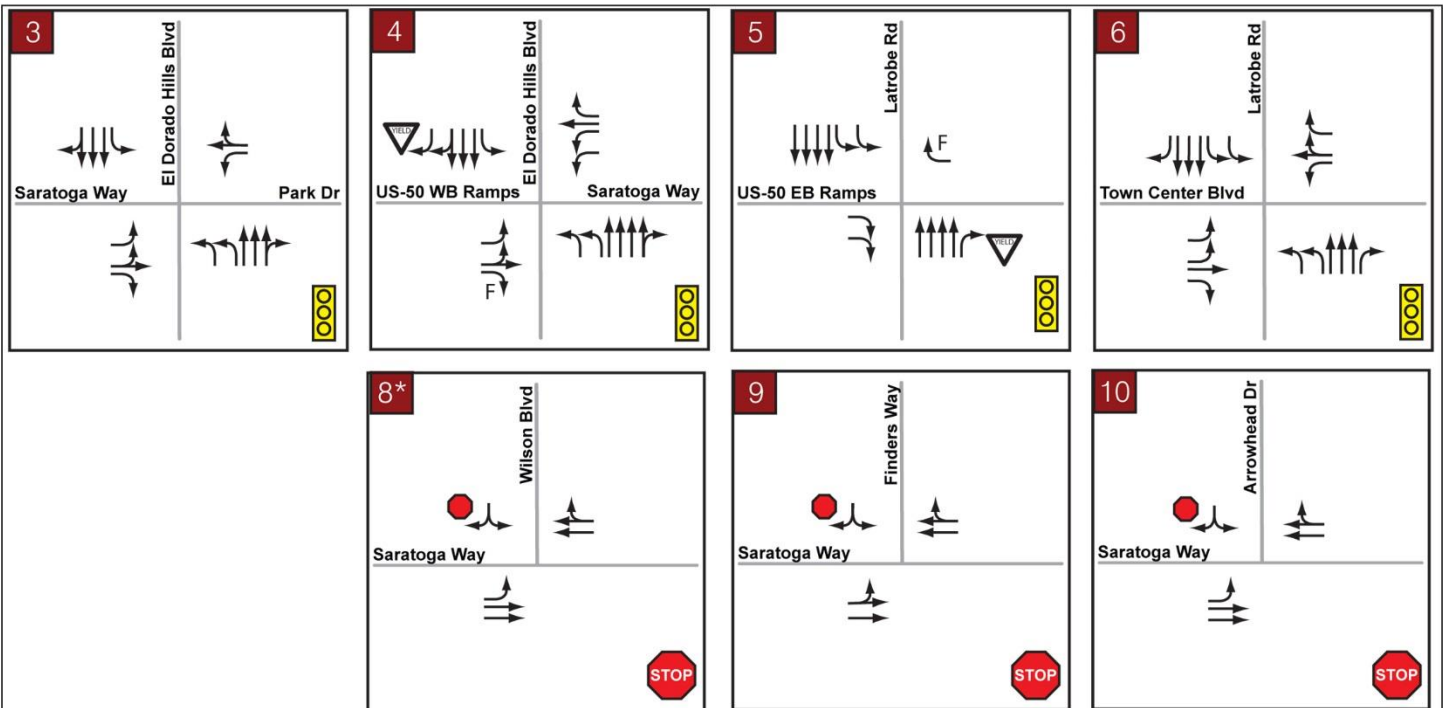
<p>1</p> <p>70 / 70 ↔ 1460 / 750 ↔ El Dorado Hills Blvd</p> <p>20 / 20 ↔ 10 / 20 ↔ 130 / 130</p> <p>Wilson Blvd</p> <p>140 / 60 ↔ 10 / 10 ↔ 290 / 140</p> <p>90 / 260 ↔ 670 / 1340 ↔ 130 / 150</p>	<p>2</p> <p>40 / 60 ↔ 1730 / 880 ↔ 110 / 80 ↔ El Dorado Hills Blvd</p> <p>100 / 40 ↔ 40 / 30 ↔ 650 / 150</p> <p>Lassen Ln</p> <p>Serrano Pkwy</p> <p>60 / 40 ↔ 40 / 40 ↔ 80 / 120</p> <p>50 / 110 ↔ 730 / 1670 ↔ 120 / 480</p>	<p>3</p> <p>710 / 210 ↔ 1680 / 820 ↔ 70 / 120 ↔ El Dorado Hills Blvd</p> <p>80 / 210 ↔ 110 / 110 ↔ 130 / 130</p> <p>Saratoga Way</p> <p>Park Dr</p> <p>160 / 570 ↔ 100 / 140 ↔ 60 / 470</p> <p>80 / 70 ↔ 660 / 1480 ↔ 70 / 170</p>	<p>4</p> <p>630 / 170 ↔ 1170 / 1180 ↔ 70 / 70 ↔ El Dorado Hills Blvd</p> <p>60 / 100 ↔ 100 / 80 ↔ 80 / 50</p> <p>US-50 WB Ramps</p> <p>Saratoga Way</p> <p>240 / 280 ↔ 70 / 50 ↔ 620 / 440</p> <p>900 / 1100 ↔ 510 / 1340 ↔ 130 / 210</p>
<p>5</p> <p>1550 / 1460 ↔ 320 / 210 ↔ Latrobe Rd</p> <p>210 / 520</p> <p>US-50 EB Ramps</p> <p>1080 / 760</p> <p>1330 / 2130 ↔ 510 / 620</p>	<p>6</p> <p>450 / 60 ↔ 1600 / 1490 ↔ 580 / 670 ↔ Latrobe Rd</p> <p>340 / 780 ↔ 50 / 20 ↔ 140 / 50</p> <p>Town Center Blvd</p> <p>50 / 280 ↔ 20 / 60 ↔ 20 / 100</p> <p>40 / 10 ↔ 1450 / 1690 ↔ 20 / 70</p>	<p>7</p> <p>790 / 490 ↔ 860 / 790 ↔ 110 / 360 ↔ Latrobe Rd</p> <p>200 / 270 ↔ 530 / 360 ↔ 360 / 280</p> <p>White Rock Rd</p> <p>340 / 690 ↔ 160 / 540 ↔ 40 / 50</p> <p>20 / 10 ↔ 970 / 810 ↔ 190 / 630</p>	<p>8</p> <p>Plus Project Only</p>
<p>9</p> <p>20 / 10 ↔ 40 / 30 ↔ Finders Way</p> <p>10 / 30 ↔ 870 / 380</p> <p>Saratoga Way</p> <p>10 / 20 ↔ 340 / 1170</p>	<p>10</p> <p>10 / 10 ↔ 10 / 10 ↔ Arrowhead Dr</p> <p>10 / 10 ↔ 870 / 400</p> <p>Saratoga Way</p> <p>10 / 10 ↔ 370 / 1190</p>		

LEGEND

- # Study Intersection
- XX/YY AM/PM Peak-Hour Volumes
- Project Site
- New Roadway Connection
- County Line

Kimley»Horn
Source: Kimley-Horn 2015

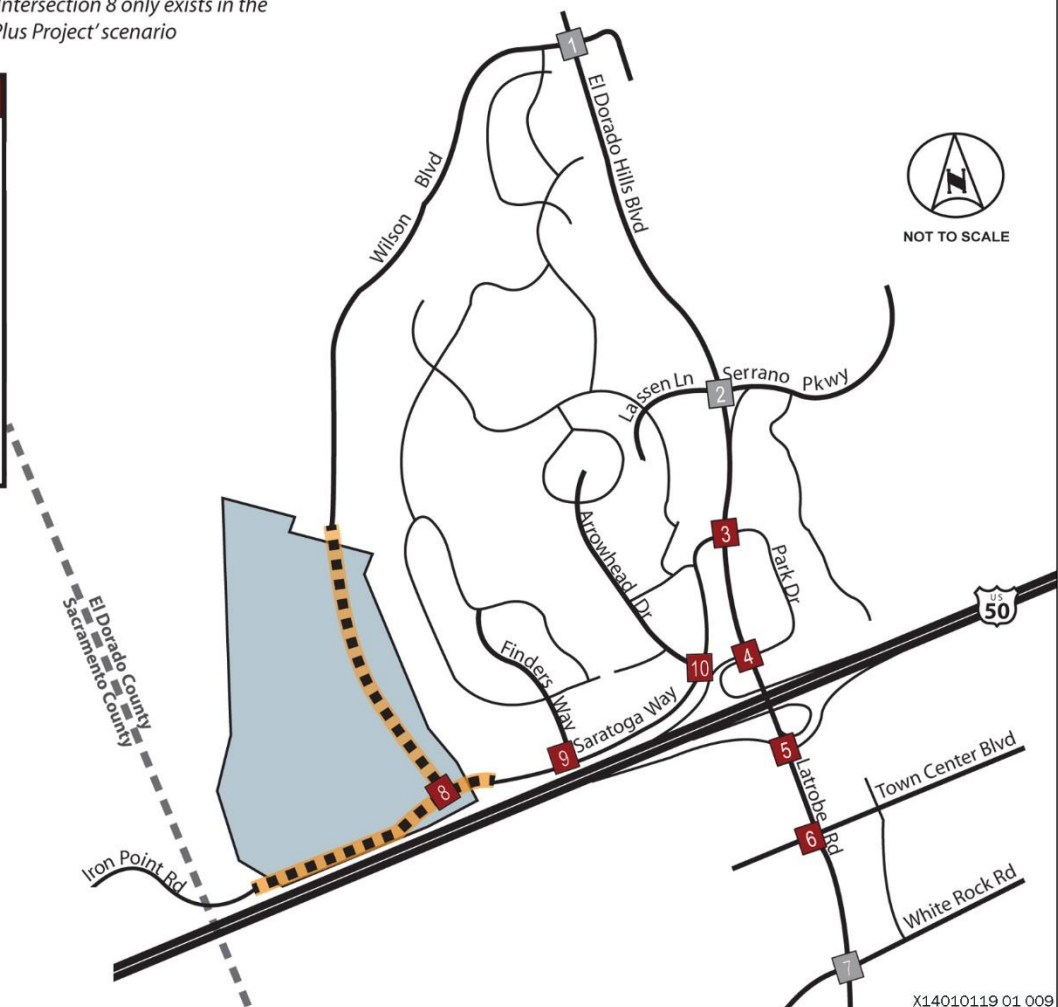
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*Intersection 8 only exists in the 'Plus Project' scenario

LEGEND

- # Study Intersection
- STOP Stop Controlled
- Signalized
- F Free Right Turn
- Right Turn Yield
- Proposed Roadways
- Project Site



Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 009

Exhibit 4.7-5

Cumulative (2035) Conditions Lane Geometries



Table 4.7-7 Cumulative (2035) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative (2035) ¹	
				Delay (sec)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	55.9	E
			PM	40.2	D
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	66.3	E
			PM	29.5	C
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	102.6	F
			PM	112.7	F
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	30.2	C
			PM	37.5	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	16.9	B
			PM	15.9	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	42.5	D
			PM	101.6	F
7	Latrobe Road at White Rock Road	Signal	AM	32.0	C
			PM	60.5	E
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ²	AM	-	-
			PM	-	-
9	Saratoga Way at Finders Way	SSSC ²	AM	1.0 (18.5 southbound)	C
			PM	0.6 (13.3 southbound)	B
10	Saratoga Way at Arrowhead Drive	SSSC ²	AM	0.4 (19.4 southbound)	C
			PM	0.3 (17.0 southbound)	C

Notes: **Bold** represents unacceptable operations.

1: Assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange.

2: Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.

Source: Kimley-Horn 2015

Table 4.7-8 Cumulative (2035) Freeway Facility Levels of Service

Highway 50				Cumulative (2035) ¹	
Direction	Segment	Type	Peak Hour	Density ²	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	13.7	B
			PM	19.0	C
	Latrobe Road southbound off ramp	Diverge	AM	24.4	C
			PM	27.9	C
	El Dorado Hills Boulevard northbound off ramp	Diverge	AM	16.3	B
			PM	23.5	C
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	9.1	A
			PM	13.9	B
	Latrobe Road on ramp	Merge	AM	19.9	B
			PM	24.5	C
	East of Latrobe Road on ramp	Weave ³	AM	-	B
			PM	-	C

Table 4.7-8 Cumulative (2035) Freeway Facility Levels of Service

Highway 50				Cumulative (2035) ¹	
Direction	Segment	Type	Peak Hour	Density ²	LOS
Westbound	East of El Dorado Hills Boulevard off ramp	Weave ³	AM	-	C
			PM	-	B
	El Dorado Hills Boulevard off ramp	Diverge	AM	20.8	C
			PM	19.0	B
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	12.4	B
			PM	11.2	B
	El Dorado Hills Boulevard on ramp	Merge	AM	25.2	C
			PM	21.8	C
	West of El Dorado Hills Boulevard on ramp	Weave ³	AM	-	D
			PM	-	C

Notes: **Bold** represents unacceptable operations

1: Assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange.

2: Density measured in passenger cars/mile/lane

3: Weave segments are analyzed using the Leisch Method, which is not based on density.

Source: Kimley-Horn 2015

Table 4.7-9 Cumulative (2035) Roadway Segment Levels of Service

Roadway Segment			Cumulative (2035) ¹	
Location	Peak-Hour	Analysis Direction	LOS	Density ²
Saratoga Way, West of Project	AM	WB	B	11.1
		EB	A	4.3
	PM	WB	A	4.8
		EB	B	14.8
Saratoga Way, East of Project	AM	WB	A	10.9
		EB	A	4.7
	PM	WB	A	5.1
		EB	B	14.9

1: Assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange

2: Density measured in passenger cars/mile/lane

Source: Kimley-Horn 2015

4.7.2 Regulatory Setting

FEDERAL

There are no federal transportation regulations or policies applicable to the proposed project.

STATE

California Department of Transportation Guide for the Preparation of Traffic Impact Studies

The *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002) provides guidance for the evaluation of traffic impacts to State highway facilities. The document identifies when a traffic impact study is needed and outlines what should be included in the scope of the study.

LOCAL

El Dorado County General Plan

The 2004 El Dorado County General Plan Circulation Map (Figure TC-1 of the General Plan) depicts the proposed circulation system of existing, approved, and planned development in unincorporated El Dorado County through 2025. This circulation system is shown on the General Plan Circulation Map using a set of roadway width classifications developed to guide the County's long-range transportation planning and programming. The General Plan Circulation Map identifies the extension of Saratoga Way to Iron Point Road and the widening of Saratoga Way to four lanes as a planned roadway improvement.

In addition, the following general plan policies are applicable to the project:

▲ **Policy TC-Xa:** The following policies shall remain in effect until December 31, 2018:

Traffic from single-family residential subdivision development projects of five or more parcels of land shall not result in, or worsen, Level of Service F (gridlock, stop-and-go) traffic congestion during weekday, peak-hour periods on any highway, road, interchange or intersection in the unincorporated areas of the county.

1. The County shall not add any additional segments of U.S. Highway 50, or any other roads, to the County's list of roads that are allowed to operate at Level of Service F without first getting the voters' approval or by a 4/5ths vote of the Board of Supervisors.
2. Developer-paid traffic impact fees combined with any other available funds shall fully pay for building all necessary road capacity improvements to fully offset and mitigate all direct and cumulative traffic impacts from new development upon any highways, arterial roads and their intersections during weekday, peak-hour periods in unincorporated areas of the county.

▲ **Policy TC-Xd:** Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table. Level of Service will be as defined in the latest edition of the Highway Capacity Manual (Transportation Research Board, National Research Council) and calculated using the methodologies contained in that manual. Analysis periods shall be based on the professional judgment of the Department of Transportation which shall consider periods including, but not limited to, Weekday Average Daily Traffic (ADT), a.m. peak hour, and p.m. peak hour traffic volumes.

- ▲ **Policy TC-Xe:** For the purposes of this Transportation and Circulation Element, “worsen” is defined as any of the following number of project trips using a road facility at the time of issuance of a use and occupancy permit for the development project:

 - A. A 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or
 - B. The addition of 100 or more daily trips, or
 - C. The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

- ▲ **Policy TC-Xf:** At the time of approval of a tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County’s 10-year CIP.

For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element; or (2) ensure the construction of the necessary road improvements are included in the County’s 20-year CIP.

- ▲ **Policy TC-Xg:** Each development project shall dedicate right-of-way and construct or fund improvements necessary to mitigate the effects of traffic from the project. The County shall require an analysis of impacts of traffic from the development project, including impacts from truck traffic, and require dedication of needed right-of-way and construction of road facilities as a condition of the development. For road improvements that provide significant benefit to other development, the County may allow a project to fund its fair share of improvement costs through traffic impact fees or receive reimbursement from impact fees for construction of improvements beyond the project’s fair share. The amount and timing of reimbursements shall be determined by the County.

- ▲ **Policy TC-Xh:** All subdivisions shall be conditioned to pay the traffic impact fees in effect at the time a building permit is issued for any parcel created by the subdivision.

- ▲ **Policy TC-5a:** Sidewalks and curbs shall be required throughout residential subdivisions, including land divisions created through the parcel map process, where any residential lot or parcel size is 10,000 square feet or less.

El Dorado County Capital Improvement Program and Traffic Impact Mitigation Fee Program

The El Dorado County Capital Improvement Program (CIP) and Traffic Impact Mitigation (TIM) Fee Program are developed and implemented by the County’s Community Development Agency, The CIP is a planning document that identifies capital projects and provides a schedule and funding options. 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 that have value and can be depreciated.

The CIP provides a means for the El Dorado County Board of Supervisors to determine capital priorities. The CIP is updated annually as new information becomes available regarding priorities, funding sources, project cost estimates, and timing.

The TIM Fee Program is the funding mechanism for projects in the CIP which mitigate cumulative traffic impacts identified in the General Plan EIR, and subsequent updates as required in the General Plan. TIM fees are collected at the time of issuance of a building permit. Where an impact is not directly attributed to an individual

development project as determined by General Plan Policies TCx-a through TCx-l, the County considers payment of TIM fees to satisfy a development project's proportionate fair share obligations for the improvements that are in the TIM Fee program. The TIM Fee Program makes up a portion of the funding for the CIP.

El Dorado County Implementation of General Plan Policies

General Plan Policy TC-Xf requires that the County "(1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County's 10-year CIP.

The project is proposed to be developed in phases, and may take several years to complete and become fully occupied (point in time where actual traffic impact is realized). Additionally, the actual background traffic growth rates for the 2024 scenario and the 2035 scenario may differ significantly from those projections analyzed in the Traffic Impact Analysis. The combined effect of these two variables could result in pre-mature construction of off-site transportation improvements and/or could introduce inefficiencies in expenditures of transportation funding.

In order to ensure that a project's impacts are fully mitigated, and that the improvements are constructed concurrently with the impact of the development, the County Transportation Division has developed a guideline conditioning template that is applied to major projects where these variabilities exist. The condition proposed to be applied to the Saratoga Estates Project is presented as follows:

Off-Site Improvements - Major Transportation Facilities:

- A. The Project shall be responsible for design, Plans, Specifications and Estimate (PS&E), utility relocation, right of way acquisition, and construction of improvements to *[LIST IMPROVEMENTS]*.
- B. Timing of Improvements
 - i. In order to ensure proper timing of the construction of the improvements identified, the Project shall perform a supplemental traffic analysis in conjunction with each final map application to determine Level of Service (LOS) of the *[IMPACT LOCATIONS]*, to include existing traffic plus traffic generated by each final map.
 - ii. If the supplemental traffic analysis indicates that the County's LOS policies would be exceeded by the existing traffic plus traffic generated by that final map, the Project shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map.
 - iii. If the County's LOS policies are not exceeded upon application for the last final map within the Project, the Project shall pay its TIM fees toward the installation of proposed roadway improvements. In which case, payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact.
 - iv. If the necessary improvements are constructed by the County or others prior to triggering of mitigation by the Project, payment of TIM fees is considered to be the Project's proportionate fair share towards mitigation of this impact.
- C. Financing and Reimbursement
 - i. Project may be reimbursed for the costs of any improvements listed above, to the extent such improvements are included in the County's Traffic Impact Mitigation (TIM) Fee Program, in accordance with the County's TIM Fee Reimbursement Guidelines, and subject to a Road Improvement and Reimbursement / Credit Agreement between the Project and the County.

- ii. If any improvements are included in the County's 10-year CIP and TIM Fee Program, and agreed to by the County in a Road Improvement and Reimbursement / Credit Agreement, the Project may receive full or partial credit for the cost of the work against TIM Fees that would otherwise be paid at issuance of building permits.
 - iii. If any improvements are included in the County's 10-year CIP and TIM Fee Program, and agreed to by County in a Road Improvement and Reimbursement / Credit Agreement, the Project may provide funding and Bid-Ready PS&E to County, for bidding and construction management by County.
- C. With respect to the improvements to the public roadways required in this condition, either one of the following shall be done prior to issuance of a building permit: (a) the subdivider shall be under contract for construction of the required improvements with proper sureties in place, or (b) the subdivider shall have submitted to the County a bid-ready package (PS&E) and adequate funding for construction.
- D. The following requirements apply to all traffic signals identified in this condition.
- i. In order to ensure proper timing for the installation of traffic signal controls, the Project shall be responsible to perform traffic signal warrants with each final map at intersections identified for potential signalization, in accordance with the Manual on Uniform Traffic Control Devices (version in effect at the time of application).
 - ii. If traffic signal warrants are met at the time of application for final map (including the lots proposed by that final map), the Project shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map.
 - iii. If traffic signal warrants are not met upon application for the last final map within the Project, the Project shall pay its TIM fees toward the installation of traffic signal controls. In which case, payment of TIM fees is considered to be the Project's proportionate fair share towards mitigation of this impact.
 - iv. If the traffic signal control at an intersection is constructed by the County or others prior to triggering of mitigation by the Project, payment of TIM fees is considered to be the Project's proportionate fair share towards mitigation of the impact.

Application of this condition ensures compliance with all General Plan Policies, ensures that required mitigation is implemented concurrently with impact, ensures that unnecessary improvements are not required to be constructed, and provides flexibility for implementation and funding of the required improvements.

El Dorado County Regional Transportation Plan

The El Dorado County Transportation Commission (EDCTC) is the Regional Transportation Planning Agency for El Dorado County (excluding the Tahoe Basin). The El Dorado County 2030 Regional Transportation Plan (RTP) was developed by the EDCTC to document the policy direction, actions, and funding recommendations intended to meet El Dorado County's short and long range transportation needs over the next 20 years. The RTP is designed to be a blueprint for the systematic development of a balanced, comprehensive, and multi-modal transportation system. In general, RTPs are developed to provide a clear vision of regional transportation goals, objectives, and policies, complemented by short- and long-term strategies for implementation.

The 2030 RTP also serves as the El Dorado County portion of the Sacramento Area Council of Governments Metropolitan Transportation Plan. The 2030 RTP identifies the County's 10-year CIP in its regional road network short-term action plan. The extension of Saratoga Way to Iron Point Road as a two-lane road with eight-foot shoulders is identified in the County's CIP.

El Dorado County Bicycle Transportation Plan

The Bicycle Transportation Plan represents the efforts of EDCTC staff, the Bicycle Transportation Plan Advisory Committee, El Dorado County, El Dorado Hills Community Services District, and numerous dedicated citizens in the area. The plan was developed with the overall goal of providing a safe, efficient, and convenient network of bicycle facilities that establish alternative transportation as a viable option in El Dorado County and its neighboring regions.

The plan addresses the following specific issues pertaining to non-motorized transportation:

- ▲ bicycle commuting;
- ▲ safety and education to maximize bicycle safety;
- ▲ identification of detailed and prioritized improvements in the El Dorado County Bicycle Transportation Plan;
- ▲ integrating bicycle and pedestrian planning with other regional and community planning;
- ▲ maximizing multi-modal connections to the bicycle transportation system;
- ▲ funding;
- ▲ connectivity; and
- ▲ developing Class I Bike Paths on the El Dorado Trail.

4.7.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ 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;
- ▲ 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 due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- ▲ result in inadequate emergency access; or
- ▲ conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold. The County's standards specify the following:

- ▲ "Level of Service (LOS) for County-maintained roads and State highways within the unincorporated areas of the County *shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions...*" (*El Dorado County General Plan Policy TC-Xd*). The study facilities are located within the El Dorado Hills Community Region; therefore, the LOS threshold applied to the project is LOS E.

- ▲ If a project causes the peak-hour level of service...on a County road or State highway that would otherwise meet the County standards (without the project) to exceed the [given] values, then the impact shall be considered significant.
- ▲ If any County road or State highway fails to meet the [given] standards for peak hour level of service...without the proposed project, and the project would significantly worsen conditions on the road or highway, then the impact shall be considered significant. According to *El Dorado County General Plan Policy TC- Xe*, worsen is defined as “a 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or the addition of 100 or more daily trips, or the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.”

The Caltrans District 3 standard of significance was applied to intersections at the Highway 50 interchange with El Dorado Hills Boulevard/Latrobe Road. Caltrans has established an LOS E threshold for the peak 15 minutes for signalized intersections outside “high speed areas.” The Highway 50 interchange ramp intersections with El Dorado Hills Boulevard/Latrobe Road are not considered to be located in high speed areas; therefore, the LOS E threshold for the peak 15 minutes applies to these facilities.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The project would not result in any changes to air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Further, there are no towers or other structures that could potentially affect air transport. Therefore, this issue is not discussed further in this Draft EIR.

Vehicle queuing for critical movements at the El Dorado Hills Boulevard intersection with Saratoga Way/Park Drive (Intersection #3) was evaluated. The calculated vehicle queues were compared to actual or anticipated vehicle storage lengths. Results of this evaluation indicate that the project would add a minimal amount of additional queuing to these movements. Thus, this issue is not addressed further in this Draft EIR. See Appendix B of this Draft EIR for more information.

METHODS OF ANALYSIS

This traffic impact analysis was performed in accordance with the County’s traffic impact study protocols and procedures. LOS for this study was determined using methods defined in the Highway Capacity Manual (HCM) (Transportation Research Board 2010) using appropriate traffic analysis software.

Proposed Project Trip Generation and Assignment

The number of trips anticipated to be generated by the proposed project was derived using data included in *Trip Generation*, 9th Edition, published by the Institute of Transportation Engineers (ITE). The anticipated ITE trip generation characteristics for the proposed project are depicted in Table 4.7-10. At full build-out, the proposed project is estimated to generate approximately 3,000 daily trips, with 232 trips occurring during the a.m. peak-hour, and 297 trips occurring during the p.m. peak-hour.

Table 4.7-10 Proposed Project ITE Trip Generation												
Land Use (ITE Code)	Size (# units)	Daily Trips	AM Peak Hour				PM Peak Hour					
			Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips
Single-Family Detached Housing (210)	317	3,036	232	25%	58	75%	174	297	63%	187	37%	110

Source: Trip Generation, 9th Edition, as cited in Kimley-Horn 2015

The El Dorado County TDM was used both as the basis to establish the relative assignment of proposed project trips, and to establish background traffic estimates for the analysis scenario. The project trip distribution percentages assuming baseline conditions (i.e., conditions in 2014) that resulted from analyses completed for this study are provided in Exhibit 4.7-6. Exhibit 4.7-7 shows the project trip distribution percentages for analysis of the near term and cumulative conditions.

Level of Service Definition

Analysis of significant environmental impacts to transportation facilities is based on the concept of LOS. The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay for motorists, to F (worst), which represents heavy delay for motorists and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual (HCM)* (2000 for those intersections analyzed using Synchro®, and 2010 for those intersections analyzed using SimTraffic®).

Intersection Analysis

The HCM includes procedures for analyzing side-street stop-controlled, all-way stop-controlled, and signalized intersections. The side-street stop-controlled procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the all-way stop-controlled and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. Table 4.7-11 presents intersection LOS definitions as defined in the HCM.

Because of the close spacing of the El Dorado Hills Boulevard/Latrobe Road intersections in the vicinity of Highway 50, LOS for Intersections #3 through #7 was determined using the SimTraffic® micro-simulation analysis software. The existing conditions SimTraffic® models were originally provided by the County for use in this study. These models were validated based on field observations of traffic volumes, driver behavior, lane utilization, and maximum vehicle queue lengths. As a result of these observations, adjustments were incorporated that improve the accuracy of vehicles behavior as they position for downstream turns. SimTraffic® measures of effectiveness are compared against the HCM intersection delay thresholds to equate SimTraffic® results to HCM LOS. For this simulation effort, a seed time of 10 minutes is used and ten runs are averaged to obtain the results.

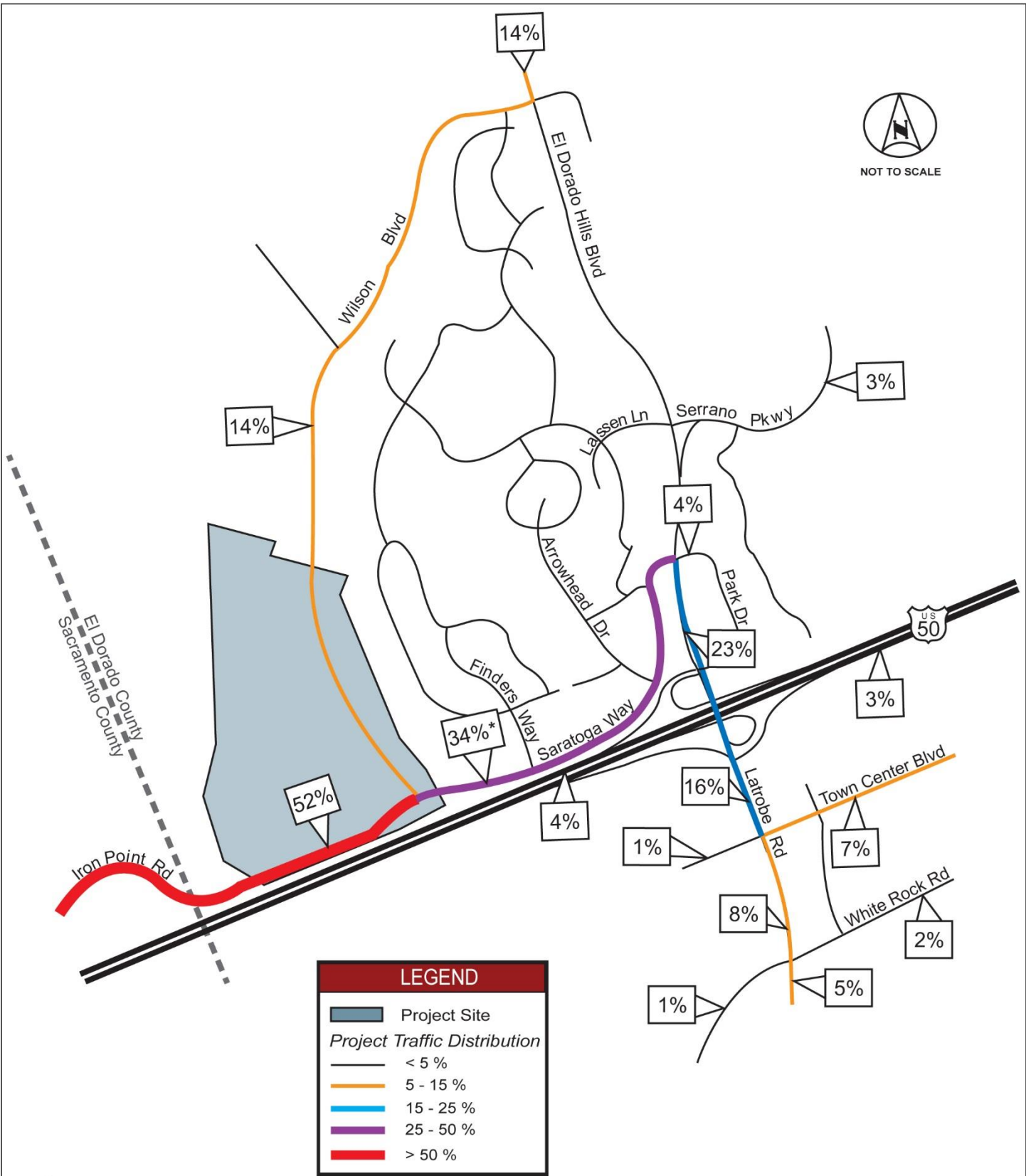
Freeway Facility Analysis

Caltrans' traffic study guidelines specify the use of vehicle density (passenger cars/mile/lane) as the appropriate measure of effectiveness for freeway facilities. The LOS criteria for basic freeway segments and merge/diverge segments are summarized in Table 4.7-12. Weaving sections (i.e., freeway segments with auxiliary lanes) were analyzed using the Leisch Method (Federal Highway Administration 1984).

Roadway Segment Analysis

The HCM also includes procedures for analyzing multilane and two-lane roadway segments. For multilane roadways segments, LOS is determined based on the density of the traffic stream. For two-lane highways, the LOS calculation is dependent on the class of the roadway. Class I two-lane highways are highways that generally have high speeds, Class II two-lane highways are lower speed highways that typically serve scenic routes or areas of rugged terrain, and Class III two-lane highways typically serve moderately developed areas with higher densities of local traffic and access.

Roadway segments along Saratoga Way are either a Class III two-lane or a multi-lane roadway, depending on the location and analysis scenario. For Class III highways, the percent of free-flow speed, which is the measure representing the ability of vehicles to travel at the posted speed limit, is used to determine LOS. The LOS criteria for multi-lane and two-lane roadway segments are shown in Tables 4.7-13 and 4.7-14, respectively.



Kimley»Horn
 Source: Kimley-Horn 2015

*4% assigned prior to El Dorado Hills Blvd
 X14010119 01 004

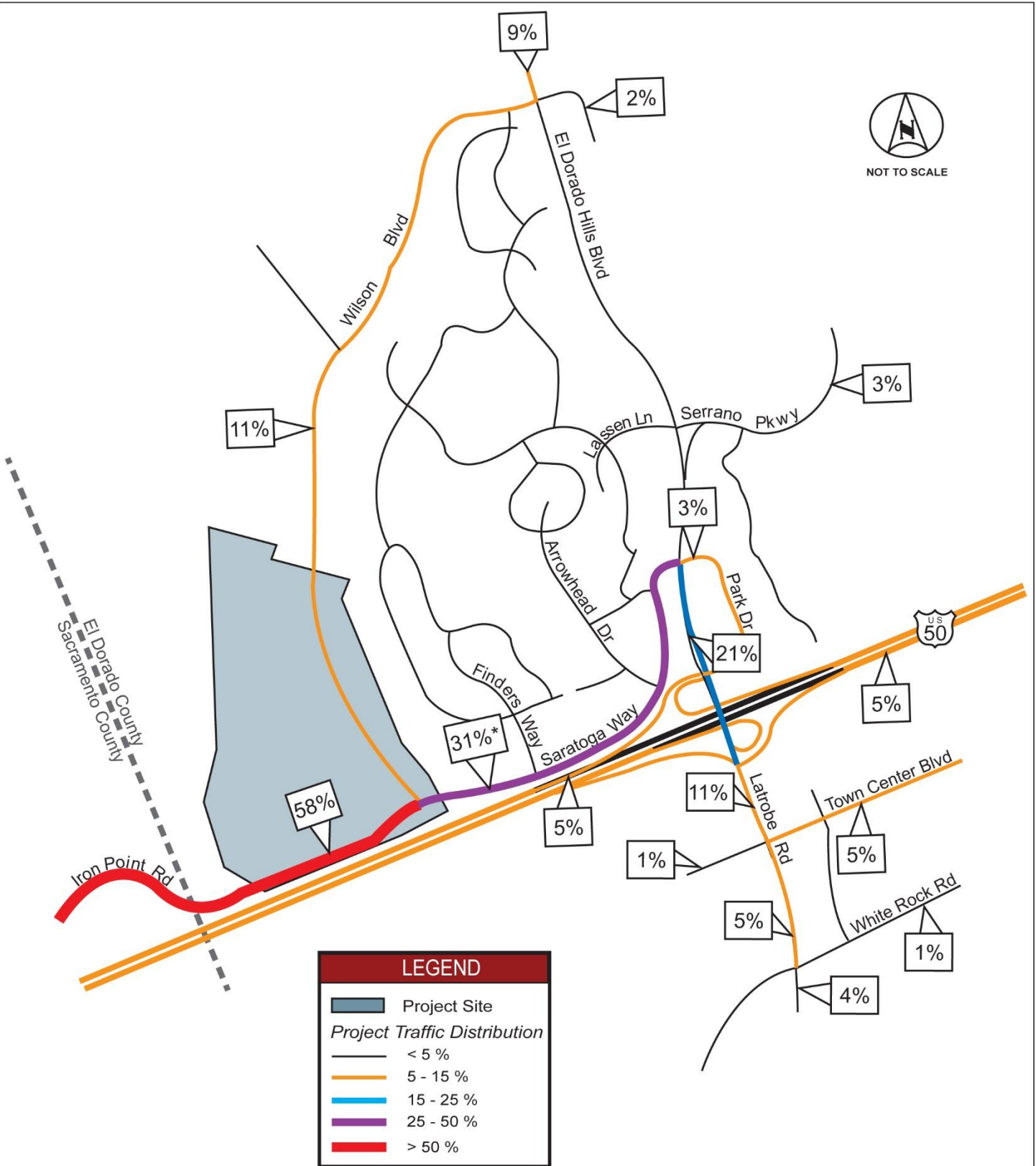
Exhibit 4.7-6

Existing (2014) Project Trip Distribution





NOT TO SCALE



LEGEND	
	Project Site
<i>Project Traffic Distribution</i>	
	< 5 %
	5 - 15 %
	15 - 25 %
	25 - 50 %
	> 50 %

Kimley»Horn

Source: Kimley-Horn 2015

*4% assigned prior to El Dorado Hills Blvd
X14010119 01 023

Exhibit 4.7-7 Near-Term (2024) and Cumulative (2035) Proposed Project Trip Distribution



Table 4.7-11 Intersection Level of Service Criteria

LOS	Unsignalized	Signalized
	Average Control Delay ¹ (seconds/vehicle)	Average Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10 - 15	> 10 - 20
C	> 15 - 25	> 20 - 35
D	> 25 - 35	> 35 - 55
E	> 35 - 50	> 55 - 80
F	> 50	> 80

1: Applied to the worst lane/lane group(s) for side-street stop controlled intersections

Source: California Department of Transportation 2010

Table 4.7-12 Freeway Facilities LOS Criteria

LOS	Basic Segments Density (pc/mi/ln)	Merge/Diverge Segments Density (pc/mi/ln)
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)	Demand exceeds capacity

Notes: pc/mi/ln = passenger cars per mile per lane

Source: Highway Capacity Manual, 2010

Table 4.7-13 Multi-Lane Roadway Segment Level of Service Criteria

Level of Service (LOS)	Free Flow Speed (mph)	Density (pc/mi/ln)
A	All	> 0 - 11
B	All	> 11 - 18
C	All	> 18 - 26
D	All	> 26 - 35
E	60	> 35 - 40
	55	> 35 - 41
	50	> 35 - 43
	45	> 35 - 45
F (demand exceeds capacity)	60	> 40
	55	> 41
	50	> 43
	45	> 45

Source: California Department of Transportation 2010

Table 4.7-14 Two-Lane Roadway Segment (Class III) Level of Service Criteria

Level of Service (LOS)	Percent Free-Flow Speed (%)
A	> 91.7
B	> 83.3 - 91.7
C	> 75.0 - 83.3
D	> 66.7 - 75.0
E	≤ 66.7

Source: California Department of Transportation 2010

IMPACTS AND MITIGATION MEASURES

Impact 4.7-1: Existing plus project intersection LOS impacts.

Under the existing plus project conditions, operation of the study intersections range from LOS C to LOS F during the a.m. and p.m. peak hours. The freeway facilities are shown to operate from LOS A to LOS E during peak hours. Roadway segments would operate at LOS D and E. With the proposed project, operations of El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard intersections would operate at LOS F and result in more than 10 additional vehicle trips per peak hour. Thus, this impact would be **significant**.

With implementation of Mitigation Measures 4.7-1a, which would require the applicant to pay TIM fees, and Mitigation Measure 4.7-1b, which would optimize signal timing along the El Dorado Hills Boulevard/Latrobe Road corridor, this impact would be **less than significant**.

The County’s TDM was used to generate and assign project traffic to the transportation network. Using these volumes and the associated roadway network changes (two-lane Saratoga Way extension and Wilson Boulevard extension), LOS was determined at the study facilities. Existing (2014) with project peak-hour turn movement volumes and LOS are presented in Exhibit 4.7-8 and Table 4.7-15. Table 4.7-16 presents the peak-hour freeway operating conditions for this analysis scenario. Table 4.7-17 shows the existing plus proposed project roadway segment LOS. (Note that the Traffic Study, included as Appendix B of this Draft EIR, includes a discussion regarding the potential traffic effects associated only with the proposed extension of Saratoga Way.)

Table 4.7-15 Existing (2014) and Existing plus Project Intersection LOS

ID	Intersection	Control	Peak Hour	Existing (2014) ¹		Existing (2014) with Project ²	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	20.8	C	25.3	C
			PM	22.5	C	29.9	C
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	44.2	D	42.4	D
			PM	21.5	C	26.5	C
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	22.4	C	150.6	F
			PM	22.0	C	102.4	F
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	29.2	C	26.6	C
			PM	35.0	C	37.8	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	31.0	C	37.5	D
			PM	11.7	B	11.8	C
6	Latrobe Road at Town Center Boulevard	Signal	AM	27.7	C	27.7	C
			PM	73.8	E	89.8	F
7	Latrobe Road at White Rock Road	Signal	AM	36.2	D	32.8	C
			PM	43.7	D	59.6	E
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ¹	AM	-	-	4.9 (29.6 southbound)	D
			PM	-	-	2.6 (32.1 southbound)	D
9	Saratoga Way at Finders Way	SSSC ¹	AM	7.7 (8.8 southbound)	A	1.0 (22.1 southbound)	C
			PM	4.3 (8.9 southbound)	A	1.0 (21.0 southbound)	C
10	Saratoga Way at Arrowhead Drive	SSSC ¹	AM	1.8 (9.1 southbound)	A	0.5 (28.3 southbound)	D
			PM	1.7 (9.2 southbound)	A	0.6 (35.8 southbound)	E

Notes: **Bold** and **shaded** represents unacceptable operations.

1. The Existing Condition scenario assumes the project site in its current conditions with no extension of Saratoga Way or Wilson Boulevard.

2. The Existing (2014) with Project scenario assumes development of the proposed residential development and extension of the proposed Saratoga Way and Wilson Boulevard Extensions.

*Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.

Source: Kimley-Horn 2015

Table 4.7-16 Existing and Existing plus Project Freeway Facilities LOS

Highway 50				Existing (2014) ¹		Existing (2014) with Project ²	
Direction	Segment	Type	Peak Hour	Density ³	LOS	Density ¹	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	12.7	B	12.8	B
			PM	21.2	C	21.3	C
	Latrobe Road southbound off ramp	Diverge	AM	22.8	C	22.8	C
			PM	32.3	D	31.4	D
	El Dorado Hills Boulevard northbound off ramp	Diverge	AM	12.6	B	12.1	B
			PM	26.5	C	27.2	C
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	5.2	A	5.4	A
			PM	11.7	B	12.9	B
	Latrobe Road on ramp	Merge	AM	13.4	B	14.0	B
			PM	24.2	C	25.8	C
	East of Latrobe Road on ramp	Basic	AM	7.3	A	7.7	A
			PM	16.3	B	17.9	B
Westbound	East of El Dorado Hills Boulevard off ramp	Basic	AM	28.8	D	28.8	D
			PM	14.5	B	14.5	B
	El Dorado Hills Boulevard off ramp	Diverge	AM	35.2	E	35.3	E
			PM	21.2	C	21.3	C
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	19.2	C	18.5	C
			PM	10.1	A	9.9	A
	El Dorado Hills Boulevard on ramp	Merge	AM	35.7	E	32.3	D
			PM	26.8	C	24.6	C
	West of El Dorado Hills Boulevard on ramp	Basic	AM	41.2	E	33.5	D
			PM	25.3	C	22.5	C

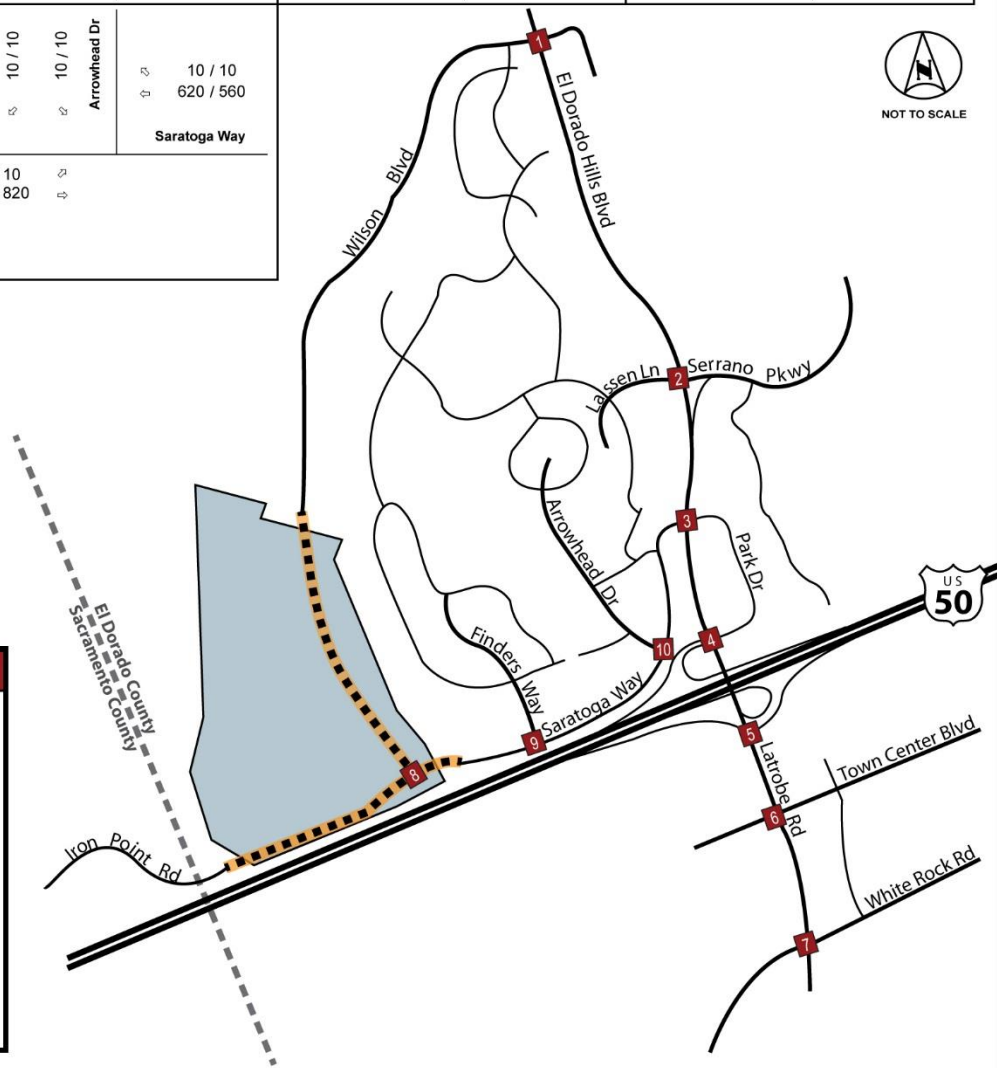
Notes:
 1. The Existing Condition scenario assumes the project site in its current conditions with no extension of Saratoga Way or Wilson Boulevard.
 2. The Existing (2014) with Project scenario assumes development of the proposed residential development and extension of the proposed Saratoga Way and Wilson Boulevard Extensions.
 3. Density measured in passenger cars/mile/lane
 Source: Kimley-Horn 2015

Table 4.7-17 Existing (2014) and Existing plus Project Roadway Segment LOS

Location	Peak-Hour	Analysis Direction	Existing (2014) ¹			Existing (2014) plus Project ²		
			LOS	PFFS	v/c	LOS	PFFS	v/c
Saratoga Way, West of Project	AM	WB	-	-	-	D	68.3	0.56
		EB	-	-	-	D	69.2	0.41
	PM	WB	-	-	-	D	67.5	0.40
		EB	-	-	-	E	66.3	0.63
Saratoga Way, East of Project	AM	WB	A	92.1	0.01	D	71.5	0.43
		EB	A	92.5	0.06	D	71.3	0.44
	PM	WB	A	91.9	0.05	D	69.9	0.39
		EB	A	91.9	0.04	D	68.8	0.55

Notes: PFFS=percent free-flow speed; LOS=level of service; v/c=volume to capacity
 1. The Existing Condition scenario assumes the project site in its current conditions with no extension of Saratoga Way or Wilson Boulevard.
 2. The Existing (2014) with Project scenario assumes development of the proposed residential development and extension of the proposed Saratoga Way and Wilson Boulevard Extensions.
 Source: Kimley-Horn 2015

1 210 / 80 ⇄ 1270 / 740 ⇄ 10 / 0 El Dorado Hills Blvd ⇄ ⇄ 0 / 0 ⇄ ⇄ 0 / 10 Wilson Blvd 170 / 130 0 / 0 170 / 120 ⇄ ⇄ ⇄ 60 / 200 510 / 1410 10 / 0	2 0 / 20 ⇄ 1380 / 820 ⇄ 60 / 30 El Dorado Hills Blvd ⇄ ⇄ 80 / 20 ⇄ ⇄ 10 / 10 ⇄ ⇄ 670 / 330 Lassen Ln 10 / 10 10 / 10 60 / 30 ⇄ ⇄ ⇄ 40 / 130 490 / 1580 200 / 500	3 390 / 230 ⇄ 1630 / 790 ⇄ 130 / 160 El Dorado Hills Blvd ⇄ ⇄ 60 / 230 ⇄ ⇄ 60 / 140 ⇄ ⇄ 10 / 40 Saratoga Way 150 / 370 120 / 110 170 / 350 ⇄ ⇄ ⇄ 180 / 200 640 / 1610 30 / 70	4 840 / 390 ⇄ 930 / 740 ⇄ 40 / 50 El Dorado Hills Blvd ⇄ ⇄ 20 / 50 ⇄ ⇄ 100 / 90 ⇄ ⇄ 100 / 140 US-50 WB Ramps 280 / 240 80 / 70 610 / 320 ⇄ ⇄ ⇄ 350 / 1060 550 / 1590 110 / 280
5 1390 / 970 ⇄ 250 / 230 Latrobe Rd ⇄ 220 / 920 US-50 EB Ramps 1320 / 580 ⇄ 790 / 2010 240 / 720	6 490 / 20 ⇄ 1700 / 970 ⇄ 520 / 560 Latrobe Rd ⇄ 280 / 690 ⇄ 50 / 10 ⇄ 70 / 70 Town Center Blvd 10 / 380 10 / 60 0 / 160 ⇄ ⇄ ⇄ 100 / 10 740 / 1660 80 / 190	7 320 / 270 ⇄ 1270 / 530 ⇄ 180 / 400 Latrobe Rd ⇄ 230 / 270 ⇄ 120 / 180 ⇄ 240 / 170 White Rock Rd 210 / 380 110 / 340 100 / 90 ⇄ ⇄ ⇄ 80 / 120 480 / 1210 140 / 300	8 170 / 40 ⇄ 60 / 40 Wilson Blvd ⇄ 10 / 40 ⇄ 630 / 520 Saratoga Way 40 / 170 560 / 790 ⇄
9 20 / 20 ⇄ 40 / 30 Finders Way ⇄ 10 / 30 ⇄ 620 / 540 Saratoga Way 10 / 30 610 / 800 ⇄	10 10 / 10 ⇄ 10 / 10 Arrowhead Dr ⇄ 10 / 10 ⇄ 620 / 560 Saratoga Way 0 / 10 650 / 820 ⇄		



LEGEND	
#	Study Intersection
XX/YY	AM/PM Peak-Hour Volumes
	Project Site
	New Roadway Connection
	County Line

Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 006

Exhibit 4.7-8

Existing Plus Project Peak Hour Traffic Volumes



As indicated above, with implementation of the project, operation of the study intersections would range from LOS B to LOS F during the a.m. and p.m. peak hours and operation of the freeway facilities would range from LOS A to LOS E during peak hours. The roadway segment operation conditions would degrade from LOS A to LOS D and LOS E. The addition of the proposed project to 2014 conditions would cause the following two intersections currently operating at acceptable levels to degrade to LOS F conditions:

- ▲ **El Dorado Hills Boulevard at Saratoga Way/Park Drive:** This intersection operates acceptably under existing (2014) conditions, but would degrade to LOS F during the a.m. and p.m. peak hours with the addition of the proposed project. (Note that this intersection would also operate at LOS F if the Saratoga Way extension were completed under the CIP separately from this development project, as indicated in Appendix B.)
- ▲ **Latrobe Road at Town Center Boulevard:** This intersection operates acceptably under existing (2014) conditions, but would degrade to LOS F during the p.m. peak hour with the addition of the proposed project.

Thus, this impact would be **significant**.

Mitigation Measures

Mitigation Measure 4.7-1a: Pay TIM Fees

The applicant shall pay fair share fees to El Dorado County to address the project's contribution to traffic at the El Dorado Hills Boulevard at Saratoga Way/Park Drive Intersection. Fee amount shall be determined by the County. All fees shall be paid at the time of issuance of building permits.

Mitigation Measure 4.7-1b: Complete a Signal Timing Plan

The project applicant shall prepare and implement a signal timing plan for the intersections along El Dorado Hills Boulevard/Latrobe Road corridor from Saratoga Way/Park Drive through Town Center Boulevard to provide acceptable LOS in the a.m. and p.m. peak hours. The plan for signal optimization shall be prepared by a California-licensed civil engineer or traffic engineer obtained by the project applicant and shall be submitted to the County Transportation Division and Caltrans, as appropriate. Prior to issuance of occupancy certificates, the applicant shall ensure the signal timing improvements are completed in coordination with the County Transportation Division and Caltrans.

Significance after Mitigation

With implementation of Mitigation Measures 4.7-1a and 1b, the applicant would pay TIM Fees and prepare and implement optimized signal timings along the El Dorado Hills Boulevard/Latrobe Road corridor. As discussed above, the Highway 50/Silva Valley Parkway interchange (Phase 1), a CIP project, is currently under construction and will be completed in 2016, prior to the time at which development of the project would begin. The Highway 50/Silva Valley Parkway interchange (Phase 1) consists of a new overcrossing over Highway 50, new on- and off-ramps with signalized intersections, and new bicycle and pedestrian facilities. The purpose of the project is to provide another access point to Highway 50 for motorists in El Dorado Hills. The completion of Highway 50/Silva Valley Parkway interchange will result in a redistribution of the traffic and would affect delays associated with roadways near the project site, including El Dorado Hills Boulevard and Latrobe Road. The interchange will decrease congestion on several roadways near the project site and improve travel time by providing more direct access to Highway 50 for many area residents and businesses that would otherwise be required to access Highway 50 from El Dorado Hills Boulevard, Latrobe Road, or Bass Lake Road.

Modeling of the project, in combination with operation of the Highway 50/Silva Valley Parkway and optimized signal cycle length and reallocation of the green time at intersections in the area, is provided in Table 4.7-18. As shown, under these conditions, LOS conditions would be acceptable and degraded conditions would improve. The new interchange, along with revised signal timings, would result in acceptable LOS E or better operations along the corridor during the a.m. and p.m. peak hours. Because this improvement is in the TIM Fee program and will be completed prior to development on the project site, payment of TIM Fees will satisfy the project's fair share obligation towards this improvement.

Table 4.7-18 Existing plus Project with Mitigation Intersection LOS							
ID	Intersection	Control	Peak Hour	Existing (2014) Plus Project		Existing (2014) Plus Project with Mitigation	
				Delay (seconds)	LOS	Delay (seconds)	LOS
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	150.6	F	67.7	E
			PM	102.4	F	55.1	E
4	El Dorado Boulevard at Highway 50 westbound ramps	Signal	AM	26.6	C	22.4	C
			PM	37.8	D	32.0	C
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	37.5	D	15.4	B
			PM	11.8	B	12.4	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	27.7	C	25.4	C
			PM	89.8	F	47.7	D
7	Latrobe Road at White Rock Road	Signal	AM	32.8	C	34.2	C
			PM	59.6	E	34.8	C

Notes: **Bold** and **shaded** represents unacceptable operations.
 Source: Kimley-Horn 2015

With implementation of Mitigation Measures 4.7-1a and 4.7-1b, intersection LOS associated with the existing plus project condition would meet, and in some cases exceed, requirements for traffic operations within the County. Thus, this impact would be reduced to a **less-than-significant** level.

Impact 4.7-2: Near Term (2024) plus proposed project conditions intersection LOS impacts.

Under Near Term (2024) conditions, operation of the study intersections would range between LOS B and LOS F during the a.m. and p.m. peak hours. The study freeway facilities would operate acceptably and range from LOS A to LOS E during peak hours. The study roadway segments would operate acceptably at LOS E or better. The El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard intersections would operate unacceptably at LOS F without the proposed residential development under Near-Term conditions. Because the project would add 10 or more trips during the peak hour to these intersections, this impact would be **significant**.

With implementation of Mitigation Measures 4.7-2 and 4.7-3, which would improve intersection operations at the impacted intersections to acceptable levels, this impact would be **less than significant**.

Traffic volumes for Near Term (2024) conditions were developed using the El Dorado County TDM, as described previously. Traffic volume estimates assume turn movements using 2010 and 2035 land use scenarios that both include the Saratoga Way extension and the Highway 50/Silva Valley Parkway interchange. A straight-line analysis was conducted to establish year 2024 turn movement estimates. The difference between the resulting 2024 traffic estimate and the 2010 model results (the growth) was then added to Existing (2014) traffic volumes to establish base Near-Term (2024) traffic estimates for this study.

Near Term (2024) with project peak-hour turn movement volumes are presented in Exhibit 4.7-9. Tables 4.7-19, 4.7-20, and 4.7-21 present the peak-hour intersection, freeway segment, and roadway segment operating conditions for this analysis scenario. As indicated in Table 4.7-19, operation of the study intersections would range from LOS B to LOS F during the a.m. and p.m. peak hours both with and without implementation of the project. Modeling indicates that project implementation would result in a slightly reduced delay for the El Dorado Hills Boulevard at Saratoga Way/Park Drive intersection in the a.m. and p.m. peak hours, there would be an increase of more than 10 trips to this intersection associated with the project. In addition, the intersection of Latrobe Road at Town Center Boulevard would increase delay and result in more than 10 trips as a result of project implementation. Freeway facilities and roadway segments would operate at acceptable LOS (Tables 4.7-20 and 4.7-21).

The 2024 analysis includes planned roadway improvements, as well as growth consistent with the 2004 General Plan and with approved and reasonably foreseeable projects within the study area. Unacceptable operations at the El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard intersections are due to a combination of increased traffic from planned development and changes in travel patterns associated with the planned infrastructure improvements, such as the Saratoga Way extension and the Highway 50/Silva Valley Parkway interchange (discussed above under Impact 4.7-1). Because implementation of the project would worsen LOS F conditions by increasing traffic volumes by more than 10 vehicles during peak hours, this impact would be **significant**.

Table 4.7-19 Near Term and Near Term with Proposed Project Intersection LOS

ID	Intersection	Control	Peak Hour	Near Term (2024) ¹		Near Term (2024) with Project ²	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	24.3	C	25.6	C
			PM	61.6	E	63.9	E
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	57.7	E	44.0	D
			PM	50.4	D	41.4	D
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	167.6	F	159.6	F
			PM	149.2	F	122.4	F
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	47.3	D	45.0	D
			PM	34.9	C	40.1	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	19.2	B	21.5	C
			PM	11.7	B	12.8	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	29.7	C	29.5	C
			PM	84.1	F	91.5	F
7	Latrobe Road at White Rock Road	Signal	AM	34.9	C	35.8	D
			PM	69.9	E	76.1	E
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ³	AM	-	-	4.8 (24.9 southbound)	C
			PM	-	-	2.4 (35.0 southbound)	D
9	Saratoga Way at Finders Way	SSSC ³	AM	1.3 (26.9 southbound)	D	1.0 (17.1 southbound)	C
			PM	1.3 (44.3 southbound)	E	0.8 (19.8 southbound)	C
10	Saratoga Way at Arrowhead Drive	SSSC ³	AM	0.4 (21.4 southbound)	D	0.3 (19.2 southbound)	C
			PM	0.4 (27.2 southbound)	D	0.4 (27.0 southbound)	D

Notes: **Bold** and **shaded** represents unacceptable operations.

1: The Near Term (2024) scenario assumes operation of the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.

2: The Near Term (2024) with Project scenario assumes the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.

3: Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.

Source: Kimley-Horn 2015

<p>1</p> <p>↔ 210 / 90 ↔ 1300 / 740 ↔ 20 / 20 ↔ El Dorado Hills Blvd</p> <p>↔ 10 / 10 ↔ 0 / 10 ↔ 60 / 70</p> <p>Wilson Blvd</p>	<p>2</p> <p>↔ 20 / 40 ↔ 1490 / 840 ↔ 80 / 60 ↔ El Dorado Hills Blvd</p> <p>↔ 90 / 30 ↔ 20 / 20 ↔ 660 / 240</p> <p>Lassen Ln</p> <p>Serrano Pkwy</p>	<p>3</p> <p>↔ 480 / 210 ↔ 1660 / 800 ↔ 100 / 140 ↔ El Dorado Hills Blvd</p> <p>↔ 70 / 220 ↔ 80 / 130 ↔ 70 / 80</p> <p>Saratoga Way</p> <p>Park Dr</p>	<p>4</p> <p>↔ 750 / 270 ↔ 1070 / 960 ↔ 50 / 60 ↔ El Dorado Hills Blvd</p> <p>↔ 40 / 80 ↔ 100 / 90 ↔ 90 / 100</p> <p>US-50 WB Ramps</p> <p>Saratoga Way</p>
<p>↔ 160 / 130 ↔ 0 / 0 ↔ 230 / 130</p> <p>↔ 70 / 230 ↔ 620 / 1340 ↔ 100 / 70</p> <p>US-50 EB Ramps</p>	<p>↔ 30 / 20 ↔ 20 / 20 ↔ 70 / 70</p> <p>↔ 40 / 120 ↔ 670 / 1590 ↔ 160 / 490</p> <p>Town Center Blvd</p>	<p>↔ 150 / 430 ↔ 120 / 120 ↔ 140 / 410</p> <p>↔ 140 / 160 ↔ 650 / 1550 ↔ 50 / 120</p> <p>White Rock Rd</p>	<p>↔ 260 / 270 ↔ 80 / 60 ↔ 610 / 380</p> <p>↔ 610 / 1080 ↔ 540 / 1480 ↔ 120 / 250</p> <p>Saratoga Way</p>
<p>5</p> <p>↔ 1480 / 1200 ↔ 290 / 240 ↔ Latrobe Rd</p> <p>↔ 220 / 730</p> <p>US-50 EB Ramps</p>	<p>6</p> <p>↔ 470 / 40 ↔ 1660 / 1210 ↔ 560 / 620 ↔ Latrobe Rd</p> <p>↔ 320 / 750 ↔ 50 / 10 ↔ 100 / 60</p> <p>Town Center Blvd</p>	<p>7</p> <p>↔ 540 / 370 ↔ 1080 / 650 ↔ 150 / 380 ↔ Latrobe Rd</p> <p>↔ 220 / 260 ↔ 320 / 270 ↔ 300 / 220</p> <p>White Rock Rd</p>	<p>8</p> <p>↔ 180 / 40 ↔ 50 / 30 ↔ Wilson Blvd</p> <p>↔ 10 / 40 ↔ 680 / 460</p> <p>Saratoga Way</p>
<p>9</p> <p>↔ 20 / 20 ↔ 40 / 30 ↔ Finders Way</p> <p>↔ 10 / 30 ↔ 680 / 480</p> <p>Saratoga Way</p>	<p>10</p> <p>↔ 10 / 10 ↔ 10 / 10 ↔ Arrowhead Dr</p> <p>↔ 10 / 10 ↔ 680 / 500</p> <p>Saratoga Way</p>		



LEGEND	
#	Study Intersection
XX/YY	AM/PM Peak-Hour Volumes
	Project Site
	New Roadway Connection
	County Line

Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 021

Exhibit 4.7-9

Near Term (2024) with Project Peak Hour Traffic Volumes



Table 4.7-20 Near Term and Near Term with Proposed Project Freeway Facilities LOS

Highway 50				Near Term (2024) ¹		Near Term (2024) with Project ²	
Direction	Segment	Type	Peak Hour	Density ³	LOS	Density ³	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	15.3	B	15.3	B
			PM	23.8	C	23.9	C
	Latrobe Road southbound off ramp	Diverge	AM	24.9	C	24.9	C
			PM	32.4	D	32.5	D
	El Dorado Hills Boulevard northbound Off Ramp	Diverge	AM	16.2	B	16.2	B
			PM	28.3	D	28.3	D
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	8.5	A	8.5	A
			PM	15.5	B	15.5	B
Latrobe Road on ramp	Merge	AM	18.5	B	18.6	B	
		PM	27.8	C	27.9	C	
East of Latrobe Road on ramp	Weave ⁴	AM	-	A	-	A	
		PM	-	C	-	C	
Westbound	East of El Dorado Hills Boulevard off ramp	Weave ⁴	AM	-	B	-	B
			PM	-	A	-	A
	El Dorado Hills Boulevard off ramp	Diverge	AM	28.0	D	28.0	D
			PM	22.2	C	22.3	C
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	22.2	C	22.2	C
			PM	15.7	B	15.7	B
	El Dorado Hills Boulevard on ramp	Merge	AM	36.8	E	36.9	E
			PM	30.4	D	30.4	D
West of El Dorado Hills Boulevard on ramp	Basic	AM	44.0	E	44.3	E	
		PM	30.3	D	30.3	D	

Notes:

1: The Near Term (2024) scenario assumes operation of the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.

2: The Near Term (2024) with Project scenario assumes the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.

3: Density measured in passenger cars/mile/lane

4: Weave segments are analyzed using the Leisch Method, which is not based on density.

Source: Kimley-Horn 2015

Table 4.7-21 Near Term (2024) and Near Term with Proposed Project Roadway Segment LOS

Location	Peak-Hour	Analysis Direction	Near Term (2024) ¹			Near Term (2024) plus Project ²		
			LOS	PFFS	v/c	LOS	PFFS	v/c
Saratoga Way, West of Project	AM	WB	D	71.1	0.54	D	69.2	0.60
		EB	D	74.3	0.25	D	72.2	0.27
	PM	WB	D	68.8	0.31	E	65.7	0.36
		EB	E	66.5	0.67	E	63.9	0.74
Saratoga Way, East of Project	AM	WB	D	70.9	0.53	D	72.7	0.46
		EB	D	73.7	0.27	D	75.0	0.29
	PM	WB	D	68.1	0.33	D	68.3	0.35
		EB	E	65.9	0.68	E	66.6	0.64

Notes: PFFS=percent free-flow speed; LOS=level of service; v/c=volume to capacity

1: The Near Term (2024) scenario assumes operation of the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.

2: The Near Term (2024) with Project scenario assumes the extension of Saratoga Way as a two-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.

Source: Kimley-Horn 2015

The significant impact at the El Dorado Hills Boulevard at Saratoga Way/Park Drive intersection can be mitigated with the addition of a southbound right-turn lane and reallocation of the traffic signal's green time. The third southbound lane is included in the County's adopted 2015 CIP as a 20-Year CIP project (Project Number GP183) and as a through lane from Lassen Lane to Saratoga Way. This analysis shows the need for only the southbound right-turn lane at the intersection. Although the improvement is in the CIP, payment of TIM Fees may not be sufficient mitigation since the improvement is currently in the 20-Year CIP, not the 10-Year CIP as required by General Plan Policy TC-Xf.

The significant impact at the Latrobe Road at Town Center Boulevard intersection during the p.m. peak-hour can be mitigated with the following improvements: restriping of the westbound Town Center Boulevard approach to include one shared through/left-turn lane, and two right-turn lanes; the addition of a right-turn overlap signal phase for the westbound right-turn thereby restricting southbound u-turns; and the addition of a component of Phase 2B improvements at the adjacent Highway 50 interchange with El Dorado Hills Boulevard/Latrobe Road. The interchange Phase 2B improvements are included in the County's adopted 2015 CIP as a 20-Year CIP project (Project No: 71323). Specifically, the Phase 2B improvements applied under this mitigation include the additional northbound lane connecting Town Center Boulevard with the right-turn lane at the downstream Latrobe Road intersection with the Highway 50 eastbound ramps. This also requires the optimization of the El Dorado Hills Boulevard/Latrobe Road coordinated signal system. Although some of these improvements are in the CIP, payment of TIM Fees will not be sufficient mitigation since the improvements are currently in the 20-Year CIP, not the 10-Year CIP as required by General Plan Policy TC-Xf.

The CIP also includes a line item for unprogrammed traffic signal installation, operational, and safety improvements at intersections. The line item includes improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County annually monitors intersections with potential need for improvement through the Intersection Needs Prioritization Process. The Intersection Needs Prioritization Process is then used to inform the annual update to the CIP, and potential intersection improvements can be added, by the Board of Supervisors, to the CIP as funding becomes available.

Mitigation Measures

Mitigation Measure 4.7-2: Road and intersection improvements

Prior to issuance of occupancy certificates, the applicant shall coordinate with the County to improve the El Dorado Hills at Saratoga Way/Park Drive intersection by adding a southbound right-turn pocket and re-allocating the traffic signal green time, and improve the Latrobe at Town Center Drive intersection by restriping of the westbound Town Center Boulevard approach to include one shared through/left-turn lane and two right-turn lanes, adding a right-turn overlap signal phase for the westbound right-turn, and adding a component of Phase 2B improvements at the adjacent Highway 50 interchange with El Dorado Hills Boulevard/Latrobe Road. As determined by the County's Community Development Agency (CDA), the project applicant shall pay TIM fees to satisfy the project's fair share obligation towards these improvements, if they are included in the 10-Year CIP. Alternatively, as determined by the CDA, the project applicant may construct the improvements if they are needed, but not included in future updates to the 10-Year CIP, and may be eligible for either reimbursement or fee credit for costs that exceed the project's proportional share.

Significance after Mitigation

Unacceptable operations at these intersections are due to a combination of increased traffic from planned development and changes in travel patterns associated with planned infrastructure improvements, like the Highway 50/Silva Valley Parkway interchange and the Saratoga Way extension. The Near Term (2024) analysis includes planned roadway improvements, as well as growth consistent with the 2004 General Plan and with approved and reasonably foreseeable projects within the study area. As noted, this intersection operates at unacceptable LOS F in the Near Term (2024) scenario without the project, which includes other foreseeable but unapproved projects. Therefore, the project is only responsible for its proportional share of the proposed mitigation under Near Term conditions. Because the impact is identified under the Near Term

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.

With implementation of Mitigation Measure 4.7-2, the applicant would be required to contribute to the County’s TIM Fee program if the needed improvements are added to the 10-Year CIP, or construct the necessary improvements, as determined by the CDA. As shown in Table 4.7-22, implementation of the roadway improvements discussed above would result in acceptable intersection operations during the a.m. and p.m. peak-hours. Therefore, this impact would be reduced to a **less-than-significant** level.

Table 4.7-22 Near Term (2024) plus Project Intersection LOS with and without Mitigation

ID	Intersection	Control	Peak Hour	Near Term (2024) plus Project		Near Term (2024) plus Project, with Mitigation	
				Delay (seconds)	LOS	Delay (seconds)	LOS
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	159.6	F	51.1	D
			PM	122.4	F	70.8	E
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	45.0	D	30.8	C
			PM	40.1	D	42.8	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	21.5	C	14.9	B
			PM	12.8	B	24.0	C
6	Latrobe Road at Town Center Boulevard	Signal	AM	29.5	C	28.5	C
			PM	91.5	F	39.7	D
7	Latrobe Road at White Rock Road	Signal	AM	35.8	D	31.8	C
			PM	76.1	E	45.2	D

Notes: **Bold and shaded** represents unacceptable operations.
 Source: Kimley-Horn 2015

Impact 4.7-3: Cumulative (2035) plus proposed project conditions intersection LOS impacts.

Under the cumulative (2035) conditions, the study intersections would operate between LOS B and LOS F during the a.m. and p.m. peak hours. Roadway segments would operate at LOS A and LOS B. The freeway facilities would operate from LOS B to LOS D during peak-hours. The results indicate inadequate LOS at the intersections of El Dorado Hills Boulevard and Saratoga Way/Park Drive, and Latrobe Road at Town Center Boulevard. Because these intersections would continue to experience LOS F conditions and the project would contribute more than 10 peak-hour trips, this impact would be **significant**.

With implementation of Mitigation Measures 4.7-1b and 2, however, these impacts would be **less than significant**.

Traffic volumes for Cumulative (2035) conditions were developed using the El Dorado County TDM, as described previously. In order to maintain consistency between post-processing model assumptions reflecting the circulation impacts of specific land use and transportation improvements made for this project’s analysis and other ongoing project analyses in the County, factors based on draft turn movement and freeway estimates provided by the County for the Central El Dorado Specific Plan project were applied to future traffic estimates for this project. The cumulative plus project scenario includes four-lane Saratoga Way, in addition to projects listed in the prior section.

Cumulative plus project conditions are shown in Exhibit 4.7-10, as well as Tables 4.7-23, 4.7-24, and 4.7-25. Unacceptable operations at the El Dorado Hills Boulevard at Saratoga Way/Park Drive and Latrobe Road at Town Center Boulevard intersections are due to a combination of increased traffic from planned development and changes in travel patterns associated with the planned infrastructure improvements, such as the Highway 50/Silva Valley Parkway interchange. The Cumulative (2035) analysis includes planned

roadway improvements, as well as growth consistent with the 2004 General Plan and with approved and reasonably foreseeable projects within the study area. These intersections operate at unacceptable LOS F in the Cumulative (2035) scenario without the project. In addition, more than 10 peak-hour trips would occur at these intersections as a result of implementation of the project. Thus, this impact would be **significant**.

Unacceptable operations at this intersection are due to a combination of increased traffic from planned development and due to changes in travel patterns associated with planned infrastructure improvements, such as the Highway 50/Silva Valley Parkway interchange and the Saratoga Way extension. The Cumulative (2035) analysis includes planned roadway improvements, as well as growth consistent with the 2004 General Plan and with approved and reasonably foreseeable projects within the study area. As noted, this intersection operates at unacceptable LOS F in the Cumulative (2035) scenario without the project. Therefore, the project is only responsible for its proportional share of the proposed mitigation under Cumulative conditions. Since 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.

Table 4.7-23 Cumulative (2035) and Cumulative plus Project Conditions Intersection LOS

ID	Intersection	Control	Peak Hour	Cumulative (2035)		Cumulative (2035) plus Project	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	El Dorado Hills Boulevard at Wilson Boulevard	Signal	AM	55.9	E	61.9	E
			PM	40.2	D	55.7	E
2	El Dorado Hills Boulevard at Serrano Parkway/Lassen Lane	Signal	AM	66.3	E	56.3	E
			PM	29.5	C	28.5	C
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	102.6	F	66.1	E
			PM	112.7	F	92.1	F
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	30.2	C	29.7	C
			PM	37.5	D	39.7	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	16.9	B	17.3	B
			PM	15.9	B	15.2	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	42.5	D	43.1	D
			PM	101.6	F	99.9	F
7	Latrobe Road at White Rock Road	Signal	AM	32.0	C	33.4	C
			PM	60.5	E	60.3	E
8	Saratoga Way at Wilson Boulevard (Project Only)	SSSC ³	AM	-	-	3.7 (20.3 southbound)	C
			PM	-	-	1.6 (18.2 southbound)	C
9	Saratoga Way at Finders Way	SSSC ³	AM	1.0 (18.5 southbound)	C	0.9 (20.3 southbound)	C
			PM	0.6 (13.3 southbound)	B	0.7 (15.1 southbound)	C
10	Saratoga Way at Arrowhead Drive	SSSC ³	AM	0.4 (19.4 southbound)	C	0.4 (17.4 southbound)	C
			PM	0.3 (17.0 southbound)	C	0.3 (17.4 southbound)	C

Notes: **Bold** and **shaded** represents unacceptable operations.

1: The Cumulative (2035) scenario assumes operation of the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.

2: The Cumulative (2035) with Project scenario assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.

3: Side Street Stop Controlled (SSSC) intersections are reported with the overall intersection delay followed by the delay of the worst approach. The reported LOS corresponds to the worst approach.

Source: Kimley-Horn 2015

<p>1</p> <p>↔ 200 / 90 ↔ 1330 / 740 ↔ 70 / 60 El Dorado Hills Blvd</p> <p>↔ 20 / 20 ↔ 10 / 20 ↔ 130 / 130</p> <p>Wilson Blvd</p> <hr/> <p>170 / 140 10 / 10 290 / 140</p> <p>↔ ↔ ↔</p> <p>90 / 260 660 / 1270 130 / 150</p>	<p>2</p> <p>↔ 40 / 60 ↔ 1600 / 870 ↔ 110 / 80 El Dorado Hills Blvd</p> <p>↔ 100 / 40 ↔ 40 / 30 ↔ 650 / 150</p> <p>Lassen Ln</p> <p>Serrano Pkwy</p> <hr/> <p>60 / 40 40 / 40 80 / 120</p> <p>↔ ↔ ↔</p> <p>50 / 110 720 / 1600 120 / 490</p>	<p>3</p> <p>↔ 580 / 200 ↔ 1680 / 820 ↔ 70 / 120 El Dorado Hills Blvd</p> <p>↔ 80 / 210 ↔ 120 / 120 ↔ 130 / 130</p> <p>Saratoga Way</p> <p>Park Dr</p> <hr/> <p>150 / 500 100 / 140 100 / 490</p> <p>↔ ↔ ↔</p> <p>90 / 110 660 / 1480 70 / 170</p>	<p>4</p> <p>↔ 640 / 170 ↔ 1200 / 1200 ↔ 70 / 70 El Dorado Hills Blvd</p> <p>↔ 60 / 100 ↔ 100 / 80 ↔ 80 / 50</p> <p>US-50 WB Ramps</p> <p>Saratoga Way</p> <hr/> <p>240 / 290 70 / 50 620 / 440</p> <p>↔ ↔ ↔</p> <p>900 / 1100 530 / 1370 130 / 210</p>
<p>5</p> <p>↔ 1570 / 1470 ↔ 330 / 220 Latrobe Rd</p> <p>↔ 210 / 530</p> <p>US-50 EB Ramps</p> <hr/> <p>1080 / 760</p> <p>↔</p> <p>1340 / 2150 510 / 620</p>	<p>6</p> <p>↔ 450 / 60 ↔ 1610 / 1480 ↔ 590 / 680 Latrobe Rd</p> <p>↔ 350 / 790 ↔ 50 / 20 ↔ 140 / 50</p> <p>Town Center Blvd</p> <hr/> <p>50 / 280 20 / 60 20 / 100</p> <p>↔ ↔ ↔</p> <p>40 / 10 1450 / 1700 20 / 70</p>	<p>7</p> <p>↔ 790 / 490 ↔ 870 / 790 ↔ 110 / 360 Latrobe Rd</p> <p>↔ 200 / 270 ↔ 530 / 360 ↔ 360 / 280</p> <p>White Rock Rd</p> <hr/> <p>340 / 690 160 / 540 40 / 50</p> <p>↔ ↔ ↔</p> <p>20 / 10 970 / 820 190 / 630</p>	<p>8</p> <p>↔ 180 / 40 ↔ 50 / 30 Wilson Blvd</p> <p>↔ 20 / 40 ↔ 760 / 400</p> <p>Saratoga Way</p> <hr/> <p>50 / 180 330 / 1110</p> <p>↔ ↔</p>
<p>9</p> <p>↔ 20 / 20 ↔ 40 / 30 Finders Way</p> <p>↔ 10 / 30 ↔ 760 / 420</p> <p>Saratoga Way</p> <hr/> <p>10 / 20 370 / 1120</p> <p>↔ ↔</p>	<p>10</p> <p>↔ 10 / 10 ↔ 10 / 10 Arrowhead Dr</p> <p>↔ 10 / 10 ↔ 760 / 440</p> <p>Saratoga Way</p> <hr/> <p>10 / 10 400 / 1140</p> <p>↔ ↔</p>		

LEGEND	
#	Study Intersection
XX/YY	AM/PM Peak-Hour Volumes
	Project Site
	New Roadway Connection
	County Line

Kimley»Horn

Source: Kimley-Horn 2015

X14010119 01 011

Exhibit 4.7-10

Cumulative (2035) plus Project Peak Hour Traffic Volumes



Table 4.7-24 Cumulative (2035) and Cumulative plus Project Freeway Facilities LOS

Highway 50				Cumulative (2035) ¹		Cumulative (2035) with Project ²	
Direction	Segment	Type	Peak Hour	Density ³	LOS	Density ³	LOS
Eastbound	West of Latrobe Road southbound off ramp	Basic	AM	13.7	B	13.7	B
			PM	19.0	C	19.0	C
	Latrobe Road southbound off ramp	Diverge	AM	24.4	C	24.2	C
			PM	27.9	C	28.0	C
	El Dorado Hills Boulevard northbound off ramp	Diverge	AM	16.3	B	16.3	B
			PM	23.5	C	23.5	C
	El Dorado Hills Boulevard northbound off ramp to Latrobe Road on ramp	Basic	AM	9.1	A	9.2	A
			PM	13.9	B	13.9	B
	Latrobe Road on ramp	Merge	AM	19.9	B	20.0	B
			PM	24.5	C	24.6	C
East of Latrobe Road on ramp	Weave ⁴	AM	-	B	-	B	
		PM	-	C	-	C	
Westbound	East of El Dorado Hills Boulevard off ramp	Weave ⁴	AM	-	C	-	C
			PM	-	B	-	B
	El Dorado Hills Boulevard off ramp	Diverge	AM	20.8	C	20.8	C
			PM	19.0	B	19.0	B
	El Dorado Hills Boulevard off ramp to El Dorado Hills Boulevard on ramp	Basic	AM	12.4	B	12.4	B
			PM	11.2	B	11.2	B
	El Dorado Hills Boulevard on ramp	Merge	AM	25.2	C	25.2	C
			PM	21.8	C	21.8	C
	West of El Dorado Hills Boulevard on ramp	Weave ⁴	AM	-	D	-	D
			PM	-	C	-	C

Notes:
 1: The Cumulative (2035) scenario assumes operation of the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.
 2: The Cumulative (2035) with Project scenario assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.
 3: Density measured in passenger cars/mile/lane
 4: Weave segments are analyzed using the Leisch Method, which is not based on density.
 Source: Kimley-Horn 2015

Table 4.7-25 Cumulative (2035) and Cumulative plus Project Roadway Segment LOS

Location	Peak-Hour	Analysis Direction	Cumulative (2035) ¹		Cumulative (2035) plus Project ²	
			LOS	Density	LOS	Density
Saratoga Way, West of Project	AM	WB	B	11.1	B	11.8
		EB	A	4.3	A	4.7
	PM	WB	A	4.8	A	5.8
		EB	B	14.8	B	16.0
Saratoga Way, East of Project	AM	WB	A	10.9	A	9.6
		EB	A	4.7	A	5.1
	PM	WB	A	5.1	A	5.6
		EB	B	14.9	B	14.3

Notes: Density measured in passenger cars/mile/lane
 1: The Cumulative (2035) scenario assumes operation of the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange without the implementation of the proposed residential development.
 2: The Cumulative (2035) with Project scenario assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.
 Source: Kimley-Horn 2015

Mitigation Measures

Mitigation Measure 4.7-1a: Pay TIM Fees

Implement Mitigation Measure 4.7-1a, as described above.

Mitigation Measure 4.7-1b: Complete a Signal Timing Plan

Implement Mitigation Measure 4.7-1b, as described above.

Mitigation Measure 4.7-2: Road and intersection improvements

Implement Mitigation Measure 4.7-2, as described above.

Significance after Mitigation

The significant impact at the El Dorado Hills Boulevard at Saratoga Way/Park Drive intersection can be mitigated by performing signal cycle length optimization and reallocation of green time. This would be implemented by the applicant through preparation and implementation of a signal timing plan for the El Dorado Hills Boulevard at Saratoga Way/Park Drive intersection, as described in Mitigation Measure 4.7-1b.

With implementation of Mitigation Measure 4.7-2, the applicant would be required to construct the necessary improvements or contribute to the County’s TIM Fee program if the improvements are included in the 10-Year CIP, as determined by the CDA. As shown in Table 4.7-26, implementation of the roadway improvements discussed above would result in acceptable intersection operations during the p.m. peak-hour. Therefore, this impact would be reduced to a **less-than-significant** level.

Table 4.7-26 Cumulative (2035) plus Project Intersection LOS with and without Mitigation							
ID	Intersection	Control	Peak Hour	Cumulative (2035) plus Project ¹		Cumulative (2035) plus Project ¹ , with Mitigation	
				Delay (seconds)	LOS	Delay (seconds)	LOS
3	El Dorado Hills Boulevard at Saratoga Way/Park Drive	Signal	AM	66.1	E	67.5	E
			PM	92.1	F	67.1	E
4	El Dorado Hills Boulevard at Highway 50 westbound ramps	Signal	AM	29.7	C	30.4	C
			PM	39.7	D	43.3	D
5	Latrobe Road at Highway 50 eastbound ramps	Signal	AM	17.3	B	17.1	B
			PM	15.2	B	15.8	B
6	Latrobe Road at Town Center Boulevard	Signal	AM	43.1	D	29.4	C
			PM	99.9	F	38.8	D
7	Latrobe Road at White Rock Road	Signal	AM	33.4	C	33.1	C
			PM	60.3	E	59.9	E

Notes: **Bold** and **shaded** represents unacceptable operations.

1: Assumes the extension of Saratoga Way as a four-lane roadway between Finders Way and Iron Point Road and the Highway 50/Silva Valley Parkway interchange and proposed residential development.

Source: Kimley-Horn 2015

Impact 4.7-4: Construction-related traffic impacts.

Construction of the project would result in temporary construction traffic and temporary disruption to traffic circulation along roadways near the project site. The amount of construction activity would vary depending on the particular type, number, and duration of usage for the varying equipment, and the phase of construction. This would be a **potentially significant** impact.

With preparation of a construction traffic management plan, as described in Mitigation Measure 4.7-4, this impact would be **less than significant**.

Construction would include four basic phases: grading, infrastructure improvements, building construction, and installation of park improvements. It is anticipated that construction would occur between 2017 and 2022. Up to 138 construction workers would be on the site during the most labor-intensive phase of construction, which would generate approximately 240 one-way vehicle trips per day (assuming vehicle occupancy of 1.15 workers per vehicle). Up to 44 vendor trucks would access the site in a day, which would generate 87 one-way trips.

Project construction would result in a short-term traffic increase associated mostly with workers commuting and material delivery (typically by truck). The proposed project would use primarily onsite soil for fill requirements (a “balanced” site) and would, therefore, require minimal import/export of fill material. The amount of construction activity would vary depending on the particular type, number, and duration of usage for the varying equipment and the phase of construction. These variations would affect the amount of project-generated traffic for both worker commute trips and material deliveries. However, during peak periods of construction, it is anticipated that construction-related traffic would be substantial and, without appropriate controls in place to manage construction traffic, could adversely affect the operation of study area roadways and intersections. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 4.7-4: Prepare and implement a construction traffic management plan.

The applicant (or designated construction manager) shall prepare a construction Traffic Management Plan (TMP) in consultation with the El Dorado County Transportation Division, as well as all other applicable transportation entities, including Caltrans for state roadway facilities and City of Folsom for city roadway facilities. The TMP will ensure that construction traffic does not result in exceedance of peak-hour LOS at existing affected transportation facilities beyond baseline conditions. The County will ensure implementation of the construction TMP during all applicable construction phases. The TMP would address the following, as needed:

- ▲ scheduling for oversized material deliveries to the work site and haul routes, including flagging, scheduling off-peak deliveries (recognizing applicable noise standards may limit early morning/evening deliveries);
- ▲ coordination of construction traffic with other concurrent, major construction projects in the same local transportation network;
- ▲ 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. Such actions could include offering a ride-sharing program for construction workers, offering some flexibility for start- and end-work times, and even restricting peak hour construction trips, if necessary.

The TMP would include an up-to-date evaluation of current operational characteristics of the roadways to verify that the plan is successful, or to identify whether additional measures should be added (as described above).

Significance after Mitigation

The construction TMP would reduce the significance of this impact by reducing peak hour construction traffic and would substantially improve and manage construction-related traffic conditions on area roadways. Therefore, this impact would be reduced to **less than significant**.

Impact 4.4-5: Pedestrian, bicycle, and transit facilities impacts.

The project would be required to construct onsite roadway and pedestrian facilities in accordance with County design guidelines. These onsite pedestrian and bicycle facilities would connect the project with the future adjacent Class II bike lanes along Saratoga Way. Through this connection to the proposed bike lane network, the project would provide continuity with adjacent projects, schools, parks, and other public facilities. This impact would be **less than significant**.

According to the El Dorado County Bicycle Transportation Plan, Class II bike lanes are proposed for Saratoga Way in the vicinity of the project site. While the project would not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the plan, it is required to include pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities. The proposed project would be required to construct on-site roadway and pedestrian facilities in accordance with County design guidelines. These onsite pedestrian and bicycle facilities would connect the project with the future adjacent Class II bike lanes along Saratoga Way. Through this connection to the proposed bike lane network, the project would provide continuity with adjacent projects, schools, parks, and other public facilities and would be consistent with the El Dorado County Bicycle Transportation Plan. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.7-6: Access and circulation impacts.

Based on a review of general access and onsite circulation conducted by a traffic engineer, adequate access to/from Saratoga Way and the surrounding transportation network would be provided. Thus, this impact would be **less than significant**.

The project includes connection of Saratoga Way and Wilson Boulevard, which would increase community connectivity and promote emergency access. The project would be required to provide fire and emergency medical services to the project site consistent with the *El Dorado County General Plan*, State Fire Safety Regulations, as adopted by El Dorado County, and the California Fire Code, as amended locally. These include requirements related to emergency vehicle access, including roadway widths and turning radii. Through these measures, the project would be designed to allow for adequate emergency vehicle access and private vehicle evacuation.

The site plan for the proposed project was qualitatively reviewed for general access and onsite circulation. According to the site plan, primary access to the site would be provided from Wilson Boulevard via its connectivity to Saratoga Way and existing Wilson Boulevard to the north. Additionally, secondary right in/right out access would be provided from Saratoga Way, west of Wilson Boulevard. Detailed LOS and delay data were previously reported for the Saratoga Way intersection with Wilson Boulevard. The combination of these access points, as well as the onsite circulation system, would provide adequate access to/from Saratoga Way and improve connectivity associated with the surrounding transportation network. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.7-7: Traffic safety impacts.

Several intersections in the project area have been identified as areas prone to vehicle accidents. Although the project is consistent with the amount of development contemplated in the County’s recent TDM and land use update, it would result in introduction of additional people to unsafe intersections and roadway segments. However, because existing safety issues in the project vicinity have either recently been corrected, or improvements are imminent, this impact would be **less than significant**.

According to the County’s 2011 Accident Location Study, three or more accidents occurred during a three-year period between January 1, 2009, and December 31, 2011 at each of several study area sites (i.e., intersections and roadway segments). According to the study, these sites were selected for investigation and determination of corrective action(s). Table 4.7-27 provides a summary of the study area sites and the status of their identified actions.

Site #	Location Description	Accident Rate ¹	Identified Action Status
13	El Dorado Hills Boulevard, Highway 50 on/off ramps	1.07	Pending Improvements
14	El Dorado Hills Boulevard, North of Lassen/Serrano Parkway	0.25	None Required
15	El Dorado Hills Boulevard, South of Wilson Boulevard	0.12	None Required
32	Latrobe Road, at White Rock Road	0.24	None Required
33	Latrobe Road, Town Center Boulevard to Highway 50	1.34	Recent Improvements
57	Serrano Parkway, vicinity of El Dorado Hills Boulevard	0.32	None Required

1: Accidents per Million Vehicles for single sites (intersections/curves), Accidents per Million Vehicle Miles for roadway sections.
 Source: El Dorado County 2012

According to the study, four sites do not require further review, but would continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis. One site has a pending improvement and it is anticipated that, upon completion, the improvement would substantially reduce the number of accidents.

The proposed project is consistent with the land use designation and zoning density for the site. As such, the size and magnitude of the proposed project (317 single-family units) is consistent with the amount of development contemplated in the County’s recent TDM and land use update. Because this development is similar to surrounding land uses in the area, potential traffic safety impacts would be related to the introduction of additional people to unsafe intersections and roadway segments. However, existing safety issues in the project vicinity have either recently been corrected, or improvements are imminent. In addition, as described under Impact 4.7-6, the circulation system would provide adequate access to/from Saratoga Way and the surrounding transportation network, and does not contain sharp curves or other roadway features that could be considered unsafe. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

4.8 AIR QUALITY

This section describes existing air quality conditions in the project area and applicable air quality regulations, and analyzes potential short-term and long-term air quality impacts that could result from implementation of the project. The methods of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions are consistent with the recommendations of the El Dorado County Air Quality Management District (EDCAQMD), the California Air Resources Board (ARB), and the U.S. Environmental Protection Agency (EPA). In addition, mitigation measures are recommended as necessary to reduce significant air quality impacts. The analysis in this section is based on the *Rancho Dorado Project Air Quality Study* prepared by KD Anderson & Associates (KD Anderson & Associates 2014).

Comments received from the public on the Notice of Preparation included concerns over increased traffic resulting in air quality impacts on nearby residences during project operation, release of naturally occurring asbestos (NOA) during either construction or operation, and the reliability of water sources used for dust watering activities during construction.

4.8.1 Environmental Setting

REGIONAL SETTING

The project site is located in a portion of western El Dorado County that is part of the Mountain Counties Air Basin (MCAB). The MCAB comprises portions of Placer County and El Dorado County, and all of Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, and Mariposa counties. The MCAB includes the central and northern Sierra Nevada Mountains. Elevations range from several hundred feet in the foothills to over 10,000 feet above mean sea level along the Sierra crest.

Ambient concentrations of air pollutant emissions are determined by the amount of pollutants emitted and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as climate, meteorology, and topography, in addition to the level of emissions by existing air pollutant sources.

The MCAB generally experiences warm, dry summers and wet winters. During the summer, in the western portion of the MCAB where the project site is located, temperatures often exceed 85 degrees Fahrenheit (°F) coupled with clear sky conditions, which is favorable for ozone formation. Local climatology of the project site is best represented by ambient temperature measurements at the Folsom Dam and wind measurements at Mather Airport. Maximum temperatures occur during July and reach 80 °F on average. Minimum temperatures can be as low as 38 °F during winter months (WRCC 2015a). Average annual precipitation of approximately 24 inches (0.1 inches of snowfall) occurs primarily during the months of November through March (WRCC 2015a). Average annual wind speed is approximately 6 miles per hour (mph) from the south (WRCC 2015b).

AIR QUALITY STANDARDS AND EXISTING CONCENTRATIONS

Criteria Air Pollutants

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}), and lead are used as indicators of ambient air quality conditions and are referred to as criteria air pollutants (CAPs). CAPs are air pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set by EPA and ARB.

A brief description of each CAP source types and health effects is provided below in Table 4.8-1. Additional information, including future trends and monitoring data at those monitoring stations located closest to the project site, is provided for ozone, NO₂, and PM, which are the key CAPs associated with the project analysis.

Table 4.8-1 Sources and Health Effects of Criteria Air Pollutants			
Pollutant	Sources	Acute¹ Health Effects	Chronic² Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NO _x in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO _x results from the combustion of fuels	Increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	Permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	Reduced capacity to pump oxygenated blood; headache, dizziness, fatigue, nausea, vomiting, death	Permanent heart and brain damage
Nitrogen dioxide (NO ₂)	Combustion devices (e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines), industrial processes, and fires	Coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; aggravation existing heat disease leading to death	Chronic bronchitis, emphysema, decreased lung function
Sulfur dioxide (SO ₂)	Combustion devices (e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines), industrial processes, and fires	Irritation of upper respiratory tract, increased asthma symptoms, aggravation of existing heart disease leading to death	Chronic bronchitis, emphysema
Respirable particulate matter (PM ₁₀), Fine particulate matter (PM _{2.5})	Fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO ₂ and ROG	Breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	Alterations to the immune system, carcinogenesis
Lead	Metal processing, piston-engine aircraft or other vehicles operating on leaded fuel	Reproductive/developmental effects (fetuses and children)	Numerous effects including neurological, endocrine, and cardiovascular effects
<p>Notes: NO_x = oxides of nitrogen; ROG = reactive organic gases ¹ "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations. ² "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations. Source: EPA 2014</p>			

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air in large amounts, but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_x) in the presence of sunlight (EPA 2014). ROG are volatile organic compounds (VOCs) that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. Emissions of the ozone precursors ROG and NO_x have decreased over the past two decades because of more stringent motor vehicle standards and cleaner burning fuels (ARB 2014a: 3-4 and 4-46).

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂. The combined emissions of NO and NO₂ are referred to as NO_x and are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (ozone), the NO₂ concentration in a particular geographical area may not be representative of the local sources of NO_x emissions (EPA 2014).

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM₁₀. PM₁₀ consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (ARB 2014a: 1-13 and 3-6; EPA 2012a). PM_{2.5} includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM₁₀ emissions are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM₁₀ have increased slightly over the last 20 years, and are projected to continue to increase slightly through 2035 (ARB 2014a: 3-7). PM_{2.5} emissions have remained relatively steady over the last 20 years and are projected to decrease slightly through 2035 (ARB 2014a: 3-6).

Criteria Air Pollutant and Precursor Monitoring Station Data and Attainment Area Designations

Concentrations of CAPs are measured at several monitoring stations in and near the MCAB. The measurements at the Placerville-Gold Nugget Way, Sacramento-Del Paso Manor, Colfax-City Hall, and Auburn-11645 Atwood Road stations are presented here and are generally representative of ambient air quality in the vicinity of the project. Table 4.8-2 summarizes the air quality data from these stations for 2011 through 2013.

Table 4.8-2 Summary of Annual Air Quality Data (2011–2013)^a			
Ozone^b			
Highest Concentration (1-hour/8-hour, ppm)	0.103/0.086	0.108/0.096	0.097/0.084
Second Highest Concentration (1-hour/8-hour, ppm)	0.095/0.079	0.107/0.094	0.093/0.083
Number of days state standard exceeded (1-hour/8-hour)	0/0	NA	0/0
Number of days national standard exceeded (1-hour/8-hour)	0/0	NA	0/0
Carbon Monoxide (CO)			
Highest Concentration (8-hour, ppm)	1.60	2.27	1.51
Second Highest Concentration (8-hour, ppm)	1.45	2.23	1.50
Number of days national and state standards exceeded	0	0	0
Respirable Particulate Matter (PM₁₀)^d			
Highest Concentration (µg/m ³) (California)	NA	31.7	57.5
Second Highest Concentration (µg/m ³) (California)	NA	29.4	56.1
Annual Average (µg/m ³) (California)	NA	13.7	17.3
Number of days national standard exceeded (measured ^e)	0	0	0
Fine Particulate Matter (PM_{2.5})^f			
Highest Concentration (µg/m ³) (California)	NA	23.6	55.8
Second Highest Concentration (µg/m ³) (California)	NA	21.5	55.6
Annual Average (µg/m ³) (California)	NA	6.4	7.4
Number of days national standard exceeded (measured ^e)	NA	6	7
Notes: µg/m ³ = micrograms per cubic meter; NA = data not available; ppm = parts per million			
^a The ambient air quality standards and attainment status for these pollutants are presented in Table 4.8-3.			
^b Ozone measurements are from the Gold Nugget Way Station in Placerville.			
^c Carbon monoxide measurements are from the Del Paso Manor Station in Sacramento.			
^d PM ₁₀ measurements are from the monitoring station at the Colfax City Hall.			
^e Measured days are those days that an actual measurement was greater than the level of the daily standard. The number of days above the standard is not necessarily the number of violations of the standard for the year.			
^f PM _{2.5} measurements are from the monitoring station – at 11645 Atwood Road in Auburn.			
Source: KD Anderson & Associates 2014; ARB 2014b			

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or hazardous air pollutants (HAPs) in federal parlance, are also used to indicate the quality of ambient air. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Unlike CAPs, TACs are pollutants of local concern because they can present harmful effects when they are emitted in close proximity to sensitive receptors.

Highway 50, which is adjacent to the southern boundary of the project site, represents the predominant non-stationary source of TACs in the project vicinity. The roadway is considered a line source which is comprised of emissions from multiple vehicles that traverse the roadway.

The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most prominent being diesel PM (ARB 2005: 9). In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. NOA is also recognized by ARB as a TAC.

Diesel Particulate Matter

Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by all diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate concentrations of diesel PM.

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. NOA, which was identified as a TAC by ARB in 1986, is located in many parts of California and is commonly associated with serpentine soils and rocks. According to three reports, two by the California Department of Conservation, Division of Mines and Geology and one from El Dorado County, the project vicinity may contain NOA (Van Gosen and Clinkenbeard 2011: 59; Churchill and Hill 2000; El Dorado County 2005, as cited in KD Anderson & Associates 2014).

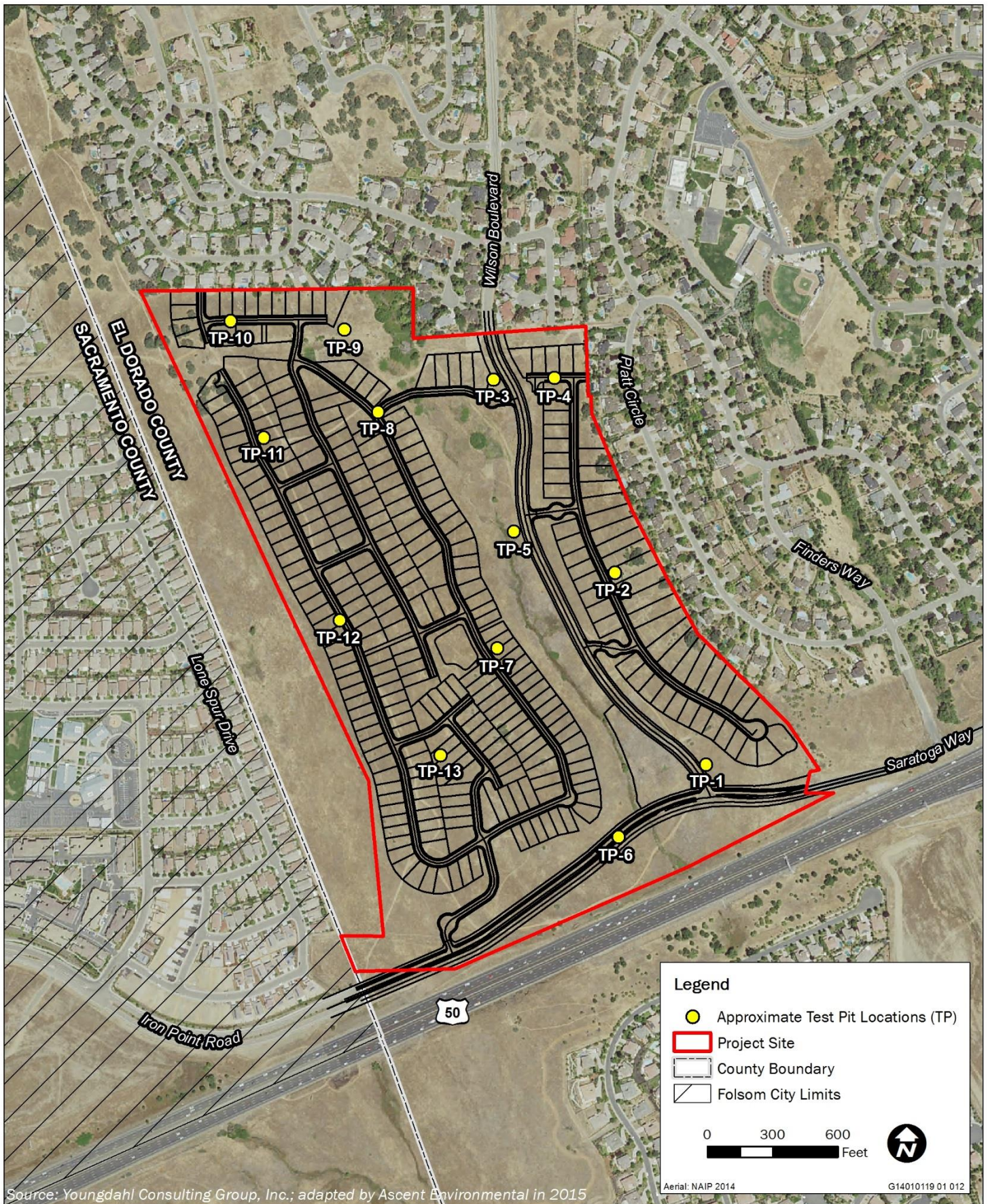
The asbestos map of western El Dorado County (*Asbestos Review Areas, Western Slope, County of El Dorado, State of California*; El Dorado County 2005) shows the location of individual parcels and areas within the following four categories considered to be subject to elevated risk of containing NOA:

- ▲ Found Area of NOA,
- ▲ Quarter Mile Buffer for Found Area of NOA,
- ▲ More Likely to Contain Asbestos, and
- ▲ Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line.

The northwest corner of the project site is mapped as within the Quarter Mile Buffer for Found Area of NOA (El Dorado County 2005). Soil samples collected from 13 test pits on the site in 2006 indicate that there are trace levels of NOA (less than or equal to 0.25 percent of particles) on the project site (see Exhibit 4.8-1).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).



Source: Youngdahl Consulting Group, Inc.; adapted by Ascent Environmental in 2015

Exhibit 4.8-1

Location of Naturally Occurring Asbestos Test Pits



The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

EXISTING EMISSION SOURCES

The Air Quality Study (KD Anderson & Associates 2014) summarizes emissions of CAPs and precursors within the MCAB for various source categories in 2012 (the most recent data available). According to the emissions inventory, mobile sources are the largest contributor to the estimated annual average for air pollutant levels of ROG and NO_x accounting for approximately 18 percent and 58 percent, respectively, of the total emissions. Areawide sources account for approximately 80 percent and 82 percent of the County's PM₁₀ and PM_{2.5} emissions, respectively (ARB 2013a).

Regarding emissions of diesel PM, emissions from diesel mobile sources are projected to continue to decrease after 2010 due to the implementation of various emission control regulations. Overall, statewide emissions are forecasted to decline by 71 percent between 2000 and 2035 (ARB 2014a: 3-8). Sources of diesel PM at and around the project site include diesel trucks and backup diesel generators.

SENSITIVE LAND USES

Land uses considered sensitive to air quality are generally those that include uses where exposure to pollutants could result in health-related risks to individuals. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthy concentrations of air pollutants. Existing sensitive land uses near the project site include the single family homes directly to the north and east of the project and approximately 300 feet to west of the project. Approximately 30 single family homes located at the northern and western borders of the project site are located within 50 feet of the planned single family home parcels on the project site. Additionally, two elementary schools are located within 1,000 feet of the project boundary: William Brooks Elementary School (670 feet east of the project site in El Dorado County) and Russell Ranch Elementary School (850 feet west of the project site in Sacramento County). Two small parks, Deputy Jeff Mitchell Field and Peter Bertelsen Memorial Park, are located approximately 1,100 feet east of the project site.

4.8.2 Regulatory Setting

FEDERAL

EPA has been charged with implementing national air quality programs. EPA air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish National Ambient Air Quality Standards (NAAQS). As shown in Table 4.8-3, EPA has established primary and secondary NAAQS for the following CAPs: ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a state implementation plan (SIP), for areas that do not attain the NAAQS. The CAA Amendments of 1990 added requirements for states with areas that are not in attainment of all NAAQSs to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest

emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and permitting of stationary air pollution sources in the nonattainment air basin.

Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

The project site is in the Sacramento Federal Ozone Nonattainment Area. In accordance with the requirements of the CAA, EDCAQMD, along with the other air districts in the region, prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan) in December 2008. The EDCAQMD adopted the Ozone Attainment Plan on February 10, 2009, and ARB determined that the plan meets CAA requirements and approved it on March 26, 2009, as a revision to the SIP (El Dorado County 2009).

The 2013 Ozone Attainment Plan revision shows that the region continues to meet federal progress requirements and demonstrates that the Sacramento Region will meet the 1997 NAAQS by 2018. The 2013 Ozone Attainment Plan was approved by ARB on November 21, 2013 and submitted to EPA as a revision to the SIP on December 31, 2013. On March 2, 2015, the EPA approved the SIP revisions that provide for the attainment of the 1997 8-hour NAAQS in the Sacramento Federal Ozone Nonattainment Area.

Hazardous Air Pollutants

EPA and ARB regulate HAPs and TACs, respectively. ARB regulates TACs through statutes and regulations that generally require the use of the maximum available control technology or best available control technology (BACT) for TACs to limit emissions. These, in conjunction with additional rules set forth by EDCAQMD, described further below, establish the regulatory framework for TACs.

EPA has programs for identifying and regulating HAPs. Title III of the CAA directed EPA to promulgate national emissions standards for HAPs. The national emissions standards for HAPs may differ for major sources and for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year of any HAP or more than 25 tons per year of any combination of HAPs; all other sources are considered area sources.

STATE

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). California law authorizes ARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare.

Criteria Air Pollutants

ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned CAPs. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Table 4.8-3 Ambient Air Quality Standards and Attainment Status in El Dorado County

Pollutant	Averaging Time	California Attainment Status	California ^{a,b}	National Attainment Status	National ^c	
					Primary ^{b,d}	Secondary ^{b,e}
Ozone	1-hour	N	0.09 ppm (180 µg/m ³)	N (Severe)	-	Same as primary standard
	8-hour		0.070 ppm (137 µg/m ³)	N (Severe)	0.070 ppm (137 µg/m ³)	
Carbon monoxide (CO)	1-hour	U	20 ppm (23 mg/m ³)	N (Moderate)	35 ppm (40 mg/m ³)	Same as primary standard
	8-hour		9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	
Nitrogen dioxide (NO ₂) ^g	Annual arithmetic mean	A	0.030 ppm (57 µg/m ³)	U	53 ppb (100 µg/m ³)	Same as primary standard
	1-hour		0.18 ppm (339 µg/m ³)		100 ppb (188 µg/m ³)	
Sulfur dioxide (SO ₂)	Annual arithmetic mean	A	-	U	0.030 ppm	-
	24-hour		0.04 ppm (105 µg/m ³)		0.14 ppm	-
	3-hour		-		-	0.5 ppm (1300 µg/m ³)
	1-hour		0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³)	-
Respirable particulate matter (PM ₁₀)	Annual arithmetic mean	N	20 µg/m ³	U	-	Same as primary standard
	24-hour		50 µg/m ³		150 µg/m ³	
Fine particulate matter (PM _{2.5})	Annual arithmetic mean	U	12 µg/m ³	N (Moderate)	12.0 µg/m ³	15.0 µg/m ³
	24-hour		-		35 µg/m ³	

Table 4.8-3 Ambient Air Quality Standards and Attainment Status in El Dorado County

Pollutant	Averaging Time	California Attainment Status	California ^{a,b}	National Attainment Status	National ^c	
					Primary ^{b,d}	Secondary ^{b,e}
Lead ^f	Calendar quarter	A	-	U	1.5 µg/m ³	Same as primary standard
	30-Day average		1.5 µg/m ³		-	-
	Rolling 3-Month Average		-		0.15 µg/m ³	Same as primary standard
Hydrogen sulfide	1-hour	U	0.03 ppm (42 µg/m ³)	No national standards		
Sulfates	24-hour	A	25 µg/m ³			
Vinyl chloride ^f	24-hour	-	0.01 ppm (26 µg/m ³)			
Visibility-reducing particulate matter	8-hour	U	Extinction of 0.23 per km			

Notes:

µg/m³ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million

Unclassified (U) = a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A) = a pollutant is designated attainment if the standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N) = a pollutant is designated nonattainment if there was a least one violation of a standard for that pollutant in the area.

^a California standards for ozone, SO₂ (1- and 24-hour), NO₂, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California Ambient Air Quality Standards are listed in the Table of Standards in Section 70200 of Title 130 of the California Code of Regulations.

^b Concentration expressed first in units in which it was issued. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^c National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when 99% of the daily concentrations, averaged over three years, are equal to or less than the standard. The PM_{2.5} 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard.

^d National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^f The ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources : ARB 2013b, ARB 2015; EPA 2015

Among ARB's other responsibilities are overseeing local air district compliance with federal and state laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, including diesel PM, and adopted EPA's list of HAPs as TACs.

Once a TAC is identified, ARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold standard exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold standard. If no safe threshold standard exists, the measure must incorporate BACT for toxics to minimize emissions.

ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (ARB 2011). Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated-gasoline regulations) and control technologies.

LOCAL

El Dorado County Air Quality Management District

Criteria Air Pollutants

EDCAQMD attains and maintains air quality conditions in El Dorado County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean-air strategy of EDCAQMD includes preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. EDCAQMD also inspects stationary sources of air pollution and responds to citizen complaints, and implements programs and regulations required by the CAA, CAA Amendments, and CCAA.

All projects in El Dorado County are subject to adopted EDCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the proposed project may include the following:

- ▲ **EDCAQMD Rule 202—Visible Emissions.** A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- ▲ **EDCAQMD Rule 224—Cutback and Emulsified Asphalt Paving Materials.** A person shall not manufacture for sale nor use for paving, road construction, or road maintenance any: rapid cure cutback asphalt; slow cure cutback asphalt containing organic compounds which evaporate at 500° F or lower as determined

by current American Society for Testing and Materials (ASTM) Method D402; medium cure cutback asphalt except as provided in EDCAQMD Rule 224.1.B.; or emulsified asphalt containing organic compounds which evaporate at 500° F or lower as determined by current ASTM Method D244, in excess of 3 percent by volume.

- ▲ **EDCAQMD Rule 215—Application of Architectural Coatings.** No person shall: (i) manufacture, blend, or repackage for sale within EDCAQMD; (ii) supply, sell, or offer for sale within EDCAQMD; or (iii) solicit for application or apply within EDCAQMD, any architectural coating with a VOC content in excess of the corresponding specified manufacturer’s maximum recommendation. “Manufacturer’s maximum recommendation” means the maximum recommendation for thinning that is indicated on the label or lid of the coating container.

- ▲ **EDCAQMD Rule 223-1—Fugitive Dust.**
 - **Visible Emissions Not Allowed Beyond the Boundary Line:** A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emission source.

 - **Visible Emissions from Active Operations:** In addition to the requirements of Rule 202, Visible Emissions, a person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer’s view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as number 2 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

 - **Concentration Limit:** A person shall not cause or allow PM₁₀ levels to exceed 50 micrograms per cubic meter (24-hour average) when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other EPA-approved equivalent method for PM₁₀ monitoring.

 - **Track-Out onto Paved Public Roadways:** Visible roadway dust as a result of active operations, spillage from transport trucks, and the track-out of bulk material onto public paved roadways shall be minimized and removed.

The track-out of bulk material onto public paved roadways as a result of operations, or erosion, shall be minimized by the use of track-out and erosion control, minimization, and preventative measures, and removed within 1 hour from adjacent streets any time track-out extends for a cumulative distance of greater than 50 feet onto any paved public road during active operations.

All visible roadway dust tracked-out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. Wet sweeping or a High Efficiency Particulate Air filter equipped vacuum device shall be used for roadway dust removal.

Any material tracked-out, or carried by erosion, and clean-up water, shall be prevented from entering waterways or storm water inlets as required to comply water quality control requirements.

- **Minimum Dust Control Requirements:** The following dust mitigation measures are to be initiated at the start and maintained throughout the duration of the construction or grading activity, including any construction or grading for road construction or maintenance.
 - Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.

- The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 mph unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 mph from emitting dust exceeding Ringelmann 2 or visible emissions from crossing the project boundary line.
 - Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
 - Prior to any ground disturbance, including grading, excavating, and land clearing, sufficient water must be applied to the area to be disturbed to prevent emitting dust exceeding Ringelmann 2 and to minimize visible emissions from crossing the boundary line.
 - Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt, from being released or tracked offsite.
 - When wind speeds are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures, grading and earthmoving operations shall be suspended. No trucks are allowed to transport excavated material offsite unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments, and loads are either covered with tarps; or wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point of the load extends above the top of the cargo compartment.
- Wind-Driven Fugitive Dust Control: A person shall take action(s), such as surface stabilization, establishment of a vegetative cover, or paving, to minimize wind-driven dust from inactive disturbed surface areas.
- ▲ **EDCAQMD Rule 501—General Permit Requirements.** Any person operating an article, machine, equipment, or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from the Air Pollution Control Officer. Stationary sources subject to the requirements of EDCAQMD Rule 522, Federal Operating Permit Program, must also obtain a Title V permit pursuant to the requirements and procedures of that rule.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce ARB's control measures. All sources with the potential to emit TACs are required to obtain permits from the district under EDCAQMD Rule 501, General Permit Requirements; Rule 523, New Source Review; and Rule 522, Federal Operating Permit. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures.

Sources that require a permit are analyzed by EDCAQMD (e.g., health risk assessment) based on their potential to emit TACs. If it is determined that the project will emit toxics in excess of EDCAQMD's threshold of significance for TACs (identified below), sources have to implement the BACT for TACs to reduce emissions. If a source cannot reduce the risk below the threshold of significance even after the BACT has been implemented, the air district will deny the permit required by the source.

EDCAQMD is also responsible for implementing and enforcing asbestos-related regulations and programs. This includes implementation of Title 130, Sections 93105 and 93106 of the California Code of Regulations (Asbestos Airborne Toxic Control Measure-Asbestos-Containing Serpentine) and the County's Naturally Occurring Asbestos and Dust Protection Ordinance. Regulated activities include construction or digging on a

site containing NOA in rock or soils and the sale and use of serpentine material or rock containing asbestos materials for surfacing (El Dorado County 2004).

In addition to addressing fugitive dust, EDCAQMD's Rule 223 also addresses NOA emissions during construction activities. The presence of NOA on the site triggers specific County requirements and additional recommendations as listed in El Dorado County Air Quality Management District Rule 223-2. Rule 223-2 is intended to reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction-related activities that disturbs or potentially disturbs NOA by requiring actions to prevent, reduce, or mitigate asbestos emissions. The County's Air Pollution Control Officer may provide an exemption from Rule 223-2 if a Professional Geologist has conducted a geologic evaluation of the property and determined that no serpentine or ultramafic rock, or asbestos, is likely to be found in the area to be disturbed. Where asbestos is known or suspect to occur on a portion of a project site, the entire site is generally subject to an Asbestos Dust Mitigation Plan, which also meets the requirements of the Fugitive Dust Control Plan required under Rule 223-1.

Rule 223-2 regulates grading in asbestos review areas and requires that finished grade surface asbestos concentrations be below 0.25 percent as measured by ARB Test Method (TM) 435; potentially requiring testing and management for asbestos during grading followed by the testing of finished grades for asbestos. All export soil/rock is required to be tested along with the completion of special documentation to accompany the export. Public disclosure is required for properties containing asbestos.

Odors

EDCAQMD has determined some common types of facilities that have been known to produce odors: wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm, and federal and state air quality regulations do not contain any requirements for their control, EDCAQMD has no rules or standards related to odor emissions other than their nuisance rules:

- ▲ **EDCAQMD Rule 205—Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property. The provisions of Rule 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

Any actions related to odors are based on citizen complaints to local governments and EDCAQMD.

El Dorado County General Plan

The Health, Safety, and Noise Element of the *El Dorado County General Plan* provides county-wide goals and polices aimed at improving air quality (El Dorado County 2004). Goals and policies in this element parallel those identified in the State and federal plans applicable to El Dorado County. The following policies related to Goal 6.7 of the general plan, which is "to strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board" and "[m]inimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors."

- ▲ **Policy 6.7.6.2:** New facilities in which sensitive receptors are located (e.g., residential subdivisions, schools, childcare centers, playgrounds, retirement homes, and hospitals) shall be sited away from significant sources of air pollution.
- ▲ **Policy 6.7.7.1:** The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the EDCAQMD's *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act*, to analyze potential air quality impacts (e.g.,

short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts.

In addition, the following policies related to asbestos are designed to meet Goal 6.3 of the general plan:

- ▲ **Policy 6.3.1.1:** The County shall require that all discretionary projects and all projects requiring a grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain NOA (based on mapping developed by the California Department of Conservation [DOC]) have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods. The County shall amend the Erosion and Sediment Control Ordinance to include a section that addresses the reduction of thresholds to an appropriate level for grading permits in areas likely to contain NOA (based on mapping developed by the DOC). The Department of Transportation and the County Air Quality Management District shall consider the requirement of posting a warning sign at the work site in areas likely to contain NOA based on the mapping developed by the DOC.
- ▲ **Policy 6.3.1.2:** The County shall establish a mandatory disclosure program, where potential buyers and sellers of real property in all areas likely to contain NOA (based on mapping developed by the DOC) are provided information regarding the potential presence of asbestos subject to sale. Information shall include potential for exposure from access roads and from disturbance activities (e.g., landscaping).

4.8.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on EDCAQMD's 2002 *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* (CEQA guide) and Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on air quality if it would:

- ▲ conflict with or obstruct implementation of the applicable air quality plan;
- ▲ violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- ▲ result in a cumulatively considerable net increase of any CAP for which the project region is in nonattainment under any applicable National or State ambient air quality standards (including releasing emissions that exceed quantitative standards for ozone precursors);
- ▲ expose sensitive receptors (especially schools, day care centers, hospitals, retirement homes, convalescent facilities, and residences) to substantial pollutant concentrations (including TACs/HAPs); or
- ▲ create objectionable odors affecting a substantial number of people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air district may be relied on to make the above determinations. The EDCAQMD CEQA guide uses the following criteria to determine the significance of an air quality impact. Applicability to either construction or operational emissions is also indicated in the titles below.

Ozone Precursors (Construction and Operation)

- ▲ Ozone precursor emissions (ROG and NO_x) are considered a significant impact if implementation (construction and operation) of the project would generate emissions exceeding 82 pounds per day (lbs/day) of ROG or NO_x (EDCAQMD 2002: Table 3.2).

Fugitive Dust Particulate Matter (Construction)

EDCAQMD does not have adopted quantitative thresholds for PM₁₀ and PM_{2.5}. The EDCAQMD CEQA guide states:

“Mass emissions of fugitive dust PM₁₀ need not be quantified, and may be assumed to be not significant, if the project includes mitigation measures that will prevent visible dust beyond the project property lines, in compliance with Rule 403 of the South Coast AQMD [SCAQMD].”

The Placer County Air Pollution Control District, for the portion of the district located in MCAB, considers PM₁₀ emissions significant if implementation (construction and operation) of the project would generate emissions exceeding 82 lbs/day of PM₁₀ (PCAPCD 2012). PM_{2.5} is a subset of PM₁₀ emissions; therefore, if PM₁₀ emissions are below the applicable threshold, an exceedance for PM_{2.5} would not be expected. Although no portion of the project is within Placer County, this numerical threshold can provide a useful benchmark for analysis since it was developed for an area that is geographically similar to the project site.

Fugitive dust particulate matter emissions from construction would be considered significant if the project:

- ▲ would not include measures designed to prevent visible dust emissions beyond the property lines of the project site, as set forth in SCAQMD’s Rule 403; and
- ▲ would generate emissions exceeding 82 lbs/day of PM₁₀.

Diesel Exhaust Particulate Matter (Construction)

The EDCAQMD established significance criteria for construction fleet with respect to the anticipated impact the fleet would have on emissions of diesel exhaust particulate matter in 2002. At that time, BACT for TACs (T-BACT) included the use of 1996 and later model year engines in all diesel construction equipment. However, the fuel use threshold may be increased based on reasonably documented reductions in PM emissions (ARB 2011, as cited in KD Anderson & Associates 2014). According to the 2002 standard, the project would result a significant impact on diesel particulate matter health risk if total construction phase fuel use exceeds 37,000 gallons of diesel fuel where T-BACT is applied or over 3,700 gallons of diesel fuel where T-BACT is not applied.

As discussed in the Air Quality Study, based on information from ARB, the importance of 1996 is that it is the year in which “Tier 1” emission control standards applied to many construction equipment engines. The use of Tier 2 construction equipment (2003 or later) would reduce emissions by approximately 39.1 percent from Tier 1 (1996 or later) construction equipment. Use of Tier 3 construction equipment (2007 or later) would reduce emissions by approximately 62.3 percent from Tier 1 (1996 or later) construction equipment. Based on the equations presented in Section 4.2.2 of the El Dorado County Air Quality Management District’s CEQA guide (EDCAQMD 2002), use of Tier 2 construction equipment would result in a significance threshold of 60,755 gallons of diesel fuel. Use of Tier 3 construction equipment would result in a significance threshold of 98,143 gallons of diesel fuel (KD Anderson & Associates 2014).

The Air Quality Study used CalEEMod default assumptions, which calculates diesel PM emissions based on the statewide average fleet mix for each construction year from ARB’s OFFROAD2011 model, and takes into account vehicle and equipment turnover rates and Tier requirements for new models. Based on comparisons of project construction emissions modeled for calendar years 2017 and 2000, the average construction fleet in 2017 would emit 57 percent less exhaust-based PM₁₀ than it would have in 2000 due to advances in technology and fleet turnover. Assuming that most PM₁₀ exhaust emissions estimated by CalEEMod are diesel PM, the adjusted fuel-based threshold would be either be 86,000 gallons (where T-BACT engines are used) or 8,600 gallons (where non-T-BACT engines are used).

Therefore, diesel exhaust particulate matter emissions from construction would be considered significant if:

- ▲ total construction phase fuel use would exceed 86,000 gallons (where T-BACT engines are used) or 8,600 gallons (where non-T-BACT engines are used).

Fugitive Dust Particulate Matter (Operation)

Regarding PM₁₀ emissions occurring during operation, Chapter 6 of the El Dorado County Air Quality Management District's CEQA guide (EDCAQMD 2002: 13) states:

“For land development projects primarily associated with indirect emissions from gasoline-powered vehicles, PM₁₀ may be assumed to be insignificant...; the same measures that limit vehicular ROG and NO_x emissions to *de minimis* levels for such projects will assure that PM₁₀ emissions are *de minimis* as well.”

Thus, for this land development project, PM₁₀ emissions (and PM_{2.5}, which is a subset of PM₁₀) would be considered significant if:

- ▲ vehicular ROG and NO_x emissions exceed EDCAQMD thresholds, provided that the development does not generate diesel-powered activity greater than the average roadway fleet mix.

Naturally Occurring Asbestos (Construction and Operations)

No quantitative CEQA significance thresholds have been set for NOA.

For the purpose of this analysis, a potentially significant impact related to NOA would occur if:

- ▲ construction or operation would result in airborne asbestos fibers that could affect sensitive receptors; or
- ▲ surface soils are comprised of more than 0.25 percent asbestos after grading.

Carbon Monoxide Emissions (Operation)

The EDCAQMD considers development projects of the type and size that fall below the significance thresholds for ROG and NO_x to also be insignificant for CO emissions. CO emissions associated with land use projects would mostly be associated with impacts from large concentrations of vehicles. For projects that do not meet EDCAQMD's initial screening criteria, EDCAQMD's CEQA guidance recommends that the project be modeled according to CO concentration isopleth maps available in the guidance. However, given that the guidance was published in 2002 and had forecasted CO concentrations only out to 2010, more recent screening criteria from the Sacramento Metropolitan Air Quality Management District (SMAQMD) and the Bay Area Air Quality Management District (BAAQMD) are considered in the CO impact discussion (EDCAQMD 2002).

Screening criteria for SMAQMD and BAAQMD were developed based on a conservative analysis of local intersections. If the project exceeds criteria, a detailed dispersion modeling analysis would need to be performed based on local data. These screening criteria have been developed in a manner such that, if they are met, operation-related local emissions of CO (associated with mobile sources generated by development) would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. According to BAAQMD, a proposed project would result in a less-than-significant CO impact if the project traffic would not increase volumes at affected intersections to more than 44,000 vehicles per hour (BAAQMD 2010). According to SMAQMD, a proposed project would result in a less-than-significant CO impact if the project would not result in an affected intersection experiencing more than 31,600 vehicles per hour (SMAQMD 2011).

For the purpose of this analysis, a significant impact related to CO emissions during operation would occur if:

- ▲ The project would increase traffic volumes at nearby intersections to more than 31,600 vehicles per hour.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The emissions inventories used to develop a region's air quality attainment plans are based primarily on projected population growth and vehicle miles traveled (VMT) for the region, which are based, in part, on the planned growth identified in regional and community plans. Therefore, projects that would result in increases in population or employment growth beyond that projected in regional or community plans could result in increases in VMT above that planned in the attainment plan, further resulting in mobile source emissions that could conflict with a region's air quality planning efforts. Increases in VMT beyond that projected in area plans generally would be considered to have a significant adverse incremental effect on the region's ability to attain or maintain state and federal ambient air quality standards.

The proposed project is consistent with the County's general plan land use designation (see Section 4.1, "Land Use," for a more detailed discussion.) Therefore, because the proposed project would be consistent with the amount of development projected in the *El Dorado County General Plan*, it would be consistent with the population growth and VMT projections contained in SMAQMD's Ozone Attainment Plan, which is based on general plan projections, and would not interfere with the region's ability to attain or maintain state and national ambient air quality standards. Thus, implementation of the proposed project would not conflict with or obstruct implementation of any air quality planning efforts and this issue is not discussed further in the impact analysis.

METHODS OF ANALYSIS

Emissions estimates reported in this analysis were taken from the *Rancho Dorado Air Quality Study* prepared by KD Anderson & Associates in 2014. The Rancho Dorado Project and the Saratoga Estates project share the same physical boundaries and location, and differ only slightly in the number of proposed homes (320 for the Rancho Dorado Project compared to 317 for the Saratoga Estates Project) and the proposed layouts. Due to these similarities, it is assumed that the results from the *Rancho Dorado Air Quality Study* are applicable and may include a slightly more conservative analysis.

Construction

Short-term construction-related emissions of CAPs and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2 computer program (SCAQMD 2013). Modeling was based on project-specific information (e.g., schedule, size, amounts of demolition, area to be graded, area to be paved), where available, and default values in CalEEMod that are based on the project's location and land use type. The Air Quality Study assumes 100 units would be built per year starting in 2017 until 2019 and 20 units would be built in 2020. The amount of diesel fuel used during the construction equipment activity was estimated using the total hours of use for each type of equipment as estimated by CalEEMod and diesel fuel consumption rates from the Virginia Tech Publication *Predicting Diesel Fuel Consumption* (Grisso 2013, as cited in KD Anderson & Associates). The Air Quality Study did not analyze the effect of required EDCAQMD Rules 202 (Visible Emissions), 215 (Cutback and Emulsified Asphalt Paving Materials), 223 (Application of Architectural Coatings), 224 (Fugitive Dust Emissions), or 501 (General Permit Requirements) on construction emissions, thus, resulting in a more conservative analysis prior to implementation of these mitigating requirements. A total of 240.7 acres are assumed to be graded over the course of the construction period (CalEEMod assumes several passes of the grading equipment, which is why the total acres graded are shown as larger than the 121 acre project site). The grading is broken down by phase, as follows: 87.5 acres for construction of the first hundred units, 75 acres for the second hundred, 75 acres of the third hundred, and 3.2 acres for the last 16 units. During construction, up to 240 worker trips and 87 vendor trips would occur per day. For additional method assumptions and model parameters, refer to the Air Quality Study (Appendix C).

Operations

As with construction emissions, long-term operational emissions of CAPs and precursors were also estimated using a separate model run of CalEEMod. CalEEMod allows land use selections that include location specific information and trip generation rates. CalEEMod also calculates area-source emissions

from the usage of natural gas, landscape maintenance equipment, and consumer products and calculates mobile-source emissions associated with vehicle trip generation. The detailed assumptions used in this model, as well as model outputs, are available in the Air Quality Study (Appendix C). With respect to area sources, based on project-specific data, the analysis assumed the project would not include wood-burning stoves or fireplaces (KD Anderson & Associates 2014). All other area source emissions were determined by CalEEMod defaults for the project.

With respect to mobile sources, operation of the proposed project is assumed to generate vehicle trips consistent with ITE Trip Generation 9th Edition rates for single family residential land uses (9.52 trips per unit on weekdays, 9.91 trips per unit on Saturday, and 8.62 trips per unit on Sunday) and begin three years after the start of construction, starting in 2020. Although the *Traffic Impact Analysis* (TIA) for this project was published in March 2015, seven months after the release of the Air Quality Study, the Air Quality Study is consistent with the assumptions used in the TIA in that both used the ITE Trip Generation 9th Edition rates.

With respect to impacts from CO emissions, and ROG and NO_x emissions, results from the Air Quality Study were used to compare project operational emissions to the screening criteria described earlier. In addition, roadway and intersection traffic volumes from the TIA were used to further determine significance related to localized CO impacts particularly from vehicular emissions, explained further in Impact 4.8-3.

Naturally Occurring Asbestos

With respect to impacts from NOA during both construction and operations, maps and results from the following reports are used as sources of information on the potential for NOA to be present on the project site:

- ▲ Asbestos Review Areas – Western Slope – County of El Dorado – State of (El Dorado County 2004)
- ▲ Geotechnical Engineering Study for Rancho Dorado Hillside Terrace – North of Saratoga Way – El Dorado Hills, California (Youngdahl 2006)
- ▲ Geotechnical Engineering Study – Update for Rancho Dorado – El Dorado Hills, California (Youngdahl 2014)

For additional method assumptions and model parameters, refer to the Air Quality Study (Appendix C).

IMPACTS AND MITIGATION MEASURES

Impact 4.8-1: Short-term, construction-generated emissions of criteria air pollutants and precursors.

Short-term, construction-generated emissions would exceed EDCAQMD's significance threshold for ROG, but would not exceed thresholds for mass emissions of NO_x, PM₁₀, and PM_{2.5} for all years of construction. This would be a **significant** impact.

Implementation of Mitigation Measures 4.8-1a, and the BACT established in Rule 403 from SCAQMD and adopted through Mitigation Measure 4.8-1b, would reduce significant impacts associated with emissions from construction activities to a **less-than-significant** level.

Construction-related activities would result in project-generated emissions of ROG, NO_x, PM₁₀ and PM_{2.5} from site preparation (e.g., excavation, grading, and clearing), off-road equipment, material delivery, and worker commute exhaust emissions, vehicle travel, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Other particulate matter emissions can result from combustion of fuels and from tire and brake wear. Ozone precursor emissions of ROG and NO_x are associated primarily with exhaust from construction

equipment, haul truck trips, and worker trips. ROG emissions are also generated during asphalt paving and the application of architectural coatings.

While the rate at which the proposed residences are constructed would be market driven, construction of the single family homes, roadways, and infrastructure under the project is assumed to occur over about a four year period, beginning in late 2017. As mentioned in the project description, single family homes would be built in 100 unit intervals starting in 2017 and last through 2021. No demolition activities are anticipated, as there are no existing buildings on the project site.

Maximum daily construction emissions are summarized in Table 4.8-4 for ROG, NO_x, PM₁₀, and PM_{2.5} for each construction year. The reported emissions take into account any overlapping of construction schedules between each 100 unit phase. Note that EDCAQMD’s significance thresholds for construction-generated particulate matter are based on fugitive dust management procedures and diesel fuel usage and are discussed further below. Refer to Appendix C for a detailed summary of the modeling assumptions, applied construction schedule, inputs, and outputs.

Table 4.8-4 Summary of Maximum Daily Emissions of Ozone Precursors Associated with Project Construction Activities by Construction Year (lbs/day)						
Pollutants	2017	2018	2019	2020	2021 ^a	Threshold of Significance (lbs/day)
ROG	6.18	5.36	85.26	85.26	40.93	82
NO _x	69.66	59.61	54.27	21.38	16.88	82
PM ₁₀	20.97	20.58	20.56	20.15	1.14	82 ^c
PM _{2.5} ^b	12.5	12.15	11.95	11.75	0.95	-

Notes:

ROG = reactive organic gases

NO_x = oxides of nitrogen

PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less

PM_{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less

lbs/day = pounds per day

- = No adopted threshold

^a Emissions from construction of last 16 units scaled from emissions estimated based on modeling 20 units. See Appendix C for detail on model inputs, assumptions, and project specific modeling parameters.

^b PM_{2.5} emissions are included for informational purposes

^c PCAPCD Threshold of Significance of 82 lbs/day is used for PM₁₀ in the absence of an adopted threshold for EDCAQMD.

Numbers in **bold** indicate exceedances of the EDCAQMD thresholds.

Source: KD Anderson & Associates 2014, supplemented by Ascent Environmental, Inc. in 2015

As shown in Table 4.8-4, construction-generated emissions of NO_x would not exceed EDCAQMD’s threshold of significance. Prior to any mitigation, the construction of the project is anticipated to exceed thresholds for ROG for each year from 2019 through 2020. According to results from the Air Quality Study, the maximum daily emissions of ROG during these years are due to the architectural coating phases with over 99 percent of emissions due to off-gassing from surface painting and coating activities and less than 1 percent of emissions due to worker trips. CalEEMod assumes construction of homes in each phase would occur simultaneously such that architectural coating for all 100 units in a phase would occur within one month according to CalEEMod default schedule assumptions. This is a highly conservative assumption, as single family homes are typically constructed in smaller batches over the construction period, which would spread out emissions from this phase over a longer period of time. Therefore, estimates of ROG emissions from architectural coating from the K.D. Anderson Air Quality Study were revised by Ascent’s air quality specialist to represent the more likely scenario, in which painting of each batch of 100 units would occur over a three-

month period while the remaining 16 units would be painted over a one-month duration. The revised analysis also removed the surface area of the roadways from the Air Quality Study's coating estimate, which had falsely elevated the ROG emission estimate. The ROG emission estimate is presented accurately in Table 4.8-4.

Short-term construction-generated emissions would not exceed adopted Placer County Air Pollution Control District significance thresholds for PM₁₀, and, thus, would not be expected to contribute to pollutant concentrations that exceed the NAAQS or CAAQS. Because construction-generated PM₁₀ emissions would be less than the applicable threshold of 82 lbs/day, and because PM_{2.5} is a subset of PM₁₀, it is not anticipated that construction activity would result in concentrations of PM_{2.5} that would violate or substantially contribute to a violation of the ambient air quality standards for PM_{2.5}.

With respect to fugitive dust particulate matter emissions, EDCAQMD determines significance based on the consistency of the project with dust control measures in Rule 403 of SCAQMD (for fugitive dust PM) and with diesel fuel limits (for diesel exhaust PM). EDCAQMD does not require implementation of dust control measures listed in Rule 403 of the SCAQMD. Thus, because the project does not include dust control measures listed in SCAQMD Rule 403 by design and due to exceedances of applicable thresholds for and ROG, this would be a **significant** impact.

Impacts from emissions of diesel particulate matter and NOA are discussed under Impact 4.8-4.

Mitigation Measures

Mitigation Measure 4.8-1a: Use architectural coatings with low-VOC content.

During construction, architectural coatings with an average VOC content of 150 grams per liter or less shall be used.

Mitigation Measure 4.8-1b: Apply Rule 403 from SCAQMD, as adopted by EDCAQMD.

During construction, implement SCAQMD's Best Available Fugitive Dust Control Measures and Best Available Fugitive Dust Control Measures for High Wind Conditions as adopted by EDCAQMD and presented in Table 4.8-5 and 4.8-6 below.

Table 4.8-5 Best Available Fugitive Dust Control Measures	
Fugitive Dust Source Category	Control Actions
Earth-moving (except construction cutting and filling areas, and mining operations)	<p>1a. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR</p> <p>1a-1. For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.</p>
Earth-moving – construction fill areas	<p>1b. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; for areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM method 1557 or other equivalent method approved by the District, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.</p>
Earth-moving – construction cut areas and mining operations	<p>1c. Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining areas unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.</p>

Table 4.8-5 Best Available Fugitive Dust Control Measures	
Fugitive Dust Source Category	Control Actions
Disturbed surface areas (except completed grading areas)	2a/b. Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area. Recycled water shall be used, as availability permits.
Disturbed surface areas – completed grading areas	2c. Apply chemical stabilizers within 5 working days or grading completion; OR 2d. Take action 3a or 3c specified for inactive disturbed surface areas.
Inactive disturbed surface areas	3a. Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions; OR 3b. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR 3c. Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR 3d. Utilize any combination of control actions 3a, 3b and 3c such that, in total, they apply to all inactive disturbed surface areas.
Unpaved roads	4a. Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR 4b. Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR 4c. Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	5a. Apply chemical stabilizers; OR 5b. Apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR 5c. Install a three-sided enclosure with walls with no more than 50 percent porosity that extend, at a minimum, to the top of the pile.
Track-out control	6a. Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR 6b. Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
All categories	7a. Any other control measures approved by the District.
Source: EDCAQMD 2002	

Table 4.8-6 Best Available Fugitive Dust Control Measures for High Wind Conditions	
Fugitive Dust Source Category	Control Actions
Earth moving	1A. Cease all active operations, OR 2A. Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	0B. On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR 1B. Apply chemical stabilizers prior to a wind event; OR 2B. Apply water to all unstabilized disturbed areas 3 times per day; if there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR 3B. Take the actions specified in Table B.6, Item 3c; OR 4B. Utilize any combination of control actions specified in Table 1, Items 1B, 2B and 3B, such that, in total, they apply to all disturbed surfaced areas.
Unpaved roads	1C. Apply chemical stabilizers prior to a wind event; OR 2C. Apply water twice per hour during active operation; OR 3C. Stop all vehicular traffic.

Table 4.8-6 Best Available Fugitive Dust Control Measures for High Wind Conditions

Fugitive Dust Source Category	Control Actions
Open storage piles	1D. Apply water twice per hour; OR 2D. Install temporary coverings.
Paved road track-out	1E. Cover all haul vehicles; OR 2E. Comply with the vehicle freeboard requirements of Section 231.14 of the California Vehicle Code for operation on both public and private roads.
All categories	1F. Any other control measures approved by the District.

^a High wind conditions means when gusts exceed 25 mph

Source: EDCAQMD 2002

Significance after Mitigation

Implementation of Mitigation Measures 4.8-1a and 1b would reduce significant impacts associated with emissions of ROG and TAC from construction activities to a **less-than-significant** level through the use of low-VOC architectural coatings and application of other BACT. Mitigated ROG emissions were estimated based on the reduced VOC content paint as specified in Mitigation Measure 4.8-1a and are shown in the Table 4.8-7, below. The effect of this mitigation measure would only occur during years in which architectural coatings are expected to be applied.

Table 4.8-7 Summary of Mitigated Maximum Daily Emissions of Ozone Precursor Associated with Project Construction Activities by Construction Year (lbs/day)

Pollutants	2017	2018	2019	2020	2021
ROG	6.18	5.36	51.16	51.16	24.56

Notes: EDCAQMD Thresholds of Significance is 82 lbs/day for both ROG and NO_x. ROG emissions from architectural coatings were hand-calculated by Ascent Environmental, Inc. in 2015. See Appendix C for detail on model inputs, assumptions, and project specific modeling parameters.

ROG = reactive organic gases

lbs/day = pounds per day

Source: KD Anderson & Associates 2014, supplemented by Ascent Environmental, Inc. in 2015

Impact 4.8-2: Long-term, operation-related emissions of criteria air pollutants and precursors.

Long-term, operational emissions would not exceed significance thresholds for ROG, NO_x, PM_{2.5}, and PM₁₀. Thus, long-term operational emissions of precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts. This impact would be **less than significant**.

Table 4.8-8 summarizes the modeled operation-related emissions of criteria air pollutants and ozone precursors under buildout conditions in 2022, after the construction of all planned units.

As shown in Table 4.8-8, CAP and precursor emissions resulting from operation of the proposed project would be well below EDCAQMD significance thresholds of 82 lbs/day for ROG and NO_x. Some residences may become operational while other units onsite are still being constructed. However, architectural coating during operations is mostly associated with paint reapplication as part of maintenance activities. Reapplication of paint and other surface coatings is not expected within the first few years of occupancy at the planned housing units. Thus, ROG emissions from construction and operation are not anticipated to overlap. In addition, EDCAQMD considers operational PM₁₀ and PM_{2.5} emissions to be less than significant if vehicular ROG and NO_x emissions do not exceed EDCAQMD thresholds,

Table 4.8-8 Summary of Maximum Daily Emissions of Ozone Precursors and Particulate Matter Associated with Project Operation (lbs/day)

Pollutant	Maximum Daily Emissions ^a	EDCAQMD Thresholds of Significance	Significant Impact?
ROG	43.13	82	No
NO _x	20.81	82	No
PM ₁₀	19.76	NA	NA
PM _{2.5} ^b	5.68	NA	NA

Notes:

ROG = reactive organic gases

NO_x = oxides of nitrogenPM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or lessPM_{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less

lbs/day = pounds per day

NA = not applicable

EDCAQMD = El Dorado County Air Quality Management District

^a Emissions from construction of 320 units. See Appendix C for detail on model inputs, assumptions, and project specific modeling parameters.^b PM_{2.5} emissions are included for informational purposes.

Source: KD Anderson & Associates 2014, adapted by Ascent Environmental, Inc. in 2015

Given that operational emissions are not expected to exceed EDCAQMD thresholds, operation of the project would not be expected to contribute to concentrations that exceed the NAAQS or CAAQS. In addition, this project is consistent with applicable air quality plans. As a result, this impact would be **less than significant**. In addition, emission rates of vehicles in California are anticipated to improve each year as older vehicles are retired and newer, lower emission vehicles are added. For this reason, emission levels associated with operation of the project are expected to decrease over time.

Mitigation Measures

No mitigation is required.

Impact 4.8-3: Mobile-source CO concentrations.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Short-term construction and long-term operation of the proposed project would not result in increases in traffic such that the adopted screening criteria would be triggered. Therefore, the project would not result in increased concentrations of CO that would expose sensitive receptors to unhealthy levels. This impact would be **less than significant**.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. Thus, high local CO concentrations are considered to have a direct influence on the receptors they affect.

Dispersion modeling to determine CO concentrations is typically recommended for areas located near signalized roadway intersections that are projected to operate at an unacceptable level of service (LOS; i.e., LOS E or F) during peak traffic hours (Garza et. al. 1997: 4-7) or when the project will substantially worsen an existing unacceptable peak-hour LOS at an intersection by 10 seconds or more when project-generated

traffic is included (PCAPCD 2012: 4-2 to 4-3). Because unsignalized intersections would accommodate fewer vehicles than signalized intersections, it is reasonable to conclude that congestion at these intersections would not result in CO concentrations that exceed the NAAQS and CAAQS. Moreover, CO emissions from modern automobiles have been reduced to the point that CO hotspots are rarely created anymore, and only at large highly congested intersections (and multi-lane highways with substantial congestion).

According to the traffic study commissioned for this project (See Appendix C), project operation would result in the worsening of four signalized intersections in the project vicinity to LOS of E or F during the peak-hour when compared to the existing condition.

SMAQMD and BAAQMD have developed screening criteria to address the significance of the project's localized CO emissions. These screening criteria were developed based on a conservative analysis of local intersections and are considered appropriate for a preliminary screening analysis. If the project exceeds criteria, a detailed dispersion modeling analysis would need to be performed based on local data. It is assumed that, if the screening criteria are met, development-generated, long-term operation-related local mobile-source emissions of CO would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations.

According to BAAQMD, a proposed project would result in a less-than-significant CO impact if the following criterion is met (BAAQMD 2010):

- ▲ Project traffic would not increase volumes at affected intersections to more than 44,000 vehicles per hour.

According to SMAQMD, a proposed project would result in a less-than-significant CO impact if the following criterion is met (SMAQMD 2011):

- ▲ The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.

Whereas the more conservative SMAQMD screening criteria references intersection vehicle volumes of 31,600 vehicles per hour or more, the intersection volumes in the project vicinity do not exceed 10,000 vehicles per hour even under 2035 Cumulative conditions. As a result, it is assumed that development-generated, long-term operation-related local mobile-source emissions of CO would not violate an ambient air quality standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations of CO. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.8-4: Exposure of sensitive receptors to TACs.

Construction activities would result in substantial emissions of diesel PM and NOA and would take place near offsite receptors. During operations, diesel powered equipment would not be as prominent and diesel PM emissions would be limited to emissions from on-road diesel vehicles. The project would not be a major source of other TACs, as these are primarily associated with industrial operations. However, the project is located in close proximity to Highway 50 and could expose sensitive receptors to substantial health risks from roadway emissions. Therefore, due to the project's potential to expose sensitive receptors to diesel PM and NOA during construction, this impact is considered **significant**.

With implementation of Mitigation Measure 4.11-2 and the recommendations in the Geotechnical Engineering Study to reduce asbestos emissions during construction (Mitigation Measure 4.8-4a), and mitigation measures related to construction equipment and screening TACs from Highway 50 (Mitigation Measures 4.8-4a and 4.8-4b), this impact would be **less than significant**.

The TACs that are the focus of the analysis are NOA and diesel PM because emissions of NOA via soil disturbance could occur during project construction and emissions of diesel PM would occur due to operation of construction equipment onsite. The risk of exposing sensitive receptors to diesel PM and NOA are discussed separately below. The project would not be a major source of other TACs (e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), as these are primarily associated with industrial operations.

Natural Occurring Asbestos

The *Asbestos Review Areas* map published by El Dorado County (2005) shows areas more likely to contain NOA. Soil-disturbances from construction activities in these areas would result in an elevated risk of entraining NOA. The asbestos map shows a “Found Area of NOA” in the northwest portion of the Saratoga Estates Project site, which indicates an elevated risk of the presence of NOA. In compliance with El Dorado County General Plan Policy 6.3.1.1, the elevated risk of the presence of NOA was analyzed in a focused geotechnical engineering study by Youngdahl Consulting Group first conducted in 2006 and later updated in 2014 (Youngdahl 2006, 2014). In 2006, geologists collected subsurface soil samples from 13 test pits (see Exhibit 4.8-1). The samples were analyzed for NOA using the ARB TM 435. NOA was detected at trace levels (less than or equal to 0.25 percent of particles) in all 13 samples.

Based on information presented in the *Asbestos Review Areas* map and the findings in the site-specific geotechnical engineering study described above, exposure of sensitive receptors, such as nearby single family homes and elementary schools, to entrained NOA would be possible during soil disturbance activities associated with construction and operation. The potential for NOA exposure would be highest during earth moving activities involving heavy equipment use during grading and site preparation phases.

- ▲ The project would be required to comply with ARB’s Airborne Toxic Control Measure (ATCM) 93105, Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations and ATCM 93106, Asbestos ATCM for Surfacing Applications. In addition, the project would be required to comply with EDCAQMD Rule 223-2, prepare and submit to the EDCAQMD an Asbestos Dust Mitigation Plan.

Violations of these rules can result in fines. Because the project is located close to existing sensitive receptors (i.e., schools and residences) and construction may occur during occupancy of completed onsite residences, air monitoring for NOA may be required by EDCAQMD.

Soil containing trace levels of asbestos (less than 0.25 percent) is subject to asbestos dust mitigation plan requirements when exported to another site in El Dorado County. Soil with 0.25 to less than 1 percent asbestos cannot be used for surfacing in California. Soils containing 1 percent or more asbestos are considered to be asbestos containing material and if disposed of offsite must be managed as a hazardous waste with transport subject to special California Department of Transportation Regulations; however, such soils can be used in El Dorado County to construct engineered fills in conformance with Rule 223-2. All export of soil from asbestos review areas requires special documentation to be provided to the recipient of such soils.

Trace levels of NOA occurred in soil samples taken from the project site, and planned construction and operational activities may result in the disturbance of NOA-containing soils. Compliance with ARB and EDCAQMD regulations for control of NOA would reduce the exposure of sensitive receptors; however, additional mitigation would be required to reduce impacts to the extent feasible. This impact is considered to be **potentially significant**.

Diesel Particulate Matter

Construction

Construction of the proposed project would result in temporary diesel exhaust emissions from onsite heavy-duty equipment required for site preparation, paving, and other construction activities. Diesel PM emissions from diesel-fueled engines were identified as a TAC by ARB in 1998. Based on the significance threshold

presented in EDCAQMD's CEQA guide, the impact of diesel PM emissions would be significant if the project exceeds the use of 37,000 gallons of diesel fuel for T-BACT engines and 3,700 gallons of diesel fuel for non-T-BACT engines during project construction.

According to the Air Quality Study, construction of the project would require 68,906 gallons of diesel fuel, exceeding EDCAQMD's threshold of 37,000 gallons for T-BACT engines and 3,700 gallons for non-T-BACT engines. However, EDCAQMD's fuel-based significance threshold was developed in 2002, before many advances in mobile emissions control technology. Current technology has the ability to reduce PM between 28 and 63 percent when replacing Tier 1 with Tier 3 engines and between 95 and 97 percent when replacing Tier 1 with Tier 4 engines (SCAQMD 2014).

The Air Quality Study used CalEEMod default assumptions associated with the construction fleet that would be used once construction begins in 2017. CalEEMod calculates diesel PM emissions based on the statewide average fleet mix for each construction year from ARB's OFFROAD2011 model, which takes into account vehicle and equipment turnover rates and Tier requirements for new models. Based on comparisons of project construction emissions modeled for calendar years 2017 and 2000, the average construction fleet in 2017 would emit 57 percent less exhaust-based PM₁₀ than it would have in 2000 due to advances in technology and fleet turnover. Adopting the approach explained above and assuming that most PM₁₀ exhaust emissions estimated by CalEEMod are diesel PM, the adjusted fuel-based threshold would either be 86,000 gallons (where T-BACT engines are used) or 8,600 gallons (where non-T-BACT engines are used). Although the projected fuel usage would be below the threshold where T-BACT engines are used, the project does not specify the types of engines to be used for construction.

Another important consideration in the determination of health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards) is the dose to which receptors are exposed. Dose is a function of the concentration of one or more substances in the environment and the duration of exposure to that substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, Health Risk Assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed project (OEHHA 2012: 11-3). Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the periods of construction (from 2017 through 2021).

Because there are no assurances that only T-BACT engines would be used for construction, project construction could result in a **potentially significant** impact related to diesel PM emissions.

Operation

During project operation, traffic on Highway 50 would be the primary source of diesel PM emissions at the project site. ARB's *Air Quality and Land Use Handbook* recommends avoiding siting of new sensitive land uses, including residents, within 500 feet of a freeway or urban road with an average roadway volume of 100,000 vehicles per day (or 50,000 vehicles per day for rural roads) (ARB 2005: 4). A related recent study from the ARB cited heightened particulate matter concentrations as far as 1,312 feet from roadways (ARB 2012: 2). The southernmost residences planned on the project site that are closest to Highway 50 would be located approximately 370 feet from the Highway 50 fence line. According to the Caltrans Traffic Census, the segment of Highway 50 between the Sacramento/El Dorado county line and Latrobe Road carries 90,000 average annual daily trips, and had 110,000 average daily trips during a peak month in 2013 (Caltrans 2013). Although the average annual daily trips of this segment of the highway is below ARB's threshold, the sensitive receptors on the project site would be located within 500 feet, downwind of Highway 50, and may be occasionally exposed to higher levels of diesel PM during peak travel months. Therefore, the exposure of future sensitive receptors to health risks from mobile source emissions associated with Highway 50 is analyzed further.

The project site plan includes a park between Highway 50 and Saratoga Way. Parks and playgrounds in active recreational use may be considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality; also, children are frequent users. However, exposure times are generally far shorter in parks and playgrounds than in residential locations and schools, for example, which typically reduces overall exposure to pollutants. Therefore, this analysis focuses on the future sensitive receptors that would be reside in the proposed residences.

EDCAQMD does not have thresholds that specifically address diesel PM impacts during project operation, the adjacent air district, SMAQMD, has developed a *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* (SMAQMD 2011). The SMAQMD guidance provides a methodology for the assessment and disclosure of potential cancer risk from diesel PM attributable to siting sensitive land uses adjacent to freeways and major roadways. The project site is located just outside the boundary of SMAQMD's jurisdiction. Therefore, the SMAQMD guidance is considered appropriate to address operational TAC impacts associated with the project's proximity to Highway 50.

The SMAQMD guidance includes screening tables to determine cancer risk based on roadway orientation, traffic volumes and the receptors' distance from the roadway. Table 1 from the guidance was used to determine the cancer risk based on an east-west roadway orientation, consistent with Highway 50 orientation. The closest sensitive receptors proposed on the project site would be located approximately 370 feet downwind of Highway 50. The peak hour traffic volume on the Highway 50 segment closest to the project site is 8,600 vehicles per hour (Caltrans 2013). Based on Table 1 of the SMAQMD guidance and interpolating risk at 370 feet from Highway 50, future receptors residing in the nearest residences would be exposed to a cancer risk of approximately 94 in a million.

As stated above, EDCAQMD does not specify a cancer risk threshold for sensitive receptors exposed to TACs. In the absence of a locally adopted threshold, guidance from the BAAQMD is used to determine the significance of the cancer risk estimated above. BAAQMD specifies a cumulative threshold of an excess cancer risk of 100 in a million for new sensitive receptors that would be sited in proximity to TAC sources (BAAQMD 2010). The sensitive receptors proposed under the project would be exposed to a cancer risk of approximately 94 in a million, just below BAAQMD's cumulative threshold of 100 in a million. However, the estimate of 94 in a million is based on screening tables and is not based on a detailed health risk assessment; therefore, although the screening table estimate is below the threshold of significance, it is close enough to warrant additional protection to further reduce the exposure to TACs. Therefore, the impact is considered **potentially significant**.

Mitigation Measures

Mitigation Measure 4.3-1: Prepare a stormwater pollution prevention plan.

Mitigation Measure 4.3-1 will be implemented as described in Section 4.3, "Hydrology and Water Quality."

Mitigation Measure 4.8-4a (NOA during construction): Comply with Applicable Recommendations in the Geotechnical Engineering Study.

A professional geologist shall be retained by the project applicant. As determined necessary by the geologist, grading activities shall be observed to identify materials likely to contain NOA. Collection of soil/rock samples for analyses for NOA shall be conducted where recommended by the onsite geologist.

An asbestos dust mitigation plan shall be prepared by the applicant and submitted to EDCAQMD that includes:

- ▲ Provisions for testing of all soils to be exported from the project site during construction. At least one sample per 1,000 tons of material shall be required.
- ▲ Prohibition of rock crushing where materials may contain asbestos.

- ▲ Track-out control measures.
- ▲ Prohibition of fugitive dust that extends beyond the project site.
- ▲ Specifications for the depth to which NOA-containing materials will be used as fill. NOA shall be used only in deep fills to avoid contact during future excavations (i.e., for pools or maintenance of utilities).
- ▲ A contingency under which the Buckeye Union School District (which includes William Brooks Elementary School) and the Folsom Cordova Unified School District (which includes Russell Ranch Elementary School) shall be notified if there is a release, or suspected release, of asbestos in fugitive dust that extends beyond the project site.

Coordinate with EDCAQMD to determine if air monitoring for NOA is necessary during construction.

Following construction, finished lot testing for NOA shall be completed, as recommended by EDCAQMD.

Mitigation Measure 4.8-4b (diesel PM during construction): Use Tier 3 construction equipment.

To reduce diesel PM emissions during construction, limit construction equipment to those that comply with Tier 3 emission control standards.

Mitigation Measure 4.8-4c (diesel PM during operation): Implement measures to reduce health risks from Highway 50.

- ▲ Houses located within 500 feet of Highway 50 shall include air filtration systems that have a minimum efficiency reporting value of 13 and mechanical airflow and ventilation systems that are equipped to handle necessary air flow needs, as determined by a specialist certified by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers. (Note: the minimum efficiency reporting value rates the effectiveness of air filters. A rating of 13 indicates that particles between 0.3 and 1 micrometers are removed 75 percent of the time.)
- ▲ To filter outdoor air and minimize TAC concentrations, the project applicant shall fund the planting of trees in the open space along the southern boundary of the project site. The plantings shall be located on the northern side of Saratoga Way, adjacent to the soundwalls shown on Exhibit 3-3 in Chapter 3, "Project Description." Trees shall consist of evergreen species, so that the potential for particle deposition and filtration is relatively consistent year-round. Two contiguous rows of trees will be planted, with individual plantings not more than 15 feet apart. The plantings in one row shall be staggered relative to the plantings in the other row. All trees shall be planted prior to occupancy of homes within 500 feet of Highway 50.

The specific tree species selected for the site shall be suited to the site conditions and constraints. All trees shall be planted in accordance with the planting standards established by the Western Chapter of the International Society of Arboriculture's *Guideline Specifications for Selecting, Planting, and Early Care of Young Trees* (Kempf and Gilman 2011), including standards for root ball management, root pruning, staking, mulching, and irrigation. The trees will be maintained in perpetuity by the EDHCSD, a landscape and lighting district, or by the HOA. As part of the ongoing maintenance, trees lost to disease, age, or other cause shall be replaced with the same tree species to maintain the screening.

Significance after Mitigation

The existing asbestos levels onsite are at or below EDCAQMD's definition of "asbestos-containing material," which is defined as any material that has asbestos content of 0.25 percent or greater by ARB TM 435. Implementation of this Mitigation Measures 4.11-2 and 4.8-4a would require the construction and design of the project to conform to recommendations from the geotechnical engineering study that were designed to reduce exposure to NOA during construction. The project would also comply with all applicable rules and regulations from ARB and EDCAQMD that would further reduce exposure to NOA during project construction.

Thus, the application of these mitigation measures would reduce the likelihood of exposure of sensitive receptors to NOA and would reduce significant impacts associated with NOA to be **less-than-significant**.

Implementation of Mitigation Measure 4.8-4b would result in compliance with EDCAMQD thresholds by requiring the use of construction equipment technology that reduces diesel PM emissions. As discussed above, the use of Tier 3 construction equipment would result in a significance threshold of 98,143 gallons. Thus, the diesel fuel use estimated for the project's construction would fall below the adjusted threshold.

Implementation of Mitigation Measure 4.8-4c would reduce impacts related to exposure to diesel PM from Highway 50. The unmitigated health risk conservatively estimated for the project is just under the 100 in a million threshold. Therefore, implementation of measures listed under Mitigation Measure 4.8-4c would be expected to reduce indoor and outdoor exposure of sensitive receptors to diesel PM to below the level of significance.

Thus, after mitigation, the impacts associated with diesel PM emissions would be **less than significant**.

Impact 4.8-5: Exposure of sensitive receptors to odors.

Neither construction nor operation of the project would create objectionable odors affecting a substantial number of people, because the proposed development does not include construction and operation of the types of facilities that are known to produce odors and any diesel exhaust odors generated by construction equipment would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. This impact would be **less than significant**.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Project implementation would not result in any major sources of odor, as it is not proposed to include any features or facilities known to produce objectionable odors (e.g., landfill, wastewater treatment plant, compost facility). The nearest potential source of odor would be the Waste Connection Incorporated waste collection facility, located approximately 5 miles west of the project site. Due to the distance from the project area and the existing wind direction from the south, potential odorous emissions would not disperse in the direction of, or otherwise affect, the proposed project site.

Diesel exhaust from the use of onsite construction equipment would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. Thus, neither construction nor operation of the project would create objectionable odors affecting a substantial number of people. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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4.9 CLIMATE CHANGE

This chapter presents a brief summary of the current state of climate change science and greenhouse gas (GHG) emissions sources in California; a summary of applicable regulations; quantification of project-generated GHG emissions and discussion about their potential contribution to global climate change; and analysis of the project's resiliency to climate change-related risks. In addition, mitigation measures are recommended to reduce the project's potential significant impacts.

Comments received from the public included concerns over flooding, which could occur as a result of climate change. No other comments related to the effects on or of climate change were received.

4.9.1 Environmental Setting

4.9.2 GHG Emissions and Climate Change

THE PHYSICAL SCIENTIFIC BASIS

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (IPCC 2014:3, 5).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project alone would measurably contribute to a noticeable

incremental change in the global average temperature, or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (ARB 2014a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2014a). Emissions of CO₂ are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (CO₂ dissolving into the water), respectively, two of the most common processes for removing CO₂ from the atmosphere.

4.9.3 Effects of Climate Change on the Environment

The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.3 to 4.8 degrees Celsius (°C) (0.5-8.6 degrees Fahrenheit [°F]) by the end of the 21st century (2081-2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). According to the California Natural Resources Agency, temperatures in California are projected to increase 2.7 °F above 2000 averages by 2050 and, depending on emission levels, 4.1–8.6 °F by 2100 (CNRA 2012:2).

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, the California Department of Water Resources projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012:5). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. Sea level rose approximately 7 inches during the last century and, assuming that sea-level changes along the California coast continue to track global trends, sea level along the state's coastline in 2050 could be 10-18 inches higher than in 2000, and 31 to 55 inches higher by the end of this century (CNRA 2012:9).

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012:11, 12).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012:11).

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios; the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower

GHG emissions future. According to Cal-Adapt, annual average temperatures in the project area are projected to rise by 3.8-6.8 °F by 2100, with the range based on low and high emissions scenarios (Cal-Adapt 2014).

4.9.4 Regulatory Setting

FEDERAL

Supreme Court Ruling of CO₂ as a pollutant

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the U.S. (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. This proposed national program allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states. While this program will increase fuel economy to the equivalent of 54.5 miles per gallon for cars and light-duty trucks by Model Year 2025, additional phases are being developed by NHTSA and EPA that address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2014).

STATE

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those problems, the Executive Order established total GHG emission targets for the State. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

As described below, legislation was passed in 2006 (Assembly Bill [AB] 32, the California Global Warming Solutions Act of 2006) to limit GHG emissions to 1990 levels by 2020 with continued "reductions in emissions" beyond 2020, but no specific additional reductions were enumerated in the legislation. Further, Senate Bill 375 (sustainable community strategies/transportation) established goals for emissions from light duty truck and automobiles for 2020 and 2035.

A recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) Cal.App.4th, further examined the executive order and whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. The case has been accepted for review by the California Supreme Court, and therefore is not currently considered a precedent.

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed

the current target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed below). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 °C - the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels according to scientific consensus.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions "...shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Assembly Bill 32 Climate Change Scoping Plan and Update

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO₂-equivalent (CO₂e) emissions, or approximately 21.7 percent from the state's projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions). ARB's original 2020 projection was 596 MMT CO₂e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008 (ARB 2011a). The Scoping Plan reapproved by ARB in August 2011 includes the Final Supplement to the Scoping Plan Functional Equivalent Document, which further examined various alternatives to Scoping Plan measures. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. ARB estimates the largest reductions in GHG emissions to be achieved by 2020 will be by implementing the following measures and standards (ARB 2011a):

- ▲ improved emissions standards for light-duty vehicles (estimated reductions of 26.1 MMT CO₂e),
- ▲ the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- ▲ energy efficiency measures in buildings and appliances (11.9 MMT CO₂e),
- ▲ a renewable portfolio and electricity standards for electricity production (23.4 MMT CO₂e), and
- ▲ the Cap-and-Trade Regulation for certain types of stationary emission sources (e.g., power plants).

In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (ARB 2014b:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (ARB 2014b:ES-2). The update also reports the trends in GHG emissions from various emission sectors.

At the time of writing this draft EIR, however, no specific reduction goal beyond 2020 has been recommended or formally adopted by ARB or the California State Legislature. As noted in the discussion of AB 32, above, ARB is tasked with making a recommendation for targets beyond 2020 as part of the legislation. ARB is currently working on a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15. The State Legislature is currently considering a bill to establish overall GHG targets, along the lines provided in AB 32, for the period after 2020. However, no such bills have been passed as of this writing (January 2016).

Senate Bill 375

Senate Bill [SB] 375, signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or

Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. ARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Placer, Sacramento, El Dorado, Yuba, Sutter, and Yolo Counties, excluding area located in the Lake Tahoe Basin. The project site is located in El Dorado County and outside of the Lake Tahoe Basin. SACOG adopted its Metropolitan Transportation Plan (MTP)/SCS 2035 in 2012 (SACOG 2012a). SACOG was tasked by ARB to achieve a 9 percent reduction in per capita GHGs from passenger cars and light trucks by 2020 and a 16 percent reduction by 2035, relative to emission levels in 2012. ARB confirmed the region would achieve both reduction targets by implementing its SCS (ARB 2013). The MTP/SCS forecasted land use development by community types: Center and Corridor Communities, Established Communities, Developing Communities, Rural Residential Communities, and Lands Not Identified for Development during the MTP/SCS Planning Period. The portion of El Dorado Hills that is west of El Dorado Hills Boulevard, including the project site, is designated as Established Communities in the MTP/SCS. The MTP/SCS forecasts 11,715 new housing units in the unincorporated portion of El Dorado County by 2035. The majority of this growth, 6,198 housing units, is located in Established Communities (SACOG 2012a:Appendix E-3).

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB [no date]).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond.

California Building Efficiency Standards (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. California's Energy Efficiency Standards for Residential and Nonresidential Buildings was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards (CEC 2012). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis for California's 2013 Building Energy Efficiency Standards estimates that the 2013 Standards are 23.3 percent more efficient than the previous 2008 standards for multi-family residential construction and 21.8 percent more efficient for non-residential construction (CEC 2013:3).

CEC adopted the 2016 Building Energy Efficiency Standards in 2015. The 2016 Title 24 standards will go into effect on January 1, 2017. For purposes of single-family residences, the 2016 Title 24 standards will result in about 28 percent less energy use for lighting, heating, cooling, ventilation and water heating than the 2013 Title

24 standards (CEC 2015a). Data regarding the comparative efficiencies of the 2016 Title 24 standards relative to the 2013 Title 24 standards are not yet available for all building types (e.g., multi-family residences; commercial buildings).

LOCAL

Environmental Vision for El Dorado County Resolution No. 29-2008

The El Dorado County Board of Supervisors adopted Resolution No. 29-2008, the “Environmental Vision for El Dorado County,” on March 25, 2008. The Resolution sets forth goals and calls for implementation of positive environmental changes to reduce global impact, improve air quality and reduce dependence on landfills, promote alternative energies, increase recycling, and encourage local governments to adopt green and sustainable practices. As it relates to global climate change and GHG emissions, the resolution establishes goals that include, but are not limited to:

- ▲ Transportation, Traffic, and Transit
 - Reduce carbon emissions and GHGs
 - Promote carpooling and reduce vehicle miles traveled
 - Promote pedestrian and bicycling commuting
 - Expand transit opportunities
 - Promote programs and designs that reduce traffic congestion
- ▲ Planning and Construction
 - Promote the design of sustainable communities
 - Encourage pedestrian/cycling-incentive planning
 - Encourage energy-efficient development
- ▲ Energy
 - Promote the use of alternative fuels and fuel conservation programs
 - Promote clean, energy efficient heating and cooling (El Dorado County 2008)

El Dorado County General Plan

The *El Dorado County General Plan* does not specifically include policies or goals to reduce GHG emissions. However, the general plan provides county-wide goals and polices aimed at improving energy efficiency, transportation efficiency, and reducing air emissions, which could reduce or sequester GHGs (El Dorado County 2004). Such policies include the following:

- ▲ **Policy TC-1p:** The County shall encourage street designs for interior streets within new subdivisions that minimize the intrusion of through traffic on pedestrians and residential uses while providing efficient connections between neighborhoods and communities.
- ▲ **Policy TC-1q:** The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.
- ▲ **Policy 5.6.2.1:** Require energy conserving landscaping plans for all projects requiring design review or other discretionary approval.
- ▲ **Policy 5.6.2.2:** All new subdivisions should include design components that take advantage of passive or natural summer cooling and/or winter solar access, or both, when possible.

4.9.5 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

CEQA Direction

In 2008, the Schwarzenegger administration issued guidance regarding assessing significance of GHGs in CEQA documents; that guidance stated that the adoption of appropriate significance thresholds was a matter of discretion for the lead agency. The guidance states:

“[T]he global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions. To this end, OPR has asked ARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. Until such time as state guidance is available on thresholds of significance for GHG emissions, we recommend the following approach to your CEQA analysis.”

Determine Significance

- ▲ When assessing a project’s GHG emissions, lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project’s impacts are significant.
- ▲ As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a “significant impact,” individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.
- ▲ The potential effects of a project may be individually limited but cumulatively considerable. Lead agencies should not dismiss a proposed project’s direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Documentation of available information and analysis should be provided for any project that may significantly contribute new GHG emissions, either individually or cumulatively, directly or indirectly (e.g., transportation impacts).
- ▲ Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project.

CEQA Guidelines Section 15064.4 was later added, in 2010, to address GHGs. The Guidelines state:

- (a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.
- (b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:
 - (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
 - (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

- (3) 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 greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Thus, one threshold that may be used to analyze the project's GHG emissions is whether the project would conflict with or obstruct the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or its governing regulation (Sections 38500-38599 of the Health & Safety Code).

The Governor's Office of Planning and Research's (OPR's) Guidance did not require Executive Order S-3-05 to be used as a significance threshold under CEQA. Rather, OPR recognized that, until ARB establishes a statewide standard, selecting an appropriate threshold was within the discretion of the lead agency.

The OPR Guidance did not include a quantitative threshold of significance to use for assessing a project's GHG emissions under CEQA. Moreover, ARB has not established such a threshold or recommended a method for setting a threshold for project-level analysis. In the absence of a consistent statewide threshold, the County in consultation with the El Dorado County Air Quality Management District (EDCAQMD), has developed a threshold of significance for analyzing the proposed project's GHG emissions. The issue of setting a GHG threshold is complex and dynamic, especially in light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (referred to as the Newhall Ranch decision hereafter). The Supreme Court ruling highlighted the need for the threshold being tailored to the specific project, its location, and the surrounding setting. Therefore, the threshold used to analyze the proposed project is specific to the analysis herein.

EDCAQMD currently recommends that lead agencies use mass emission thresholds of significance for evaluating construction- and operation-related GHG emissions developed by *Sacramento Metropolitan Air Quality Management District (SMAQMD)*. EDCAQMD recommends a two-tiered approach for assessing a project's operational emissions. The two-tier framework is recommended by all air districts in the region and is retained in this analysis.

The first tier consists of comparing a project's annual operational emissions to EDCAQMD's recommended mass emission threshold. The first tier gives lead agencies the ability to assess smaller projects and conclude that each development proposal would not necessarily make a considerable contribution to the cumulative impact of climate change.

Prior to the Newhall Ranch decision, the second-tier involved comparison of the project emissions to a "no action taken" (NAT) scenario. In the Newhall Ranch decision, the court found that, although comparison of a project to NAT (or "business as usual") may be appropriate in concept, the comparison of a specific local project against a statewide business as usual scenario is not an analogous comparison. (Specifically, the Court stated that the business as usual approach would need to be based on a substantial evidence-supported link between data in the Scoping Plan and the project, at its proposed location, to demonstrate consistency of a project's reductions with statewide goals. It should be noted that, based on current data available, it is not possible, within the structure of the Scoping Plan sectors, to develop the evidence to reliably relate a specific land use development project's reductions to the Scoping Plan's statewide goal, as envisioned by the Court.) Based on the court's finding, the NAT approach is now considered problematic and is no longer recommended by SMAQMD. Therefore, consistent with direction from the EDCAQMD, the DEIR analysis replaces the second tier with a threshold that is consistent with the Newhall Ranch decision. This new second-tier consists of evaluating the consistency of a project's GHG efficiency with California's GHG reduction targets. In light of the Newhall Ranch decision, efficiency metrics were developed in coordination with EDCAQMD to assess the project's consistency with California's adopted GHG reduction target for 2020 under AB 32 and an interim goal at project buildout in 2022.

El Dorado County Air Quality Management District

EDCAQMD currently recommends that lead agencies use mass emission thresholds of significance for evaluating construction- and operation-related GHG emissions adopted by SMAQMD and available in the SMAQMD CEQA Guide, last updated in November 2014 (Baughman, pers. comm., 2015). These thresholds were developed for the Sacramento metropolitan region, which includes western El Dorado County. EDCAQMD recommends the use of a mass emission threshold for evaluating construction emissions. EDCAQMD recommends a two-tiered approach for assessing a project's operational emissions. The first tier consists of comparing a project's annual operational emissions to EDCAQMD's recommended mass emission threshold. The second tier consists of evaluating a project's consistency with California's GHG reduction targets. In light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (S217763), efficiency metrics were developed in coordination with EDCAQMD to assess the project's consistency with California's adopted GHG reduction target for 2020 under AB 32 and an interim goal at project buildout in 2022 (Baughman, pers. comm., 2016).

EDCAQMD's recommended methodology for assessing a project's consistency with GHG targets established in AB 32 is the use of GHG efficiency metrics to assess the GHG efficiency of a project on a "service population (SP)" basis (the sum of the number of jobs and the number of residents provided by a project). These metrics represent the rate of emissions needed to achieve a fair share of the state's emissions mandate embodied in AB 32. The use of "fair share" in this instance indicates the GHG efficiency level that, if applied statewide, would meet the AB 32 emissions target and support efforts to reduce emissions beyond 2020. The intent of AB 32 is to accommodate population and economic growth in California, but do so in a way that achieves a lower rate of GHG emissions. With a reduced rate of emissions per resident + employee, California can accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and supporting efforts to reduce emissions beyond 2020. Ascent's climate change specialists developed GHG efficiency metrics for the project based on emissions rates for the land use-driven emission sectors in ARB's GHG inventory. Ascent focused on the sectors that would accommodate projected growth (as indicated by population and employment growth) while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). The per service population efficiency target is based on the AB 32 GHG reduction target and GHG emissions inventory prepared for ARB's 2008 Scoping Plan. To develop the efficiency metric for 2020, land-use driven sectors in ARB's 1990 GHG inventory were identified and separated to tailor the inventory to land use projects. This process removes emission sources that would not be applicable to the project area. The land-use sector driven inventory for 1990 was divided by the population and employment projections for California in 2020. Detailed calculations showing derivation of the efficiency metrics are shown in Appendix C. The efficiency metric allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of emission sources from land-use related sectors. The efficiency approach allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32. The resultant GHG efficiency metric applicable to the project would be 4.9 MT CO₂e/SP/year for 2020.

Operation of the project would continue well after the 2020 comparison year, based on an assumed 40-year lifetime for new residential units (Sustainable Building Task Force 2003:10). For this reason, this analysis includes an evaluation of potential GHG impacts in the timeframe beyond 2020, a period for which there is currently no State-adopted GHG emissions reduction target.

The proposed project is anticipated to be built out in the relative near-term (i.e., 2022) as compared to the state's longer-term target years (2030 and 2050). ARB has indicated that an average statewide GHG reduction of 5.2 percent per year would be necessary to achieve the 2030 target (ARB 2015). Therefore, a GHG efficiency goal in terms of metric tons per service population, similar to the one developed for 2020, was estimated for 2022 to allow evaluation of the project's GHG emissions in the post-2020 landscape. The equivalent goal for 2022 computes to 4.3 MT CO₂e/SP/year. This target was estimated by applying a uniform reduction from ARB's 1990 emissions inventory and dividing the resultant value by the projected population and employment in 2022. While a statewide GHG reduction plan for post-2020 targets to achieve either the post-2020 reduction targets of Executive Orders S-03-05 and B-30-15 has not been adopted; the

County bases its significance determination for this proposed project on the interim 2022 target. Analysis of project emissions at buildout is consistent with current CEQA practice and available guidance from air districts on analyzing emissions from the first fully operational year (SMAQMD 2015:6-5, BAAQMD 2011:4-6). Operational emissions would be highest during the first year and would decline due to fleet turnover and implementation of additional regulations at the state level.

If the project's estimated GHG emissions per service population in 2020 and 2022 are less than these metrics, the impact would be considered less than significant for the AB 32 target year and project buildout year. The 2022 GHG efficiency metric was derived based on the reduction trajectory the state needs to maintain to achieve its 2030 and 2050 goals (5.2 percent reduction per year) (ARB 2015). Therefore, if the project's emissions are determined to be on this trajectory based on compliance with the 2022 GHG emissions per service population goal, it would not be anticipated to interfere with the state's long-term GHG reduction goals.

Based on the discussion above, the following thresholds are applied to this analysis:

- ▲ For the evaluation of construction-related emissions, the EDCAQMD-recommended mass emission threshold of 1,100 metric tons of carbon dioxide-equivalent per year (MT CO₂e/year) is used.
- ▲ For the evaluation of operational emissions, a two-tiered approach is used:
 - (Tier I) Operational emissions of a project would not have a significant impact on the environment if they are less than 1,100 MT CO₂e/year, and
 - (Tier II) Projects with operational emissions that exceed 1,100 MT CO₂e/year, but are able to demonstrate consistency with a GHG efficiency metric of 4.9 MT CO₂e/SP/year by 2020 and 4.3 MT CO₂e/year by 2022, would not conflict with AB 32 and California's envisioned post-2020 GHG reduction goals.

For the evaluation of this project, an impact would be significant if both Tier I and Tier II thresholds are exceeded.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

All GHG and climate change issues addressed in the significance criteria are evaluated below. As described further in the cumulative impact analysis, analysis of GHGs associated with the project is inherently a cumulative impact analysis.

METHODS OF ANALYSIS

Short-term construction-generated and long-term operational GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2 computer program (SCAQMD 2013). Model assumptions were based on project-specific information (i.e., number and type of units, construction phasing of 100 units per phase, start date of construction, area to be graded, area to be paved, and year of operation); and default values in CalEEMod that are based on the project's location and land use types. Construction GHG emissions were estimated using the same assumptions as outlined in Section 4.8, "Air Quality," and the Air Quality Study, available in Appendix C.

The Air Quality Study, which also estimated GHG emissions, was completed in 2014 and differs only slightly from the proposed project in that it estimated the impacts related to the construction of 320 units, instead of the proposed 317 units. Emissions estimates presented in the analysis assume the same level of effort would be needed to construct each unit and not vary significantly in the construction of other auxiliary components such as roadways and recreational areas. Thus, the analysis below scales the Air Quality Study's emissions results by the difference in the number of units between the Air Quality Study and the project.

Long-term operational GHG emissions were estimated for all applicable emissions sectors anticipated for the project. Mobile-source emissions were estimated using the emission factors provided in CalEEMod and

estimates of project-generated vehicle trips that were developed as part of the analysis presented in Chapter 4.7, “Transportation and Circulation.” Emissions from natural gas combustion used for space heating, water heating, and fireplaces were estimated based on the consumption levels provided in Chapter 4.14, “Public Utilities,” using GHG emission factors contained in CalEEMod. Emissions from landscape maintenance equipment were estimated using the applicable module in CalEEMod (SCAQMD 2013).

Indirect emissions associated with electricity consumption were calculated based on utility emission factors for Pacific Gas and Electric Company for CO₂, N₂O, and CH₄ as contained in CalEEMod, and estimates of project-related electricity consumption provided in Chapter 4.14, “Public Utilities.” GHG emissions from water consumption and wastewater treatment were estimated based on the volume of water that would be required by the project, as provided in Chapter 4.14, “Public Utilities,” and energy intensity factors for water supply in northern California published by CEC and incorporated into CalEEMod (CEC 2006:2). Indirect GHG emissions associated with the quantity of solid waste generated by the land uses was estimated using the applicable module in CalEEMod based on the quantities reported in Chapter 4.14, “Public Utilities.”

The loss in sequestered carbon was also estimated in CalEEMod using the vegetation module. The types and amounts of vegetation that would be removed permanently because of construction were estimated as part of the biological impact analysis presented in Chapter 4.4, “Biological Resources.” Total one-time GHG emissions from the loss in carbon sequestration were then amortized over the operational life of the project (assumed to be 40 years for this analysis) and considered in combination with on-going operational emissions. This approach is consistent with the South Coast Air Quality Management District’s (SCAQMD’s) recommendations on the use of the vegetation module in CalEEMod (SCAQMD 2014). Accounting for the loss in sequestered carbon in this way allows for the evaluation of whether ongoing operation of the proposed land uses would be efficient enough to “recoup” these one-time emissions.

Emissions were estimated for 2020 to provide a comparison with the State’s GHG reduction goals under AB 32. Operational emissions from all sources were also estimated for full buildout of the project, which could occur as early as 2022.

In addition, the project’s consistency with SACOG’s adopted MTP/SCS was analyzed. The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Impacts and Mitigation Measures

Impact 4.9-1: Construction-generated greenhouse gas emissions.

Construction-generated GHG emissions would not exceed EDCAQMD’s recommended GHG emissions threshold. Therefore, GHG emissions from project-related construction would not be substantial. This impact would be **less than significant**.

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction of the land uses proposed under the project would occur over a four-year period with the construction of 100 units per year for three years and 17 units during the last year. While project phasing may evolve in a variety of ways depending on factors such as market demand for housing as well as changes in the development goals or financial capabilities of property owners, it is anticipated that construction would follow the general phasing schedule outlined in Section 3, “Project Description.” Project construction is anticipated to start in late 2017 and continue until 2021.

Total construction emissions for each set of unit construction and estimated amortized construction emissions are summarized in Table 4.9-1. Additional details on the modeling assumptions, inputs, and outputs are provided in Appendix C.

Table 4.9-1 Estimated Greenhouse Gas Emissions Associated with Project Construction Activities by Construction Group

Construction Year	GHG Emissions (MT CO ₂ e/year)
2017	314
2018	842
2019	721
2020	509
2021	127
EDCAQMD Threshold of Significance (MT CO ₂ e/year)	1,100
Significant Impact?	No

Notes:

MT CO₂e = metric tons of carbon dioxide equivalents
EDCAQMD = El Dorado County Air Quality Management District
SMAQMD = Sacramento Metropolitan Air Quality Management District

Source: KD Anderson & Associates 2014, adapted by Ascent Environmental, Inc. in 2015

As shown above in Table 4.9-1 construction activities would result in maximum annual emissions of 842 MT CO₂e/year in 2018 and would not exceed EDCAQMD's recommended mass emission threshold of significance for GHG emissions. Therefore, GHG emissions from project-related construction would not be substantial. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 4.9-2: Operational greenhouse gas emissions.

The project would be consistent with SACOG's MTP/SCS because it would be located in the area designated "Established Community" in the MTP/SCS, and proposed land use would be consistent with the overall land use, density, and intensity information provided for this community type in the MTP/SCS. However, GHGs associated with operation of the proposed project would exceed the Tier I mass-emission threshold of 1,100 MT CO₂e/year and operational GHGs would exceed the GHG efficiency-based Tier II threshold developed for the project based on statewide reduction targets and post-2020 conditions. This impact would be **significant**.

Mitigation measures are recommended that would reduce the impact to **less than significant**.

Operation of the project would result in GHG emissions associated with motor vehicle trips to and from the project area, the combustion of natural gas for space and water heating and fireplaces, the consumption of electricity and water, the generation of wastewater and solid waste, and equipment used for landscaping. Although the proposed project would result in the removal of onsite grass, shrubs, and some trees, it would also install landscaping associated with the residences, landscape strips, and parks. The landscaping would include various types of new vegetation, including shrubs and trees.

The project's operational GHG emissions were estimated assuming full buildout in 2020 and 2022 in order to provide a comparison with California's adopted statewide GHG reduction goal for 2020 and an interim goal for 2022 that was derived based on uniform annual reductions envisioned under ARB's ongoing 2030 Target Scoping Plan update. Table 4.9-2 summarizes all the direct and indirect sources of GHG emissions associated with the project upon full buildout in 2020 and 2022. These emissions include the application of existing regulations pertaining to vehicle emissions, building standards, and electricity generation.

As shown in Table 4.9-2, operation of the project in 2020 would result in annual emissions of 4,439 MT CO₂e per year, exceeding the EDCAQMD-recommended Tier I mass emission GHG threshold. Therefore, this analysis evaluates the GHG efficiency with which buildout of the project would operate compared to the GHG efficiency threshold (MT CO₂e/SP/year) in 2020 (Tier II). As reported in Chapter 4.2, "Population, Employment,

and Housing,” the project would provide housing for an estimated 929 individuals (based on 317 units and 2.93 individuals per unit), but no land uses that harbor employment. Therefore, GHG emissions per service population for the proposed project would be 4.8 MT CO₂e/SP/year in 2020, which would be lower than the target efficiency of 4.9 MT CO₂e/SP/year. Thus, the project would be consistent with the GHG efficiency metric designed to meet the State’s 2020 GHG reduction targets under AB 32.

Table 4.9-2 Summary of Annual Greenhouse Gas Emissions Associated with the Project at Full Buildout in 2020 and 2022^a		
Emissions Activity	MT CO ₂ e/year	
	2020	2022
Mobile Sources ^b	2,971	2,826
Electricity ^c	479	479
Natural Gas (excluding fireplaces)	287	287
Fireplaces ^d	251	251
Landscaping Equipment	4	4
Water Consumption and Wastewater Treatment	124	124
Solid Waste Generation	264	264
Vegetation Removal ^e	10	10
Total Annual Emissions	4,390	4,245
EDCAQMD Threshold of Significance (MTCO ₂ e/year)	1,100	1,100
Project Population ^f	929	929
Project GHG Efficiency (MT CO₂e/SP/year)	4.7	4.6
GHG Efficiency Target (MT CO ₂ e/SP/year)	4.9	4.3
Exceeds Threshold?	No	Yes

Notes: See Appendix C for detail on model inputs, assumptions, and project specific modeling parameters.

MT CO₂e/year = metric tons of carbon dioxide equivalents per year; SP = service population

^a Full buildout of the project is expected in 2022. However, for comparison purposes to AB 32 goals, emissions estimates in this table are also provided based on full buildout by 2020.

^b Mobile source emissions account for the impact of Pavley I standards and the Low Carbon Fuel Standard. The reductions associated with these regulations are included in CalEEMod. An additional 3 percent reduction in emissions from passenger vehicles in 2020 are applied to account for the Advanced Clean Cars regulation. The reported reduction from Advanced Clean Cars is 3 percent in 2020 and 12 percent in 2025. A 7 percent reduction was interpolated for 2022 (ARB 2011b).

^c Indirect GHG emissions associated with electricity consumption were estimated based on compliance with the 33 percent Renewables Portfolio Standard (RPS). This is considered conservative for post-2020 because ARB is working on regulations to increase the RPS requirements to 50 percent by 2030.

^d The project does not include wood-burning stoves or fireplaces. Fire places in all units would be powered with natural gas.

^e Loss in carbon sequestration is annualized over an estimated 40-year life of the project consistent with CalEEMod guidance.

^f Based on 2.93 individuals per unit (See Chapter 4.2, “Population, Employment, and Housing”).

Source: Modeling performed by Ascent Environmental in 2016; ARB 2011b

Operation of the project in 2022 would result in annual emissions of 4,294 MT CO₂e per year, exceeding EDCAQMD-recommended mass emission GHG threshold. Therefore, this analysis evaluates the GHG efficiency with which buildout of the project would operate compared to the GHG efficiency threshold (MT CO₂e/SP/year) in 2022 (Tier II). Using the same methodology as described above for 2020, GHG emissions per service population for the proposed project would be 4.6 MT CO₂e/SP/year in 2022, which exceeds the efficiency target of 4.3 MT CO₂e/SP/year. Therefore, because the project exceeds the interim GHG efficiency metric for 2022 that was derived based on a uniform annual reduction to assist the State in meeting its envisioned GHG reductions in 2030, the project emissions would exceed the threshold of significance.

Post-2020 Considerations

Based on the best available information and the most current methods for evaluating impacts, as described in the Regulatory Setting above (Section 4.9.4), ARB is working toward recommending statewide GHG reduction goals beyond 2020. In addition, Executive Orders B-30-15 and S-3-05 set targets of reducing emissions to 40 and 80 percent below 1990 levels by 2030 and 2050, respectively. New legislation is proposed to establish post-2020 goals, but, as of the time of writing this EIR, no action on the legislation has

been taken (January 2016). While project design can contribute to reducing potential GHG emissions from the project, achievement of future GHG efficiency standards is also dependent on regulatory controls applied to all sectors of the California economy.

Thus, the ability of this project—and all land use development—to achieve GHG reduction goals beyond 2020 is partially out of the control of the project and its proponents. First, a specific goal has not been established, beyond the Executive Order Goals of 40 and 80 percent below 1990 GHG levels by 2030 and 2050, respectively. ARB has stated in its updated Scoping Plan that additional “mid-term” targets (such as when this project is expected to buildout) must still be established and adopted (ARB 2014b:ES6). ARB is currently working on a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15. Even though additional state-level regulations will be necessary to achieve the post-2020 targets statewide, it is also clear that incremental reductions will need to continue between 2020 and 2030 to get the state closer to achieving its goals. Additionally, certain regulations that are relevant to the land use development and that are being implemented as part of the AB 32 Scoping Plan will continue to be phased in after 2020 (e.g., Advanced Clean Cars, Renewables Portfolio Standard [RPS], SB 375) and result in additional GHG reductions. Thus, it is anticipated that projects that are built out in the near-term post 2020 may be able to demonstrate consistency with interim GHG reduction targets through a combination of regulatory reductions and project-specific measures.

Consistency with SACOG MTP/SCS

Another consideration in addressing the project’s post-2020 GHG emissions is whether the SACOG MTP/SCS, which addresses GHG emissions goals for automobiles and light duty trucks for 2020 and 2035 in the Sacramento Metropolitan Region, would address an overall GHG target for the project past 2020. As previously described, SACOG was tasked by ARB to achieve a 9 percent reduction in per capita GHGs from passenger cars and light trucks by 2020 and a 16 percent reduction by 2035, relative to emission levels in 2012. ARB confirmed the region would achieve both reduction targets by implementing its SCS (ARB 2013). This target cannot be directly translated to an overall threshold, given it is geared toward GHG emissions from transportation only. However, mobile source emissions from passenger vehicles represent a large proportion of GHG emissions associated with land use development projects, especially residential development, resulting from vehicle trips to and from the development. This is evidenced in the project’s GHG emissions shown in Table 4.9-2. The Saratoga Way Extension portion of the project is included in the SCS planning period (through 2035) and the rest of the project site is consistent with the “Established Community” designation in the SCS (SACOG 2012a). While the MTP/SCS acknowledges it cannot predict land use on a parcel-by-parcel basis throughout the SACOG region, SACOG does account for some growth in areas designated as “Established Communities” through 2035 (SACOG 2012a). If development follows the trends and predictions for growth in the SCS for the SACOG region over the next 20 years, development at the project site would be consistent with SCS assumptions.

SACOG states that for the purposes of determining SCS consistency, the policies of the MTP/SCS are embedded in the metrics and growth forecast assumptions of the MTP/SCS. Projects consistent with the growth forecast assumptions of the MTP/SCS, are consistent with the MTP/SCS and its policies (SACOG 2012b). As reported in Section 4.9.4, the MTP/SCS forecasts 11,715 new housing units in the unincorporated portion of El Dorado County by 2035. The majority of this growth, 6,198 housing units, is located in Established Communities (SACOG 2012a: Appendix E-3). The 317 units of the proposed project are, therefore, within the growth anticipated in the MTP/SCS and development from the project when added to other entitled projects will not exceed the MTP/SCS buildout assumptions for the area within this Community Type. The proposed project would be located in an Established Community and the project uses would be consistent with the general land use, density, and intensity information provided for this Community Type in Appendix E-3 of the MTP/SCS. Therefore, the project would be consistent with the MTP/SCS which addresses GHG emissions goals for automobiles and light duty trucks for 2020 and 2035.

Consistency with ARB Scoping Plan

In accordance with AB 32, ARB developed the 2008 Scoping Plan to outline the State’s strategy to achieve 1990 level emissions by year 2020. In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012. Since adoption of the 2008 Scoping Plan and the

subsequent update in 2014, State agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations, California Building Standards (e.g., CALGreen and the 2013 Building and Energy Efficiency Standards), 33 percent Renewables Portfolio Standard (RPS), and changes in the corporate average fuel economy standards (e.g., Pavley I and California Advanced Clean Cars). The project's GHG emissions shown in Table 4.9-2 include reductions associated with statewide strategies that have been adopted since AB 32.

The new buildings under the project would be significantly more energy efficient than the current buildings in the surrounding area, many of which were constructed under previous versions of the Title 24 energy code. Likewise, plumbing fixtures and landscaping installed as part of the project would result in a decrease in per capita water use compared to existing land uses. The project would also need to operate in accordance with the goals of AB 341 that requires a 75 percent diversion rate of waste from landfills. Once built, the project would become part of existing development within the state that can be subjected to a variety of future state or federal GHG reduction measures intended to target existing development to the extent they are legally applicable, such as a more stringent RPS. Additionally, the project's operational emissions would be reduced as additional regulations are implemented by ARB and other state agencies to comply with the statewide GHG reduction targets. For example, the project's transportation emissions would be expected to decline as vehicle efficiency standards are implemented beyond the Advanced Clean Cars program and the Low Carbon Fuel Standard is strengthened. Therefore, project emissions would continue to decline beyond the buildout year due to regulations that would indirectly affect project emissions.

In the *First Update to the Climate Change Scoping Plan*, ARB notes that California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (ARB 2014b:ES-2). The update also elaborates on potential GHG reduction goals beyond 2020:

This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions (ARB 2014b:34).

Therefore, recognizing ARB as an authoritative substantial evidence source in evaluating post-2020 GHG impacts, this analysis also evaluates whether the project would interfere with the three main programs ARB identified to support its conclusions that the state is on a trajectory to meet the 2030 and 2050 GHG targets – (1) initiative to install 12,000 MW of renewable distributed energy by 2020; (2) the California Building Standards Commission's goal to construct net-zero energy homes after 2020; and (3) existing building retrofits under AB 758.

The project is not expected to interfere with the state's goal to install 12,000 MW of renewable distributed generation systems by 2020. In fact, the project includes a mitigation measure to install rooftop solar systems to offset 50 percent of its overall electricity demand. Likewise, the project is not anticipated to interfere with the ability of the California Building Standards Commission's goal of constructing net-zero energy homes after 2020. The project is expected to be fully operational by 2022 and would be constructed to comply with existing building energy standards at the time building permits are obtained. Therefore, the project would not interfere with the state's ability to mandate net-zero energy homes for new construction after 2020. If construction of all or a portion of the project is delayed beyond 2020, it would be required to construct homes in conformance with the then-existing California Building Standards Commission mandates for net-zero energy homes.

Moreover, the project would not interfere with the state's implementation of building retrofits to further energy efficiency for existing buildings under AB 758. AB 758, the Comprehensive Energy Efficiency in Existing Buildings Law, tasked CEC with developing and implementing a comprehensive program to increase energy efficiency in existing residential and nonresidential buildings that "fall significantly below the current

standards in Title 24.” (Pub. Resources Code, section 25943(a)(1).) Approximately 50 percent of existing residential and nonresidential buildings in California were constructed before California Building Energy Efficiency Standards went into effect in 1978 (CEC 2015b:8). Other buildings constructed after 1978 also fall below current Title 24 standards and represent significant opportunities for energy efficiency improvements. Pursuant to AB 758, the CEC has developed an Existing Buildings Energy Efficiency Action Plan that identifies strategies to implement energy efficient renovations for such existing commercial, residential, and publicly owned buildings. Strategies include making information about a building’s energy efficiency more readily available, educating the public about the cost-benefit of energy efficiency upgrades, making attractive financing more readily available, educating the public and contractors about available energy upgrades and code compliance requirements, and educating a work force capable of implementing energy upgrades (CEC 2015b:91-102). The project would be constructed in compliance with the applicable Title 24 standards and, therefore, would not interfere with CEC or other initiatives implemented to increase energy efficiency and reduce GHG emissions associated with buildings that do not adhere to Title 24 standards.

ARB’s Scoping Plan also recommended the development of a California Cap-and-Trade Program that links with other Western Climate Initiative partner programs to create a regional market system. On January 1, 2013, ARB launched the second-largest GHG Cap-and-Trade Program in the world. The Cap-and-Trade Regulation establishes a hard and declining cap on approximately 85 percent of total statewide GHG emissions. Under the Cap-and-Trade Regulation, ARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. As the emissions cap is gradually reduced over time, and as additional sources are brought under the cap to include the vast majority of emissions in the State, the program will ensure that California remains on track to continually reduce emissions and meet the 2020 limit. Looking out into the future, the Cap-and-Trade Program will play a critical role in keeping California on the right emissions reduction trajectory to meet ongoing reduction targets at the lowest possible cost. The Cap-and-Trade Program is a vital component in achieving both California’s near-and long-term GHG emissions targets (ARB 2014b:86). While the Cap-and-Trade Regulation is not directly applicable to the project, it is worth noting that it represents an important component of the overall GHG reduction framework in the state. If ARB determines that sufficient reductions are not being achieved in the “uncapped sectors,” the Cap-and-Trade Program can be adjusted to ensure that the state’s overall GHG reduction targets are met.

Impact Summary

The proposed project would be consistent with SACOG’s adopted MTP/SCS which addresses GHG emissions goals for automobiles and light duty trucks for 2020 and 2035. The project is also not anticipated to interfere with programs identified by ARB that would help the state achieve the GHG reduction trajectory to meet the 2030 and 2050 goals. However, the project would result in operational GHG emissions that exceed EDCAQMD’s recommended mass emissions threshold and the efficiency threshold for 2022. As previously stated, the County adopted goals in Resolution No. 29-2008 that encourage the reduction of GHG emissions through the promotion of transportation-related programs and measures, energy-efficient development, and alternative fuel and fuel conservation programs. Although these goals do not have quantified targets, development and implementation of future policies subsequent to the Resolution could result in additional GHG efficiency beyond the estimates shown in Table 4.9-2. However, based on the quantitative analysis provided above, while the project would meet the GHG efficiency standard based on the 2020 statewide GHG emissions target, it would not be consistent with the estimated interim 2022 reduction target. Therefore, this impact would be **significant**.

Mitigation Measures

Mitigation Measure 4.9-2: Reduce operational GHG emissions

Prior to issuance of certificates of occupancy, the project applicant shall incorporate mitigation measures into the project to reduce operational GHG emissions to levels that do not exceed the identified performance standard, that is, the GHG efficiency target. The following measures are recommended given the state of the science today. However, in consideration of new and advanced technologies that may be introduced, other feasible, enforceable measures that result in emissions reductions additional to regulatory requirements and

that would also achieve the performance standard may be substituted, with prior approval by El Dorado County.

Transportation

- ▲ All single family homes shall include adequate electric wiring and infrastructure to support a 240-Volt electric vehicle charger in the garage or off-street parking area to allow for the future installation of electric vehicle chargers. This connection should be separate from the connection provided to power an electric clothes dryer.

Energy

- ▲ All houses shall be designed to exceed the 2013 Title 24 standards by a minimum of 25 percent. Title 24 regulates energy uses including space heating and cooling, hot water heating, and ventilation. Therefore, potential options to meet the 25 percent improvement goal could include, but not be limited to, high-efficiency HVAC systems, efficient hot water heaters (e.g., tankless or solar), and insulation requirements that exceed Title 24 standards.
- ▲ Energy Star appliances (including clothes washers, dish washers, fans, and refrigerators) shall be installed in all residential units.
- ▲ The project shall achieve reductions in onsite electricity and natural gas use through a combination of on-site renewable energy (e.g., solar photovoltaic panels) and elimination of fireplaces in specified number of units. The pathway to achieving this reduction would be flexible, as long as the specified reductions in GHGs are achieved.
 - For example, the project could include solar photovoltaic panels, or an equivalent mode of on-site renewable energy generation, with all houses to offset 30 percent of net annual electricity demand by single family residences. Based on the projected electricity consumption for the project (2.3 million kWh annually), this would amount to a total system size of 500 kilowatts. The total area required for the photovoltaic panels is expected to be approximately 40,000 square feet and the total number of solar panels required would range from approximately 2,000-2,500 depending upon the panel wattage. The project would have the flexibility to meet this requirement by installing an average number of panels on all homes (example, 6-8 panels on each home) or larger systems on a portion of the homes, as long as the 30 percent net annual electricity demand is met through onsite renewable energy. (Note that the values provided here are preliminary estimates. The actual system size and design would be determined at the project’s design stage.)
 - Alternatively, the project could include various combinations of solar photovoltaic panels and elimination of fireplaces in the units as follows:

Number of solar panels per unit	Number of units with fireplaces
6-8	317
4-6	269
3-4	254
2-3	238
1-2	222
0	159

Note:
The data presented in the section assumes one natural gas fireplace per single family unit in the unmitigated condition.

- Building design, landscape plans (tree placement), and solar panel installation shall take into account solar orientation to maximize solar exposure.

Area Sources

- ▲ Electrical outlets shall be provided on the exterior of project buildings to allow sufficient powering of electric landscaping equipment.

Water Conservation

- ▲ The project shall include the following measures related to water conservation:
 - Install low-flow kitchen faucets that comply with CALGreen residential voluntary measures (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi).
 - Install low-flow bathroom faucets that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi)
 - Install low-flow toilets that exceed the CALGreen residential mandatory requirements (maximum flush volume less not to exceed 1.28 gallons per flush)
 - Install low-flow showerheads that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 2 gallons per minute at 80 psi)
 - Install a “Smart” irrigation control system that uses weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Appropriate systems that could be installed to comply with this measure include Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners.

Waste Diversion/Recycling

- ▲ The project shall comply with the following performance measure related to reducing solid waste disposal:
 - Achieve a 20 percent reduction in the generation of solid waste, relative to baseline waste disposal rates. This performance standard may be achieved through a combination of actions. Strategies to reduce landfill waste include increasing recycling, reuse, and composting. The project can achieve this reduction by providing a recycling collection service and providing separate recycling and waste containers to future residents. The project may also include provisions to divert all green waste from the park and landscape lots and recycle it as mulch. It should be noted that this list of measures is not intended to be all-inclusive. If it can be demonstrated that other measures or technologies achieve an equivalent reduction, these may be implemented with County authorization.

Significance after Mitigation

Implementation of identified actions and achievement of performance standards identified under Mitigation Measure 4.9-2 would reduce the project’s GHG emissions as shown in Table 4.9-3.

As shown in Table 4.9-3, with implementation of Mitigation Measure 4.9-2, the project would operate with a GHG efficiency of 4.2 MT CO₂e/SP/year upon full buildout in 2022, which meets the GHG efficiency goal computed for 2022. Therefore, implementation of Mitigation Measure 4.9-2 would reduce this impact to a **less-than-significant** level.

Table 4.9-3 Summary of Mitigated Annual Greenhouse Gas Emissions Associated with the Project in 2020 and 2022¹

Emissions Activity	MT CO ₂ e/year	
	2020	2022
Mobile Sources	2,971	2,826
Electricity	312	312
Natural Gas (excluding fireplaces)	224	224
Fireplaces	251	251
Landscaping Equipment	4	4
Water Consumption and Wastewater Treatment	104	104
Solid Waste Generation	211	211
Vegetation Removal	10	10
Total Annual Emissions	4,087	3,943
Project Population	929	929
Project GHG Efficiency (MT CO₂e/SP/year)	4.4	4.2
GHG Efficiency Target/Goal (MT CO ₂ e/SP/year)	4.9	4.3

Notes: See Appendix C for detail on model inputs, assumptions, and project specific modeling parameters.

Emissions reported include reductions from regulations identified in Table 4.9-2 and mitigation measures identified above. Emissions are shown for the scenario where 30 percent of the project's electricity demand would be met through onsite renewable energy. The mitigated emissions would be similar for any combination of onsite solar and elimination of fireplaces shown above.

MT CO₂e/year = metric tons of carbon dioxide equivalents per year

¹ Pub. Resources Code, Section 21159.28(a) is paraphrased here. The section states that if a residential or mixed-use residential project is consistent with the use designation, density, building intensity, and applicable policies specified for the project area in a sustainable communities strategy then any findings or other determinations for the CEQA document prepared for the project pursuant to this division shall not be required to reference, describe, any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network. The project is consistent with SACOG's MTP/SCS; however, all transportation emissions are conservatively included in the project analysis.

Source: Modeling performed by Ascent Environmental in 2016

Impact 4.9-3: Impacts of climate change on the project.

Climate change is projected to result in a variety of effects that would influence conditions in the project area including increased temperatures, leading to increased wildfire risk; and changes to timing and intensity of precipitation, resulting in increased stormwater runoff and flood risk. However, there are numerous programs and policies in place to protect against and respond to wildfire. This impact would be **less than significant**.

As discussed previously in this chapter, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is a strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- ▲ increased average temperatures;
- ▲ modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- ▲ changes in the timing and amount of runoff;

- ▲ reduced water supply;
- ▲ deterioration of water quality; and
- ▲ elevated sea level.

Many of these changes may translate into a variety of issues and concerns that may affect the project area, including but not limited to:

- ▲ increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures; and
- ▲ increased stormwater runoff associated with changes to precipitation patterns and snowmelt patterns.

Although the precise severity of these effects is uncertain, there is consensus regarding the range, frequency, or intensity of these effects that can be expected. The project could be subject to potential hazards that could be exacerbated by climate change, such as changes in the timing and amount of runoff and the increased risk of flooding associated with changes to precipitation. Although the project site is mostly surrounded by developed land, the project is located in a moderate fire hazard safety zone as identified by the California Department of Forestry and Fire Protection (CAL FIRE 2007).

With regards to increased average temperatures, El Dorado County, including the project area, could experience an increase in 3.9 to 6.7 °F over annual average temperatures (Cal-Adapt 2015). The California Department of Forestry and Fire Protection plans for El Dorado County include continued provision of fire protection and prevention services for areas surrounding the project area. El Dorado County's general plan also specifies ordinances to maintain defensible space, requires new development to ensure adequate emergency water flow, and other policies to minimize fire hazards and risks. See Chapter 4.3, "Public Services," and Chapter 4.12, "Hazards and Hazardous Materials," for additional information on plans and policies related to wildfire. Implementation of these plans would reduce the likelihood of wildfire through management of fuels and implementation of best practices, and would ensure that resources to respond to occurrence of wildland fire would be available. In addition, the project would not include wood-burning stoves or fireplaces in the proposed residences. Therefore, the proposed project would be resilient to potential increases in wildfire risk that might result from climate change.

Sea level rise is expected to increase 31 to 55 inches by the year 2100 (CNRA 2012). However, the project and the rest of El Dorado County would not be located where inundation from sea level rise would occur according to inundation maps developed by Cal-Adapt (Cal-Adapt 2015).

With regards to flood risk associated with increased stormwater runoff and changes to precipitation patterns and snowmelt patterns, the project site is not located in an area at risk for flooding. The project includes a drainage system, including detention facilities that control the rate of stormwater flows into the creek. This would reduce potential localized flooding impacts related to changes in precipitation associated with climate change. (See Chapter 13, "Hydrology and Water Quality.")

As discussed above, inclusion of the features in the design and operation of the project and project area would reduce the extent and severity of climate change-related impacts to the land uses and facilities by providing methods for adapting to these changes (e.g., manage wildfire, reduced flood risk). These design features would reduce the extent and severity of climate change-related impacts to the project from increased risk of wildfire and flooding. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

4.10 NOISE

This chapter includes definitions of common noise descriptors; summaries of applicable noise regulations, acoustic fundamentals, and existing ambient noise conditions; and an analysis of potential short- and long-term noise impacts associated with implementation of the project. Additional data is provided in Appendix D, “Noise Measurement Data and Noise Modeling Calculations.”

Notice of Preparation comments were received on this topic and included concerns with noise impacts associated with Wilson Boulevard. Noise impacts are discussed in this section and mitigation is recommended where appropriate.

4.10.1 Common Noise Descriptors

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used in relation to the environment are defined below (Caltrans 2013a).

- ▲ Decibel (dB): a sound level expressed in decibels which is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure of 20 micropascals.
- ▲ A-Weighted Decibel (dBA): the frequency-response adjustment of a sound level meter that conditions the output signal to approximate human hearing response.
- ▲ Equivalent Continuous Sound Level (L_{eq}): the equivalent steady-state sound level in a stated period of time that would contain the same acoustic energy as the time-varying sound level during the same period (i.e., average noise level).
- ▲ Percentile-Exceeded Sound Level (L_{xx}): the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time).
- ▲ Maximum Sound Level (L_{max}): the highest instantaneous noise level during a specified time period.
- ▲ Minimum Sound Level (L_{min}): the lowest instantaneous noise level during a specified time period.
- ▲ Day-Night Sound Level (L_{dn}): the 24-hour L_{eq} with a 10-dBA penalty applied during the hours from 10 p.m. to 7 a.m., which are typically reserved for sleeping.
- ▲ Community Noise Equivalent Level (CNEL): Similar to L_{dn} , CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring between 10:00 p.m. and 7:00 a.m. and a 5-dB penalty applied to sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m.

4.10.2 Sound Properties

A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz.

To simplify expression of sound pressure fluctuations, the dB scale was introduced. The use of the decibel is a convenient way to address the million-fold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly summed. For example, a 65 dBA source of sound, such as a truck, when joined by another 65 dBA source results in a sound amplitude of 68 dBA, not 130 dBA (i.e., doubling the source strength increases the sound pressure by 3 dBA). A sound level increase of 10 dBA corresponds to 10 times the acoustical energy, and an increase of 20 dBA equates to a 100 fold increase in acoustical energy.

Noise can be generated by a number of sources, including mobile sources (i.e., transportation) such as automobiles, trucks, and airplanes and stationary sources such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease) depending on geometric spreading (the initial pressure difference is distributed across an increasing surface area which reduces the energy per unit area), ground absorption characteristics, atmospheric conditions, and the presence of physical barriers. For short distances the ground effect is important; hard sites (characterized by asphalt, concrete, or hard packed earth) attenuate noise less than soft sites (loose soil or vegetated ground cover). Noise generated from mobile sources generally attenuates at a rate of 4.5 dBA per doubling of distance for soft sites, and 3 dBA per doubling of distance where hard ground surfaces exist between the transportation source and receivers. Stationary noise sources spread with more spherical dispersion patterns that attenuate at a rate of 6 dBA (for hard sites) to 7.5 dBA (for soft sites) per doubling of distance.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction (i.e., shielding) provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural (e.g., berms, hills, and dense vegetation) and human-made features (e.g., buildings and walls) may be used as noise barriers.

All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dBA with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of 0.25-inch thickness typically provides an exterior-to-interior noise reduction of 30 to 40 dBA with its windows closed (Caltrans 2011).

Table 4.10-1 describes typical A-weighted noise levels for various noise sources. For this analysis, noise levels are A-weighted unless otherwise noted.

Table 4.10-1 Typical A-Weighted Noise Levels		
Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawn mower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	– 70 –	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	– 60 –	

Table 4.10-1 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
		Large business office
Quiet urban daytime	- 50 -	Dishwasher next room
Quiet urban nighttime	- 40 -	Theater, large conference room (background)
Quiet suburban nighttime		Library
	- 30 -	
Quiet rural nighttime		Bedroom at night, concert hall (background)
	- 20 -	
		Broadcast/recording studio
	- 10 -	
Lowest threshold of human hearing	- 0 -	Lowest threshold of human hearing

Source: Caltrans 2013a

4.10.3 Noise Effects on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The non-auditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be perceived.

With respect to how humans perceive and react to changes in noise levels, a 1 dBA increase is imperceptible, a 3 dBA increase is barely perceptible, a 6 dBA increase is clearly noticeable, and a 10 dBA increase is subjectively perceived as approximately twice as loud (Egan 2007). These subjective reactions to changes in noise levels were developed on the basis of test subjects’ reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels. For these reasons, a noise level increase of 3 dBA or more is typically considered substantial in terms of the degradation of the existing noise environment.

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be

considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, and level of the noise, and the exposure time (Caltrans 2013a).

4.10.4 Vibration

Sources of vibration (ground oscillation) include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery or transient in nature, explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006, Caltrans 2013b). PPV and RMS vibration velocity are normally described in inches per second.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006).

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006).

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Table 4.10-2 includes the general human response to different ground vibration-velocity levels.

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the RMS velocity amplitude.
Source: FTA 2006

4.10.5 Environmental Setting

SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, schools, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship and transit lodging, and other places where low interior noise levels are essential, are also considered noise-sensitive. Those noted above are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

The project site is currently vacant and does not include any sensitive land uses. Land uses surrounding the project site on three sides consist of single-family homes, similar to the proposed residential development. Highway 50 borders the project site to the south.

AMBIENT NOISE LEVELS

The existing noise environment within the overall project area varies by location, but is defined primarily by traffic noise. The most pervasive noise source affecting the project area is traffic on Highway 50. To characterize the existing ambient noise environment at the project site, long-term (continuous) and short-term ambient noise level measurements were conducted at four locations within the proposed project area on December 23, 2014 (Bollard Acoustical 2015). The locations of the noise monitoring sites are shown in Exhibit 4.10-1, below. In addition to conducting ambient noise measurements, existing traffic-noise levels were modeled for project area roadways. The traffic-noise model was calibrated based on field measurements. Methods and results of ambient noise levels and traffic-noise modeling are explained in further detail in Appendix D.

Larson Davis Laboratories Model 820 precision integrating sound level meters were used for the ambient noise level measurement surveys. The meters were calibrated before use with Larson Davis Laboratories Model CAL200 acoustical calibrators to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute.

The results of the long-term ambient noise measurement survey are summarized below in Table 4.10-3. The data in Table 4.10-3 indicate that existing noise levels within the project area vary depending on location of the noise monitoring site relative to Highway 50. Inspection of the data showed that monitoring locations nearest to Highway 50 recorded the highest noise levels during sampling.

Site ID	Location	dB
1	North end of site, near existing Wilson Boulevard	49 Ldn
2	East side of site, midway between existing Wilson Boulevard and Highway 50	56 Ldn
3	East side of site, near Highway 50	66 Ldn
4	Middle of site, along future Saratoga Way, near Highway 50	62 Ldn
A	At future intersection of Wilson Boulevard and Saratoga Way	60.4 Leq
B	Middle of site, along future Saratoga Way, near Highway 50 (adjacent to Location 4)	59.6 Leq

Notes: Site IDs correspond to IDs depicted in Exhibit 4.10-1.

Source: Bollard Acoustical Consultants 2015

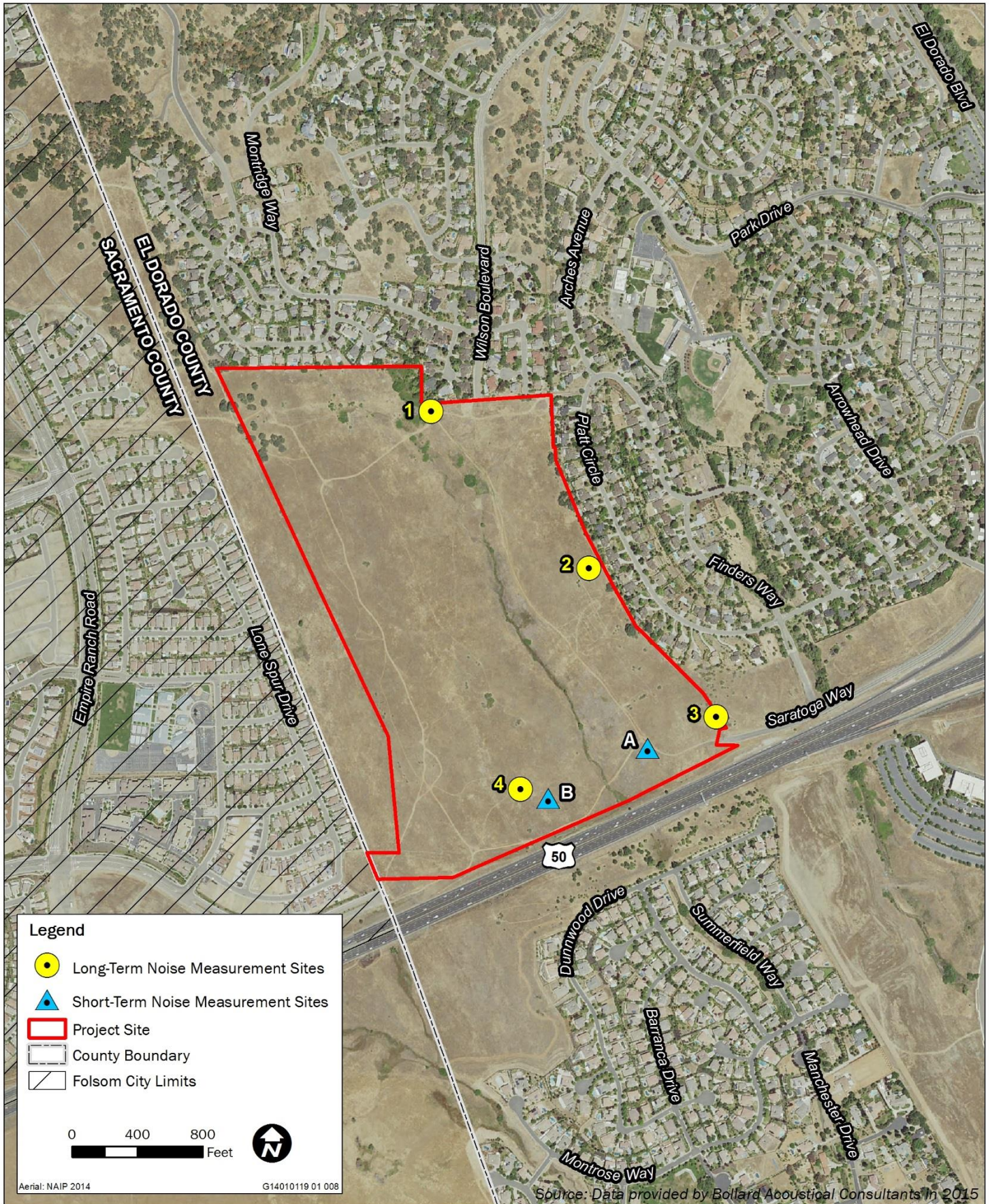


Exhibit 4.10-1

Ambient Noise Measurement Locations



4.10.6 Regulatory Setting

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. After its inception, the EPA Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place and are enforced by designated federal agencies where relevant.

Occupational Health and Safety Act of 1970

This act assigns the Occupational Safety and Health Administration two regulatory functions—setting standards and conducting inspections to ensure that employers are providing safe and healthful workplaces. Employers must become familiar with the standards applicable to their establishments and eliminate hazards. Included in this act is a regulation for worker noise exposure at 90 dBA over an eight-hour work shift. Areas where exposure exceeds 85 dBA must be designated and labeled as high-noise-level areas and hearing protection is required.

Federal Aviation Administration

The Federal Aviation Administration establishes 65 dB CNEL as the maximum noise exposure limit associated with aircraft noise measured at exterior locations in noise-sensitive land uses (e.g., land uses where quiet environments are essential such as residential areas, churches, and hotels). This standard is also generally applied to railroad noise.

U.S. Department of Transportation

To address the human response to groundborne vibration, Federal Transit Administration (FTA) set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. Among these guidelines are the following maximum-acceptable vibration limits:

- ▲ 65 VdB, referenced to 1 microinch per second and based on the RMS velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities);
- ▲ 80 VdB for residential uses and buildings where people normally sleep; and
- ▲ 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).

STATE

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Though not adopted by law, the *State of California General Plan Guidelines 2003*, published by the Governor's Office of Planning and Research (2003), provide guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various

land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance.

California Department of Transportation

In 2013, California Department of Transportation (Caltrans) published the *Transportation and Construction Vibration Manual*. The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 4.10-4, below, presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 4.10-4 Caltrans Recommendations Regarding Vibration Levels	
Peak Particle Velocity (inches/second)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Source: Caltrans 2013b

LOCAL

El Dorado County General Plan

The Health, Safety, and Noise Element of the *El Dorado County General Plan* (2004) contains policies to ensure that county residents are not subjected to noise beyond acceptable levels. The general plan policies which are applicable to these to potential impacts are summarized below:

- ▲ **Policy 6.5.1.1:** Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 4.10-5 (GP Table 6-1) or the performance standards of Table 4.10-6 (GP Table 6-2), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.
- ▲ **Policy 6.5.1.3:** Where noise mitigation measures are required to achieve the standards of Tables 4.10-5 and 4.10-6, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.
- ▲ **Policy 6.5.1.5:** Setbacks shall be the preferred method of noise abatement for residential projects located along Highway 50. Noise walls shall be discouraged within the foreground viewshed of Highway 50 and shall be discouraged in favor of less intrusive noise mitigation (e.g., landscaped berms, setbacks) along other high volume roadways.
- ▲ **Policy 6.5.1.8:** New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 4.10-5 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 4.10-5.

- ▲ **Policy 6.5.1.9:** Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 4.10-5 at existing noise sensitive land uses.
- ▲ **Policy 6.5.1.11:** The standards in Table 4.10-7 shall apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally-recognized holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.
- ▲ **Policy 6.5.1.12:** When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.

 - A. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant;
 - B. Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and
 - C. Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.

Table 4.10-5 Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹ L_{dn} /CNEL, dB	Interior Spaces	
		L_{dn} /CNEL, dB	L_{eq} , dB ²
Residential	60 ³	45	-
Transient Lodging	60 ³	45	-
Hospitals, Nursing Homes	60 ³	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls, Schools	60 ³	-	40
Office Buildings	-	-	45
Libraries, Museums	-	-	45
Playgrounds, Neighborhood Parks	70	-	-

Notes:

- ¹ 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.
- ² As determined for a typical worst-case hour during periods of use.
- ³ 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.

Source: El Dorado County 2004

Table 4.10-6 Noise Level Performance Protection Standards for Noise-Sensitive Land Uses Affected by Non-Transportation* Sources						
Noise Level Descriptor	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
	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

Notes:

Each of the noise levels specified above shall be lowered by five 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 feet 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 effected 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 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, and other outdoor land use.

Source: El Dorado County 2004

Table 4.10-7 Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Community Regions and Adopted Plan Areas-Construction Noise			
Land Use Designation ¹	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
Higher-Density 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 and Public Facilities (C, R&D, PF)	7 a.m. – 7 p.m.	70	90
	7 p.m. – 7 a.m.	65	75
Industrial (I)	Any Time	80	90

Notes:

1 Adopted plan areas should refer to those land use designations that most closely correspond to the similar general plan land use designation for similar development

Source: El Dorado County 2004

4.10.7 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- result in a substantial temporary (or periodic) increase in ambient noise levels in the project vicinity above levels existing without the project, as summarized in Table 4.10-7;

- ▲ expose people to or generate excessive ground vibration or ground noise levels (i.e., exceed the Caltrans recommended level of 0.2 inch per second PPV with respect to the prevention of structural damage for normal buildings or the FTA maximum acceptable level of 80 VdB with respect to human response for residential uses [i.e., annoyance] at nearby existing vibration-sensitive land uses);
- ▲ expose people to or generate transportation noise levels in excess of applicable allowable levels (i.e., long-term exposure of sensitive receptors [existing or proposed] to transportation noise [existing or project-generated]) as described in Table 4.10-5;
- ▲ result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (e.g., long-term exposure of existing sensitive receptors to increased project-generated noise levels as determined by Policy 6.51.12);
- ▲ for a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- ▲ for a project within the vicinity of an active private airstrip, expose people residing or working in the project area to excessive noise levels.

METHODS OF ANALYSIS

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference emission levels, and usage factors from the *FTA Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2006) and the Federal Highway Administration (FHWA) *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels are noise and vibration emissions for specific equipment or activity types that are well documented in the field of acoustics.

The assessment of potential long-term (operational) noise impacts from project-generated increases in traffic is based on modeling built on the Caltrans traffic noise analysis protocol and the technical noise supplement (Caltrans 2011, 2013a) and project-specific traffic data (Appendix D). The analysis is based on the reference noise emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Truck usage and vehicle speeds on project area roadways were estimated from field observations and the project-specific traffic report. Note that the modeling conducted does not account for any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels.

ISSUES NOT DISCUSSED FURTHER

Cameron Airpark, a small private airport, is located approximately 5.5 miles to the northeast of the project site. Mather Airfield, McClellan Airfield, and Placerville Airport are all over 10 miles away from the project site. There are no private airstrips within close proximity to the project area. The proposed project includes new residential land uses. However, all proposed residential land uses would be located over 5 miles from the Cameron Airpark. Further, the proposed development is not within the any airport noise contours or safety zones and, therefore, the project would not result in people residing in close proximity to the airports and there would be no impact. This issue is not discussed further.

IMPACTS AND MITIGATION MEASURES

Impact 4.10-1: Construction noise impacts.

The project is anticipated to be built out over approximately five years. Construction would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. Night construction is not proposed. Worst-case construction-related activities could result in noise levels of up to 86 dBA L_{eq} and 91 dBA L_{max} , which could exceed El Dorado County daytime (i.e., 7:00 a.m. to 7:00 p.m.) noise standards (i.e., 55 dBA L_{eq} / 75 dBA L_{max}) at or within 855 feet of proposed construction activity. A majority of the project site and potential construction locations are located over 855 feet from surrounding existing sensitive land uses. However, some existing residences on the northern edge of the project site are located directly adjacent to (and thus within 855 feet of) potential construction areas and, therefore, could potentially be exposed to noise levels above applicable El Dorado County standards (i.e., 55 dBA L_{eq} / 75 dBA L_{max}). This is considered a **significant** impact.

Mitigation is proposed to reduce construction-related noise. However, a reduction of 31 dB would be required to comply with noise standards, which would not be achievable. Therefore, nearby sensitive receptors would be exposed to temporary increases in noise during construction activities. Mitigation Measure 4.10-1 would reduce noise exposure at existing residences to the extent feasible; however, the noise levels at these sensitive receptors could still be in excess of the County's noise standard. This impact would remain **significant and unavoidable**.

Construction noise levels in the vicinity of the project site would fluctuate depending on the type, number, and duration of usage of vehicles and equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day; noise levels generated by those activities; distances to noise sensitive receptors; potential noise attenuating features such as topography, vegetation, and existing structures; and the existing ambient noise environment in the receptor vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific set of equipment with varying equipment type, quantity, and intensity. These variations in the equipment change the effect they have on the noise environment of the project site and surrounding area during the construction process.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations (e.g., stationary crane, generator). Operational characteristics of heavy construction equipment are typified by short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

Additionally, when construction-related noise levels are evaluated, activities that occur during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as traffic volumes and commercial activities decrease, construction activities performed during these more noise-sensitive periods can result in increased annoyance and potential sleep disruption for occupants of nearby residences.

The project is anticipated to be built out over approximately five years, depending on factors such as market demand. Construction is anticipated to occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. Night construction is not proposed. Construction would consist of four basic phases: grading, infrastructure improvements, home construction, and installation of park improvements. For a complete description of construction phasing and activities, please refer to Chapter 3, "Project Description."

The site preparation phase typically generates the most substantial noise levels because the onsite equipment associated with grading, compacting, and excavation are the noisiest. Construction equipment would vary day-to-day depending on the project phase and the activities occurring but would involve operation of all-terrain

heavy-duty diesel equipment. Typical noise levels generated by construction equipment anticipated to be used are identified in Table 4.10-8.

Table 4.10-8 Noise Emission Levels from Construction Equipment	
Equipment Type	Typical Noise Level (dBA) at 50 feet
Backhoe (Site Preparation/Grading)	80
Concrete Mixer	85
Concrete Pump	82
Crane	85
Dozer (Site Preparation/Grading)	85
Drum Mixer	80
Excavator (Site Preparation/Grading)	85
Front End Loader (Site Preparation/Grading)	80
Generator	70
Paver	89
Roller	85
Scraper (Site Preparation/Grading)	89
Pickup Trucks (Site Preparation/Grading)	55

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Source: FTA 2006

Based on the information provided in Table 4.10-8, and accounting for typical usage factors of individual pieces of equipment and activity types, worst-case construction-related activities could result in noise levels of up to 86 dBA L_{eq} and 91 dBA L_{max} at 50 feet from construction activity. Anticipated daytime construction activity could exceed El Dorado County daytime (i.e., 7:00 a.m. to 7:00 p.m.) noise standards (i.e., 55 dBA L_{eq} / 75 dBA L_{max}) within 855 feet of proposed construction activity.

A majority of the project site and potential construction locations are located over 855 feet from surrounding existing sensitive land uses. However, existing residences along Platt Circle, on the eastern edge of the site, and residences along Santa Cruz Court, Wilson Boulevard, Crestline Circle, and Montridge Way, on the northern edge of the project site, are located directly adjacent (and thus within 855 feet) to potential construction areas and therefore could potentially be exposed to noise levels above applicable El Dorado County standards (i.e., 55 dBA L_{eq} / 75 dBA L_{max}). This would be a **significant** impact.

Mitigation Measures

Mitigation Measure 4.10-1: Implement construction-noise reduction measures.

To minimize noise levels during construction activities, construction contractors shall comply with the following measures during construction:

- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses, and/or located such that existing topography blocks line-of-sight from these land uses to the staging areas.

- ▲ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- ▲ Where feasible and consistent with building codes and other applicable laws and regulations, individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite).
- ▲ All construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. The self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. In addition to the use of backup alarms, the construction contractor shall consider other techniques such as observers and the scheduling of construction activities such that alarm noise is minimized.
- ▲ When future noise sensitive uses are within close proximity to prolonged construction noise, noise attenuating buffers such as structures, truck trailers, temporary noise curtains or sound walls, or soil piles shall be located between noise sources and the receptor to shield sensitive receptors from construction noise.
- ▲ The applicant or construction contractors shall post visible signs along the perimeter of the construction site that disclose construction times and duration. A contact number for an El Dorado County enforcement officer shall be included where noise complaints can be filed and recorded. The applicant will be informed of any noise complaints and will be responsible for investigating complaints and implementing feasible and appropriate measures to reduce noise at receiving land uses. These may include:
 - Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).
 - For construction activity that occurs within 855 feet of existing sensitive land uses, install temporary noise curtains that meet the following parameters:
 - temporary noise curtains shall be installed as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s).
 - temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.

Significance after Mitigation

Implementation of the mitigation measure would reduce construction noise for the entire construction area. Construction activities that occur over 855 feet from existing sensitive receptors would not exceed applicable thresholds and would not expose these land uses to excessive noise levels. For construction activities located within 855 feet from existing sensitive land uses, additional mitigation is proposed to include noise barriers to further reduce noise at these receptors, which can reduce noise by up to 10 dB (EPA 1971). Although noise reduction would be achieved with implementation of these measures, reductions of up to 31 dB would be required to comply with the 55 dBA L_{eq} daytime noise standard. Reductions of this magnitude are not expected to be achieved under all circumstances with implementation of Mitigation Measure 4.10-1 and this impact would be **significant and unavoidable**.

Impact 4.10-2: Short-term construction vibration impacts.

Site preparation could require the use of blasting to remove rock outcroppings, if discovered. Ground vibration levels associated with blasting could result in damage to nearby structures if it were to occur within 75 feet. Blasting could also result in disturbance/annoyance to occupied structures within 230 feet of blasting activities. Specific locations where blasting could occur are not known at this time and would depend on specific soil/ground conditions. However, because construction activities would occur as close as 50 feet from existing residences and such activities could include blasting, these activities could result in annoyance to residents of occupied structures and potential damage to structures. This would be a **significant** impact.

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as bulldozers and trucks. Blasting activities also generate relatively high levels of ground vibration and noise. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and high levels of vibration can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions and sleeping.

The project would not include the development of any new major sources of ground vibration (e.g., no new highways or railroads). As described above (see Impact 4.10-1), development of the proposed project would include construction activities that require the use of various types of equipment. Construction of the project may result in varying degrees of temporary ground vibration and noise, depending on the specific construction equipment used and activities involved. As shown in Table 4.10-9, pile driving and blasting are the typical construction activities that generate the greatest ground vibration. Of these construction methods blasting would likely be required to break up large outcroppings and, therefore, the maximum ground vibration and noise levels would be associated with blasting. Other equipment that could be used that would have the potential to generate disturbing vibration would be a dozer during grading activities.

Table 4.10-9 Representative Ground Vibration and Noise Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 feet (inches/second) ¹	Approximate L _v (VdB) at 25 feet ²
Impact Pile Driver	1.518	112
Blasting	1.13	109
Sonic Pile Driver	0.734	104
Large Dozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Rock Breaker	0.059	83
Jackhammer	0.035	79
Small Dozer	0.003	58

L_v = the root mean square velocity expressed in vibration decibels, assuming a crest factor of 4
 Source: FTA 2006

According to FTA, vibration levels associated with the use of a large dozer are 0.089 in/sec PPV and 87 Vdb at 25 feet. The use of a large dozer would not exceed the Caltrans recommended level of 0.2 in/sec PPV with respect to structural damage as the reference level at 25 feet is substantially below 0.2 in/sec PPV. Based on the proposed construction site and existing structures surrounding the site, no grading would

occur within 25 feet of an existing structure and therefore there is very low potential for structural damage from typical construction equipment and activities, such as grading. With respect to human disturbance, the use of a large dozer would exceed the FTA maximum acceptable level of 80 VdB within 40 feet of dozing activity. Some residences are located within 40 feet of potential grading activity such as the residences on the north and western boundary of the project site. As discussed above under Impact 4.10-1, construction activities would take place during the less sensitive times of the day when people are less likely to be at home or sleeping. Further, grading does not occur in one location for an extended period of time but rather moves throughout an entire site. Thus, due to the temporary and mobile nature of grading activities and the fact that any grading activities would occur during the less sensitive times of the day, grading would not expose nearby existing sensitive receptors to excessive vibration levels.

With regards to potential blasting, vibration levels are 1.13 in/sec PPV and 109 Vdb at 25 feet (Table 4.10-9). Based on FTA's recommended procedure for applying a propagation adjustment to these reference levels, vibration levels from blasting could exceed Caltrans recommended level of 0.2 in/sec PPV with respect to the structural damage within 75 feet of blasting activities and could exceed FTA's maximum acceptable level of 80 VdB with respect to human response within 230 feet of blasting activities.

Specific locations where blasting may occur have not been determined but blasting could be required to remove large rock outcroppings if discovered during site preparation. The project site is located adjacent to existing residences and therefore it is possible that blasting activities could occur within distances that could expose people or structures to excessive vibration levels. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.10-2: Reduce blasting-related vibration.

For any proposed blasting that would otherwise occur within 230 feet from any existing occupied structure, alternatives to traditional blasting (silent demolition), such as non-explosive chemical agents, expansive grout, or other non-explosive technology, shall be used to preclude vibration and noise impacts.

Significance after Mitigation

Implementation of Mitigation Measure 4.10-2 would require the use of alternative methods to traditional blasting should the removal of any large outcropping be required within 230 feet of an existing residence (the distance for which blasting could cause disturbance to sensitive receptors). As such, blasting activities located within close proximity to sensitive receptors would not result in vibration levels that would exceed exceed disturbance (i.e., 80 Vdb) or structural damage thresholds (i.e., 0.2 in/sec PPV). This impact would be reduced to a **less-than-significant** level.

Impact 4.10-3: Long-term operational noise impacts to existing receptors.

Implementation of the project would result in the extension of Saratoga Way and Wilson Boulevard, thus resulting in new noise sources at these new roadways. In addition, existing traffic patterns would be diverted because of these new roads, resulting in traffic-noise increases. Traffic-noise increases were modeled for all roadways potentially affected by construction of the project. Traffic-noise levels on Saratoga Way between El Dorado Hills Boulevard and Arrowhead Drive would result in an 11.9 dB increase at 100 feet from the centerline. Maximum noise levels on Saratoga Way would reach 56.7 dB, accounting for noise reduction from the existing sound wall along Saratoga Way, which is considered a substantial long-term increase in noise (i.e., 5 dB or more). This impact would be **significant**.

A sound wall is currently in place that would continue to provide noise reduction. Therefore, no additional feasible mitigation has been identified. Therefore, this impact would be **significant and unavoidable**.

Project implementation would result in an increase in traffic volumes on affected roadway segments and, potentially, an increase in traffic noise levels. Generally, a doubling of a noise source is required to result in an increase of 3 dB, which is perceived as barely noticeable by people (Egan 2007: 21). *El Dorado County*

General Plan Policy 6.5.1.12 defines a substantial increase in noise as 5 dB when existing levels are less than 60 dBA, a 3 dBA increase when existing levels range between 60 and 65 dBA, and a 1.5 dB increase when existing levels are greater than 65 dBA. This analysis evaluates the noise exposure to existing land uses as a result of the proposed project. Impacts from individual roadways are discussed separately.

To assess this impact, traffic noise levels associated with the proposed project under existing no project and existing plus project conditions were predicted for affected roadway segments. The existing plus project scenario includes the development of new roadways (i.e., Saratoga Way and Wilson Boulevard), which would result in the diversion of existing traffic onto these new segments. The modeling for the existing plus project scenario includes the traffic-noise from all traffic on the modeled roadways. No distinction is made between existing traffic and traffic attributable to the new homes because the project would result in new traffic patterns and traffic-related noise on roads that do not currently exist.

Table 4.10-10 summarizes the modeled traffic noise levels at 100 feet from the roadway centerlines for the existing and existing plus project conditions. For further details on traffic-noise modeling inputs and parameters, refer to Appendix D.

Table 4.10-10 Summary of Modeled Traffic Noise Levels under Existing and Existing Plus Project Conditions				
Roadway	Segment	L _{dn} (dB) at 100 feet from Roadway Centerline		Change (dB)
		Existing No Project	Existing +Project	
Highway 50	Adjacent to project site	77.8	77.8	+0.0
Saratoga Way	El Dorado Hills Boulevard to Arrowhead Drive	55.0	66.2	+11.2
Saratoga Way	Arrowhead Drive to Finders Way	53.8	66.2	+12.4
Saratoga Way	Finders Way to Wilson Boulevard	NA	66.1	NA
Saratoga Way	Wilson Boulevard to county line	NA	66.6	NA
Iron Point Road	County line to Empire Ranch Road	NA	66.1	NA
Wilson Boulevard	El Dorado Hills Boulevard to North Project Boundary	58.4	59.9	+1.5
Wilson Boulevard	North Project Boundary to Saratoga Way	NA	56.9	NA
El Dorado Hills Boulevard	North of Wilson Boulevard	68.4	68.9	+0.5
El Dorado Hills Boulevard	Wilson Boulevard to Lassen Lane/Serrano Parkway	68.7	68.9	+0.2
El Dorado Hills Boulevard	Lassen Lane/Serrano Parkway to Park Drive	69.9	70.4	+0.5
El Dorado Hills Boulevard	Park Drive to Highway 50	69.7	69.9	+0.2
Latrobe Road	Highway 50 to Town Center Boulevard	73.5	73.6	+0.1
Latrobe Road	Town Center Boulevard to White Rock Road	71.9	72.1	+0.2
Latrobe Road	South of White Rock Road	71.1	71.3	+0.2
Finders Way	North of Saratoga Way	48.7	49.5	+0.8
Arrowhead Drive	North of Saratoga Way	44.5	45.1	+0.6

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level
Source: Modeled by Bollard Acoustics, 2015

Saratoga Way

The project includes the extension of Saratoga Way west to the El Dorado County line at which point it would connect with Iron Point Road in the City of Folsom. With regard to Saratoga Way, four separate segments were evaluated (Table 4.10-10). As a result of the project, existing traffic would be diverted from the current roadway network onto the new Saratoga Way connection. Because Saratoga Way is currently a dead-end

street, the existing segment of Saratoga Way from El Dorado Hills Boulevard to Arrowhead Drive currently experiences very low traffic levels. The proposed extension of Saratoga Way would provide a new thoroughfare, which would substantially increase the traffic volume. This is projected to result in an 11.2 dB increase in traffic noise along this segment of Saratoga Way. According to *El Dorado County General Plan Policy 6.5.1.12*, when existing noise levels are below 60 dB (which is the case), a 5 dB increase would be considered substantial. However, an existing sound wall is located between Saratoga Way and the existing residences. Typical sound walls provide a 10 dB or greater (depending on design and materials) reduction in noise (FHWA 2010). In general, the maximum noise reduction that can be achieved from a barrier is about 20 dBA (FHWA 2010), so a reduction of 10 dB from the existing sound barrier would be considered conservative. Considering that project-generated traffic-noise levels along Saratoga Way could reach 66.6 dBA at 100 feet, and residences are located as close as 75 feet, residences would experience an 11.2 dB increase, which is perceptible, but overall noise exposure would remain below 60 dB (i.e., project traffic-noise levels of 66.6 dB minus 10 dB reduction from the sound wall is 56.6 dB), the applicable El Dorado County noise standard. In addition, upper levels of the residences located adjacent to Saratoga Way at this segment could experience an additional 3 dB increase (because of reduced ground absorption at elevated levels), and therefore could be exposed to noise levels of up to 69.6 dBA. However, upper levels of homes do not constitute outdoor activity areas, where El Dorado County exterior noise levels apply. Further, typical building construction provides at least 25 dB exterior-to-interior noise reduction (Caltrans 2011). Therefore, interior noise levels at these residences would not exceed applicable interior noise standard of 45 dBA L_{eq} (i.e., 69.6 minus 25 is 44.6dBA). Nonetheless, although noise levels would not exceed El Dorado County maximum allowable noise levels for traffic-noise, existing residents located along this roadway would be exposed to substantial long-term increases in traffic-noise of 11.2 dB which exceeds the El Dorado County allowable limit of 5 dB by 6.2 dB.

On the segment of Saratoga Way from Arrowhead Drive to Finders Way, traffic-noise would increase by 12.4 dB, which would also result in substantial increases in noise per El Dorado County noise standards. However, no existing sensitive receptors are located adjacent to this segment. Therefore, noise increases on Saratoga Way at this segment would not result in a substantial noise increase to sensitive receptors.

The extension of Saratoga Way from Finders Way to the El Dorado County line would result in a new noise source associated with existing traffic and project-generated traffic using the new roadway. Noise levels on the new segments of Saratoga Way could reach up to 66.6 dB. However, no sensitive receptors currently exist along the proposed Saratoga Way extensions. No existing sensitive receptors would be exposed to substantial increases in noise as a result of the extended Saratoga Way at these segments.

Wilson Boulevard

The project also includes the extension of Wilson Boulevard, south to the Saratoga Way extension. The extension of Wilson Boulevard would provide a new roadway that would be used by both project-generated and existing traffic. As a result of the extension, traffic and traffic-generated noise would increase on the existing portion of Wilson Boulevard from El Dorado Hills Boulevard to the project's north boundary by 1.5 dB. An increase of less than 1 dB would not be perceptible and an increase of 3 dB would be barely perceptible, therefore an increase of 1.5 dB would not be considered a substantial increase in noise. The extension of Wilson Boulevard from the northern project boundary to Saratoga Way would result in a new noise source associated with existing and project-generated traffic using the new roadway. Noise levels on this segment could reach 56.9 dB at 100 feet from the roadway centerline. Existing residences are located to the east and west of where the future Wilson Boulevard extension would be (all are over 300 feet away from the proposed roadway alignment). However, these existing residences would be shielded by the proposed development and intervening topography and would not be exposed to substantial noise increases. Therefore, the extension of Wilson Boulevard would not result in a substantial increase in noise at any existing sensitive receptor.

Summary

As shown in Table 4.10-10, all other project-affected roadways would experience noise increases of less than a 3 dBA and therefore would not expose any existing sensitive receptor to a substantial increase in

noise. As described above, although the increased roadway noise level (56.6 dB) resulting from the proposed extension of Saratoga Way would likely remain below El Dorado County exterior noise standards (60 dB) at backyards of residences along the segment of Saratoga Way from El Dorado Hills Boulevard to Arrowhead Drive, the increase in noise (11.2 dB) from existing noise levels would exceed the County's standard for acceptable noise increases (5 dB). This would be a **significant** impact.

Mitigation Measures

Because a sound wall already exists along Saratoga Way, no feasible mitigation measures have been identified.

Significance after Mitigation

The portion of Saratoga Way from El Dorado Hills Boulevard to Arrowhead Drive would result in an up to 11.2 dB increase in noise as a result of the project. Also, as noted above, an existing sound barrier is located between the line-of-sight of the traffic on Saratoga Way and the existing sensitive receptors. As such, the existing sound barrier would continue to shield the existing sensitive receptors from future traffic increases and, as described above, exterior and interior noise levels at these receptors would continue to remain below El Dorado County maximum allowable standards for transportation sources (i.e., 45 dBA L_{dn} for interior and 60 dBA L_{dn} for exterior).

Although maximum allowable noise levels would not be exceeded (i.e., 60 dB L_{dn} /CNEL), project-generated traffic-noise levels would result in a substantial increase in noise (i.e., 11.2 dB) from existing noise levels. Considering that a noise barrier already exists at these receptors, the only remaining mitigation would be to redesign the existing noise barrier to provide an additional reduction of at least 7 dB so that the incremental increase in noise as a result of the project does not exceed 5 dB. Based on FHWA criteria for sound barrier construction, a barrier can achieve an additional 1 dB of noise reduction with every 2 feet of height after it breaks the line of sight (with a maximum theoretical reduction of 20 dB). Therefore, to achieve an additional 7 dB reduction, the new sound wall would need to be 24 feet above the line-of-sight to the noise source, which is typically considered to be 5 feet (Caltrans 2013a). Thus, it is possible that a 29 foot sound wall could potentially achieve the reduction necessary. However, this level of reduction would be considered "very difficult" by FHWA standards (Table 8, 2010). A wall of this size would block the views from upper level balconies and windows of the existing residences and, thus, may not be acceptable to all affected residences. In addition, a wall of this size would have other structural, safety, and aesthetic limitations that would need to be evaluated (e.g., wind load, seismic). This mitigation is considered infeasible. Other mitigation measures to protect existing residential exterior areas are not available; therefore, the proposed extension of Saratoga Way would result in the exposure of existing sensitive land uses (i.e., residences located adjacent to Saratoga Way between El Dorado Hills Boulevard and Arrowhead Drive) to an increase (11.2 dB) in noise levels that exceed applicable El Dorado County standard (5 dB) for noise increases (even though the resulting noise level would be within El Dorado County's 60 dB exterior noise standard). This impact would remain **significant and unavoidable**.

Impact 4.10-4: Long-term operational noise impacts to proposed sensitive receptors.

Implementation of the project would result in development of new sensitive receptors located in close proximity to existing and future roadways including Highway 50, Saratoga Way, and Wilson Boulevard. Noise increases on Wilson Boulevard would not exceed applicable El Dorado County noise standards. Noise Levels from Saratoga Way would exceed El Dorado County noise standards of 60 dBA L_{dn} (exterior) at proposed receptors located adjacent and to the north of Saratoga Way. Noise levels from Highway 50 would exceed El Dorado County noise standards of 60 dBA L_{dn} (exterior) and 45 dBA L_{dn} (interior) at residences located directly to the north of Highway 50. This would be a **significant** impact.

With the implementation of Mitigation Measure 4.10-4, which would reduce interior noise levels, this impact would be **less than significant**.

Implementation of the project would result in the placement of 317 single-family homes in close proximity to existing and newly constructed roadways including Saratoga Way, Wilson Boulevard, and Highway 50. Noise

impacts on the proposed sensitive receptors from these roadways are described separately, where applicable, below. For traffic-noise modeling results, refer to Table 4.10-10, above.

Saratoga Way and Wilson Boulevard

Both Saratoga Way and Wilson Boulevard would be extended as a part of the project. The newly extended roads would be used by existing vehicles and would divert traffic from other roadways and provide access to the newly constructed residences. As a result of the diverted traffic that would use the new road extensions and the traffic attributable to the new homes, Saratoga Way would result in up to 66.6 dB at 100 feet from the centerline (Table 4.10-10). New residents would be located in close proximity to the new Saratoga Way extension (i.e., as close as 100 feet), and therefore would be exposed to levels in excess of the El Dorado County maximum allowable noise levels of 60 dBA for outdoor activity areas. Typical construction (e.g., wood or stucco siding) results in at least a 25 dBA reduction in noise and, therefore, interior noise standards of 45 dBA L_{dn} would not be exceeded.

Wilson Boulevard would result in noise levels of up to 59.9 dB at 100 feet from the centerlines and 56.9B along the new extension (where new receptors would be located). Homes would be built in close proximity to Wilson Boulevard, but projected noise levels would not exceed the El Dorado County standard of 60 dB. Noise from Wilson Boulevard would not expose any new sensitive receptors to excessive noise levels. Typical construction (e.g., wood or stucco siding) results in at least a 25 dBA reduction in noise and, therefore, interior noise standards of 45 dBA L_{dn} would not be exceeded.

Highway 50

Based on the traffic-noise modeling conducted, noise levels from Highway 50 could reach 77.8 dBA 100 feet from the centerline. Future receptors could be located as close as 300 feet to Highway 50 and, based on the noise study conducted, noise levels at this distance could be as high as 72 dBA (Bollard Acoustics 2015). If any of these residences are multi-level, upper levels could be exposed to levels of up to 75 dBA (3 dB higher) because of reduced ground absorption at higher levels. Typical construction (e.g., wood or stucco siding) results in at least a 25 dB reduction in noise (Caltrans 2011). Therefore, interior noise levels would be reduced to at least 50 dBA L_{dn} , which would exceed El Dorado County's interior noise standard of 45 dBA L_{dn} . Thus, traffic-noise levels from Highway 50 would cause El Dorado County's interior (i.e., 45 dBA L_{dn}) and exterior (i.e., 60 dBA L_{dn}) noise standards at residences north of Highway 50 to be exceeded.

Summary

Project-generated noise levels on Wilson Boulevard would be below the El Dorado County maximum allowable noise levels (i.e., 60 dBA L_{dn}) at new receptors located along Wilson Boulevard. Compliance with the exterior noise level would automatically comply with the interior noise standard, as typical construction provides at least a 25 dB reduction (Caltrans 2011). Noise levels from Saratoga Way would combine with noise levels from Highway 50, but a doubling of a noise source would be necessary to result in a 3 dB increase. Therefore, as noise from Saratoga Way is predicted to be substantially lower than Highway 50 (i.e., 11 dB), noise from Highway 50 would be the primary concern for proposed sensitive receptors. As described above, noise levels from Highway 50 would result in levels that exceed the El Dorado County maximum allowable noise level of 60 dB L_{dn} for outdoor activity areas of the residences directly to the north of Highway 50. However, as described in Chapter 3, "Project Description" a sound wall would be included in the design of the project, shielding the residences closest to Saratoga Way and Highway 50. Refer to Exhibit 3-3 for exact location. The sound wall would be designed to result in a 12 dB reduction (i.e., a minimum transmission loss rating of 22 dB) at the non-road side of the barrier. As such, predicted noise levels of 72 dBA L_{dn} from Highway 50 would be reduced to 60 dBA L_{dn} at the residences located behind the barrier.

However, noise levels of up to 75 dB at the upper levels of houses would exceed the El Dorado County interior noise standards of 45 L_{dn} , assuming an exterior-to-interior noise reduction of 25 dB. New residences located to the north of Highway 50 would be exposed to excessive noise levels and this would be a **significant** impact.

Mitigation Measures

Mitigation Measure 4.10-4: Implement building design measures to reduce interior noise levels at proposed residences.

To reduce interior noise levels at all elevated south, east, and west-facing properties located adjacent to Saratoga Way, the following design standard shall be met. Refer to Figure 2 of Appendix D for properties requiring these design measures.

- ▲ An exterior-to-interior noise reduction of at least 30 dB shall be achieved. This level of noise reduction can be achieved with incorporation of the following measures:
 - All windows and doors shall meet a minimum sound transmission class rating of 33;
 - Air conditioning shall be provided to allow occupants to close doors and windows; and
 - Additional insulation designed specifically for noise reduction shall be used in walls facing Saratoga Way and Highway 50.

Significance after Mitigation

Implementation of Mitigation Measure 4.10-4 would reduce noise exposure at new residences proposed as part of the project. The inclusion of a sound-barrier at the new residences located north of Saratoga Way and Highway 50 would be required to provide, at a minimum, 12 dB of reduction. Therefore, predicted noise levels of 72 dBA L_{dn} from Highway 50 would be reduced to 60 dBA L_{dn} at the residences located behind the barrier. Implementation of Mitigation Measure 4.10-4 would ensure that interior noise levels at the residences affected by Highway 50 and Saratoga Way would comply with interior noise standards of 45 dBA L_{dn} by requiring additional sound reduction through building design measures. This impact would be reduced to a **less-than-significant** level.

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4.11 GEOLOGY AND SOILS

This section discusses the geologic conditions of the region, soil and mineral resources on the project site, as well as potential hazards associated with the onsite geologic and soil conditions. Hazards associated with naturally occurring asbestos are addressed in Section 4.8, “Air Quality.”

4.11.1 Environmental Setting

GEOLOGY AND TOPOGRAPHY

The project site is in the western foothills of the Sierra Nevada geomorphic province, which is composed of northwest-trending metamorphic, volcanic, and igneous rocks that stretch from Bakersfield to Lassen Peak. It includes the Sierra Nevada and a broad belt of western foothills. Rocks in the project area are deformed, metamorphosed remnants of Paleozoic and Mesozoic oceanic crust and volcanic islands added to the continent during subduction along the western coast of North America that were later intruded by plutonic rocks (rocks that cooled from magma underground) in various locations. The project site is located on of the Copper Hill Volcanics geologic unit, which dates to the Late Middle Jurassic and is associated with mostly mafic to andesitic pyroclastic rocks, lava, and pillow lava (Busch 2001).

Ultramafic and serpentine rocks are associated with naturally-occurring asbestos (NOA). “Asbestos” is a non-technical term applied to a group of minerals that form long, very thin mineral fibers. These fibers can become airborne when rocks or soils containing such minerals are disturbed by mining or earthwork activities, and are potentially hazardous if inhaled. The U.S. Geological Survey and California Geological Survey (CGS) have mapped reported asbestos occurrences and ultramafic rock outcropping in the region. The northwest corner of the site is within a 0.25-mile buffer for a known area of NOA (El Dorado County 2005). No detectable amounts of NOA were reported in samples from the area of the proposed Saratoga Way extension (between Finders Way and Iron Point Road) conducted in 2007 (El Dorado County 2009).

The topography of the site is undulating with elevations varying from 790 feet above mean sea level in the northwest portion of the site to 630 feet above mean sea level in the southeast portion of the site, and is generally comprised of two steep northwest/southeast trending ridges bisected by a perennial drainage (Youngdahl 2014). Most of the site has slopes of less than 20 percent. Steeper slopes occur in the northwest corner, southeast corner, and center of the southern half of the site (CTA 2014). The slope of the site is generally characterized in Table 4.11-1.

Table 4.11-1 Project Site Topography	
Slope Range	Proportion of the Project Site¹
0 to 10%	32.5%
10 to 15%	28.0%
15 to 20%	21.0%
20 to 30%	14.5%
30 to 40%	3.0%
Over 40%	0.5%

Notes: 1 Proportions of the project site are approximate and may not add to 100% because of rounding.

Source: CTA 2014

FAULTS AND SEISMICITY

Seismically-induced ground rupture, the physical displacement of surface deposits in response to an earthquake's seismic waves, is considered most likely along faults that have a record of displacement sometime in the past 11,000 years (the Holocene Epoch). These faults are considered active. Faults on which an event is believed to have occurred during the Quaternary Period (approximately the last 1.6 million years) are considered potentially active. All other faults are considered inactive.

The project is in the Bear Mountains Fault Zone, on which the last full displacement occurred in the Late Quaternary Period (i.e., during the last 700,000 years) (Jennings and Bryant 2010). The inferred location of the West Bear Mountain Fault is less than 1 mile east of the project site (Busch 2001).

There are no active faults within or adjacent to the project area, and there is a low risk of fault rupture. No active faults or Alquist-Priolo fault zones have been delineated in El Dorado County (El Dorado County 2003; El Dorado County 2009).

Ground Shaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions.

Based on historical seismic activity and fault and seismic hazards mapping, El Dorado County is considered to have relatively low potential for seismic activity (El Dorado County 2003). There is a 20 percent probability of an earthquake of greater than 5.0 magnitude occurring on the project site within the next 50 years (U.S. Geological Survey 2009). An earthquake that registers 5.0 on the Richter magnitude scale (which is used to quantify the energy released by an earthquake) is of moderate intensity and would be widely felt but would not cause damage to buildings unless they are poorly constructed.

Liquefaction and Lateral Spreading

Liquefaction is the sudden loss of soil shear strength and sudden increase in porewater pressure (Youngdahl 2014). Soil liquefaction is caused by pressure waves moving through the ground because of earthquakes. Loose, granular soils and non-plastic silts that are saturated by relatively shallow groundwater (generally less than 50 feet) are susceptible to liquefaction. Liquefaction causes soil to lose strength and "liquefy," triggering structural distress or failure because of the dynamic settlement of the ground or a loss of strength in the soils underneath structures. Liquefaction in a subsurface layer can in turn cause lateral spreading of the ground surface, which usually takes place along weak shear zones that have formed within the liquefiable soil layer.

Seismic Hazard Zones are regulatory zones mapped by CGS that encompass areas prone to liquefaction and earthquake-induced landslides. The CGS has not mapped the project site as a Seismic Hazard Zone; this indicates that the risk for liquefaction is low.

Slope Failure

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience soil slumps, rapid debris flows, and deep-seated rotational slides. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse

ridges. Overall, the risk of landslides within and adjacent to the project area caused by seismic events or project activities is low.

SOIL CHARACTERISTICS

Overlying the geologic units described above is a layer of soil. In general, soil characteristics are strongly governed by slope, relief, climate, vegetation, and the rock type upon which they form. Soil types are important in describing engineering constraints such as erosion and runoff potential, corrosion risks, and various behaviors that affect structures, such as expansion and settlement. Table 4.11-2 lists the soils mapped on the project site by the Natural Resources Conservation Service. Soils on the project site are generally loamy and are well-drained, permeable, and susceptible to erosion. The exception is the clay-type soil associated with the perennial drainage. These soils are poorly drained, and have a high shrink-swell potential (NRCS 2014). In general, there is 3 feet or less soil overlying bedrock, except in the vicinity of the drainage, where up to approximately 9 feet of soil was observed during geotechnical analysis (Youngdahl 2014).

Table 4.11-2 Characteristics of Soils on the Project Site

Soil Map Unit Name	Shrink-Swell Potential ¹	Permeability ²	Water Erosion Hazard ³	Wind Erosion Hazard ⁴	Drainage	Concrete Corrosivity	Limitations
Argonaut gravelly loam, 2 to 15% slopes	Moderate	Moderately high	Low	6	Well drained	Low	High clay percentage; unstable excavation walls; shallow depth to bedrock
Auburn silt loam, 2 to 30% slopes	Low	Moderately high	High	5	Well drained	Low	Shallow depth to bedrock; slopes greater than 15%
Auburn very rocky silt loam, 2 to 30% slopes	Low	Moderately high	High	5	Well drained	Low	Shallow depth to bedrock; slopes greater than 15%
Auburn extremely rocky silt loam, 3 to 70% slopes	Low	Moderately high	High	5	Well drained	Low	Shallow depth to bedrock; slopes greater than 15%
Rescue clay, clayey variant	High	Moderately low	Low	4	Poorly drained	Low	Saturation at shallow depth; high clay percentage, unstable excavation walls

Notes:

- ¹ Based on percentage of linear extensibility.
- ² Based on standard saturated hydraulic conductivity (Ksat) class limits; Ksat refers to the ease with which pores in a saturated soil transmit water.
- ³ Based on the erosion factor “Kw whole soil,” which is a measurement of relative soil susceptibility to sheet and rill erosion by water.
- ⁴ The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Source: NRCS 2014

Expansive Soils

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as building and structure foundations or underground utilities, and can result in structural distress and/or damage. Often, grading, site preparations, and backfill operations associated with subsurface structures can eliminate the potential for expansion.

Erosion and Runoff

Erosion is a natural process whereby soil and highly-weathered rock materials are worn away and transported, most commonly by wind or water. Soil erosion can become problematic when human intervention causes rapid soil loss and the development of erosional features (such as incised channels,

rills, and gullies) that undermine roads, buildings, or utilities. Vegetation clearing and earth moving reduces soil structure and cohesion, resulting in accelerated erosion. This typically occurs during construction activity involving grading and soil moving activities that loosen soils and makes them more susceptible to wind and water erosion. Further, the operation of associated heavy machinery and vehicles over access roads, staging areas, and work areas can compact soils and decrease their capacity to absorb runoff, resulting in rills, gullies, and excessive sediment transport. Natural rates of erosion can vary depending on slope, soil type, and vegetative cover. Soils containing high amounts of silt are typically more easily eroded, while coarse-grained (sand and gravel) soils are generally less susceptible to erosion. The soils on the project site are generally susceptible to erosion.

Soil Corrosivity

Corrosion is the deterioration of a metal, concrete, or other material through a reaction with its environment. The corrosivity of soils is commonly related to several key parameters, including soil resistivity, the presence of chlorides and sulfates, oxygen content, and pH. Typically, the most corrosive soils are those with the lowest pH and highest concentration of chlorides and sulfates. Depending on the degree of corrosivity of the subsurface soils, concrete, reinforcing steel, and bare-metal structures exposed to these soils can deteriorate, eventually leading to structural failures.

MINERAL RESOURCES

There are no known mineral resources on the project site, but there is potential for discovery of minerals in economically significant quantities in the general area. The area is underlain by volcanic sequences in which undiscovered volcanic ore deposits (i.e., gold, copper, zinc) could occur (Loyd 1984).

4.11.2 Regulatory Setting

FEDERAL

National Pollutant Discharge Elimination System Program

Under Section 402 of the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the United States. The California State Water Resources Control Board administers the NPDES permit program in California. Projects that disturb 1 or more acre of soil must obtain coverage under the state's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan (SWPPP) must be developed and implemented that provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of topsoil. The required components and BMPs commonly included in a SWPPP are described in greater detail in Section 4.3, "Hydrology and Water Quality."

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and published maps showing these zones. The Project site is not located in an Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking and other hazards caused by earthquakes. This act requires the State Geologist to delineate "zones of required investigation" (i.e., seismic hazard zones) where site investigations are required to determine the

need for mitigation of potential liquefaction and/or earthquake-induced landslide. There are no Seismic Hazard Zone maps for El Dorado County.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction.

The 2013 CBC is based on the 2009 International Building Code and contains necessary California amendments that are based on the American Society of Civil Engineers Minimum Design Standards 7-05. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category for a project.

The updated CBC no longer cites the 1997 Uniform Building Code (UBC) Table 18-1-B for identifying expansive soils although the significance criteria in Appendix G of the State CEQA Guidelines still refers to this table. This analysis relies on the updated CBC section as provided below.

1803.5.3 Expansive Soil. In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity index (PI) of 15 or greater, determined in accordance with American Society of Testing and Materials (ASTM) Standard D 4318
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422
4. Expansion index greater than 20, determined in accordance with ASTM D 4829

The CBC also includes a seismic zone map to determine applicable seismic standards for proposed structures. Seismic zones range from 0 to 4, with Zone 0 being the least active and Zone 4 the most active. All of El Dorado County is located in Seismic Zone 3. All structures built in the county must comply with UBC requirements for this zone (El Dorado County 2003).

Surface Mining and Reclamation Act

Pursuant to the Surface Mining and Reclamation Act of 1975, the California State Mining and Geology Board oversees the Mineral Resource Zone (MRZ) classification system. The MRZ system characterizes both the location and known/presumed economic value of underlying mineral resources. The mineral resource classification system uses four main MRZ categories based on the degree of available geologic information, the likelihood of significant mineral resource occurrence, and the known or inferred quantity of significant mineral resources. Local agencies are required to use the classification information when developing land use plans and making land use decisions.

The California Division of Mines and Geology maps indicate that the project site is in MRZ-1 for chromite (i.e., there is little likelihood of significant deposits) and MRZ-4 for industrial minerals and placer gold (i.e., area

where available information does not rule out either the presence or absence of mineral resources). The project site is in MRZ-3a for gold, copper, and zinc formed by volcanic processes. This designation indicates that there may be undiscovered deposits in the area, based on the underlying geology.

LOCAL

El Dorado County General Plan

The adopted *El Dorado County General Plan (2004a)* provides County-wide policies for regulating land use, development, and conservation in the County. The Public Health, Safety, and Noise Element of the general plan includes policies pertaining to land use in areas where naturally occurring asbestos may be encountered and in areas where seismic and other geologic hazards may be a planning and development concern. The Conservation and Open Space Element discusses significant natural resources in the County, including geology and soils, and establishes goals, objectives, and policies related to these topics. Relevant policies from the *El Dorado County General Plan* include:

- ▲ **Policy 6.3.2.5:** Applications for development of habitable structures shall be reviewed for potential hazards associated with steep or unstable slopes, areas susceptible to high erosion, and avalanche risk. Geotechnical studies shall be required when development may be subject to geological hazards. If hazards are identified, applicants shall be required to mitigate or avoid identified hazards as a condition of approval. If no mitigation is feasible, the project will not be approved.
- ▲ **Policy 7.1.2.1:** Development or disturbance shall be prohibited on slopes exceeding 30 percent unless necessary for access. The County may consider and allow development or disturbance on slopes 30 percent and greater when:
 - Reasonable use of the property would otherwise be denied.
 - The project is necessary for the repair of existing infrastructure to avoid and mitigate hazards to the public, as determined by a California registered civil engineer or a registered engineering geologist.
 - Replacement or repair of existing structures would occur in substantially the same footprint.
 - The use is a horticultural or grazing use that utilizes “best management practices (BMPs)” recommended by the County Agricultural Commission and adopted by the Board of Supervisors.

Access corridors on slopes 30 percent and greater shall have a site specific review of soil type, vegetation, drainage contour, and site placement to encourage proper site selection and mitigation. Septic systems may only be located on slopes under 30 percent. Roads needed to complete circulation/access and for emergency access may be constructed on such cross slopes if all other standards are met.

- ▲ **Policy 7.1.2.2:** Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.
- ▲ **Policy 7.1.2.3:** Enforce Grading Ordinance provisions for erosion control on all development projects and adopt provisions for ongoing, applicant-funded monitoring of project grading.

El Dorado County Code

Chapter 15.14 of the County Code covers grading and requires grading and drainage plans to be developed for major development projects. Volume III of the County Design and Improvement Standards Manual,

Grading, Erosion, and Sediment Control (Grading Manual), implements those standards. The Grading Manual includes standards for geotechnical, geologic, drainage, and soil studies that are required for development projects.

The grading plan must be prepared by a California professional civil engineer and must contain a detailed erosion and sediment control plan. The plan must be designed to prevent increased discharge of sediment at all stages of grading and development, from initial disturbance of the ground to project completion, and shall be consistent with all local, state, and federal rules and regulations. It must include an effective revegetation program to stabilize all disturbed areas that will not be otherwise protected.

4.11.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ expose people of structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - 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;
 - strong seismic ground shaking;
 - seismic-related ground failure, including liquefaction; or
 - landslides;
- ▲ result in substantial soil erosion or the loss of substantial 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 on or off site landslide, lateral spreading, liquefaction, or collapse;
- ▲ be located on expansive soil, creating a substantial risk to life or property;
- ▲ have soils incapable of adequately supporting the use of septic tanks or other alternative waste disposal systems 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; or
- ▲ 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.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The project includes extension of utilities onto the project site, including sewer lines, and does not propose use of alternative waste disposal systems. Therefore, this issue is not discussed further.

The project site is mapped by the California Division of Mines and Geology as MRZ-3a. These are hypothetical resource areas where conditions indicate the potential for mineral resources, but no such resources have been identified. The *El Dorado County General Plan* (Figure CO-1) does not map the site as

within an important mineral resource area. Therefore, project implementation would not impact known mineral resources and this issue is not discussed further.

METHODS OF ANALYSIS

This analysis is based on the potential geologic and soil hazards identified above. It is assumed that the project would obtain all necessary building permits and comply with the provisions of applicable regulations, including implementation of standard BMPs.

IMPACTS AND MITIGATION MEASURES

Impact 4.11-1: Expose people or structures to substantial adverse effects involving rupture of a known earthquake fault, ground shaking, liquefaction, or slope failure.

Due to the relatively shallow depth to bedrock and the relatively low seismicity of the area, the potential for damage because of site liquefaction, slope instability, and surface rupture are considered negligible. This impact would be **less than significant**.

Construction and operation of the Saratoga Estates project would not expose people or structures to the potential for substantial adverse effects as a result of seismic hazards. The project site is located in an area of relatively low seismicity, with no active or potentially active faults mapped at the site.

Based on the shear-wave velocity characteristics of geologic units in California and subsurface interpretations, the Geotechnical Study recommends that the project site be classified as Site Class C in accordance with section 1613.3.2 of the 2013 CBC. Due to the relatively shallow depth to bedrock and the relatively low seismicity of the area, the potential for damage because of site liquefaction, slope instability, and surface rupture is considered negligible. The Geotechnical Study does not recommend mitigation for these potential hazards (Youngdahl 2014).

Fault rupture would not be a potential impact. Implementation of the CBC and other County requirements would reduce seismic impacts related to ground shaking, liquefaction, and seismic-related landslides. There would be a **less-than-significant** impact associated with the potential for the project to result in exposure of people or structures to these hazards.

Mitigation Measures

No mitigation is required.

Impact 4.11-2: Result in substantial soil erosion or the loss of substantial topsoil.

Construction of the Saratoga Estates Project would require earthwork in areas proposed for development. Because the soils on the project site are susceptible to erosion, particularly during grading and excavation activities, this would be a **potentially significant** impact.

With implementation of Mitigation Measure 4.3-1, which requires preparation of an erosion control plan, this impact would be **less than significant**.

Approximately 80 acres of the project site's 122 acres would be disturbed during grading. The soils on the project site are susceptible to erosion. Where vegetation is removed from sloped areas or soils are unconsolidated in newly graded areas, surface water and wind could result in the loss of topsoil. Because construction would expose erosion-prone soils to the effects of wind and water, the project could result in **potentially significant** loss of topsoil.

Mitigation Measures

Mitigation Measure 4.3-1: Prepare and implement a stormwater pollution prevention plan.

Mitigation measure 4.3-1 will be implemented as described in Section 4.3 “Hydrology and Water Quality.”

Significance after Mitigation

Implementation of Mitigation Measure 4.3-1 would reduce construction-related erosion impacts by requiring the project applicant to prepare a stormwater pollution prevention plan (SWPPP) that complies with the SWRCB Statewide Construction General Permit. The SWPPP would incorporate appropriate BMPs into the design of the development to prevent soil erosion. The plan would be designed to prevent increased discharge of sediment at all stages of construction, from initial ground disturbance to project completion. Adequate surface drainage control would be designed by the project civil engineer in accordance with the latest applicable edition of the California Building Code. All slopes should have appropriate drainage and vegetation measures to minimize erosion of soils. Contract provisions would require compliance with the El Dorado County Grading Ordinance and SWMP and implementation of BMPs. With adherence to existing requirements, impacts related to soil erosion would be **less than significant**.

Impact 4.11-3: Construction on expansive soils and potential for settling.

The project would be built on fill material. Grading would generally eliminate the expansive qualities of the clay materials on the site through mixing. However, if not sufficiently compacted, these materials can settle under the weight of project structures. The potential for expansive soils and settling to affect proposed structures would be a **potentially significant** impact.

With mitigation that includes oversight of grading activities to confirm proper grading and compaction of materials (Mitigation Measure 4.11-3), this impact would be **less than significant**.

The project site would require grading and earthmoving to accommodate the proposed development. Foundation loads would be typical of wood-framed residential construction, with foundations sized in accordance with allowable bearing capacities. Under these conditions, a total settlement of less than 1 inch is anticipated (Youngdahl 2014).

To minimize the potential for settlement, all areas proposed to receive fill would be scarified to a minimum depth of 8 inches, moisture conditioned as necessary, and compacted to at least 90 percent of the maximum dry density based on the ASTM 01557 test method. The fill would be placed in thin, horizontal lifts not to exceed 12 inches in uncompacted thickness. The upper 8 inches of fills placed under proposed pavement areas would be compacted to a relative compaction of not less than 95 percent based on the ASTM 01557 test method. All fills placed deeper than 10 feet from finished grade would be compacted to a minimum of 95 percent relative compaction.

Due to the significant quantity of rock materials that would comprise a majority of the fills on the project site, a Caterpillar 825 steel-wheel compactor, or equivalent, would be employed to facilitate breakdown of oversize bedrock materials and generation of soil fines during the fill placement process. In areas where significant rock quantities are not present, a large vibratory padded drum compactor or approved equivalent would be capable of achieving the compaction requirements for engineered fill. The use of handheld equipment, such as jumping jack or plate vibration compactors may require thinner lifts of 6 inches or less to achieve the desired relative compaction parameters.

Building foundations, roads, and other structures could also be damaged if located on expansive soils, especially if located in areas that cross the boundaries of soil units with different expansiveness properties (El Dorado County 2003: 5.9-50). The soils associated with the onsite drainage are expansive. In addition, intermittent or isolated pockets of highly expansive clay soils may be present on top of the weathered bedrock. In concentrated amounts, such clays could cause distress to concrete slab-on-grade floors and foundations if present in the upper 3 feet of the structural improvement areas (Youngdahl 2014). However,

given their limited presence, it is anticipated that these materials can be sufficiently blended to eliminate any potential for effects to site structures. Expansive clays, if encountered, would be mixed thoroughly with less expansive on site materials (silts, sands, and gravels). No concentration of clay materials would occur within 5 feet of the building envelope, either vertically or laterally. Some focused excavations of clay materials may be required.

The soil conditions present in the study area are not particularly unique in comparison to other areas, nor do they represent a significant impediment to the project. Facility design and construction would employ standard engineering and building practices common to construction projects throughout California. Nonetheless, the potential for expansive soils and settling to affect proposed structures would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 4.11-3: Evaluate soil compaction and implement recommendations during grading.

The applicant shall employ a qualified engineer to observe the stripping of deleterious material and over excavation of any unsuitable materials, and provide consultation and supplemental recommendations, as field conditions dictate, to the grading contractor in the field.

Fill soil compaction shall be evaluated through means of in-place density tests performed during fill placement so that adequacy of soil compaction efforts may be determined. This will likely include the periodic excavation of test pits within the fill materials to observe and document that a uniform over-optimum moisture condition and absence of large and/or concentrated voids has been achieved before additional fill placement.

If large quantities of expansive soils are encountered at the project site, recommendations shall be made by a qualified engineer based on observations at the time of construction and the proper disposition of clays on site shall be observed and documented by a qualified third party monitor.

Significance after Mitigation

Implementation of this mitigation measure would reduce significant impacts associated with potential for settlement of fills and damage because of expansive soils to a **less-than-significant** level by providing third party oversight of grading activities.

4.12 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential presence of hazards and hazardous materials on and near the project site, and evaluates the effects that project implementation could have on the health of the public and the environment. The evaluation is based largely on information provided by the applicant, including a Phase I Environmental Site Assessment (Youngdahl 2014a) and the results of a geotechnical engineering study (Youngdahl 2014b). Hazards associated with naturally occurring asbestos are addressed in Section 4.8, “Air Quality.”

4.12.1 Environmental Setting

REGIONAL SETTING

Topography and Geology

The project site is located in the western foothills of the Sierra Nevada geomorphic province, which is dominated by plutonic rocks. The property is underlain by metavolcanic rock of the Copper Hill Volcanic Formation that is of Mesozoic age (Youngdahl 2014a). The topography of the site is undulating, with elevations varying from 790 feet above mean sea level in the northwest portion of the site to 630 feet above mean sea level in the southeast portion of the site, and is generally comprised of two steep northwest/southeast trending ridges bisected by a perennial drainage (Youngdahl 2014b). Further information on the topography and geology of the site is provided in Section 4.11, “Geology and Soils.”

Groundwater

Groundwater occurs in fractures in the bedrock of the area, which limits groundwater recharge, movement, and storage. See Section 4.3, “Hydrology and Water Quality,” for additional characterization of groundwater in the project area.

Wildfire Conditions

Wildland fire is defined by the National Wildfire Coordinating Group as “any non-structure fire that occurs in vegetation or natural fuels” (National Wildfire Coordinating Group 2014). Wildland fire may be started by natural processes (primarily lightning) or it may be started (intentionally and accidentally) by human activities, such as smoking, debris burning, and equipment operation. For this reason, where there is human access into wildland areas, the risk of fire increases. Emergency fire access plays a major role in determining whether a fire can be quickly extinguished or whether it will spread. Topography is a primary factor for assessing the fire hazard of an area. As slopes increase, fires spread faster, and accessibility by fire crews and equipment often decreases (El Dorado County 2003).

The State Board of Forestry identifies those lands where the California Department of Forestry and Fire Protection (CAL FIRE) has the primary duty for wildland fire prevention and suppression; these lands are commonly known as state responsibility areas (SRAs). CAL FIRE has mapped the fire hazard potential within SRAs based on relevant factors such as fuels, terrain, and weather. The hazards are described according to their potential to cause ignition of buildings. The maps classify land into Fire Hazard Severity Zones of moderate, high, and very high. The maps are based on data and models describing development patterns, estimated fire behavior characteristics over a 30- to 50-year time horizon, and expected burn probabilities, to quantify the likelihood and nature of vegetation fire exposure to new construction (CAL FIRE 2007).

The project site is mapped as an SRA in a moderate fire hazard severity zone (CAL FIRE 2007). Generally, when development density within a given SRA exceeds one dwelling unit per acre, the land is no longer classified as an SRA and becomes the responsibility of the local fire protection district (El Dorado County 2003).

LOCAL SETTING

Soil Contamination

A Phase I Environmental Site Assessment was completed for the property in February of 2014. This study did not identify any recognized environmental conditions on the project site. Database review identified a location approximately 0.5 mile east of the project site where there had been a leaking underground storage tank, which the State Water Resources Control Board considered closed; indicating that the former storage tank site has been remediated to regulatory standards. The location is currently an active gas station (Union gas station #5162: 1020 Saratoga Way, El Dorado Hills).

Proximity to Airports

The Cameron Airpark Airport is located approximately 5.5 miles northeast of the project site. It is a public use airport with two runways and an average of 99 daily operations. The project site is not within the Airport Influence Area of the Cameron Park Airport established in the Land Use Compatibility Plan (El Dorado County Airport Land Use Commission 2012).

Proximity to Schools

School locations are important to consider because children are particularly sensitive to hazardous materials exposure, and additional protective regulations apply to projects that could emit hazardous air emissions or handle extremely hazardous substances near schools. For projects that could emit hazardous air emissions or handle extremely hazardous substances within 0.25 mile of a school site, the California Public Resources Code (PRC) requires consultation with the potentially effected school district. There are two school sites within 0.25 mile of the Saratoga Estates Project site: Russell Ranch Elementary School (375 Dry Creek Road, Folsom) and William Brooks Elementary School (3610 Park Drive, El Dorado Hills) (See Exhibit 3-2 in Chapter 3, "Project Description").

Power Lines and Electromagnetic Fields

Electromagnetic field (EMF) is the combined term used to describe electric and magnetic fields. Electric fields are present whenever voltage exists on a wire, and are not dependent on current. The magnitude of the electric field is primarily a function of the configuration and operating voltage of the power line and decreases with the distance from the source. Electric fields are effectively blocked by most materials, such as trees and walls. Magnetic fields are present whenever current flows in a conductor and are not dependent on the voltage of the conductor. The strength of these fields also decreases with distance from the source. However, unlike electric fields, most common materials have little blocking effect on magnetic fields. The magnetic field levels of power lines vary with loading conditions of the power system.

A 115 kilovolt (kV) power line runs east to west in an easement near the northern edge of the project site. Power lines produce EMFs. Although there is no proven association between exposure to EMFs and health problems, there is general public concern related to these issues. In 2006, the California Public Utilities Commission updated its EMF Policy in Decision 06-01-042. The decision re-affirmed that health hazards from exposure to EMFs have not been established and that state and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.

Pacific Gas and Electric, which owns the power line on the project site, has plans to reconductor the line. As part of this effort, Pacific Gas and Electric proposes to raise the height of poles in residential areas to levels 10 feet higher than levels required by the California Public Utilities Commission regulations and implement other design practices that would reduce the intensity of the magnetic field at the edge of the right of way (California Public Utilities Commission 2015).

Emergency Response and Evacuation

Emergency response is addressed in El Dorado County's Hazardous Waste Management Plan and Multi-Hazard Functional Emergency Response Plans. Emergency response is provided by the El Dorado County Environmental Management Department, the El Dorado County Office of Emergency Services, and the El

Dorado Hills Fire Department. Additional information regarding emergency response is provided in Section 4.13, “Public Services.” El Dorado Hills does not currently have an adopted emergency evacuation plan (El Dorado County 2004a).

4.12.2 Regulatory Setting

FEDERAL

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA) was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements regarding emergency planning and “community right-to-know” reporting on hazardous and toxic chemicals.

EPCRA requires states and local emergency planning groups to develop community emergency response plans for protection from a list of extremely hazardous substances (40 Code of Federal Regulations [CFR] 355 Appendix A). The community right-to-know provisions help increase the public’s knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. In California, EPCRA is implemented through the California Accidental Release Prevention Program.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act was designed to protect human health and the environment, reduce or eliminate the generation of hazardous waste, and conserve energy and natural resources. The U.S. Environmental Protection Agency has authorized the California Department of Toxic Substances Control (DTSC) to enforce hazardous waste laws and regulations in California. Under the Resource Conservation and Recovery Act, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that entities managing hazardous waste follow state and federal requirements. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Hazardous Materials Transportation Act

The U.S. Department of Transportation (DOT) has developed regulations in Titles 10 and 49 of the CFR pertaining to the transport of hazardous substances and hazardous wastes. The Hazardous Materials Transportation Act is administered by the Research and Special Programs Administration of DOT. The act provides DOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against risk to life and property that is inherent in the commercial transport of hazardous materials. The DOT regulations that govern the transport of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers.

Federal Occupational Safety and Health Act

The U.S. Department of Labor regulates worker health and safety at the federal level. The Federal Occupational Safety and Health Act of 1970 authorizes states (including California) to establish their own safety and health programs with Occupational Safety and Health Administration approval.

STATE

California Code of Regulations

The California Department of Industrial Relations regulates implementation of worker health and safety in California. The Department of Industrial Relations includes the Division of Occupational Safety and Health, which acts to protect workers from safety hazards through its California Occupational Safety and Health Administration program and provides consultative assistance to employers. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes, as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations. Additional regulations have been developed for construction workers potentially exposed to asbestos. California Occupational Safety and Health Administration enforcement units conduct onsite evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, of Title 22 Social Security contains the DTSC's hazardous waste regulations. Regional Water Quality Control Board regulations are contained in Title 27 of the California Code of Regulations. Title 26 is a compilation of toxic regulations issued by state regulatory agencies that are also found in the original titles assigned to each agency.

Hazardous Waste Control Act

The Hazardous Waste Control Act regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous.

Hazardous Waste and Substances Sites List

The Hazardous Waste and Substances Sites List, also known as the Cortese List, is a planning document used by the State of California and its various local agencies to comply with the CEQA requirements to provide information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires that the California Environmental Protection Agency update the list annually. The list is maintained via DTSC's Brownfields and Environmental Restoration Program (Cleanup Program), and is accessible through the EnviroStor online database.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act regulates water quality through the State Water Resources Control Board and Regional Water Quality Control Board, including oversight of water monitoring and contamination cleanup and abatement.

California Public Resources Code Section 21151.4

California PRC Section 21151.4 requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of a project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Wildfire Responsibility Areas/State Responsibility Areas

The state provides protection to private, undeveloped land. CAL FIRE implements statewide laws aimed at reducing wildfire hazards, including in wildland-urban interface areas. The laws apply to SRAs, which are defined as areas in which the state has primary financial responsibility for preventing and suppressing fires, as determined by the State Board of Forestry pursuant to PRC Sections 4125 and 4102. Fire safe regulations address road standards for fire equipment access, standards for signage, minimum water supply requirements for emergency fire use, and fuel breaks and greenbelts, among others. Fire protection outside SRAs is the responsibility of federal or local jurisdictions. These areas are referred to by CAL FIRE as federal responsibility areas and local responsibility areas, respectively.

Government Code Section 66474.02

Before approving a tentative map (or a parcel map where a tentative map is not required) for an area located in a SRA or a very high fire hazard severity zone, the legislative body of the County must find that: the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable regulations adopted by CAL FIRE pursuant to PRC Sections 4290 and 4291; structural fire protection and suppression services will be provided to the subdivision by a county, city, special district, or other entity organized solely to provide fire protection services, or CAL FIRE; and ingress and egress meets the road standards for fire equipment access adopted pursuant to PRC Section 4290 and any applicable local ordinance.

LOCAL

El Dorado County General Plan

The following goals and associated policies are established in the Public Health, Safety, and Noise Element of the *El Dorado County General Plan* (El Dorado County 2004) and are applicable to the project.

Goal 6.2: Minimize fire hazards and risks in both wildland and developed areas.

- ▲ **Policy 6.2.1.1:** Implement Fire Safe ordinance to attain and maintain defensible space through conditioning of tentative maps and in new development at the final map and/or building permit stage.
- ▲ **Policy 6.2.3.1:** As a requirement for approving new development, the County must find, based on information provided by the applicant and the responsible fire protection district that, concurrent with development, adequate emergency water flow, fire access, and firefighting personnel and equipment will be available in accordance with applicable State and local fire district standards.
- ▲ **Policy 6.2.3.2:** As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.
- ▲ **Policy 6.2.3.4:** All new development and public works projects shall be consistent with applicable State Wildland Fire Standards and other relevant State and federal fire requirements.

Goal 6.6: Recognize and reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials.

- ▲ **Policy 6.6.1.1:** The Hazardous Waste Management Plan shall serve as the implementation program for management of hazardous waste in order to protect the health, safety, property of residents and visitors, and to minimize environmental degradation while maintaining economic viability.
- ▲ **Policy 6.6.1.2:** Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, a site investigation, performed by a Registered Environmental Assessor or other person experienced in identifying potential hazardous wastes, shall be submitted to the County for any subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the Environmental Management Department as provided by the State of California and federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit.

El Dorado County Hazardous Waste Management Plan

Objectives of the El Dorado County Hazardous Waste Management Plan include promoting source reduction and proper management of hazardous materials at businesses; developing public education programs; promoting clean-up of contaminated sites; minimizing improper disposal of hazardous wastes; developing

siting criteria for hazardous waste management facilities; ensuring emergency response capabilities; and coordination of hazardous waste planning efforts with the public and private sectors, as well as local and state plans.

El Dorado County Multi-Hazard Functional Emergency Operations Plans

The El Dorado County Multi-Hazard Functional Emergency Operations Plans provide guidance and protocols for the County's response to extraordinary large-scale emergency situations, including wildland fire. Numerous local, state, and federal agencies, as well as private businesses and nonprofit organizations, would be involved in the response to wildland fires, including the local fire protection districts, CAL FIRE, U.S. Forest Service, and law enforcement agencies.

El Dorado County Environmental Management Department

The County's Hazardous Materials Program is managed by the Solid Waste & Hazardous Materials Division of the Environmental Management Department (EMD), which serves as the County's Certified Unified Program Agency. The Solid Waste & Hazardous Materials Division is responsible for management of, and education programs on, hazardous waste generated by households and businesses. It also inspects businesses that handle hazardous materials, responds to hazardous material spills and releases, and conducts special collection events for household hazardous waste. EMD regulates the cleanup of contaminated properties in its jurisdiction in coordination with the California Environmental Protection Agency.

El Dorado County Sheriff Office of Emergency Services

The County's Office of Emergency Services, which is managed by the County Sheriff's Office, collaborates with the County's fire districts, emergency medical services agency, hospitals, schools, and public and private agencies to implement preparedness programs, develop emergency response plans, and conduct training drills. The Office of Emergency Services also sponsors several community based programs, such as the "Neighborhood Emergency Services Team," which provides important information regarding actions citizens can take individually and collectively to prevent, respond to, and survive a disaster event, such as a hazardous material spill. If a disaster should occur, the Office of Emergency Services would activate and deploy emergency personnel and resources to minimize the effect of the disaster and to assist in recovery efforts.

4.12.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ 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 the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- ▲ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes, within 0.25 mile of an existing or proposed school;
- ▲ be located on a site which 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, or within 2 miles of a public airport or public use airport where such a plan has not been adopted, and result in a safety hazard for people working or residing in the area;

- ▲ be located in the vicinity of a private airstrip and result in a safety hazard for people working or residing in the project area;
- ▲ impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan; or
- ▲ 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.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

As discussed above, the Phase I Environmental Site Assessment did not identify any sites of known or suspected contamination on, or in the vicinity of, the project site, and there are no airports near the project site. Potential effects related to location of the project on a known hazardous materials site, or in the vicinity of a public use airport or private airstrip, are not evaluated further.

Because there is no agreement among scientists that exposure to EMFs creates a potential health risk, and there are no defined or adopted CEQA standards for assessing health risk from EMFs, this issue is not considered further. However, recognizing that there is public interest and concern regarding potential health effects related to exposure to EMFs from power lines, information is included in the environmental setting discussion above regarding EMF associated with electric utility facilities and human health and safety for the benefit of the public and decision-makers.

METHODS OF ANALYSIS

The Phase I Environmental Site Assessment (Youngdahl 2014a) was prepared in accordance with the American Society for Testing and Materials Standard E1527-13. The evaluation included a review of government records; review of historical data, such as topographic maps; review of reports previously conducted for the site; a site reconnaissance; and a questionnaire completed by an individual representing the owner of the site. The results of these efforts are summarized in the discussion of existing setting, above. The conclusions, opinions, and recommendations of the report inform the following analysis, which is based on the existing conditions described above and use of hazardous materials and potential traffic effects typical of similar residential developments. It is assumed that the project would obtain all necessary building permits and comply with the provisions of applicable regulations, including implementation of standard best management practices (BMPs).

Potential impacts related to emergency response and evacuation, as well as potential loss as a result of wildland fire, are related to traffic management and availability of public services. As referenced below, these topics are also discussed in other sections of this analysis.

IMPACTS AND MITIGATION MEASURES

Impact 4.12-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

The project would require transport, use, and disposal of hazardous materials during construction and operation in quantities typical of single-family residential development. The potential for such activities to result in a significant hazard to the public or the environment would be effectively managed through adherence to existing regulations and compliance with the safety procedures mandated by applicable federal, state, and local laws and regulations. This impact would be **less than significant**.

Construction

Construction activities associated with the proposed project would involve transportation, use, storage, and disposal of hazardous materials and petroleum products commonly used at construction sites (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). Standard accident and hazardous materials recovery training and procedures—enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors—reduce the potential for hazards associated with this routine use. Hazardous materials would be transported to the project area according to applicable hazardous materials transport and handling laws and regulations (such as the DOT Office of Hazardous Materials Safety regulations for the safe transportation of hazardous materials described in Title 49 of the CFR), and would only be stored in proper containers within a secured construction staging area. Hazardous wastes (including used oil, used oil filters, used gasoline containers, spent batteries, and other items) would be collected regularly and disposed of in accordance with all applicable laws and regulations.

Further, pursuant to 40 CFR 112, a spill prevention, containment, and countermeasures plan or, for smaller quantities, a spill prevention and response plan, that identifies BMPs for spill and release prevention and provides procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases would be established for the project. As required under state and federal law, plans for notification and evacuation of site workers and local residents in the event of a hazardous materials release would be in place throughout construction. Inspections would be conducted to verify consistent implementation of general construction permit conditions and BMPs to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas. Compliance with various federal, state, and local regulations would minimize the risk of a spill or accidental release of hazardous materials.

Operation

Residential land uses do not typically involve transport, use, or disposal of significant quantities of hazardous materials. Generally, small quantities of hazardous materials, such as paints, cleaning chemicals, and fertilizers, are used in residential subdivisions for routine maintenance. As described above for construction, conformance with established regulations and policies would reduce the potential for improper handling of materials and wastes that could result in accidental releases. In addition, the El Dorado County EMD implements a Household Hazardous Waste Management Program, which reduces improper disposal of household hazardous wastes to protect of human health and the environment by providing assistance to residents for proper disposal of household hazardous wastes.

Summary

Adherence to existing regulations and compliance with the safety procedures mandated by applicable federal, state, and local laws and regulations would minimize the risks resulting from the routine transportation, use, storage, or disposal of hazardous materials or hazardous wastes associated with construction and implementation of the proposed project to a **less than significant** level.

Mitigation Measures

No mitigation is required.

Impact 4.12-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes, within 0.25 mile of an existing or proposed school.

No significant emissions of hazardous materials would be anticipated during construction or operation of the proposed project. However, construction of the project could result in the disturbance of naturally occurring asbestos. This would be a **potentially significant** impact.

However, with implementation of the mitigation measures established for the protection of air quality, the project would not be expected to produce hazardous emissions within 0.25 mile of a school and this impact would **less than significant**.

As described in the environmental setting, no soil contamination was identified during the Phase I Environmental Site Assessment. Furthermore, as described above under Impact 4.12-1, no significant emissions of hazardous materials would be anticipated during construction or operation of the proposed project. In addition, given the location of area schools in relation to the project and major thoroughfares, it is unlikely that haul routes would be established on roadways adjacent to established schools.

However, as discussed in Section 4.8, "Air Quality," construction of the project could result in the disturbance of naturally occurring asbestos. Pursuant to California PRC Section 21151.4, El Dorado County would consult with the Buckeye Union School District (which includes William Brooks Elementary School) and the Folsom Cordova Unified School District (which includes Russell Ranch Elementary School) about the potential effects that construction could have on air quality. There would be a **potentially significant** impact to schools within 0.25 mile of the project site due to release of naturally occurring asbestos.

Mitigation Measures

Mitigation Measure 4.8-4a: Limit potential for release of asbestos to affect sensitive receptors.

Mitigation Measure 4.8-4a will be implemented as described in Section 4.8 "Air Quality." No additional mitigation is required.

Significance after Mitigation

It is anticipated that any potential health effects would be minimized through implementation of mitigation measures identified in Section 4.8, "Air Quality." The mitigation will include contingencies to notify the school districts of any offsite release of asbestos during construction. Further, initial grading activities are likely to occur in the summer months, when the presence of children at the school site is reduced. With implementation of the mitigation measures established for the protection of air quality, the project would have a **less-than-significant** potential to produce hazardous emissions within 0.25 mile of a school.

Impact 4.12-3: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Project implementation would not impair implementation of, or interfere with, the County Multi-Jurisdictional Hazard Mitigation Plan. Adequate road design for emergency vehicle access and private vehicle evacuation would be provided, as required under *El Dorado County General Plan* Policy 6.2.3.2. This impact would be **less than significant**.

The project site is vacant and does not currently have an internal roadway system. The proposed project involves construction of a residential subdivision that is consistent with the general plan land use designation. The proposed project includes connection of Saratoga Way and Wilson Boulevard, which increase community connectivity and promote emergency access. Project implementation would not impair implementation of, or interfere with, the County Multi-Jurisdictional Hazard Mitigation Plan. General plan Policy 6.2.3.2 requires that project design allow for adequate emergency vehicle access and private vehicle evacuation. Roadway design and approvals required to achieve adequate access for emergency vehicles and

evacuation of personal vehicles are addressed in Section 4.7, "Transportation and Circulation." The potential for project implementation to result in impaired function of an adopted emergency response or evacuation plan would be **less-than-significant**.

Mitigation Measures

No mitigation is required.

Impact 4.12-4: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The project would not expose people or structures to a significant risk of loss, injury, or death because the site is not in an area of high fire potential, and the site would be graded and appropriate building standards and setbacks would be maintained. This impact would be **less than significant**.

Project implementation would result in the construction of residences in an area of moderate fire potential, adjacent to the Promontory Open Space. A fire in the Promontory Open Space would meet the National Wildfire Coordinating Group's definition of a wildland fire. Currently, there is no formal access to this property, although a trail is planned through the open space in conjunction with the Promontory Specific Plan.

Before construction, the portions of the site planned for residences and public infrastructure would be grubbed and vegetation would be removed. Construction activities on the project site would incorporate standard BMPs (such as designated smoking areas and vehicles with spark arrestors) to reduce the potential for project construction to result in fire that could spread to the adjacent wildland and effect existing residences.

The project would also incorporate appropriate building standards and setbacks to minimize the potential for loss in the event of a wildfire, consistent with general plan Policies 6.2.1.1, 6.2.3.1, and 6.2.3.4. Following project implementation, fire protection services would be provided by the El Dorado Hills Fire Department.

The project would not expose people or structures to a significant risk of loss, injury, or death because the site is not in an area of high fire potential, and the site would be graded and appropriate building standards and setbacks would be maintained. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

4.13 PUBLIC SERVICES

This section describes the existing public services in the project area that would serve the proposed project and evaluates the project's potential effect on public services and facilities. This section covers fire protection, law enforcement, schools, and park facilities. Descriptions and analysis in this section are primarily based on information obtained through consultation with public service providers, including the El Dorado Hills Fire Department (EDHFD), El Dorado County Sheriff's Office, Buckeye Union School District (BUSD), and El Dorado Union High School District (EDUHSD). Additional information was obtained from the *El Dorado County General Plan* (El Dorado County 2004).

Comment letters regarding public services were received during public review of the Notice of Preparation and are addressed within this section. Comments were generally related to effects on response times, crime rates, and reduced levels of service.

4.13.1 Environmental Setting

FIRE PROTECTION

The project site is within the EDHFD service area. EDHFD provides fire suppression, emergency medical services, and fire prevention within the El Dorado Hills community. Pre-hospital emergency medical and dispatch services are provided by EDHFD in cooperation with County Service Area No. 7 and El Dorado County Regional Pre-Hospital Emergency Services Operations Authority.

EDHFD consists of the following three divisions: Support/Administrative, Prevention, and Operations. As of May 2015, overall staffing at EDHFD includes 61 career personnel and 30 volunteer firefighters. The Operations Division is managed by a deputy fire chief, three shift battalion chiefs, 14 captains, 12 engineers and 24 firefighters. The Support/Administrative Division includes one chief financial officer, one support/fleet manager, two full time administrative assistants, two administrative assistants working 40 percent time each and one human resources representative working 20 percent time. The Prevention Division is managed by a division chief/fire marshal and two fire inspectors.

On a daily basis, EDHFD equipment and staffing consists of one battalion chief officer, four engines (captain, engineer, and firefighter), one truck (captain, engineer, two firefighters), and one medic unit (two firefighters). A staff chief also covers calls during the day and evening.

Station 85 (1050 Wilson Boulevard) is closest to the project site, located approximately 1 mile northeast. Station 85 is staffed by a battalion chief, captain, engineer, and four firefighters (two of which are on a medic unit). This station has one truck that is staffed 24 hours a day with a captain, engineer, and two firefighters; and one medic unit that is also staffed 24 hours with two firefighters. Station 85 also houses two Type 1 fire engines, an air unit, and a reserve medic unit (all of which are unstaffed). "Unstaffed" stations house additional apparatus and are only used when there is a call for service. When a call comes in, volunteer and off-duty personnel go to the station and respond with the apparatus housed at the station. Station 85 also serves as EDHFD's administrative headquarters.

Station 87 (4680 Golden Foothill Parkway) is the second closest station, located approximately 1.5 miles southeast of the project site. Station 87 houses one engine that is staffed 24 hours a day with a captain, engineer, and one firefighter; and houses one Type 1 fire engine and one Type 3 fire engine (all of which are unstaffed).

EDHFD participates in joint dispatching with other fire agencies in El Dorado County, in which the closest uncommitted unit responds to emergency calls, regardless of jurisdiction. In addition, the EDHFD participates

in the Master Mutual Aid System for the State of California, which provides staff and mechanical assistance throughout the state. The EDHFD's goal for response time is 6 minutes 90 percent of the time. As of April 2015, the overall average response time for all calls within Station 85 and 87 response areas was 4 minutes and 56 seconds.

LAW ENFORCEMENT

The El Dorado County Sheriff's Office is located at 300 Fair Lane in Placerville. The closest station to the project site, the El Dorado Hills Substation (EDH Substation), is located at 4354 Town Center Drive and is approximately 0.75 mile southeast of the project site.

The Sheriff's Office has a current staff of 262 sworn and 110 non-sworn personnel. The Sheriff's Office sworn personnel includes one sheriff, one undersheriff, three captains, seven lieutenants, 24 sergeants, 128 deputy sheriffs, and 98 correctional officers. Non-sworn personnel include three managers, 98 professional civilian positions, and nine security officers (El Dorado County Sheriff's Office 2014: 9).

The Patrol Division consists of the West Slope and Lake Tahoe areas. The West Slope patrol is responsible for the unincorporated area of El Dorado County from Strawberry to the El Dorado/Sacramento County line and from the North Fork of the American River to the Highway 88/Consumes River border and includes the project site. The West Slope patrol includes 68 patrol deputies, ten patrol sergeants, two lieutenants, and one operations commander. Patrol deputies work 12-hour shifts with split times to ensure maximum coverage during peak business times (El Dorado County Sheriff's Office 2014: 28).

Primary law enforcement issues in El Dorado County during 2014 included larceny, assaults, and burglary. In 2014, the Sheriff's Office received 72,178 calls for service, which represented a 5 percent increase from the number of calls for service made in 2013 (El Dorado County Sheriff's Office 2014: 11, 12). The most common types of calls for service were related to traffic, medical and fire assists, and alarm activations (El Dorado County Sheriff's Office 2014: 11, 12).

There is no existing memorandum of agreement between El Dorado County Sheriff's Office and Sacramento County Sheriff's Office or City of Folsom. It is only on very rare occasion that law enforcement outside of El Dorado County have been called in to backup El Dorado County Sheriff's staff (Becker, pers. comm., 2015a).

SCHOOLS

The project site is within the jurisdictions of BUSD and EDUHSD. These districts are described below.

Buckeye Union School District

The BUSD operates seven schools serving the communities of El Dorado Hills, Shingle Springs, and Cameron Park, including six elementary schools and two middle schools. The project site would be served by William Brooks Elementary School and Rolling Hills Middle School.

The district-wide enrollment for the 2014-2015 school year was 4,700, with a student capacity of 5,412 (i.e., 712 student seats available). At William Brooks Elementary School, student enrollment was 492 with a capacity of 644 (i.e., 152 student seats available). Enrollment at Rolling Hills Middle School was 1,004 with a capacity of 972 (i.e., over capacity by 32 students). Because Rolling Hills Middle School exceeded capacity, BUSD declared the site as impacted and diverted students to Camerado Springs Middle School (McHaney, pers. comm., 2015).

The enrollment for the 2015-2016 school year for William Brooks Elementary School and Rolling Hills Middle School is projected to be slightly higher than 2014-2015, at 515 and 1,015 students, respectively (McHaney, pers. comm., 2015). BUSD has a current maximum classroom student-to-teacher ratio of 24-26:1 for elementary schools and a ratio of 30:1 for middle schools.

On the Western Slope, EDUHSD and elementary feeder districts have an agreement as to how fee revenues must be shared, under which Buckeye Union School District (K-8) is allowed to collect 61 percent and EDUHSD (9-12) is allowed to collect 39 percent of the maximum fees for residential construction. BUSD is currently collecting \$1.95 per square foot in residential developer fees and \$0.31 per square foot in commercial/industrial fees, its 61 percent share of a K-12 Level 1 fee of \$3.20 per square foot for residential development and \$0.51 per square foot for commercial/industrial development (McHaney, pers. comm., 2015).

El Dorado Union High School District

The EDUHSD operates four comprehensive high schools and a number of alternative schools serving the communities of Cameron Park, El Dorado Hills, Shingle Springs, Diamond Springs, Coloma, Camino, Pollock Pines and the City of Placerville (EDUHSD 2015a). District-wide enrollment for the 2014-2015 school year was 6,809 students (CDOE 2015b). The project site is located in the Oak Ridge High School attendance area; however, EDUHSD does not guarantee that school-aged residents from the project site would be assigned to this high school. Oak Ridge High School is located at 1120 Harvard Way in El Dorado Hills.

The number of students enrolled at Oak Ridge High School for the 2014-2015 school year was 2,359, representing approximately 35 percent of current district-wide enrollment. Oak Ridge High School is currently operating at approximately 98 percent capacity.

The estimated projected enrollment for the 2015-2016 school year for Oak Ridge High School and EDUHSD are 2,355 and 6,755 students, respectively. This projected enrollment yield would be lower than the 2014-2015 school year (EDUHSD 2015b). For the 2018-2019 school year, EDUHSD anticipates that Oak Ridge High School would be operating at 99 percent capacity and schools district-wide would be operating at 83 percent capacity.

EDUHSD uses a student generation rate of 0.177 student per residential unit. In June 2008, voters approved a \$66.3 million bond, known as Measure Q. Funding from this bond was used to repair, update, construct, furnish, and equip school facilities, including technology, job training, science and health facilities, roofs, electrical, plumbing and heating systems. As of May 2015, approximately \$1.2 million of the original \$66.3 million remains unspent.

New development is required to provide necessary funding and/or capital facilities for the school system, as determined by applicable State-mandated development impact fees. The proposed project would be subject to Level 1 development impact fees (EDCOE 2014). Currently EDUHSD charges Level 1 fees in the amount of \$2.97 per square foot for residential construction. No new high school facilities are currently planned for development that would benefit the project area.

PARKS AND RECREATION

El Dorado Hills Community Services District

Park facilities within local community service and recreation districts are intended primarily to serve the residents of respective communities, but are generally open to all members of the public. The El Dorado Hills Community Services District (EDHCS D) provides parks and trail facilities to El Dorado County residents. The EDHCS D owns and operates parks, trails, and recreational programs, including approximately 140 acres of existing park space. Table 4.13-1 shows existing parks in EDHCS D. EDHCS D uses a standard of 5 acres per 1,000 residents for neighborhood and community parks as guidelines for acquisition and development of park facilities.

Table 4.13-1 Existing Parks in El Dorado Hills Community Services District

Park/Facility Name	Acres	Location and Driving Distance from Project Site	Amenities
Village Green Park	10	Located at the corner of Silva Valley and Serrano Parkways	Lawn area, native oak trees, large pond, stream and waterfalls, picnic tables, children's play structure, walking paths
El Dorado Hills Community Park	40	Located at 1021 Harvard Way	3 multi-use sports fields, basketball courts, nature area, picnic tables and barbecue, playground, horseshoe pit, courtyard, swimming pool, pavilion meeting, banquet facility (senior lounge, classroom, dance room, commercial kitchen, park amenities), restrooms, teen center skate park
New York Creek Nature Trail	28	Access located at Art Weisberg Park and Community Park	1.5 mile trail
Bass Lake (Sellwood) Field	3	Located off of Serrano Parkway, just northwest of Bass Lake Road	300-foot baseball field with a competition, regulation soccer field overlay
Murray Homestead Park	4	Located along Aberdeen Lane and Amer Way	Large natural grass area, children's play structure, picnic tables, barbecue pit
Oak Knoll Park	2.6	Located off of Alyssum Circle	Clubhouse, children's play structure, grass volley ball court, native oak trees, picnic table, parking lot
Fairchild Park	2.46	Located off of Brackenwood Place	Natural turf, children's play structure, paved and gravel paths, large oak trees, picnic table, drinking fountain, Indian grinding rocks
Overlook Park	1.18	Access located at Kensington Drive or Beechwood Court	Children's play structure, lawn area, picnic tables, barbeque, drinking fountain, large oak tree
Wild Oaks Park	10.5	Located near the intersection of El Dorado Hills Blvd and Francisco Drive	Native oak and pine trees along with native grasses, unimproved walking trails, benches
Windsor Point Park	1	Located at the intersection of Francisco Drive and Schooner Drive	Natural area, bench, picnic table, basketball half-court, BBQ, turf area
Lake Forest Park	9.76	1821 Francisco Drive	Children's play structure, drinking fountain, group picnic area, sand volleyball, bocce ball, two tennis courts, nature trail, outdoor classroom, restroom
Waterford Park	1.15	Located at the corner of Carnelian Circle and Bairdsley Place	Lawn area, picnic tables, water fountain, children's play structure
Allan Lindsey Park	5	Located on Silva Valley Parkway, between Entrada Drive and Oak Meadow Elementary School	Baseball fields (2), soccer fields (2), shaded picnic area
Laurel Oaks Park	1.7	Located on Whistlers Bend Way	Children's play structure, drinking fountain, picnic tables, basketball hoop, natural turf field
Art Weisberg Park	4.27	Located on the corner of Francisco and Pendleton Drives, and across the street from Jackson Elementary School	Lawn area, picnic tables, barbeques, horseshoe pits, drinking fountain, native oak trees, natural open space, short walking trails
William McCabe Park	4.7	Located at the intersection of El Dorado Hills Blvd. and Francisco Drive	Children's play structure, picnic tables, barbecue pits, natural turf area, drinking fountain
Stephen Harris Park	5.93	Located off of Tam O'Shanter Drive	Tennis courts (4), tennis practice wall, basket-ball hoops (2), soccer field, ¼-mile walking, jogging path, exercise "par" course, children's play structure, picnic tables, barbecue pits, drinking water faucets, parking lot
Total:	135.25		

Source: EDHCS 2012

El Dorado County Recreational Facilities

El Dorado County is responsible for managing and maintaining six public recreational facilities and owns additional land to be developed into four future parks. The County's existing park and recreational space include neighborhood, community, and regional parks. As shown in Table 4.13-2, El Dorado County has a total of approximately 274 acres of existing and proposed park and recreational facilities, of which 139 acres are existing and approximately 134 acres are proposed. El Dorado County also maintains the El Dorado Trail with the City of Placerville and the Rubicon Trail.

El Dorado County uses a standard of 1.5 acres per 1,000 residents for regional and community parks, and a standard of 2 acres per 1,000 residents for neighborhood parks as guidelines for acquisition and development of park facilities.

Table 4.13-2 El Dorado County Existing and Proposed Park and Recreation Areas

Type of Park	Existing		Proposed	
	Number of Parks	Acreage (acres)	Number of Parks	Acreage (acres)
Neighborhood Parks	1	2.7	0	0.0
Community Parks	3	73.0	1	26.0
Regional Parks	2	63.7	3	108.3
Total	6	139.4	4	134.3

Source: EDHCS 2012; El Dorado County Parks and Trails Master Plan, Appendix A.

Existing park facilities located within a mile of the project site include: Peter Bertelsen Park and Deputy Jeff Mitchell Field, located approximately 0.2 mile east of the project site, which includes a baseball field, play structure, water spray ground, covered picnic pavilion, picnic tables, barbecue grills, drinking fountains, horseshoe pits, and restrooms; Creekside Greens Park, located approximately 0.75 mile southeast of the project site, which includes play structure, picnic tables, lawn area, and barbecue grills; and Ridgeview Park, located approximately 0.8 mile north of the project site, which includes lawn area, natural open space, picnic tables, barbecue grills, and drinking fountains. Parks located within 2 miles of the project site include: Bowmen’s Archery Range, Allan Lindsay Park, Village Green Park, Ridgeview Unit 7 Park, Kalithea Park, and Parkview Heights Park (EDHCS 2012).

4.13.2 Regulatory Setting

FEDERAL

Fire Protection

National Fire Protection Association

The National Fire Protection Association publishes a number of standards that are useful to the El Dorado County Fire Department, including:

- ▲ **NFPA 1710:** Provides standards for response time; including a call processing time of 60 seconds; a personnel turnout time of 60 seconds for medical, and one minute twenty seconds for fires; and a travel time of 4 minutes (240 seconds). This equates to a 6 minute 20 second response time standard for fire calls.

Law Enforcement, Schools, and Parks and Recreation

There are no federal law enforcement, school, or parks and recreation regulations or policies applicable to the proposed project.

STATE

Fire Protection

Uniform Fire Code

The Uniform Fire Code with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous

materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire—safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

Law Enforcement

There are no state law enforcement regulations or policies applicable to the proposed project.

Schools

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

Leroy f. Greene School Facilities Act of 1998

This bill, commonly known as “SB 50,” was passed in 1998 and placed limitations on cities and counties with respect to mitigation requirements for school facilities. SB 50 permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits. The limits were set in 2000, can be adjusted annually for inflation, and can be leveled based on the square footage of residential (up to \$1.93 per square foot in 2000) and commercial-industrial square footage (up to \$0.31 per square foot in 2000).

Parks and Recreation

Quimby Act

The Quimby Act (California Government Code Section 66477) preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is 3 acres or more per 1,000 persons, then the community may require dedication based on a standard of 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 persons, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a City or County to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4.

LOCAL

El Dorado County General Plan

The *El Dorado County General Plan* (El Dorado County 2004) contains the following goals and policies that are relevant to public services.

Goal 5.1: Provision of Public Services. Provide and maintain a system of safe, adequate, and cost- effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

- ▲ **Policy 5.1.2.1:** Prior to the approval of any discretionary development, the approving authority shall make a determination of the adequacy of the public services and utilities to be impacted by that development. Where, according to the purveyor responsible for the service or utility as provided in Table 5-1 [of the general plan], demand is determined to exceed capacity, the approval of the development shall be conditioned to require expansion of the impacted facility or service to be available concurrent with the demand, mitigated, or a finding made that a Capital Improvement Program project is funded and authorized which will increase service capacity.
- ▲ **Policy 5.1.2.2:** Provision of public services to new discretionary development shall not result in a reduction of service below minimum established standards to current users, pursuant to Table 4.13-3. The following Levels of Service shall apply to the review of discretionary projects:

Table 4.13-3 El Dorado County General Plan- Minimum Levels of Service		
	Community Region	Rural Center and Rural Region
Public water source	As determined by purveyor	As determined by purveyor, when applicable
Private wells	Environmental Management	Environmental Management
Public water treatment capacity	As determined by purveyor	As determined by purveyor
Public sewer treatment capacity	As determined by purveyor	As determined by purveyor
Onsite sewage disposal	Environmental Management	Environmental Management
Storm drainage	Department of Transportation	Department of Transportation
Solid waste	Environmental Management	Environmental Management
Country and State road circulation system	LOS E	LOS D
Schools	As determined appropriate by the school districts	As determined appropriate by the school districts
Parks	Specific plan for new communities or Quimby Fee/dedication program for tentative maps	Quimby Fee/dedication program for tentative maps
Fire district response	8-minute response to 80% of the population	15 to 45-minute response
Sheriff	8-minute response to 80% of the population	No standard
Ambulance	10-minute response to 80% of the population	20-minute response in Rural Regions and “as quickly as possible” in wilderness areas*

*In accordance with State standards
 Source: El Dorado County 2004

Objective 5.1.3: Efficient Development Pattern. Promote a development pattern that permits the efficient delivery of public services in a cost-effective manner.

- ▲ **Policy 5.1.3.1:** Growth and development and public facility expenditures shall be primarily directed to Community Regions and Rural Centers.
- ▲ **Policy 5.6.1.2:** Reserve adequate rights-of-way to facilitate expansion of services in a timely manner.

Goal 5.7: Emergency Services. Adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services.

Objective 5.7.1: Fire Protection (Community Regions). Ensure sufficient emergency water supply, storage, and conveyance facilities are available, and that adequate access is provided for, concurrent with development.

- ▲ **Policy 5.7.1.1:** Prior to approval of new development, the applicant will be required to demonstrate that adequate emergency water supply, storage, conveyance facilities, and access for fire protection either are or will be provided concurrent with development.

Objective 5.7.3: Law Enforcement. An adequate, comprehensive, coordinated law enforcement system consistent with the needs of the community.

- ▲ **Policy 5.7.3.1:** Prior to approval of new development, the Sheriff's Department shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.

Objective 5.7.4: Medical Emergency Services. Adequate medical emergency services available to serve existing and new development recognizing that levels of service may differ between Community Regions, and Rural Centers and Regions.

- ▲ **Policy 5.7.4.1:** Prior to approval of new development, the applicant shall be required to demonstrate that adequate medical emergency services are available and that adequate emergency vehicle access will be provided concurrent with development.
- ▲ **Policy 5.7.4.2:** Prior to approval of new development, the Emergency Medical Services Agency shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.

Objective 5.8.1: School Capacity. Require that adequate school capacity exists and/or appropriate mitigation consistent with State law to serve new residents concurrent with development.

- ▲ **Policy 5.8.1.1:** School districts affected by a proposed development shall be relied on to evaluate the development's adverse impacts on school facilities or the demand therefore. No development that will result in such impacts shall be approved unless:
 1. To the extent allowed by State law, the applicant and the appropriate school district(s) have entered into a written agreement regarding the mitigation of impacts to school facilities; or
 2. The impacts to school facilities resulting from the development are mitigated, through conditions of approval, to the greatest extent allowed by State law.
- ▲ **Policy 5.8.2.2:** The affected school district shall be relied upon to review development applications to determine the ability of the district to serve the new development. The level of educational services shall

not be reduced below acceptable levels as a consequence of new development to the extent permitted by State law.

Goal 10.2: Public Services and Infrastructure. Provide adequate levels of public services and infrastructure for existing residents and targeted industries and establish equitable methods to assure funding of needed improvements to existing infrastructure and services and new facilities to further economic development consistent with the County's custom, culture, and economic stability.

Objective 10.2.1: Public and Civic Facilities Investment. Give a high priority to funding quality civic, public and community facilities, and basic infrastructure that serve a broad range of needs.

▲ **Policy 10.2.1.5** A public facilities and services financing plan that assures that costs burdens of any civic, public, and community facilities, infrastructure, ongoing services, including operations and maintenance necessitated by a development proposal, as defined below, are adequately financed to assure no net cost burden to existing residents shall be submitted with the following development applications:

- A. Specific plans; and
- B. All residential, commercial, and industrial projects located within a Community Region or Rural Center which exceed the following thresholds:
 1. Residential 50 units
 2. Commercial 20 acres or 100,000 square feet
 3. Industrial 20 acres or 250,000 square feet

El Dorado Hills Community Service District Parks and Recreation Facilities Master Plan

The EDHCS D *Parks and Recreation Facilities Master Plan* (2007) provides a 15-year vision for how parks, facilities, and recreation programs will be managed in the EDHCS D to respond to anticipated growth and changing recreation trends. The plan includes the vision and priorities of district residents, implementation strategies, and analysis of funding requirements.

EDHCS D is in the process of updating its *Park and Recreation Facilities Master Plan*.

4.13.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact if it would:

- ▲ result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, and/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 any of the following public services:
 - fire protection,
 - law enforcement,
 - schools,
 - other public facilities;
- ▲ result in the increased use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated;

- ▲ include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment; or
- ▲ conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to public services and recreation.

METHODS OF ANALYSIS

Evaluation of potential impacts to public services are based on personal communications with the EDHFD, El Dorado County Sheriff's Department, and a review of studies pertaining to the project site and/or public services, including annual reports and strategic plans from fire and sheriff's departments, the EDHCS *Parks and Recreation Facilities Master Plan*, the *El Dorado County General Plan*, and a variety of reports from the school district. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policies presented above.

IMPACTS AND MITIGATION MEASURES

Impact 4.13-1: Impact on fire facilities.

The project would include development that would increase demand for fire protection and emergency medical services. However, the site is approximately 1 mile from the nearest fire station and EDHFD has adequate equipment and staff to maintain acceptable fire service ratios, response times, and other performance objectives with implementation of the project. No additional facilities would be needed to serve the project site, and the project would be required to pay impact fees and comply with all conditions of approval. Impacts on fire protection services and facilities would be **less than significant**.

EDHFD staff indicated that the department has adequate equipment and staffing and will be able to maintain acceptable fire service ratios, response times, and other performance objectives with implementation of the Saratoga Estates Project (Lillienthal, pers. comm., 2015).

EDHFD's goal for response time is 6 minutes 90 percent of the time. As of April 2015, the overall average response time for all calls in Station 85 and 87 response areas was 4 minutes and 56 seconds (Lillienthal, pers. comm., 2015). The *El Dorado County General Plan* requires a minimum response time of 8 minutes to 80 percent of the population for EDHFD response in community regions. Because average response time of the nearby stations falls well below EDHFD's goal for response and the general plan's minimal service requirements for fire response, it is anticipated that the project's impact to demand on fire and emergency services would not result in a substantial adverse effect. Furthermore, the ability of the EDHFD to access the site, as well as residents to evacuate, is of concern as the project site is located within the Moderate Fire Hazard Severity Zone, as determined by the California Department of Forestry and Fire Protection (CAL FIRE 2007). The project would be required to provide fire and emergency medical services to the project site consistent with the *El Dorado County General Plan*, State Fire Safety Regulations, as adopted by El Dorado County, and the California Fire Code, as amended locally. All of the above provisions also require compliance with EDHFD fire standards including, but not limited to: location of and specifications for fire hydrants; emergency vehicle access including roadway widths and turning radii; fire flow and sprinkler requirements; and defensible space and wildland fire-safe plans. For these reasons, the proposed project would result in a **less-than-significant** impact related to fire protection service.

Mitigation Measures

No mitigation is required.

Impact 4.13-2: Impact on law enforcement facilities.

The project would include development that would increase demand for law enforcement services. While average response times in 2014 met County requirements for most call priority categories, Priority 4 (i.e., lowest priority) response times may not meet minimum standards. Development of the proposed project would have the potential to exacerbate this condition. The applicant for the Saratoga Estates Project may be required to pay impact fees as required by the County. This would be a **less-than-significant** impact.

Average response times in 2014 for the El Dorado Hills area was 5 minutes and 22 seconds for Priority 1 calls (i.e., highest priority calls); 7 minutes and 44 seconds for Priority 2 calls; 7 minutes for Priority 3 calls; and 8 minutes and 41 seconds for Priority 4 calls (Becker, pers. comm., 2015b). The *El Dorado County General Plan* requires a minimum response time of 8 minutes to 80 percent of the population in community regions. Priority 4 response times in 2014 did not meet the general plan's minimal service requirements as applied to 100 percent of the population; however, it is possible that the response time standard was met as applied to 80 percent of the population. Response times for all other priority calls met the minimal service requirement.

The proposed project would increase demand for law enforcement services due to the increased population and development at the project site. Adding additional residences to the area could have the potential to further affect response times by demanding additional law enforcement protection. However, consistent with General Plan Policy 10.2.1.5 the project is required to prepare a public facilities and services financing plan, which would include a fiscal impact study. Consistent with Policy 10.2.1.5, the financing plan would include the fair share contribution necessary to prevent the proposed project from diminishing existing levels of public services, including law enforcement. Because the proposed project would be consistent with this General Plan policy, this would be a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Impact 4.13-3: Impact on schools.

Development of the proposed project could result in issues related to school capacity. Payment of school facility mitigation fees, which have been deemed by the State legislature (per Government Code Section 65995(h)) to constitute full and complete mitigation of impacts of a development project on the provision of adequate school facilities, would be required. The project would therefore result in a **less-than-significant** impact.

The proposed project would result in development of 317 new residential units that would generate additional students within the school district. Using student generation rates provided by BUSD and EDUHSD (see Table 4.13-4), the project site could generate approximately 199 students.

Table 4.13-4 Project Related Student Generation

District	Proposed Dwelling Units	Student Generation Rate Used by School District for Residential Developments	Additional Students Generated by Proposed Project
Buckeye Union School District	317	0.451	143
El Dorado Union High School District	317	0.177	56
Total Students			199

Source: 2014 Master Plan for El Dorado Union High School District; McHaney, Jackie, Assistant Superintendent, Administrative Services, Buckeye Union School District. Personal communication. May 28, 2015.

Buckeye Union School District

In 2014-2015 school year, William Brooks Elementary School student enrollment was 492 with a capacity of 644 (i.e., 152 student seats available) and Rolling Hills Middle School was 1,004 with a capacity of 972 (i.e., over capacity by 32 students). Based on the student generation rates shown in Table 4.13-4, the addition of 317 dwelling units on the project site would generate approximately 143 new elementary and middle school students.

With 152 seats available at William Brooks Elementary School, the project is not anticipated to exceed the current capacities available within BUSD District. At Rolling Hills Middle School, any increase in middle school students could exceed current capacities available because the school is currently impacted. There are no plans to expand Rolling Hills Middle School; students would continue to be diverted to Camerado Springs Middle School (McHaney, pers. comm., 2015). According to the 2012-2013 Statement of School Availability from Buckeye Union School District, Camerado Springs (as of 2013) had a capacity of 958 and an enrollment of 614 with 344 seats available. Therefore, capacity exists for the additional middle-school students generated by the proposed project (BUSD 2013). In order to fund the development and construction of new school facilities, BUSD would impose a school impact fee of \$1.95 per square foot of residential development.

El Dorado Union High School District

In the 2014-2015 school year, Oak Ridge High School student enrollment was 2,359 and operating at 98 percent capacity. This enrollment slightly higher (four students less) than the predicted enrollment for the 2015-2016 school year (EDUSHD 2015b). For the 2018-2019 school year, EDUHSD anticipates that Oak Ridge High School would be operating at 99 percent capacity and schools district-wide would be operating at 83 percent capacity (Tranter, pers. comm., 2015).

The addition of 317 dwelling units on the project site would generate approximately 56 new high school students. New development is required to provide necessary funding and/or capital facilities for the school system, as determined by applicable State-mandated development impact fees. The proposed project would be subject to Level 1 development impact fees (EDCOE 2014). Currently EDUHSD charges Level 1 fees in the amount of \$2.97 per square foot for residential construction. No new high school facilities are currently planned for development that would benefit the project area (Tranter, pers. comm., 2015).

Summary

The school districts are responsible for implementing the specific methods of mitigating school impacts under the Government Code. The school impact fees and the school districts' methods of implementing measures specified by Government Code 65996 are meant to offset increased student enrollment. Payment of school facility mitigation fees has been deemed by the State legislature (per Government Code Section 65995(h)) to constitute full and complete mitigation of impacts of a development project on the provision of adequate school facilities, even though, as a practical matter, additional funding, usually from statewide or local bond measures, are needed to create new school capacity. Specific school facility developments would be subject to environmental review on a project-by-project basis. Through the payment of associated development fees and compliance with applicable State and local regulations, the proposed project would have a **less-than-significant** impact on school facilities.

Mitigation Measures

No mitigation is required.

Impact 4.13-4: Impact on parks and recreation facilities.

The Saratoga Estates Project includes new recreation and park facilities, the potential effects of which are addressed throughout this EIR and, by providing parkland onsite, would not increase the use of existing park and recreation facilities in the area such that they would experience deterioration, or require improvement or expansion. This would be a **less-than-significant** impact.

The proposed project would include approximately 42 acres of open space areas, which includes a trail system, landscaping, and open space areas surrounding the creek corridor, and 8 acres of public parks. All parks are proposed to be dedicated to either the EDHCSD, HOA, or other County-approved mechanism for maintenance and/or management. The final design of the parks is subject to EDHCSD/HOA approval.

EDHCSD uses a standard of 5 acres per 1,000 residents. As discussed in Section 4.2, "Population, Employment, and Housing," of this EIR, the proposed project would generate an estimated population of 929; given the EDHCSD park standards, as well as the amount of park acreage included in the project, the proposed project would meet the District standard and would increase the amount of parks acreage available to District patrons. Because adequate park facilities would be provided onsite, construction of the proposed project would not result in the substantial physical deterioration of a park facility (through overuse, for example), and construction of the recreational facilities would not result in an adverse physical effect on the environment with implementation of the mitigation measures included in this EIR. The potential impact related to park and recreation facilities would be **less than significant**.

Mitigation Measures

No mitigation is required.

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4.14 PUBLIC UTILITIES

This section describes the utility systems (water, wastewater, solid waste, energy, and telecommunications) serving the project site and identifies the potential impacts related to utilities that could result from implementation of the proposed project. Mitigation measures are recommended, as appropriate.

Comments were received in response to the Notice of Preparation that raised concerns about the current drought and water supply, and about extension of offsite utilities.

4.14.1 Environmental Setting

EXISTING WATER SUPPLY AND DEMAND

Water Supply Plans

The El Dorado Irrigation District (EID) is an irrigation special district, organized and existing under the California Irrigation District Law (Water Code Section 20500, et seq.) and authorizing statutes (Water Code Section 22975, et seq.). EID serves nearly 110,000 residents in El Dorado County. EID's existing sources of water include surface water and recycled water. The potable water system has three principle points of diversion that deliver raw water to the system: 1) District-owned-and-operated Sly Park Dam and Jenkinson Lake; 2) District-owned-and-operated El Dorado Hydroelectric Federal Energy Regulatory Commission Project 184 at Forebay Reservoir; and 3) Folsom Reservoir via two U.S. Bureau of Reclamation water service contracts. Raw water diverted at these locations is treated at the Reservoir A Water Treatment Plant (WTP), Reservoir 1 WTP, and El Dorado Hills WTP, respectively.

EID has developed and maintains several water resources plans, including: an Urban Water Management Plan (UWMP), an Integrated Water Resources Master Plan (IWRMP), and Water Resources and Service Reliability Reports (WRSRR). These documents are briefly described as follows:

EID's 2010 UWMP was prepared in accordance with the Urban Water Management Act (California Water Code, Division 6, Part 2.6, and Section 10610 – 10657). The 2010 UWMP provides the following information: service area physical description; potable water system description; local climate; regional population, employment, and housing. In addition, this plan includes water supply reliability and water shortage contingency planning (EID 2011).

The 2013 IWRMP provides a plan that optimizes the use of EID's water resources and provides a roadmap for cost-effective development of future infrastructure and maintenance of existing facilities. The 2013 IWRMP provides water use factors for land uses included in the 2004 general plan, based on historic water demand within EID's service zones (eastern, western, and El Dorado Hills) (EID 2013a).

For the purposes of this analysis the 2014 WRSRR is considered to provide the most recent, up-to-date, information related to water supply availability associated with the project site. The water meter availability for EID is described in this report, and tracked within two distinct water supply areas: the El Dorado Hills supply area and the Western/Eastern supply area. The project area is located within the El Dorado Hills supply area.

The available supply in the El Dorado Hills supply area is currently restricted by infrastructure, which includes the capacity of the El Dorado Hills Water Treatment Plant and other conveyance facilities. Water allocations associated with supply areas are limited to their physical boundaries. As a result, consideration of water supply associated with the project is relevant only to the El Dorado Hills supply area (EID 2015a). The most recent Water Resources and Service Reliability Report provides data, shown in Table 4.14-1.

Table 4.14-1 El Dorado Hills Supply Area – 2015 Water Meter Availability

Water Supply	14,110 acre feet
Total Potential Demand	8,355 acre feet
Unallocated Water Supply	3,025 acre feet
Water Meter Availability	4,088 equivalent dwelling units

Source: EID 2015a

EID Facility Improvement Letter

On January 20, 2015, EID provided a Facility Improvement Letter (FIL) to the applicant in response to a request for water, sewer, and fire hydrant services for the project. The FIL does not represent a commitment to serve, but does address the location and approximate capacity of existing facilities that may be available to serve the project. EID expresses existing and available wastewater and water supply service levels in terms of equivalent dwelling units (EDUs). Pertinent discussions related to water supply, provided in the FIL, are summarized as follows (Brink 2015).

Assessment District No. 3

The project site is located within the boundary of Assessment District No. 3, which was established to provide water and sewer facilities to serve the El Dorado Hills supply area. Assessment District No. 3 currently supplies water and sewer service to 217 EDUs.

Water Supply

As of August 10, 2015, there were approximately 4,088 EDUs available in the El Dorado Hills water supply area. The project would require approximately 325 EDUs of water supply.

Water Facilities

The El Dorado Hills Fire Department has determined that the minimum fire flow for this project is 1,000 gallons per minute for a two-hour duration while maintaining a 20-pound-per-square-inch residual pressure. Water lines existing near to the property are capable of delivering the required fire flow; however, a water line extension is required (see Exhibit 3-4 in Chapter 3, “Project Description.”)

Water Treatment Facilities

The El Dorado Hills Water Treatment Plant (EDHWTP) serves the El Dorado Service Zone and treats water supplied from Folsom Reservoir. EDHWTP treats raw water from Folsom Reservoir to supply potable water to the El Dorado Hills service zone. The EDHWTP has a capacity of 4.0 million gallons per day (mgd). Treatment processes include raw water pumping, chemical addition facilities, clarifiers/filters, and disinfection in a clearwell. Treatment of backwash from the filters includes storage, chemical addition, and plate settlers. A series of high service water pumps distribute potable water to the distribution system (EID 2011).

Water Distribution System and Facilities

The EID water conveyance system is a combination of pipelines, regulating reservoirs, diurnal storage tanks, and a few gold-rush-era ditches. The piped potable system consists of 1,250 miles of pipe ranging in size from 2 inches to 48 inches. EID has a total of 36 tanks with a combined storage capacity of 109 million gallons (EID 2011).

In addition to a potable water system, EID operates a recycled water system that provides tertiary treated recycled water from the Deer Creek and El Dorado Hills wastewater treatment plants to serve portions of the service area to the west bordering Sacramento County. That water is distributed through a separate set of pipelines. It is not anticipated that the project would demand recycled water supplies (EID 2011).

DROUGHT ACTION PLAN

The Drought Action Plan serves as a detailed work plan for EID that includes specific actions for management of water supply and demands, addresses effects associated with drought, and facilitates the timely implementation of effective drought responses. The most recent plan was adopted in February 2014, with subsequent revisions in April 2014. The Drought Action Plan addresses four stages of drought: 1) water alert; 2) water warning; 3) water crisis; 4) water emergency. In addition, post-drought actions address the scenarios that caused the drought (e.g., low rainfall or snowpack), lessons learned, and the associated costs and revenue to EID (EID 2014).

EID's service area has experienced three consecutive dry years, with 2013 and 2014 being some of the worst in recorded history. On February 4, 2014, the EID board of directors declared a Stage 2 Water Warning. In addition, EID is subject to a 28 percent conservation target set by the State. As a result, water restrictions are in effect from June 1 through September 30, 2015 that limit watering to three days per week (EID 2015b).

WASTEWATER

Wastewater Collection and Treatment Systems

EID provides wastewater collection and treatment services to the project area. EID has the following four permitted wastewater collection systems: El Dorado Hills, Deer Creek, Camino Heights, and Gold Ridge Forest. The project would be served by the El Dorado Hills Collection System, which consists of a series of lift stations, force mains, and gravity mains that convey wastewater to the El Dorado Hills Wastewater Treatment Plant (EDHWWTP).

The EDHWWTP is located approximately 1.25 miles south of Highway 50 on Latrobe Road in the El Dorado Hills business park area. Liquid treatment processes located within the EDHWWTP consist of headworks, screening and grit removal, primary clarifiers, biological nutrient removal basins, activated sludge basins with nitrification, secondary clarifiers, tertiary filters, and ultra violet light disinfection. Solids handling processes consist of waste activated sludge, dissolved air flotation thickeners, anaerobic digesters, and belt filter presses. Dewatered biosolids are hauled offsite for use in biosolids land application.

The EDHWWTP has a rated average dry weather flow capacity of 4 mgd. Treated effluent is either recycled or discharged into Carson Creek, a tributary to the Cosumnes River, during the wet season. The EDHWWTP typically discharges to Carson Creek between November and April, and recycles all of the treated effluent for beneficial reuse between May and October. At times, there is intermittent discharge to Carson Creek during periods when the EDHWWTP is recycling the treated effluent for beneficial reuse. The existing average dry weather flow at EDHWWTP is 2.65 mgd (EID 2013b).

EID Facility Improvement Letter

As described above for water supply, EID's January 20, 2015, FIL does not represent a commitment to provide wastewater service but addresses the location and approximate capacity of existing facilities that may be available to serve the project. Pertinent discussions related to wastewater treatment capacity, provided in the FIL, are summarized as follows (Brink 2015).

Sewer Facilities

According to the FIL, the project would require approximately 317 EDUs of sewer service. Existing gravity sewer lines are located at the northeast edge of the project site and approximately 1,500 feet east of the project site within Saratoga Way. These sewer lines discharge into the 18-inch El Dorado Hills Boulevard trunk gravity sewer line in the vicinity of White Rock Road and Post Street. Several sections of the offsite 18-inch gravity sewer appear to be near capacity and are programmed for upsizing by EID consistent with the 2013 EID Integrated Water Resources Master Plan (EID 2013a:117). The FIL indicates that service to the proposed project is not contingent on the off-site improvements. The proposed project includes an offsite

sewer line extension to connect to the 18-inch sewer line in Saratoga Way. No additional offsite wastewater improvements are necessary to serve the project.

SOLID WASTE

The project site is located within the El Dorado Hills Community Services District (EDHCS D) boundary. EDHCS D contracts with El Dorado Disposal Service, a Wastes Connections Company, for franchised solid waste collection, disposal, and recycling services. El Dorado Disposal Service transports waste to the Western El Dorado Recovery Systems (WERS) Transfer Station and Material Recovery Facility, located at 4100 Throwita Way in Placerville. The WERS Transfer Station and Material Recovery Facility handles mixed municipal waste and has a maximum permitted throughput of 400 tons per day (CalRecycle 2015a).

After undergoing processing, non-recyclable waste from the WERS Transfer Station and Material Recovery Facility are delivered to the Potrero Hills Landfill, located at 3675 Potrero Hills Lane, in Suisun City (EDHCS D 2012). The landfill handles several different types of waste including agricultural, ash, construction and demolition, industrial, mixed municipal, sludge, and tires. The Potrero Hills Landfill has a maximum permitted capacity of 83.1 million cubic yards and, as of the year 2006, a remaining estimated capacity of approximately 13.9 million cubic yards, or 16.7 percent of the landfill's total capacity. The landfill receives a maximum disposal of 4,330 tons per day (CalRecycle 2015b).

ENERGY AND TELECOMMUNICATIONS

Gas and Electric Service

The Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the El Dorado Hills community. PG&E Company charges connection and user fees for all new development, in addition to sliding rates for electrical and natural gas service based on use.

Telecommunications

The EDHCS D provides and manages a franchise agreement with Comcast Cable to provide cable television services to most areas within EDHCS D boundaries. AT&T cable is also provided to El Dorado Hills residents through a franchise managed by the State.

Comcast and AT&T provide or host a variety of other telecommunication services, such as digital subscriber line, internet service provider, web hosting, virtual private networking, U-verse, multi-protocol label switching, content delivery network, and wireless/cellular paging services.

The California Public Utilities Commission requires that telecommunications providers anticipate and serve new growth. To meet this requirement, these providers continually upgrade their facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the County. Telecommunication providers also work with the El Dorado Hills community to ensure that construction of new facilities does not interfere with any new or newly-paved streets.

4.14.2 Regulatory Setting

FEDERAL

There are no federal plans or programs that address utilities and service systems and that would apply to the project.

STATE

Water

The following State regulations are applicable to the project as they relate to water supply.

- ▲ **California Water Code:** The California Water Code outlines the general state authority and responsibilities over water in California.
- ▲ **Urban Water Management Planning Act:** The Urban Water Management Planning Act requires water suppliers to document water supplies available during normal, single dry, and multiple dry water years during a 20-year projection period, and to document the existing and projected future water demand during a 20-year projection period.
- ▲ **SB 610 and SB 221:** Senate Bill (SB) 610 (now CEQA Guidelines Section 15155) amended the Water Code requirements within the CEQA process and broadened the types of information required in a UWMP. SB 610 requires the preparation of water supply assessments (WSA) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent) proposed under the jurisdiction of a County or City lead agency. California Water Code Part 2.10 - Water Code Part 2.10 clarifies the roles and responsibilities, under CEQA, of the lead agency and the water supplier (i.e., the public water system) with respect to describing current and future supplies compared to current and future demand. It also defines the projects for which a WSA must be prepared as well as the responsibilities of the lead agency related to the WSA. As noted in the below impact analysis, project water consumption is below the threshold for which a WSA is required; nevertheless, this EIR provides similar information typically used in a WSA to evaluate whether the proposed project would have impacts related to water supply.
- ▲ **SB X7-7:** The Water Conservation Act of 2009 set an overall goal of reducing statewide per capita urban water use by 20 percent by December 31, 2020 (with an interim goal of at least 10 percent by December 31, 2015). To measure progress, the legislation requires that urban retail water suppliers (defined by California Water Code Section 10608.12(p) as “a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.”) determine their “urban baseline,” per-capita water use (for residential, commercial and industrial uses) based on average demand for a recent five or ten year period, expressed in gallons per capita per day.

Electricity and Natural Gas

California Building Code Title 24, Part 6, establishes building energy efficiency standards for new construction (including requirements for new buildings, additions, alterations, nonresidential buildings, and repairs). Energy efficiency standards were established in 1978 in response to a legislative mandate to reduce California’s energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Solid Waste

The California Waste Management Act of 1989 requires State, County, and local governments to substantially decrease the volume of waste disposed at landfills by the year 2000 and beyond. The act requires each County to submit an Integrated Waste Management Plan to the California Integrated Waste Management Board that includes an adopted Source Reduction and Recycling Element from each of its cities as well as a County-prepared Source Reeducation and Recycling Element for the unincorporated area. The element identifies existing and future quantities and types of solid waste, an inventory of existing disposal sites, a determination of the plan’s economic feasibility, enforcement programs, and implementation schedule.

LOCAL

El Dorado Irrigation District

EID is a public agency dedicated to providing high quality water, wastewater treatment, recycled water, hydropower, and recreation services. Strategic goals associated with EID include:

- ▲ maintain continuous, dependable water service and a clean, healthy water supply;
- ▲ provide quality wastewater collection, treatment and disposal service;
- ▲ provide recycled water in geographic locations where feasible;
- ▲ generate hydro-electric power, when appropriate, and according to the Federal Energy Regulatory Commission requirements;
- ▲ ensure opportunities for quality recreation; and
- ▲ ensure District operations consistently meet all appropriate environmental and other regulations.

EID policies relevant to the project include the following:

- ▲ **AR 5010.1 Annual reporting:** The District will maintain adequate water supply and demand records to ensure accurate monitoring and reporting. The General Manager will ensure that an updated Water Resources and Service Reliability Report is prepared annually for review by the Board of Directors. The report will include the current system firm yield of the overall District, along with the water supply and infrastructure capacity, potential demands, existing commitments, and meter availability for each water service area of the District as defined in the report.
- ▲ **AR 5010.2 Shortages:** The Water Resources and Service Reliability Report will use a system firm yield method to determine that sufficient water supply exists to meet potential demands. Under this methodology, approximately 95 percent of the time sufficient water supply is available to meet normal water demands, but during the remaining 5 percent of the time water shortages may occur. Such shortages may result in the implementation of voluntary or mandatory conservation measures.
- ▲ **AR 5010.3 New meter restrictions:** Should findings in the Water Resources and Service Reliability Report warrant restrictions on the issuance of new water meters, the General Manager will bring the situation to the attention of the Board of Directors. During emergency conditions when supplies are restricted or limited, the General Manager may also bring to the Board's attention possible restrictions on water meter availability.
- ▲ **BP 6010 Wastewater System Management:** The District will maintain a wastewater collection, treatment, and disposal system that complies with applicable state and federal wastewater discharge requirements and regulations.
- ▲ **AR 6020 Wastewater Discharge and Disposal:** Where sufficient capacity exists in mainline and collection sewers, the District will make service available subject to applicable connection procedures and fees. Connection to the District's sewer shall not cause objectionable odors or significant corrosive conditions such as those associated with effluent-only systems or pumped services.
- ▲ **AR 9028.6 Letters issued by the District:** The District will issue a FIL for water, wastewater, and/or recycled water services to applicants requesting service to existing parcels, lands being subdivided, and lands being rezoned or involving petition for amendment to the County or City general plans. The FIL will be valid for three years from the date of issuance. This document will state the current availability of service and the ability of the District's existing system to provide the requested service. The District may

require the submittal of a Facility Plan Report for approval if deemed necessary because of project size or complexity. An extension of up to one year for the FIL may be granted upon request and submittal of the appropriate application and fee.

El Dorado County General Plan

Goals and policies included in the *El Dorado County General Plan* (El Dorado County 2004) and relevant to the project including the following.

Goal 5.1: Provision of Public Services: Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

- ▲ **Policy 5.1.2.3:** New development shall be required to pay its proportionate share of the costs of infrastructure improvements required to serve the project to the extent permitted by State law. Lack of available public or private services or adequate infrastructure to serve the project which cannot be satisfactorily mitigated shall be grounds for denial of any project or cause for the reduction of size, density, and/or intensity otherwise indicated on the general plan land use map to the extent allowed by State law.

Goal 5.2: Water Supply: The development or acquisition of an adequate water supply consistent with the geographical distribution or location of future land uses and planned developments.

- ▲ **Policy 5.1.2.3:** New development shall be required to pay its proportionate share of the costs of infrastructure improvements required to serve the project to the extent permitted by State law. Lack of available public or private services or adequate infrastructure to serve the project which cannot be satisfactorily mitigated shall be grounds for denial of any project or cause for the reduction of size, density, and/or intensity otherwise indicated on the general plan land use map to the extent allowed by State law.
- ▲ **Policy 5.2.1.2:** An adequate quantity and quality of water for all uses, including fire protection, shall be provided for with discretionary development.
- ▲ **Policy 5.2.1.3:** All medium-density residential, high-density residential, multifamily residential, commercial, industrial and research and development projects shall be required to connect to public water systems when located within Community Regions and to either a public water system or to an approved private water systems in Rural Centers.
- ▲ **Policy 5.2.1.4:** Rezoning and subdivision approvals in Community Regions or other areas dependent on public water supply shall be subject to the availability of a permanent and reliable water supply.
- ▲ **Policy 5.2.1.6:** Priority shall be given to discretionary developments that are infill or where there is an efficient expansion of the water supply delivery system.
- ▲ **Policy 5.2.1.7:** In times of declared water shortages, the Board of Supervisors shall give priority within the affected water district to approving affordable housing and non-residential development projects.
- ▲ **Policy 5.2.1.9:** In an area served by a public water purveyor or an approved private water system, the applicant for a tentative map or for a building permit on a parcel that has not previously complied with this requirement must provide a WSA that contains the information that would be required if a water supply assessment were prepared pursuant to Water Code section 10910. In order to approve the tentative map or building permit for which the assessment was prepared the County must (a) find that by the time the first grading or building permit is issued in connection with the approval, the water supply from existing water supply facilities will be adequate to meet the highest projected demand associated with the approval on the lands in question; and (b) require that before the first grading permit or building

permit is issued in connection with the approval, the applicant will have received a sufficient water meters or a comparable supply guarantee to provide adequate water supply to meet the projected demand associated with the entire approval. A water supply is adequate if the total entitled water supplies available during normal, single, dry, and multiple dry years within a 20-year projection will meet the highest projected demand associated with the approval, in addition to existing and 20-year projected future uses within the area served by the water supplier, including but not limited to, fire protection, agricultural, and industrial uses, 95 percent of the time, with cutbacks calculated not to exceed 20 percent in the remaining 5 percent of the time.

- ▲ **Policy 5.2.1.10:** The County shall support water conservation and recycling programs and projects that can reduce future water demand consistent with the policies of the general plan. The County will develop and implement a water use efficiency program for existing and new residential, commercial/industrial, and agricultural uses. The County will also work with each of the County's water purveyors to develop a list of the type of uses that must utilize reclaimed water if feasible. The feasibility of using reclaimed water will be defined with specific criteria developed with public input and with the assistance of EID, and will be coordinated with their ongoing reclaimed water (also referred to as recycled water) planning and implementation process. The County shall encourage all water purveyors to implement the water conservation-related Best Management Practices already implemented by EID and in compliance with the related criteria established by U.S. Bureau of Reclamation.
- ▲ **Policy 5.2.1.11:** The County shall direct new development to areas where public water service already exists. In Community Regions, all new development shall connect to a public water system. In Rural Centers, all new development shall connect either to a public water system or to an approved private water system.

Goal 5.3: Wastewater Collection and Treatment. An adequate and safe system of wastewater collection, treatment, and disposal to serve current and future County residents.

- ▲ **Policy 5.3.1.1:** High-density and multifamily residential, commercial, and industrial projects shall be required to connect to public wastewater collection facilities as a condition of approval except in Rural Centers and areas designated as Platted Lands (-PL). In the Community Region of Camino/Pollock Pines, the long term development of public sewer service shall be encouraged; however, development projects will not be required to connect to wastewater collection facilities where such connection is infeasible, based on the scale of the project. (Res. No. 298-98; 12/8/98)
- ▲ **Policy 5.3.1.7:** In Community Regions, all new development shall connect to public wastewater treatment facilities. In Community Regions where public wastewater collection facilities do not exist project applicants must demonstrate that the proposed wastewater disposal system can accommodate the highest possible demand of the project.

Goal 5.5: Solid Waste. A safe, effective and efficient system for the collection and processing of recyclable and transformable materials and for the disposal of residual solid wastes which cannot otherwise be recycled or transformed.

- ▲ **Policy 5.5.2.1:** Concurrent with the approval of new development, evidence will be required that capacity exists within the solid waste system for the processing, recycling, transformation, and disposal of solid waste.
- ▲ **Policy 5.5.2.3:** The County shall adopt a Construction and Demolition Debris Diversion Ordinance requiring that a minimum of 50 percent of the debris from construction and demolition projects be reused or recycled. The County shall encourage a higher rate of diversion.

Goal 5.6: Gas, Electric, and Other Utility Services. Sufficient utility service availability consistent with the needs of a growing community.

- ▲ **Policy 5.6.1.1:** Promote and coordinate efforts with utilities for the undergrounding of existing and new utility distribution lines in accordance with current rules and regulations of the California Public Utility

Commission and existing overhead power lines within scenic areas and existing Community Regions and Rural Centers.

- ▲ **Policy 5.6.1.2:** Reserve adequate rights-of-way to facilitate expansion of services in a timely manner.
- ▲ **Policy 5.6.1.4:** Special use permits shall be required for the installation of community telecommunication facilities (e.g., microwave towers) in residential areas to ensure that siting, aesthetics, environmental issues, surrounding land uses, and health and safety are considered.

El Dorado County Construction and Demolition Debris Recycling Ordinance

The El Dorado County Construction and Demolition Debris Recycling Ordinance establishes a program for the recycling and salvage of construction and demolition debris. The ordinance requires at least 50 percent of the debris from construction and demolition project with structure footprints exceeding 5,000 square feet to be diverted from landfills through recycling practices. Before the issuance of a permit, the project applicant must file a Debris Recycling Acknowledgment (DRA) with the County's Environmental Management Division. A Debris Recycling Report (demonstrating compliance with the 50 percent diversion goal) must be filed within 60 days after final and/or occupancy approval. If the in two years of the date the DRA was filed, the project applicant would be required to submit a Performance Securities with subsequent DRAs.

4.14.3 Impact Analysis

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and other considerations, a utilities and service systems impact would be significant if implementation of the proposed project would do any of the following:

- ▲ result in a lack of sufficient water supplies available to serve the project from existing resources and entitlements, and/or a need for new or expanded entitlements;
- ▲ require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▲ require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▲ exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- ▲ result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- ▲ generate waste materials that would exceed the permitted capacity of local landfills; or
- ▲ violate federal, state, and/or local statutes and regulations related to solid waste.
- ▲ create demand for electricity or natural gas service that would require or result in the construction of new electricity or natural gas facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The project would generate solid waste that would be similar in character to that associated with domestic use (e.g., food waste, paper, limited medical-related waste) and construction-related waste from grading,

clearing, and erecting buildings. Construction and operation of the project would follow all relevant federal, state, and local statutes and regulations associated with collection and disposal of waste generated at the site. Thus, there would be no impact related to violation of solid waste laws and regulations and this topic is not discussed further in this Draft EIR.

EID is in compliance with permit-required activities under Order No. 2006-0003 and No. WQ-2008-0002-EXEC. Because the project would not be implemented unless the EDHWWTP is capable of treating flows at levels that are within these permits, these requirements could not be violated. Thus, there would be no impact and this topic is not discussed further in this Draft EIR.

METHODS OF ANALYSIS

As required by EID, water and sewer service is determined through the allocation of EDUs. The potential for EDU availability for the project site was provided in the FIL, submitted to the project applicant in January 2015. Solid waste generation rate from the California Integrated Waste Management Board of 10 pounds per day for single-family homes were used to determine if collection and disposal facilities would provide adequate service for the project.

IMPACTS AND MITIGATION MEASURES

Impact 4.14-1: Water supply and infrastructure impacts.

The project would require approximately 325 EDUs of water supply, which have been requested from EID. As stated in the FIL, and verified through the July 2015 Water Resources and Service Reliability Report, sufficient water supply exists to serve buildout of the project. Several nearby connections to the water supply system are available to accommodate the project. Thus, because water supply and connections are currently available for the project, this impact would be **less than significant**.

CEQA Guidelines 15155(a)(1) defines size thresholds for consideration of a project as a water demand project and indicates that a residential development of more than 500 dwelling units would require a WSA. The project consists of a 317-unit single-family residential development that incorporates approximately 42 acres of open space areas, which would include public parks, a trail system, and landscaping. This would not meet the size threshold requirements that would trigger preparation of a WSA.

Project implementation would result in development of land that is currently vacant with no existing use of municipal water. The available supply in the EID El Dorado Hills supply area is currently restricted by infrastructure, which includes the capacity of the El Dorado Hills Water Treatment Plant and other conveyance facilities. According to EID's 2013 *Water Resources and Service Reliability Report*, as of August 10, 2015, 4,088 EDUs of water supply were available.

The project would require approximately 325 EDUs of water supply, which have been requested from EID. In response to the request, as described above under Section 4.14.1, "Environmental Setting," an FIL was prepared by EID and received by the applicant. As stated in the FIL, and verified through the August 2015 *Water Resources and Service Reliability Report*, sufficient water supply exists to serve buildout of the project. It is important to note that water supply is not yet guaranteed by EID. Several steps are required before water meters would be granted, including: an approved Facility Plan Report, Extension of Facilities application and fee, payment of connection fees, agreements approved and signed by EID Board of Directors, and certification of environmental documents.

In addition to potable water supply, the El Dorado Hills Fire Department has determined the minimum flow rate for the project (1,000 gallons per minute for a two-hour duration, while maintaining 20-pound-per-square-inch residual pressure). This connection, as well as domestic water supply connections, would be accommodated through connections available in several nearby locations, including:

- ▲ a 10-inch water line stub out near the northwest border of the project site;
- ▲ an 8-inch water line in Montridge Way;
- ▲ an 8-inch water line stub out near the northeast edge of the project site, extending from Platt Circle; and/or
- ▲ a 10-inch water line near the intersection of Finders Way and Saratoga Way.

Thus, because water supply and connections are currently available for the project, this impact would be **less than significant**.

The potential for the proposed project to contribute to a potential long-term water supply shortage is evaluated in Section 5.1, "Cumulative Impacts."

Mitigation Measures

No mitigation is required.

Impact 4.14-2: Wastewater treatment capacity availability.

The project site is located within EID's service area, but does not currently have any connection to the existing collection and conveyance infrastructure. The connection would be made in accordance with the County's and EID's ordinances and requirements. The project would require approximately 317 EDUs of sewer service. EID provided a FIL to the applicant on January 20, 2015, which confirmed that adequate wastewater treatment capacity is available. Thus, this impact would be **less than significant**.

The project site is located within EID's service area, but does not currently have any connection to the existing collection and conveyance infrastructure. Sewer service to the project site was requested from EID from the project applicant. The FIL received for the project indicates that the project would require approximately 320 EDUs of sewer service (the FIL was based on a previous iteration of the plan that included 320 units). The FIL indicated that adequate wastewater treatment capacity is available.

Existing gravity sewer lines are located at the northeast edge of the project site and approximately 1,500 feet east of the project site within Saratoga Way. These sewer lines discharge into the 18-inch El Dorado Hills Boulevard trunk gravity sewer line in the vicinity of White Rock Road and Post Street. Exhibit 3-4 in Chapter 3, "Project Description" shows the extension of the offsite sewer line to connect to the existing 18-inch line. All connections would be made in accordance with the County's and EID's ordinances and requirements. These requirements may include, but are not limited to: approval of engineered improvement plans, extension of facilities applications and fees, payment of applicable wastewater connection feeds, and agreements approved and signed by the EID Board of Directors.

Thus, because adequate sewer capacity is available, and because connections would be made in accordance with County and EID requirements, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.14-3: Solid waste disposal capacity.

As discussed above, the project site is located within EDHCS boundary where the El Dorado Disposal Service provides solid waste collection, disposal, and recycling services. The project would generate approximately 3,160 pounds of waste per day. This increased amount of solid waste is not a substantial amount of the permitted capacity and would not result in the need to expand or construct new landfill facilities. In addition, this project would adhere to all required State and County waste management ordinances and requirements. Thus, impacts on solid waste disposal facilities would be **less than significant**.

As discussed above, the project site is located within EDHCSD boundary where the El Dorado Disposal Service provides solid waste collection, disposal, and recycling services. Collected waste is transported to the WERS Transfer Station and Materials Recovery Facility, which is permitted to accept up to 400 tons per day. Upon processing, non-recyclable wastes from the WERS Transfer Station and Material Recovery Facility are delivered to the Potrero Hills Landfill, which has a remaining estimated capacity of approximately 13.9 million cubic yards (in 2006) and is estimated to remain in operation until February of 2048.

The California Integrated Waste Management Board estimates waste generation of 10 pounds per day for single-family homes. Using these rates, the project would generate 3,170 pounds of waste per day (1.59 tons per day). This represents approximately 0.4 percent of the permitted capacity at WERS Transfer Station and Materials Recovery Facility; and, 0.04 percent of the permitted daily waste at the Potrero Hills Landfill facility. This relatively small increase in solid waste would not consume a substantial proportion of the permitted capacity at either facility and would not result in the need to expand or construct new landfill facilities. In addition, this project would adhere to all required State or County waste management ordinances and requirements, such as diversion of construction and demolition debris and hazardous waste handling requirements that ensure that use of landfill space is limited and potential for accidental spills is minimized. Thus, impacts on solid waste would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.14-4: Electricity and natural gas service.

Development of the proposed project would occur in a location with immediate access to electricity, natural gas, and telecommunications services. The project would not result in energy demands that would require the development of new energy sources or affect service to existing customers. The proposed project would have **less-than-significant** impact on electricity and gas service.

Electricity and natural gas services for the proposed project would be provided by PG&E. The proposed project would increase electricity and natural gas consumption and require new utility connections. These utilities would be installed underground, and no offsite extensions would be needed. Where necessary, recommended mitigation measures would reduce construction-related impacts associated with onsite electric and natural gas improvements associated with the project. The proposed project is expected to generate roughly 2.3 million kilowatt hours annually (kWh/year) in new electricity demand and roughly 102,000 therms/year in natural gas demand. Specific energy demand would be calculated in coordination with PG&E would occur to ensure that the project site is adequately served. In the event that upgrades are required, PG&E would coordinate, fund, and implement all necessary improvement (Sweeney, pers. comm., 2015). In addition, the project would be subject to the standards of Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 measures consist of developing an energy budget for structures and designing the structures to use no more energy that what is budgeted. The project would not result in energy demands that would require the development of new energy sources or affect service to existing customers. The proposed project would have **less-than-significant** impact on electricity and gas.

Mitigation Measures

No mitigation is required.

5 OTHER CEQA CONSIDERATIONS

5.1 CUMULATIVE IMPACTS

CEQA requires that an EIR include an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. An EIR must discuss the cumulative impacts of a project when its incremental effect will be cumulatively considerable. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, Section 15130(a)). Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable.

5.1.1 Cumulative Impact Analysis Methodology

Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Section 15130(a)(3) of the State CEQA Guidelines states that an EIR may determine that a project’s contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The State CEQA Guidelines (Section 15130) identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. This analysis is based on consideration of the project in conjunction with other projects that have been, are, or will be completed in the project area.

The effects of past and present projects on the environment are reflected by the existing conditions in the project area. A list of probable future projects is provided below. Probable future projects are those in the project vicinity that have the possibility of interacting with the proposed project to generate a cumulative impact (based on proximity and construction schedule) and either:

- ▲ are partially occupied or under construction,
- ▲ have received final discretionary approvals,
- ▲ have applications accepted as complete by local agencies and are currently undergoing environmental review, or
- ▲ are proposed projects that have been discussed publicly by an applicant or that otherwise become known to a local agency and have provided sufficient information about the project to allow at least a general analysis of environmental impacts.

5.1.2 Projects Considered in the Cumulative Analysis

Table 5-1 identifies probable future projects that were considered in the development and analysis of potential cumulative impacts. Projects considered in the cumulative analysis are also mapped in Exhibit 5-1. Probable future projects meet the criteria described above: they are in the project vicinity and have the possibility of interacting with the Saratoga Estates Project to generate a cumulative impact. Past and present projects in the area contribute to the existing setting, and are, therefore, also a component of the cumulative effects analysis.

5.1.3 Analysis of Cumulative Effects

The basis of the cumulative analysis varies by technical area. For example, air quality impacts are evaluated against conditions in the air basin. Other cumulative analyses, such as cultural resources, consider the potential loss of resources in a broader, more regional context. Cumulative impacts for each technical area are discussed below.

Significance criteria, unless otherwise specified, are the same for cumulative impacts as project impacts for each environmental topic area. When considered in relation to other probable future projects, cumulative impacts to some resources could be significant and more severe than those caused by the proposed project alone.

LAND USE COMPATIBILITY

The cumulative analysis of land use compatibility is focused on the effects of the project and projects adjacent to the project site. As identified in Table 5-1 and Exhibit 5-1, the projects in the cumulative condition that are located in close proximity to the project site are generally specific plans. These projects establish a framework for development in large areas and are designed to promote land use compatibility.

The proposed project includes rezoning to allow for the development of 317 residential units and associated infrastructure and amenities on the site. Application of the planned development (PD) combining zone district would be consistent with the County's general plan land use designation. In addition, all standards, densities, and other requirements are required to conform to the base zone. Thus, the proposed project would be consistent with the *El Dorado County General Plan* and *Zoning Ordinance*. Therefore, the incremental effect of project implementation on land use compatibility would not be cumulatively considerable.

POPULATION, EMPLOYMENT, AND HOUSING

The geographic context for the cumulative impacts associated with population and housing issues are the unincorporated communities located in western El Dorado County and the City of Folsom, both of which are expected to undergo population growth over the next few decades. This growth is anticipated in regional planning documents.

Construction of the projects identified in Table 5-1 could occur simultaneously, increasing the demand for construction workers. As discussed for the project, there are many populated areas in the region and a large pool of construction personnel to staff the anticipated development. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of these workers to the area is not anticipated. Because the project's construction crews would not be expected to relocate into the study area to construct the project, any incremental indirect impacts on population growth associated with the project's labor force would not be cumulatively considerable.

Table 5-1 Cumulative Projects List				
Project Name	Location	Description	Residential Units and/or Non-Residential Area	Project Status
1. Bass Lake Hills Specific Plan	3 miles east of the Sacramento/El Dorado County line, adjacent to the west end of Cameron Park, and north of Highway 50	Development framework for 1,196 acres. Provides for development of residences in a range of densities, from one dwelling unit per 5 acres to four dwelling units per acre.	1,458 residential units	Approved by the El Dorado County Planning Commission April 9, 1992. Not yet developed.
2. Carson Creek Specific Plan	East of the Sacramento/El Dorado County line, south of White Rock Road	Framework for mixed-use development on 710 acres. Except for a maximum of 18 units, all residential units would be age-restricted senior housing.	1,700 residential units; 40,000 sf of commercial, 449,605 sf of research and development, 780,279 sf industrial, 37 ac park, 199 ac open space	Adopted September 24, 1996; amended September 28, 1999. Approximately 25% constructed.
3. Promontory Specific Plan	East of the Sacramento/El Dorado County line and north of Highway 50.	Framework for mixed-use development on 1,000 acres. Includes eight residential villages, a village center, a community park, and open space.	1,100 residential units; 285 ac open space	Plan completed September 29, 1999. Approximately 80% constructed.
4. Valley View Specific Plan	South of Highway 50 and east of Latrobe Road	Framework for mixed-use development on 2,037 acres.	2,840 residential units	Adopted December 1998. Approximately 50% constructed.
5. Central El Dorado Hills Specific Plan (Serrano Westside and Pedregal Planning Areas)	East and west sides of El Dorado Hills Boulevard at Serrano Parkway, north of Highway 50	Framework for mixed-use development on 256 acres. Includes residential, open space, park, and commercial land uses.	1,028 residential units; 50,000 sf of commercial	Draft EIR released for public review November 2015.
6. Marble Valley Specific Plan	East of Marble Valley Road, south of Highway 50	Framework for mixed-use development on 2,341 acres. Includes a variety of residential housing types, commercial uses and public facilities, and parks and natural open spaces.	3,236 residential units; 17 ac commercial, 35 ac schools, 47 ac park, 1,282 ac open space	Draft EIR in preparation; NOP submitted February 2013.
7. Lime Rock Valley Specific Plan	West of Shingle Lime Mine Road, south of Cameron Estates, and east of the Marble Valley Specific Plan area	Framework for mixed-use development on 740 acres.	800 residential units; 314 ac open space, 14 ac park land	Draft and Specific Plan EIR in preparation; NOP submitted February 2013.
8. Dixon Ranch	South of Green Valley Road, 100 feet southeast of the intersection with Malcom Dixon Road	Development plan for 280 acres. Includes 30% open space, and general plan amendment and zoning change.	605 residential units (160 would be age-restricted); 84 acres open space	Final EIR in preparation.

Table 5-1 Cumulative Projects List				
Project Name	Location	Description	Residential Units and/or Non-Residential Area	Project Status
9. Ridgeview Village	East of El Dorado Hills Boulevard	444 acres with 527 large and small lot residential, three parks, and open space	483 existing residential units, 44 approved residential lots, and three parks	Approximately 90% constructed.
10. San Stino Residential Project	4661 French Creek Road. South of Mother Lode Drive and east of French Creek Road in the Shingle Springs area	Planned development permit for a proposed residential subdivision on 645 ac. Includes 41% open space. Residential lots range from 5,000 to 157,682 sf.	1,041 residential units	Draft EIR in preparation; NOP submitted February 2013.
11. Folsom South of 50	South of Highway 50, east of Prairie City Road, north of White Rock Road, and west of the El Dorado County line	3,510 ac planned for residential, office industrial, and retail.	10,210 residential units; 363 ac commercial and industrial, 179 ac schools, 122 ac parks, 1,053 ac open space	First development, Russell Ranch, environmental review in process.

Source: Compiled by Ascent Environmental 2015

Notes:

ac = acres

sf = square feet

NOP = notice of preparation

The Serrano Specific Plan development is not included on this list because it is largely constructed and is, therefore, generally incorporated into the existing condition. Those elements of Serrano that currently have tentative maps in process are also considered in the cumulative scenario.

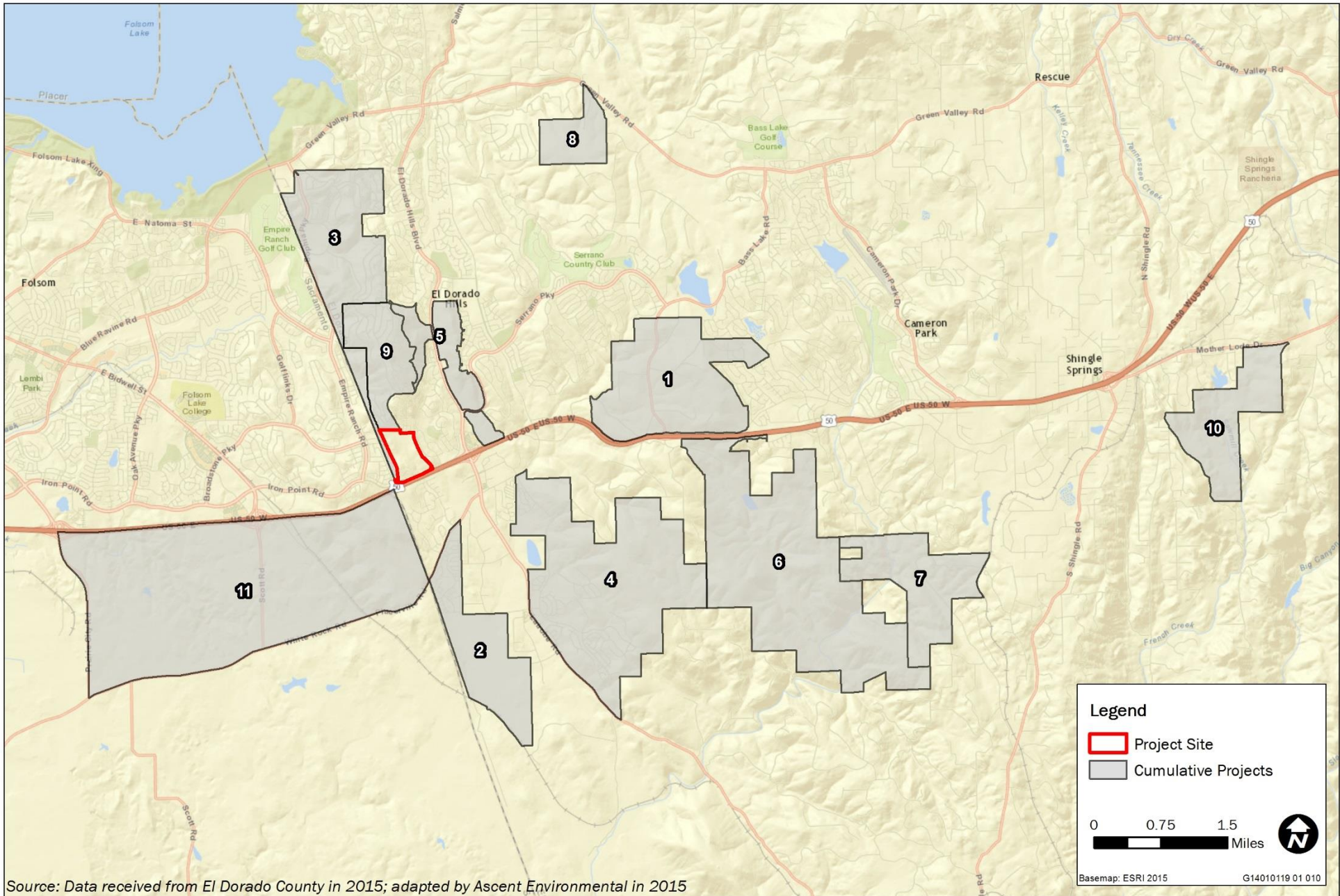


Exhibit 5-1

Projects Considered in the Cumulative Analysis



Once constructed, the Saratoga Estates project would provide housing for an estimated 929 individuals. These additional residences would accommodate population growth in the unincorporated community of El Dorado Hills that is consistent with the growth projections in the *El Dorado County General Plan* and related planning documents. Additionally, the cumulative projects, as well as other future development, would be subject to the applicable county and/or city planning process, as well as environmental review on a project-by-project basis. As such, build-out of the projects listed in Table 5-1 would not be likely to result in the inducement of substantial direct or indirect population growth in the area beyond what is planned. Accordingly, the project's incremental impact on indirect population growth would not be cumulatively considerable.

HYDROLOGY AND WATER QUALITY

Stormwater Capacity

Development of the proposed project in combination with development of the related projects would result in the addition of impervious surfaces, which would increase stormwater runoff. However, in accordance with federal, state, and local stormwater regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper post-construction best management practices (BMPs) when source control or exposure protection are insufficient for reducing pollutant loads. Therefore, before any construction-related ground disturbance, final drainage plans would be required to demonstrate that all runoff would be appropriately conveyed and would not leave the project sites at rates exceeding pre-project runoff conditions. In addition, the implementation of Mitigation Measure 4.3-1 and 4.3-2 would further reduce the project's contribution to stormwater runoff in the project vicinity. Therefore, the proposed project would not have a considerable contribution to cumulative stormwater drainage impacts.

Water Quality

Overall water quality in the region has degraded over time, as natural habitat has been converted to urban uses, and these uses have resulted in runoff of various pollutants into the adjacent waterways. A variety of programs have been implemented with the goal of halting degradation of water quality and reversing this trend. Several state and federal agencies are involved in these programs, many of which come from the federal Clean Water Act. Nonetheless, a cumulative adverse water quality condition exists. Construction of the proposed project, as well as construction of the related projects, would result in surface disturbance through ground scraping, grading, trenching, and compaction associated with typical development activities. Existing vegetation would be removed, thereby increasing the potential for erosion. Operational activities and proposed land uses (e.g., roadways, driveways) would generate atmospheric pollution, tire-wear residues, petroleum products, and oil and grease which would be carried in stormwater runoff. These constituents could enter the storm drainage system and adversely affect water quality.

Implementation of Mitigation Measures 4.3-1 and 4.3-2 would reduce the project's contribution to the cumulative effect on water quality to a less-than-considerable level. In addition, other projects would be required to comply with federal and state water quality regulations and prepare project-specific Stormwater Pollution Prevention Plans that would include site-specific BMPs and any other necessary site-specific Waste Discharge Requirements or waivers under the Porter-Cologne Act. In accordance with federal and state stormwater regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper post-construction BMPs when source control or exposure protection are insufficient for reducing pollutant loads. Therefore, project construction and operation, and the construction and operation of related projects, would reduce site-specific water quality impacts such that cumulatively adverse water quality impacts would not occur and the project would not have a considerable contribution such that a new significant cumulative impact would occur.

BIOLOGICAL RESOURCES

Habitat for biological resources has been reduced in the region over time, as land has been converted for residential, commercial, and open space. It is expected that the value of remaining pockets of isolated habitat would continue to decrease as commercial and residential development progresses in the region, and conversely, the value of larger remaining expanses of contiguous habitat will continue to increase. Regional development has had an adverse cumulative effect on special-status species.

As described in Section 4.4, “Biological Resources,” the Saratoga Estates property is surrounded by development and transportation corridors and, thus, provides limited habitat for biological resources. Development of the planned residential and open spaces uses, as well as the associated utilities and connector roads, would primarily result in the loss of annual grassland habitat, which provides foraging habitat and limited nesting/burrow habitat for various avian species. However, these potential impacts on biological resources resulting from development of the Saratoga Estates project would be mitigated to less-than-significant levels with implementation of the mitigation measures described in Section 4.4, “Biological Resources.” Furthermore, the project site does not contain any known individuals or populations of special-status wildlife or plant species.

Given its isolated nature, the project site does not support large or important populations of any special-status species, nor does it provide a movement corridor for special-status or common species. The most valuable habitat component, the perennial drainage and limited riparian habitat, would be preserved and incorporated into the project design to minimize adverse effects and preserve its integrity to the extent possible. No high-quality habitat important to the long-term conservation of any species in the region is present on the project site. Therefore, the incremental contribution of the proposed project to the cumulative impact on special-status species in the region would not be cumulatively considerable.

Operation of the proposed project is not expected to have a long-term effect on biological resources because, as described above, the primary habitat consisting of the perennial drainage is being preserved and incorporated into the open space portion of the project. Other planned, proposed, and approved projects in the region could also result in significant impacts to wildlife species. As described in Section 4.4, “Biological Resources,” it is not expected that the project would eliminate any resident or migratory animal or bird species or reduce species diversity in the vicinity of the project site or region. Loss of oak trees, though minor in context of the region, could incrementally reduce the amount of nesting habitat for both common and special-status avian species. Mitigation recommended in Section 4.4 would reduce impacts to less-than-significant levels by avoiding any known nests. After implementation of the specified measures, the project would not substantively contribute to reduction of any affected species. Therefore, the proposed project’s contribution to impacts on native wildlife populations would not be cumulatively considerable.

CULTURAL RESOURCES

The cumulative context for the cultural resources analysis considers a broad regional system of which the resources are a part. The cumulative context for archaeological resources and human remains is the Nisenan and the Plains Miwok territories. Nisenan territory comprised the drainages of the Yuba, Bear, and American rivers, and the lower drainages of the Feather River. The Plains Miwok inhabited the lower reaches of the Mokelumne and Cosumnes rivers, and the banks of the Sacramento River from Rio Vista to Freeport.

Because all significant archaeological resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site extend beyond the site boundaries. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. The proposed project, in combination with other development in the region,

could cause a substantial adverse change in the significance of unique archaeological resources or human remains.

As discussed in the project-specific impact analysis, the proposed project is designed to avoid damage to archaeological resource P-9-822, which has been determined eligible for the National Register of Historic Places and California Register of historic Resources. Implementation of Mitigation Measure 4.5-1a would ensure that impacts to the resource would be avoided. Implementation of Mitigation Measures 4.5-1b and 4.5-1c would reduce potentially significant impacts to currently undiscovered archaeological resources because actions would be taken to avoid, move, record, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations. Implementation of these mitigation measures would minimize the project's potential to adversely affect local archaeological resources and would therefore also minimize the project's incremental contribution to a cumulative impact, and the project's contribution is less than considerable.

Although no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project site, there is a potential for these resources to become unearthed during construction activities. Therefore, it is conservatively assumed that the proposed project, in combination with other development in the Nisenan and Miwok territory could contribute to the loss of significant cultural resources, which include ancestral remains. Implementation of Mitigation Measure 4.5-2 would reduce the project's contribution to this cumulative impact to a less than considerable level.

AESTHETIC AND VISUAL RESOURCES

The projects described in Table 5-1 include numerous residential development projects in eastern Sacramento County and western El Dorado County that could alter the visual character of areas within the project vicinity. The projects would generally be located in suburban and rural developed areas and could affect the area's visual character. As for the proposed project, future development within the project vicinity would be guided by applicable city and county general plans and design review processes, in addition to associated planning and environmental documents.

Development of the proposed project would not obstruct views of existing scenic vistas or important scenic resources, as no such views are currently available from public vantage points surrounding the site. The project would change the character of the project site, however, from vacant land to suburban residential. There would be a permanent loss of natural elements, including rock outcroppings and mature trees, and an increase in built features and associated light and glare.

Most of the projects identified in Table 5-1 would contribute a similar alteration to the visual setting, creating an environment that is increasingly residential in character. When compared to the projects in Table 5-1, the Saratoga Estates Project represents a relatively small-scale development in an area where suburban residential land uses already dominate. Although construction of the related projects would represent a substantial visual change and a significant impact to aesthetic and visual resources in the region, the project's contribution, in the context of its location adjacent to a major highway and surrounded on three sides by residential development, would not be a considerable incremental effect.

TRANSPORTATION AND CIRCULATION

Section 4.7, "Transportation and Circulation," includes a discussion of cumulative impacts based on the projects listed in Table 5-1 and anticipated capital improvements. Cumulative (2035) lane geometries and peak-hour turn movement volumes are presented in Exhibits 4.7-10 and 4.7-9, respectively. Table 4.7-23 through 4.7-25 present the peak-hour intersection and freeway operating conditions for this analysis scenario.

Although there could be a cumulative impact under the cumulative scenario, the project would generally improve traffic conditions in the area. As identified in Impact 4.7-3, anticipated delay times would be improved for most studied intersections and freeway segments. With implementation of Mitigation Measure 4.7-1, the level of service at the Saratoga Way/Wilson Boulevard intersection that would be constructed as part of the proposed project would meet applicable standards through signal length optimization. Therefore, the project would not contribute to a cumulatively significant impact.

AIR QUALITY

The context for cumulative air quality impacts is the entire air basin, where air emissions from a variety of sources, affected by meteorology, topography, and other factors, combine to determine the ambient air. For this reason, the analysis of air quality impacts associated with the project in Section 4.8, "Air Quality," is inherently a cumulative analysis.

For the purpose of the analysis in this EIR, a significant impact would occur if reactive organic gas (ROG) or oxides of nitrogen (NO_x) emissions from either construction or operation of the project would exceed 82 pounds per day or the project would not include measures designed to prevent visible dust emissions beyond the property lines of the project site, as set forth in Sacramento County Air Quality Management District's Rule 403 (adopted by the El Dorado County Air Quality Management District), during construction. Particulate matter (PM) emissions from operation would be considered significant if vehicular ROG and NO_x emissions exceed El Dorado County Air Quality Management District thresholds, provided that the development does not generate diesel-powered activity greater than the average roadway fleet mix. In addition, diesel exhaust particulate matter emissions from construction would be considered significant if total construction phase fuel use would exceed 86,000 gallons (where best available control technology engines are used) or 8,600 gallons (where best available control technology engines are not used).

As a result of project construction, short-term emissions would exceed El Dorado County Air Quality Management District's significance threshold for ROG, but would not exceed thresholds for mass emissions of NO_x, PM₁₀, and PM_{2.5}. Construction emissions of ROG and fugitive dust-related could conflict with the air quality planning efforts and contribute substantially to the nonattainment status of El Dorado County with respect to the National or State ambient air quality standards for ozone and particulate matter. However, with implementation of mitigation measures related to construction equipment, this impact would be less than significant.

During operations, diesel powered equipment would not be as prominent and diesel PM emissions would be limited to emissions from on-road diesel vehicles. The project would not be a major source of other toxic air contaminants. However, the project is located in close proximity to Highway 50 and the sensitive receptors proposed within 500 feet of Highway 50 could be exposed to elevated health risk. However, with implementation of a mitigation measure requiring upgraded HVAC units and vegetation to screen TACs from Highway 50, this impact would be less than significant. A significant impact related to carbon monoxide (CO) emissions would occur if the project would increase traffic volumes at nearby intersections to more than 31,600 vehicles per hour during operation. Under cumulative conditions, which include the traffic anticipated from the projects identified in Table 5-1, the intersection volumes in the project vicinity would not exceed 10,000 vehicles per hour. Short-term construction and long-term operation of the proposed project would not result in increases in traffic such that the adopted screening criteria would be triggered. As a result, it is assumed that development-generated, long-term local mobile-source emissions of CO would not contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations of CO.

A potentially significant impact related to naturally-occurring asbestos (NOA) would occur if construction or operation would result in airborne asbestos fibers that could affect sensitive receptors, or if surface soils are comprised of more than 0.25 percent asbestos after grading. With implementation of recommendations in the Geotechnical Engineering Study to reduce NOA emissions during construction, this impact would be less than significant.

The project would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts. As summarized in Table 4.8-3, in Section 4.8, “Air Quality,” the Mountain Counties Air Basin is in nonattainment for applicable National or State ambient air quality standards related to ozone, CO, and PM. However, as summarized above, the assessment of whether the project would result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is in nonattainment in Section 4.8, “Air Quality,” concludes that, because the project would not exceed established thresholds with implementation of identified mitigation measures, it would not substantially contribute to a basin-wide (i.e., cumulative) impact.

CLIMATE CHANGE

The quantity of greenhouse gas (GHG) emissions required to induce climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climate. Therefore, from the standpoint of CEQA, the analysis of GHG emissions in the context of global climate change is inherently cumulative.

As described in Section 4.9, “Climate Change,” the project’s mitigated GHG emissions would not exceed the efficiency targets. In addition, the project would be consistent with adopted long-range plans and policies designed to reduce communitywide GHG emissions, consistent with Assembly Bill 32 and other local and State policies. Therefore, the project would not result in a cumulatively considerable contribution to a significant cumulative impact related to global climate change.

NOISE

Cumulative Short-Term Construction Noise

Cumulative impacts from construction-generated noise could result if other future planned construction activities were to take place in close proximity to the project and cumulatively combine with construction noise from the project. The land directly surrounding the project site on the east, north, and west is already developed and, therefore, it is not anticipated that construction activities would occur in these areas. No cumulative construction noise impact would occur.

There are several community plan developments that would occur in El Dorado County in the near future. The Ridgeview and the Central El Dorado Hills Specific Plan are closest to the project site and located north of Highway 50. Refer to Exhibit 5-1 for exact locations. Portions of these specific plans are already constructed and will continue to be developed into the future. However, specific construction schedules and phasing is unknown, as these types of developments typically occur based on market demand. Therefore, it is assumed that some construction activities at the Ridgeview and El Dorado Hills Specific Plan may overlap in time with the construction at the proposed project site. However, construction of the proposed project would be relatively short (i.e., approximately five years) and noise generated by the proposed construction activities would be localized to the project site. Further, mitigation is in place that would reduce construction-related noise and would provide adequate noise reduction at the project site. As such, construction-noise at the proposed project would not combine with any future construction activities located at nearby development.

Cumulative Long-Term Ambient Noise Levels

Cumulative noise levels could be affected by additional build-out of surrounding land uses and increases in vehicular traffic on affected roadways. Several new large developments (e.g., The Central El Dorado Hills Specific Plan, Dixon Ranch, Ridgeview Specific Plan) and others (see Table 5-1 for a complete list) are planned in El Dorado County, surrounding the project area.

Traffic-noise modeling was conducted for the cumulative condition (2035) with and without the proposed project. Refer to Appendix D for modeling inputs and results. As indicated by the traffic-noise modeling (Table 6 of Appendix D), the cumulative no project condition would result in several roadways that exceed the El Dorado County maximum allowable noise level of 60 A-Weighted Decibel Day-Night Sound Level for transportation noise (e.g., Highway 50, Latrobe Road, El Dorado Hills Road). A cumulative impact without the project would exist at several of the study roadways. For example, Highway 50 would be expected to reach 79.5 A-Weighted Decibel Day-Night Sound Level, 100 feet from the centerline of the road. This noise level would exceed 60 dB at residences located to the south of Highway 50 along Dunnwood Drive, as well as residences located to the north of Highway 50 along Iron Point Road. However, based on the traffic-modeling conducted, project-generated increases in noise on all modeled roadways would be below 1 decibel. In many cases, no increase in noise at all would occur. Refer to Table 6 of Appendix D for a complete list of roadways and predicted noise increases. The project's contribution to traffic-noise in the cumulative plus project scenario would not result in a noticeable increase in noise on any roadways. Thus, the project would not contribute substantially to the already existing cumulative impact with regards to regional traffic-noise.

GEOLOGY AND SOILS

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. Unless a project would alter the soils and rock underlying other adjacent projects or affect surrounding land due to landslides, impacts related to geology, soils, and seismic hazards would be limited to the project site. The geographic scope of cumulative impacts related to geology, soils, or seismic hazards, therefore, includes only projects immediately adjacent to the project site.

Three projects are located adjacent to the Saratoga Estates Project and are, therefore, within the geographic scope of cumulative geologic impacts: the Promontory Specific Plan, Ridgeview Village, and Folsom South of 50. These projects would be constructed in accordance with the most recent version of the California Building Code construction and seismic safety requirements and recommendations contained in project-specific geotechnical reports. It is anticipated, therefore, that any potential impacts associated with geologic and soil conditions could be mitigated within these project sites.

Due to the relatively shallow depth to bedrock and the relatively low seismicity of the area, the potential for damage because of site liquefaction, slope instability, and surface rupture on the project site are considered negligible. Potential impacts could be associated with loss of topsoil and construction on expansive soils. However, with the incorporation of Mitigation Measures 4.3-1 and 4.11-3, all geologic, soils, and seismic hazard impacts of the project would be less than significant. Project-specific impacts on geology, soils, and seismicity would not cause or contribute to a significant cumulative effect and would not be cumulatively considerable.

HAZARDS AND HAZARDOUS MATERIALS

Depending on the pathway of migration, the geographic scope for cumulative effects relating to hazards and hazardous materials would be the air basin, watershed boundary, groundwater basin, or extent of affected soils. Materials delivery routes also would be included in the event of a traffic accident-related spill.

There is no existing significant adverse cumulative condition relating to hazards and hazardous materials in the vicinity of the Project and, alone, the incremental impacts of the project would not cause a significant adverse cumulative impact. Further, construction activities associated with the project would not substantially increase the hazard potential in the study area, and operation of the project would have no impact.

Other projects in the vicinity of the project would create similar hazardous material effects during standard construction activities. Current and reasonably foreseeable projects would also be required to comply with measures that would minimize and/or avoid exposure of hazardous materials to people or the environment.

Accordingly, the cumulative impact would be less than significant and the project would not have a cumulatively considerable incremental effect on potential hazards.

PUBLIC SERVICES

The study area for the cumulative impact to public services is the service area for the local fire department, sheriff's office, and school district, as well as the planning area of the general plan for recreation amenities. Potential impacts to public services are generally regulated by policies in the general plan such that the cumulative contribution of the project to local demand for public services is considered.

The project would be required to provide fire and emergency medical services to the project site consistent with the *El Dorado County General Plan* and El Dorado Hills Fire District standards. The project would be reviewed, pursuant to Policy 5.7.3.1 of the *El Dorado County General Plan*, by the Sheriff's Department to determine the ability of the department to provide protection services to the site and existing development at acceptable levels. Impact fees recommended by the Sheriff's Department may be incorporated as conditions of approval. Payment of school facility mitigation fees would mitigate impacts on the provision of adequate school facilities. Specific school facility developments would be subject to environmental review on a project-by-project basis. As discussed in Section 4.2, "Population, Employment, and Housing," of this EIR, the proposed project would generate an estimated population of 929; given the EDHCS standard of 5 acres of park land per 1,000 residents, the proposed project would meet the standard and would increase the amount of parks acreage available to District patrons.

As described above, the project would not result in a cumulatively considerable contribution to demand for public services. Because the projects identified in Table 5-1 would be subject to standards and mitigating requirements similar to those described above, no cumulative adverse impact to public services is expected.

UTILITIES AND ENERGY CONSERVATION

Water

The El Dorado County General Plan EIR (2003) evaluated water supply capacity and concluded that buildout of the General Plan would result in a significant and unavoidable impact due to projected water supply shortage. The El Dorado County Board of Supervisors certified the 2003 General Plan EIR prior to the approval of the 2004 General Plan. As part of that approval the Board adopted a statement of overriding considerations for the significant and unavoidable impacts identified in the General Plan EIR, including the significant impact related to water supply. The proposed project is consistent with the land use type and density designated for the site in the general plan, and is therefore consistent with the overall water demand projections included in the 2003 General Plan EIR.

CEQA Section 15183(a) mandates that projects that are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific effects which are peculiar to the project or its site. The proposed project does not include any features that would require unusually high water demand; therefore, regarding water supply, there would be no project-specific effects peculiar to the project or its site. Consistent with CEQA Section 15183(1), the project's impacts related to water supply were already evaluated as part of the 2003 General Plan EIR, and no additional CEQA analysis is required.

Since certification of the 2003 General Plan EIR, El Dorado Irrigation District (EID) and El Dorado County Water Agency (EDCWA) have both published updated water supply documents. The updated information confirms the 2003 General Plan EIR's conclusion. Because several commenters raised issues related to water supply, a summary of the information provided in these more recent documents is included below to demonstrate that, although the numbers are different, the 2003 General Plan EIR's conclusion remains

valid. For the purposes of this discussion, the geographic scope considered for water supply encompasses both El Dorado County and the EID service area.

EDCWA was created in 1959 to ensure that El Dorado County has adequate water to serve its multiple needs now and in the future. There are five public water purveyors in El Dorado County and private water companies. El Dorado Irrigation District owns and operates Jenkinson Lake Reservoir in Pollock Pines and El Dorado Hydroelectric FERC Project 184 (Project 184), which includes Echo, Aloha, Caples, Silver lakes and contracts for water from Folsom Lake. Georgetown Divide Public Utility District owns and operates Stumpy Meadows Reservoir east of Georgetown. Grizzly Flats Community Services District owns and operates its reservoir. South Lake Tahoe Public Utility District serves its customers from wells. Tahoe City Public Utility District serves its customers from ten ground water and two spring wells.

The EID’s potable water system is composed of a main contiguous system which serves over 95 percent of its customers, and two satellite systems. The three principle diversion points for delivering into the main system are: EID-owned and operated Sly Park Dam and Jenkinson Lake; the EID-owned and operated Project 184 at Forebay Reservoir; and Folsom Reservoir via a United States Bureau of Reclamation (USBR) Water Service Contract, a Warren Act Contract for re-diverted EID ditch and Weber Reservoir water supplies, and State water right Permit 21112. The two satellite diversions include potable water deliveries to Outingdale by diverting water from the Middle Fork of the Cosumnes River and Strawberry by diverting water from the upper South Fork American River. The EID also diverts water into the Crawford Ditch from the North Fork of the Cosumnes River as a raw water source. Aside from the USBR Contract, the EID does not currently purchase water from any wholesale supplier. In the future, EID expects to purchase water wholesale from EDCWA, which is pursuing a USBR Contract under Public Law 101-514.

According to EID’s 2010 Urban Water Management Plan, water demands are expected to increase from approximately 40,000 acre-feet per year (AFY) to 88,000 AFY in 2030. Additional supplies are anticipated through: water purchased from EDCWA, supplier-produced surface water under an agreement with the Sacramento Metropolitan Utilities District (SMUD), and increased recycled water supplies. Water supply and demand projections, under normal year conditions, are shown in Table 5-2. As indicated, there would be a surplus in normal-year water supply through 2030.

Year	Supply totals (AFY)	Demand totals (AFY)	Surplus (AFY)
2015	79,046	48,921	30,125
2020	110,568	52,267	58,301
2025	112,420	60,028	52,392
2030	122,420	69,620	52,800

AFY=acre-feet per year
 Source: EID 2011

Urban Water Management Plans (UWMPs) must consider multiple dry year water supply and demand scenarios for a three-year period. The multiple dry water year scenario is based on water year data from 1987 through 1992, when supplies decreased by 94 percent in the first year, 87 percent in the second year, and 84 percent in the third year. The 2010 UWMP assumed that 20 percent demand reduction would be in place by 2020 (see Section 4.14.2, discussion of Senate Bill SB X7-7, Water Conservation Act of 2009). Through 2030, water supply is expected to be greater than demand under the multiple dry year scenario; surplus amounts are shown in Table 5-3.

Year	First Year (AFY)	Second Year (AFY)	Third Year (AFY)
2015	22,528	17,528	16,028
2020	34,182	24,182	17,682
2025	26,421	16,421	9,921
2030	16,829	6,829	329

Notes: AFY= acre feet per year
Source EID 2011

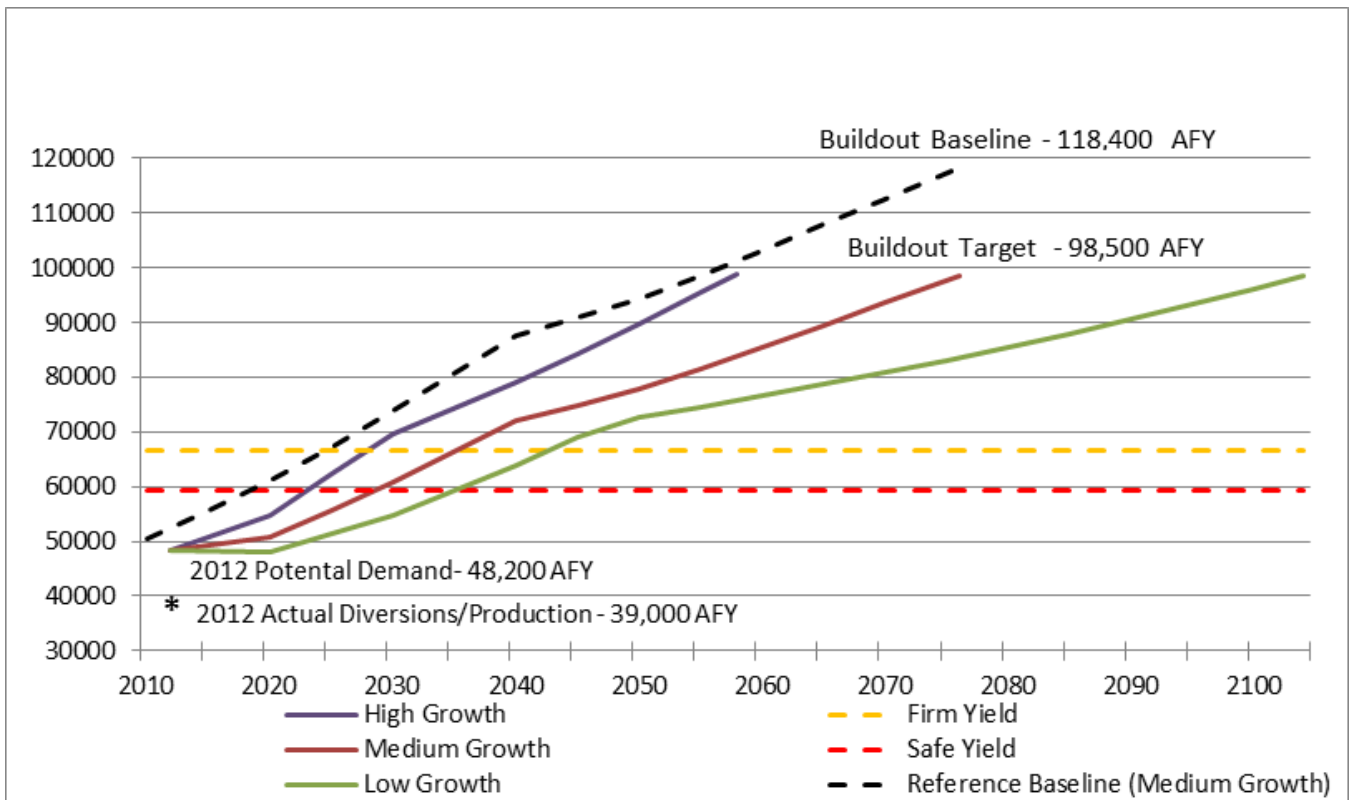
In addition to UWMPs prepared by EID, the El Dorado County Water Agency prepares Water Resources Development and Management Plans (WRDMPs). WRDMPs are developed to ensure that adequate water supplies are available for existing and future uses in El Dorado County. The most recent version of the WRDMP is the 2014 West Slope Update, which includes projected future water demands for West Slope water surveyors, for the year 2030 and build-out conditions, which were estimated for low-, medium-, and high-growth rate scenarios. The 2030 timeframe is used to be consistent with other contemporary studies and reports, such as UWMPs. The 2014 West Slope Update addresses the following water purveyors: EID, Georgetown Divide Public Utility District (GDPUD), and Grizzly Flat Community Services District. Data contained in the 2014 West Slope Update includes different types of information than presented in the 2010 UWMP. For instance, growth rate projections are based on high-, medium-, and low-growth rate scenarios, and agricultural land use, crop water use, and changes in the types of land use developments are considered (EDCWA 2014).

The 2014 West Slope Update indicates that El Dorado County's western slope is expected to experience a shortfall of approximately 69,000 acre-feet of water per year at full build-out (2075, under the medium-growth scenario). While this quantity reflects county-wide estimates, each of the water supply areas were evaluated. For the purposes of this discussion, the following information contains water supply and demand for the EID water supply area. In addition to a normal year scenario, two scenarios were considered that address projected demand: existing/additional supply with 50 percent Central Valley Project (CVP) Cutback; and an assumed 10 percent supply decrease and 5 percent increase in irrigation demand due to climate change (EDCWA 2014). These supply decreases were not assumed in EID's UWMP.

For the purposes of water use planning, the 2014 West Slope Update considers yield, rather than multiple dry years discussed in the 2010 UWMP. Yield is considered as both firm yield and safe yield. Firm yield quantities are based on the assumption that approximately 95 percent of the time sufficient water supply is available to meet normal water demands; but, 5 percent of the time water shortages may occur. If insufficient water supply is projected, voluntary or mandatory conservation measures may be implemented. Safe yield is defined by the critical period of that system, meaning the most severe drought experienced during a period of record. If a more severe drought occurs, the critical period changes and the safe yield is reduced.

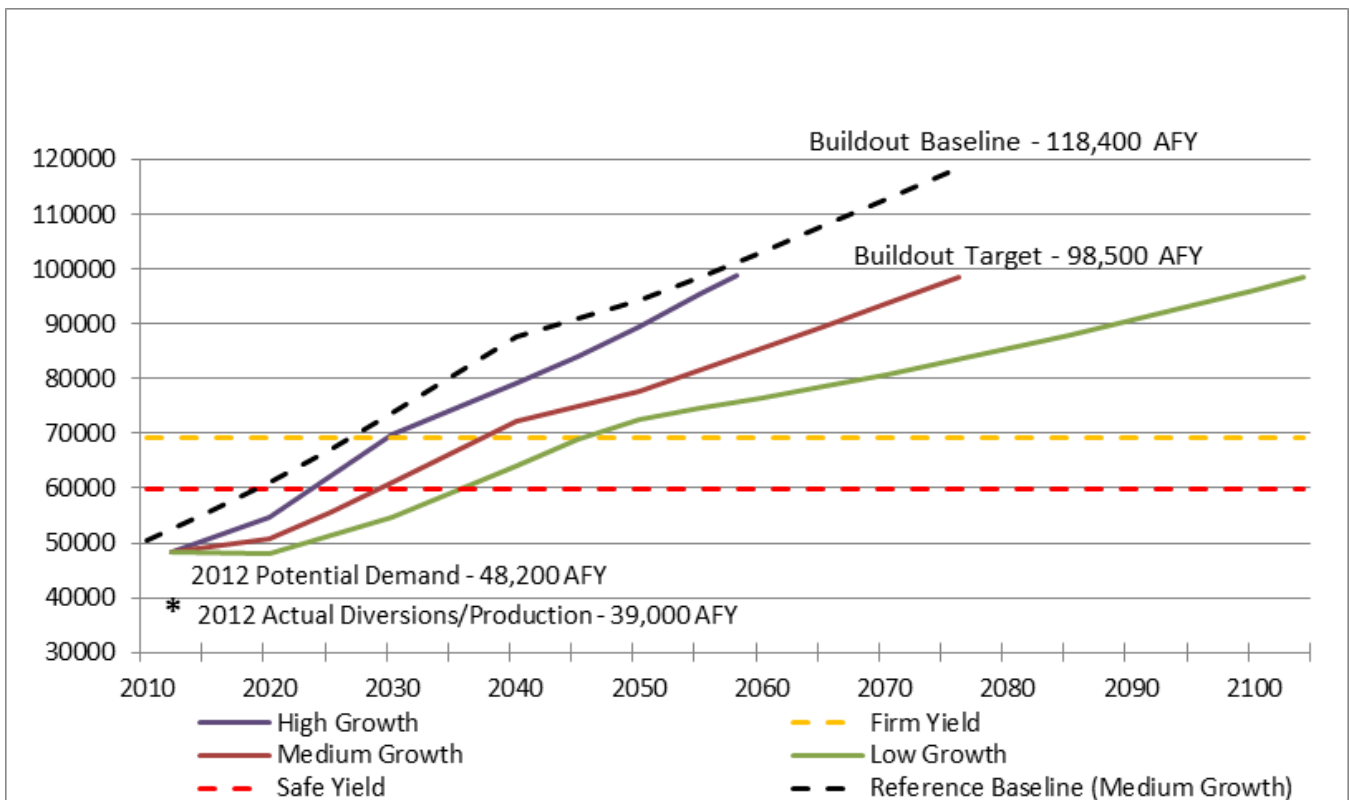
Exhibit 5-2, 5-3, and 5-4 provide a graphical comparison of each water supply scenario (existing, 50 percent CVP cutbacks, and climate change) under a range of growth projections (low, medium, and high).

For the Existing Water Supply scenario shown in Exhibit 5-2 when considering firm yield, new supply is needed as early as 2028 for the high growth scenario and as late as 2045 for the low growth scenario. For the medium growth scenario new supply is needed by 2035. When considering safe yield, new supply is needed as early as 2024 for the high growth scenario and as late as 2036 for the low growth scenario. For the medium growth scenario, new supply is needed by 2029 (EDCWA 2014).



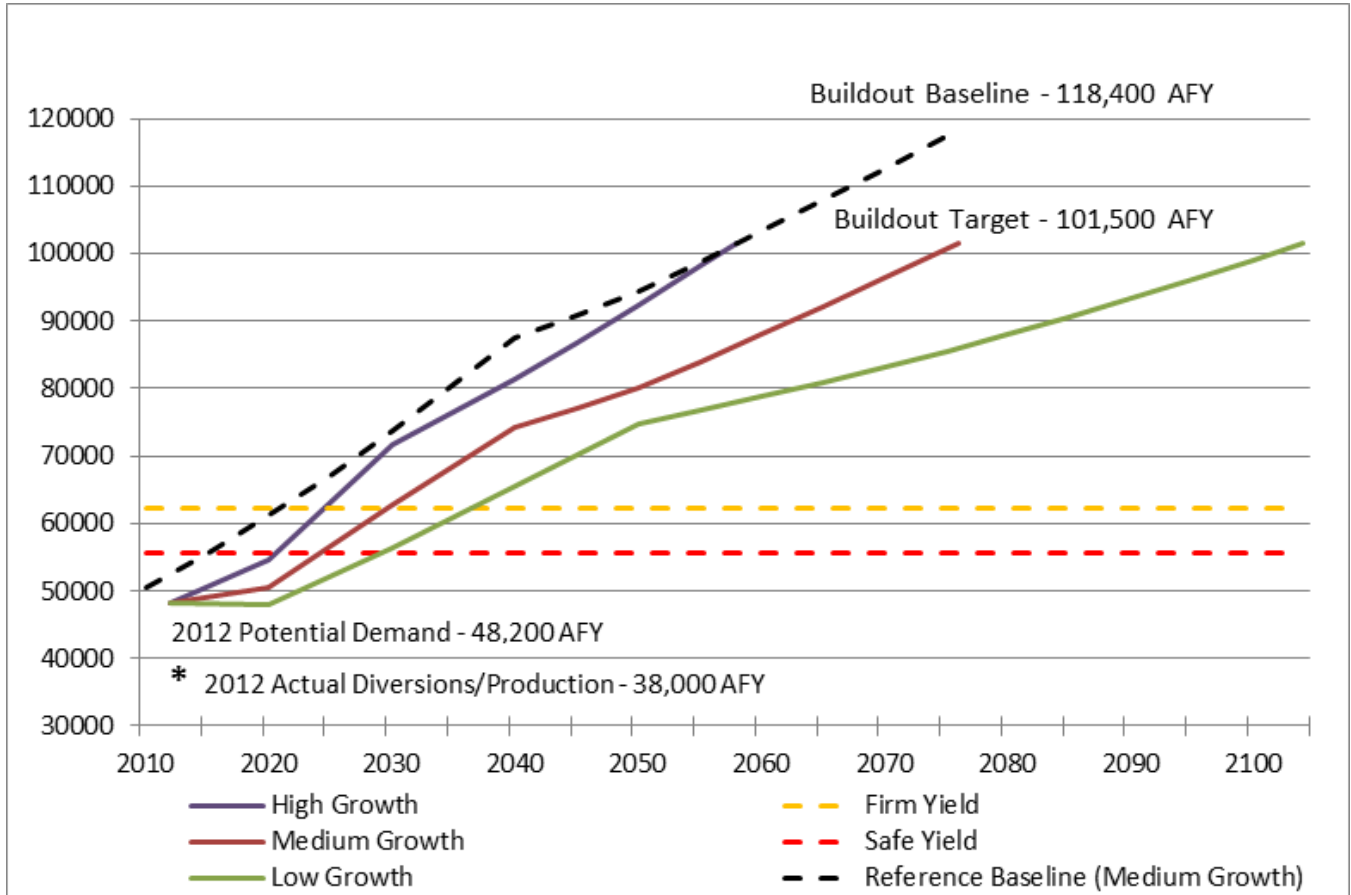
Source: EDCWA 2014

Exhibit 5-2 EI Dorado Irrigation District Existing Supply versus Projected Demand (acre- feet)



Source: EDCWA 2014

Exhibit 5-3 EI Dorado Irrigation District Existing and Additional Recycled Water Supply w/ 50 percent CVP Cutbacks versus Projected Demand (acre-feet)



Source: EDCWA 2014

Exhibit 5-4 El Dorado Irrigation District Existing and Additional Recycled Water Supply versus Projected Demand w/Climate Change (acre-feet)

For the “Existing and Additional Supply with 50 percent CVP Cutback” scenario shown in Exhibit 5-3, when considering firm yield, new supply is needed as early as 2030 for the high growth scenario and as late as 2046 for the low growth scenario. For the medium growth scenario new supply is need by 2038. When considering safe yield, new supply is needed as early as 2024 for the high growth scenario and as late as 2036 for the low growth scenario. For the medium growth scenario new supply is needed by 2030 (EDCWA 2014).

For the “Existing and Additional Supply w/Climate Change” scenario shown in Exhibit 5-4, when considering firm yield, new supply is needed as early as 2025 for the high growth scenario and as late as 2037 for the low growth scenario. For the medium growth scenario new supply is needed by 2030. When considering safe yield, new supply is needed as early as 2022 for the high growth scenario and as late as 2030 for the low growth scenario. For the medium growth scenario new supply is needed by 2025 (EDCWA 2014).

In order to satisfy these new water supply needs various projects were identified in the 2014 West Slope Update. These potential supplies include the following (EDCWA 2014).

- Main Ditch Piping-** Piping the Main Ditch between Forebay Reservoir and the Reservoir 1 Water Treatment Plant. This project would reduce seepage and evapotranspiration losses by an estimated 1,300 acre-feet per year. This project is part of EID’s plan to achieve its mandated SB X-7 water conservation goal and would not reduce the water supply need identified in the WRDMP.

- ▲ Folsom Lake Water Supplies.** A new Water Service Sub-contract with EDCWA for USBR Central Valley Project water authorized by legislation, Public Law 101-514 (Fazio Water). Under this law, EDCWA was allocated 15,000 acre-feet from Folsom Lake to serve the future municipal and industrial needs of the county (West Slope). This water supply is contingent on execution of a new water service contract between EDCWA and USBR. For planning purposes, it has been assumed that this supply would be shared between EID and GDPUD. Potential allocation scenarios range from 15,000 acre-feet being taken by EID to 11,000 acre-feet being taken by GDPUD and 4,000 acre-feet taken by EID.

It should be noted this supply source is subject to cutbacks up to 50 percent in dry years under USBR's current and proposed shortage policy, as was the case in 2014. Further cutbacks to health and safety levels are also possible under USBR's shortage policy. It is expected that USBR Water Service Contracts will be cut back more frequently in the future under the National Marine Fisheries Service (NMFS) 2009 biological opinion on the long-term operations of the CVP and State Water Project. Reclamation's recently completed informal consultation for this project with NMFS further calls into question the certainty and timing of this supply. According to the NMFS concurrence letter dated June 2, 2014:

“EDCWA will adhere to restrictions on diversions set forth by Reclamation and/or applicable biological opinions to ensure that the proposed project will not result in any decrease to the available cold water pool in Folsom Reservoir.”

The 2009 biological opinion referenced in the concurrence letter requires improvements to Reclamation's:

“...ability to manage the cold water pool to provide suitable temperatures for steelhead through physical and structural improvements at the dams. More specifically, improvements to the temperature control device at the EID intake structure or the construction of the most effective device for conserving cold water in Folsom Reservoir...”

- ▲ El Dorado Water Reliability Project** (i.e., Supplemental Water Rights Project). This project would entail 40,000 acre-feet of new water to be stored in, and diverted from, SMUD's Upper American River Project in accordance with the El Dorado - SMUD Cooperation Agreement. The water would be supplied via a diversion at SMUD's Whiterock Penstock, located approximately 3 miles northeast of Placerville, and transmitted to a new treatment plant. Under the water rights application, water can also be taken at Folsom Lake through existing facilities to potentially backfill CVP shortages in dry years. This water supply option is based on acquiring the water rights and paying for power foregone to the El Dorado Water and Power Authority.

This supply source is subject to cutbacks at the Whiterock Penstock in the most critically dry years under the SMUD Cooperation Agreement. Presently, there are no restrictions if taken at Folsom Reservoir.

- ▲ Alder Dam and Reservoir.** The reservoir would have a capacity of 31,700 acre-feet and a safe yield of 11,250 acre-feet. The water would be taken at Jenkinson Lake via the Hazel Creek Tunnel, Forebay Reservoir, downstream at Folsom Reservoir, or at a new point of diversion such as the White Rock Penstock (EDCWA 2014). Construction and use of this project would result in a rock-filled dam, approximately 143 feet high with a crest length of 800 feet and width of 30 feet at elevation 5,333 feet. The Alder Reservoir would have a capacity of 31,700 acre-feet, capturing runoff from approximately 18.5 square miles (EID 2013a).

Additional water use efficiency projects such as more aggressive pipeline replacements, and implementation of additional water conservation measures could also reduce the need for additional supplies (EDCWA 2014).

Wastewater

This Wastewater Facilities Master Plan provides a long-term program for the collection and treatment of wastewater and the use of recycled water resources for EID. Wastewater flow projections associated with this plan provide a basis for planning future capital improvements.

According to the Wastewater Facilities Master Plan, the existing ADWF at the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) is 2.65 million gallons per day (mgd). When considering future additional flow at buildout of the County's general plan (2026), EDHWWTP would receive an additional 2.80 mgd. As a result, the average dry weather flow capacity required at the EDHWWTP is estimated to be 5.45 mgd. This wastewater treatment plant was recently expanded (El Dorado Phase III Expansion) to increase the rated capacity from 3.0 to 4.0 mgd. A subsequent expansion phase will be implemented to provide the ultimate buildout capacity of 5.45 mgd (EID 2013b). According to long-range planning efforts, wastewater treatment plant expansion should be online and operational by the time the influent flow reaches approximately 80 to 90 percent of the plant capacity to provide flexibility to accommodate unforeseen conditions. There is potential that expansion of the EDHWWTP could result in environmental impacts, such as issues associated with biological resources, air quality, and water quality depending on the scope and extent of an expansion. Thus, because the project would contribute toward the need for expansions under EID's Capital Improvement Program, the proposed project would contribute to a potential cumulatively significant impact.

Electricity, Natural Gas and Telecommunication Systems

The potential impact of increased natural gas and electricity services is not cumulative in nature because PG&E periodically considers the need to purchase more energy resources. In addition, infrastructure considerations are site-specific, and must be addressed during individual project planning and development. Therefore, the project would not have a considerable contribution such that a new significant cumulative electricity, natural gas, or telecommunication impacts would occur.

Increased Solid Waste

Impact 4.14-3 considers the existing plus project condition to determine if the project would exceed capacity at the WERS Transfer Station and Material Recovery Facility and the Potrero Hills Landfill. As described, both facilities are currently accepting quantities of waste far below their accepted level. Therefore, the project would not have a considerable contribution such that a new significant cumulative solid waste impact would occur.

5.2 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the State CEQA Guidelines, an EIR 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. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Although growth inducement itself is not considered an environmental effect, it could potentially lead to adverse environmental effects.

Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped. Typically, development projects on sites that are designated for development and surrounded by existing suburban uses are not considered adversely growth-inducing because growth in areas that already have development and infrastructure available to serve new development are generally considered in established planning documents.

The proposed project would develop 317 single-family residential units, which could increase the population within the county by approximately 929 residents. The project includes a zoning change to apply a PD zoning district. Planned residential developments allow for innovative planning to fulfill the development strategies of the *El Dorado County General Plan* by encouraging balanced growth that reflects the character and scale of the community. Under the PD zoning district, the general plan encourages uses that provide a public benefit through clustering intensive land uses to minimize impacts to natural resources, cultural resources, and visual resources while also promoting public health, safety, and welfare in the community. The PD districts are not intended to encourage further development in the surrounding area. This development would occur within the General Plan Community Region Boundary (urban limit line) of El Dorado Hills; therefore, the general plan anticipates development at the project site.

The project would be developed in a built-out area of El Dorado County and would connect to existing infrastructure. No offsite utility extensions are proposed. An established transportation network exists in the project area that offers local and regional access to the project site. Onsite circulation would be facilitated by construction of internal streets.

The project would provide improved circulation between El Dorado Hills and the City of Folsom. Undeveloped properties adjacent to Saratoga Way between El Dorado Hills Boulevard and Finders Way are designated Commercial and properties west of Finders Way are designated High-Density Residential. The absence of the Saratoga Way connection to Iron Point Road may not currently fully preclude development of commercial uses adjacent to Saratoga Way between El Dorado Hills Boulevard and Finders Way; however, it can be reasonably anticipated that the improved circulation and access to these properties that would result from the extension of Saratoga Way to Iron Point Road could foster development of the commercial properties.

The extension of Saratoga Way and the potential development of residential and commercial uses discussed above are consistent with the *El Dorado County General Plan*. Specifically, the Circulation Element identifies the extension of Saratoga Way as a four-lane facility, and the Land Use Element designates the adjacent properties as Commercial and High-Density Residential. As such, the CEQA review conducted by the County for the *El Dorado County General Plan* included consideration of these potential future uses and the general environmental impacts that could occur as a result of such development. Development of these adjacent areas would also be subject to project-specific CEQA review by the County to identify specific environmental effects.

Therefore, although the Saratoga Estates project would provide residences for approximately 929 residents, the project would not have growth inducing effects due to expansion of utility infrastructure. To the extent that the extension of Saratoga Way promotes development of properties in the area, it is anticipated that this development would be consistent with the *El Dorado County General Plan* and could be subject to additional environmental review.

5.3 SIGNIFICANT AND IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project would result in significant irreversible changes to the physical environment. The State CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is addressed below. Although the project would require commitment of resources, these environmental changes are not considered significant for the purposes of this analysis.

5.3.1 Changes in Land Use Which Commit Future Generations

Site preparation, construction, and operation of the proposed project would irreversibly commit future generations to a suburban land use on approximately 80 acres the project site. The remaining 42 acres of the site would be maintained as open space.

5.3.2 Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated with development of the proposed residential project. The use of hazardous materials beyond standard construction supplies and household hazardous waste is not proposed.

5.3.3 Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. The presence of agricultural and mineral resources is not established for the project site. As such, developing the property would not result in conversion of agricultural lands or loss of access to mineral resources.

Project construction would consume fossil fuels and other non-renewable or slowly renewable resources through the operation of vehicles and equipment for site grading and construction activities. Other resources, including materials such as wood products, metals, cement, asphalt and other products, would be used or consumed during project construction or will be permanently committed as project materials. Operation of the proposed project would also require additional electricity, water, and natural gas; however, the scale of such consumption would be typical for a residential development of this size.

ENERGY CONSERVATION

Appendix F of the *CEQA Guidelines* requires that an EIR include information on the energy implications of a project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Implementation of the proposed project would use more energy than the existing onsite conditions. The implementation of the project would consume a large amount of energy in both the short-term during project construction and in the long-term during project operation. The proposed project would consume energy in four forms: (1) the fuel energy consumed by construction vehicles; (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass; (3) ongoing energy required for interior and exterior lighting, heating/ventilating/air conditioning (HVAC), computer and home electronics systems, electric cooking ranges, refrigerators, freezers, and security systems; and (4) the consumption of transportation energy.

Construction Vehicles. Fossil fuels used for construction vehicles and other energy consuming equipment would be used during project construction. Standard construction practices discourage unnecessary idling or through the operation of poorly maintained equipment.

Construction Materials. The incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials such as lumber and gas would not substantially increase demand for energy compared to overall local and regional demand for construction materials. Construction materials would not be used in a wasteful manner to reduce project construction costs.

Operational Energy Requirements. In accordance with California Energy Code Title 24, the proposed project would not use energy in a wasteful manner. Minimum efficiency standards for household appliances, water and space heating and cooling equipment and insulation for doors, pipes, walls and ceilings would ensure that the proposed project would not use energy in a wasteful manner.

Transportation Energy. Implementation of the proposed project would require additional energy for transportation uses within El Dorado County. State and federal regulations regarding fuel efficiency standards for vehicles in California are designed to reduce wasteful, unnecessary and inefficient use of energy for transportation. The proposed project would include pedestrian sidewalks and trails, which

promotes non-auto travel. The inclusion of parks and open space areas would also reduce the energy consumption related to vehicle miles traveled by providing walkable and bikeable access to outdoor recreation facilities.

5.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the State CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures.

Implementation of the proposed project would result in significant and unavoidable impacts related to noise. During construction, residences near the project site would be exposed to temporary noise in excess of standards established by the County. Mitigation is proposed to reduce construction-related noise. However, the reduction required to comply with noise standards would not be achievable. During operation, additional vehicles would travel on Saratoga Way and Wilson Boulevard. This would result in a substantial noise increase to some existing residences on Saratoga Way. A sound wall is currently in place that would continue to provide noise reduction, and no additional feasible mitigation has been identified.

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6 PROJECT ALTERNATIVES

6.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

The State CEQA Guidelines require analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project (Section 15126.6[a]). The range of potentially feasible alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The potential feasibility of an alternative may be determined based on a variety of factors, including economic viability, availability of infrastructure, and other plans or regulatory limitations. Specifically, Section 15126.6(f) (1) of the State CEQA Guidelines states, in part:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). The State CEQA Guidelines further require that the alternatives be compared to the project's environmental impacts and that the "no project" alternative is considered (Section 15126.6[d] [e]).

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The requirement that an EIR evaluate alternatives to the proposed project or alternatives that address the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code and the CEQA Guidelines direct that the EIR need "set forth only those alternatives necessary to permit a reasoned choice." The ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body (See PRC Section 21081[a] [3].)

6.1.1 Key Considerations

The objectives of the proposed project are provided in Chapter 3, "Project Description." Potential project alternatives carried forward for analysis were selected based on their ability to meet most of the project's stated objectives; avoid or reduce the magnitude project-specific significant and unavoidable effects; or lessen the mitigation requirements of the proposed project. The feasibility of alternatives was also considered.

6.2 ALTERNATIVES DISMISSED FROM DETAILED EVALUATION

The following describes other alternatives considered by El Dorado County, but dismissed from further evaluation in this Draft EIR, with a brief description of the reasons for their rejection.

6.2.1 Off-site Alternative

The possibility of an off-site location was considered as an alternative to the proposed project; however, the applicant does not currently hold vacant property that could be feasibly developed with a project that would meet the primary project objectives. It is also noted that the project site is surrounded by existing residential development and roadway facilities. Much of the other available vacant land in the County (in contiguous sections large enough to accommodate 317 single-family units) is located in more rural areas where natural resources are often more prevalent and less disturbed. The project site is also just east of the County's border with Sacramento County in which many of the employment centers are located. Locating 317 units on a different site would not likely result in substantial reduction or avoidance of any project-related impacts to natural resources and could increase trip lengths and vehicle miles traveled associated with residents commuting farther, consequently increasing air pollutant and greenhouse gas (GHG) emissions. For these reasons, the off-site alternative was dismissed from detailed evaluation.

6.2.2 Employment Center Alternative

El Dorado Hills is primarily a residential suburb with many employed residents commuting to outside areas. An employment center located at the project site could reduce vehicle miles traveled (and subsequently reduce pollutant emissions, GHG emissions, and highway traffic) by placing an employment center closer to the residents of El Dorado Hills. However, this alternative would not be consistent with the County's General Plan designation for the site (High Density Residential). In addition, the employment center alternative would not be consistent with most of the project objectives. For these reasons, the employment center alternative was dismissed from detailed evaluation.

6.2.3 Alternate Saratoga Way Alignment

Since the release of the Notice of Preparation (NOP) in March 2015, minor modifications were made to the site plan, which is shown conceptually in Exhibit 2 of the NOP. The modifications resulted from a change in the proposed alignment to Saratoga Way based on input from County Transportation Department staff. The previous site plan showed proposed residences closer to Highway 50 and did not include the large park adjacent to Highway 50. Rather, a small park was previously proposed near the current terminus of Wilson Boulevard. The previous site plan also included one fewer unit than the currently proposed 317. The Alternate Saratoga Way Alignment was briefly considered as a potential alternative to the proposed project; however, it was determined to be infeasible because the roadway alignment was not consistent with County roadway standards and it was eliminated from further evaluation.

6.2.4 No Project, General Plan Buildout

State CEQA Guidelines Section 15126.6(e)(1) requires that the no project alternative be described and analyzed "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published...as well as 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” (Section 15126.6[e][2]). CEQA states that if the project is a development project on identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. This “No Project, No Development” scenario is discussed in detail below. However, CEQA further indicates that where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment. In other words, if disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this “no project” consequence should be discussed (Section 15126.6[e][3][B])

The El Dorado County General Plan designates the project site High Density Residential (HDR), which allows one to five dwelling units per acre. The project site is surrounded by existing residential development and roadways. It is reasonable to expect that if the proposed project were not approved, the project site would be developed. Because there are no other development plans pending for the site, it is assumed that any future development would be consistent with the General Plan land use designation. The proposed project is consistent with the land use type and overall density allowed under the General Plan, and it is likely that any alternative would be substantially similar. Therefore, it is assumed that the environmental impacts resulting from the No Project, General Plan Buildout Alternative would be substantially similar to the environmental impacts associated with the proposed project. A thorough comparative discussion is not necessary to reach this conclusion. Therefore, the No Project, General Buildout Alternative is dismissed from detailed evaluation below.

6.3 EVALUATION OF ALTERNATIVES

The following alternatives to the proposed project are evaluated in detail, as described below:

- ▲ Alternative 1: No Project, No Development
- ▲ Alternative 2: No Project, Saratoga Way Extension Only
- ▲ Alternative 2: Reduced Density
- ▲ Alternative 3: Maximum General Plan Buildout

For each alternative, a brief discussion of its principal characteristics is followed by an analysis of the alternative. The emphasis of the analysis is on a determination of whether or not the alternative would reduce, eliminate, or create new significant impacts, as well as the alternative’s relative beneficial effects compared to the proposed project and how well the alternative meets each of the project objectives. This section concludes with a discussion of the environmentally superior alternative.

6.3.1 Alternative 1: No Project, No Development

CEQA requires consideration of the No Project alternative, which addresses the impacts associated with not moving forward with the proposed project. The purpose of analyzing the No Project alternative is to allow decision-makers to compare the impacts of the proposed project versus no project. CEQA indicates that in certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” (Section 15126.[e][3][B].)

Because the project site is designated in the General Plan for residential development, and because the project site is surrounded on all sides by existing residential development and roadways, it is unlikely that

the project site would remain undeveloped. Therefore, in this case, the “practical result of the project’s non-approval” would not be perpetually undeveloped property, but would more likely be urban development. The No Project, No Development Alternative, discussed above under “Alternatives Dismissed from Detailed Evaluation,” assumes development of the project site consistent with the current General Plan land use designation. As concluded above, the No Project, No Development Alternative would be substantially similar to the proposed project and would result in similar impacts to the environment.

Although preservation of the existing undeveloped site condition is considered less likely than future development of the site, examination of the comparative environmental impacts between the proposed project and a “No Project, No Development” scenario is useful. Whereas the Draft EIR focuses on the direct, indirect, and cumulative impacts of the proposed project, the analysis of the No Project, No Development Alternative considers the effects of leaving the project site in its current condition.

EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use Compatibility

The No Project, No Development Alternative would not result in conflicts with existing residential land uses surrounding the project site because the relationship between the undeveloped property and the residential neighborhoods would remain unchanged. Volunteer trails (trespass trails) on the site would continue to be used for walking and mountain biking. However, the County’s General Plan designates the project site for high density residential development, and the site is also zoned for residential development; therefore, maintaining the vacant condition of the site would not be consistent with the County’s General Plan and zoning. The No Project, No Development Alternative would not result in land use compatibility impacts.

Population, Employment, and Housing

The No Project, No Development Alternative would not result in new housing or generate additional population, nor would it result in direct or indirect impacts associated with population growth. As described above, this alternative would not be consistent with the General Plan designation for high density residential development.

Hydrology and Water Quality

Implementation of the No Project, No Development Alternative would result in no changes to the existing hydrology of the site. Although dirt roads and other exposed soil on the site show signs of erosion, the site is primarily grassland, and it is assumed that, overall, the site’s existing condition does not result in substantial sedimentation during storm events. No increased incidence of flooding would occur under this alternative. The proposed project is designed to avoid long-term impacts to on-site watercourses, and mitigation measures are included to minimize construction-related impacts to water quality. Furthermore, the proposed project includes municipal drainage facilities that control runoff and minimize the likelihood for localized flooding.

Biological Resources

Under the No Project, No Development Alternative no potential impacts to special-status species or sensitive habitat would occur. Implementation of the proposed project would result in potential impacts to special-status species and sensitive habitats. Although implementation of mitigation measures would reduce project-related impacts to a less-than-significant level, the No Project, No Development Alternative would result in no environmental effect.

Cultural Resources

Implementation of the No Project, No Development Alternative would not disturb any known or unknown cultural resources. Implementation of the proposed project would result in potential impacts to known and unknown cultural resources. Although implementation of mitigation measures would reduce project-related

impacts to a less-than-significant level, the No Project, No Development Alternative would result in no environmental effect.

Aesthetic and Visual Resources

Maintaining existing site conditions under the No Project, No Development Alternative would result in no change to the visual character of the site and would not obstruct any views of or from the site. Although the proposed project would not result in significant impacts related to aesthetics, the No Project, No Development Alternative would result in no effect to the existing visual condition.

Transportation and Circulation

Under the No Project, No Development Alternative, no traffic would be generated. No extension of Wilson Boulevard would be developed, and the connection for Saratoga Way would not be provided. Because no traffic would be generated by the No Project, No Development Alternative, no impacts to existing roadway or intersection operation would occur. However, because the Wilson Boulevard extension and Saratoga Way connection are both planned transportation facilities, implementation of the Alternative would not be consistent with the County's transportation plan. By comparison, the proposed project would generate additional traffic; however, potential impacts to roadway and intersection service levels would be mitigated to a less-than-significant level. Unlike the Alternative, the proposed project would implement the County's transportation plan by installing the extension of Wilson Boulevard and the connection of Saratoga Way.

Air Quality

The No Project, No Development Alternative would not generate any air pollutant emissions from construction activities or from operation of any development. The No Project, No Development Alternative would also not place any sensitive receptors on the project site. Although implementation of mitigation measures would reduce project-related air pollutant emissions and exposure of sensitive receptors to air contaminants, the No Project, No Development Alternative would result in no environmental effect related to air quality.

Climate Change

Under the No Project, No Development Alternative no additional GHG emissions would be generated beyond existing conditions. By contrast, the proposed project (mitigated) would annually generate 3,943 metric tons of carbon dioxide equivalent (MT CO₂e/year) at buildout. Although this level of GHG emission is not considered a significant impact, it is greater than the emissions generated under existing conditions.

Noise

The No Project, No Development Alternative would not generate any short-term or long-term noise above and beyond existing conditions. The proposed project, on the other hand, would generate significant noise impacts during construction and operation. The No Project, No Development Alternative would avoid significant environmental effects associated with the proposed project.

Geology and Soils

No changes to the site geology or soils would occur under the No Project, No Development Alternative. Some erosion associated with exposed soils was noted on the site and would likely continue to occur; however, the project site is primarily grassland, and no substantial erosion would be expected if the site remained undeveloped. Furthermore, no structures would be developed, and no risk would occur related to seismicity or unstable soils. By comparison, the proposed project would result in less-than-significant impacts related to soil erosion, but only with implementation of mitigation measures.

Hazards and Hazardous Materials

Implementation of the No Project, No Development Alternative would result in no changes to the existing condition of the site. No soil contamination has been identified on the project site. Naturally occurring asbestos has been detected on the site; however, under the No Project, No Development Alternative, no soil disturbance would occur on the site beyond existing conditions. Without soil disturbance, naturally occurring

asbestos is much less apt to become windborne and enter the lungs. By comparison, the proposed project would result in soil disturbance, and mitigation measures are identified to minimize impacts associated with naturally occurring asbestos.

Public Services

The No Project, No Development Alternative would not generate any demand for public services beyond existing conditions. The proposed project would generate additional demand for public services, but the additional demand would be accommodated without the need for expansion of facilities, and the project impact is considered less than significant.

Utilities and Energy Conservation

Under the No Project, No Development Alternative, no increased demand for public utilities would be generated. The proposed project, on the other hand, would generate additional demand for water supply, wastewater treatment, solid waste disposal, and electricity and gas service. All of these services can be provided to the proposed project without expansion of existing facilities. Water supply is constrained under future conditions, and impact associated with these constraints were analyzed in the County's General Plan EIR.

Summary

The No Project, No Development Alternative would result in no development on the project site and would therefore not be consistent with the County's General Plan land use designation (High Density Residential), as well as with the General Plan Housing Element and future housing supply projections. The No Project, No Development Alternative would also result in no connection of Saratoga Way or extension of Wilson Boulevard. These roadways are both identified in the County's transportation plan; implementation of the No Project, No Development Alternative would not be consistent with the transportation plan. Regarding impacts to natural and cultural resources, the No Project, No Development Alternative would generally result in a lower level of impact than the proposed project; however, because the proposed project includes mitigation measures to reduce impacts to biological resources, cultural resources, and hydrologic features, implementation of the No Project, No Development Alternative would not substantially reduce or avoid any project-related significant impacts to natural resources. Regarding impacts related to traffic, air quality, and GHG emission, the project-related impacts are less than significant after implementation of feasible mitigation measures; therefore, the No Project, No Development Alternative would reduce impacts, but would not substantially reduce or avoid any significant project impacts. The same is true for impacts related to health and safety (hazardous materials, seismic hazards, and unstable soils). The No Project, No Development Alternative would, however, avoid significant project-related noise impacts. Because the No Project, No Development Alternative would not involve any construction activities, the project's significant impact related to construction activities would be avoided. Also, the No Project, No Development Alternative would not result in the connection of Saratoga Way; therefore, the traffic volume of the existing Saratoga Way segments would not substantially increase and the significant noise impact would be avoided. Overall, because the No Project, No Development Alternative would result in reduction in the degree of project-related impacts for most of the environmental issues, and because the No Project, No Development Alternative avoids significant project impacts, the No Project, No Development alternative would result in less impact than the proposed project.

However, a major consideration for the No Project, No Development Alternative is that, although no development would occur on the project site, it is assumed that the housing identified for the site by the County's General Plan would need to be provided elsewhere to meet the County's housing needs. Provision of additional housing elsewhere in the County could result in significant environmental impacts, but since it is unknown where the housing would be provided (multiple sites would be possible) the type and level of environmental impact are unknown.

6.3.2 Alternative 2: No Project, Saratoga Way Extension Only

The extension of Saratoga Way (2 lanes) is included in the El Dorado County 10-year Capital Improvement Program (CIP). The No Project, Saratoga Way Extension Only Alternative assumes that the proposed 317-unit residential development is not constructed, but the County implements only the Saratoga Way extension as a 2-lane roadway, aligned similar to the proposed extension of Saratoga Way. It is assumed that the remainder of the project site would remain undeveloped. The Wilson Boulevard extension would not be constructed as part of this Alternative.

EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use Compatibility

The No Project, Saratoga Way Extension Only Alternative would not result in conflicts with existing residential land uses surrounding the project site because the relationship between the undeveloped property and the residential neighborhoods would remain unchanged. Volunteer trails (trespass trails) on the site would continue to be used for walking and mountain biking. However, the County's General Plan designates the project site for high density residential development, and the site is also zoned for residential development; therefore, maintaining the vacant condition of the site would not be consistent with the County's General Plan and zoning. The No Project, Saratoga Way Extension Only Alternative would not result in land use compatibility impacts.

Population, Employment, and Housing

The No Project, Saratoga Way Extension Only Alternative would not result in new housing or generate additional population, nor would it result in direct or indirect impacts associated with population growth. As described above, this alternative would not be consistent with the General Plan designation for high density residential development.

Hydrology and Water Quality

Implementation of the No Project, Saratoga Way Extension Only Alternative would require fewer changes to the site's existing topography and existing hydrology. Development of this Alternative would include much less impervious surface area which would increase surface water infiltration, and reduce sedimentation and urban pollutants in stormwater runoff. Under this Alternative it is assumed that Saratoga Way would be constructed to County standards and would be designed to include appropriate drainage. Implementation of this Alternative would still require mitigation measures (similar to the proposed project) to protect existing waterways from stormwater pollution associated with construction and operation of the extension of Saratoga Way.

Biological Resources

Under the No Project, Saratoga Way Extension Only Alternative, only a small section of the project site would be developed with the Saratoga Way extension. The remainder of the site would remain undeveloped, which would increase preservation of onsite vegetation and protection of species. However, even though the amount of soil disturbance would be greatly reduced, construction of implementation of the No Project, Saratoga Way Extension Only Alternative would not likely completely avoid any of the potential effects associated with the proposed project and would likely require mitigation measures similar to those required for the proposed project.

Cultural Resources

One known cultural resource was identified on the project site. Because the Saratoga Way alignment is not located near this resource, implementation of the No Project, Saratoga Way Extension Only Alternative would avoid impacts to the resource. Regarding unknown cultural resources, although the Alternative would require far less ground disturbance, it would still require the same mitigation measures for protecting unknown cultural resources as identified for the proposed project.

Aesthetic and Visual Resources

Under the No Project, Saratoga Way Extension Only Alternative, the majority of the project site would not be developed. This Alternative would result in much less change to the visual character of the site and would not obstruct any views of or from the site. Although the proposed project would not result in significant impacts related to aesthetics, the No Project, Saratoga Way Extension Only Alternative would result in less effect to the existing visual condition.

Transportation and Circulation

Implementation of the No Project, Saratoga Way Extension Only Alternative would not result in any development that would generate additional traffic. This Alternative includes only extension of Saratoga Way as included in the County's CIP. Although the operation of the extension of Saratoga Way would result in no traffic generation, it would result in redistribution of existing traffic. As part of the project traffic study (See Appendix B), Kimley-Horn evaluated potential traffic impacts associated with construction of only a 2-lane extension of Saratoga Way without the proposed residential development. The analysis shows that under existing conditions, traffic impacts would be substantially similar to the proposed project and the Alternative would actually result in an additional significant impact at the intersection of Saratoga Way at Finders Way. This is because the extension of Wilson Boulevard under the proposed project alleviates congestion at the intersection of Saratoga Way at Finders Way. Similar mitigation measures would be required for this Alternative and the overall traffic impacts would be similar to the proposed project.

Air Quality

Because the area of ground disturbance is much smaller and no structures would be developed, the No Project, Saratoga Way Extension Only Alternative would require less construction and would generate fewer construction-related emissions than the proposed project. This Alternative would also generate no vehicle trips and would therefore generate far fewer operations-related emissions than the proposed project. The proposed project's air-quality-related impacts would be reduced to a less-than-significant level by implementation of mitigation measures. Similar mitigation measures would likely be required for the construction of the Saratoga Way extension under the Alternative.

Climate Change

Implementation of the No Project, Saratoga Way Extension Only Alternative would not result in any development that would generate additional vehicle trips or any additional energy consumption during project operation. Although the Alternative would result in some generation of GHG associated with construction, these GHG emissions would be less than the GHG generated during construction of the proposed project. Also the Alternative would not generate substantial additional operations-related GHG emissions beyond existing conditions. By contrast, the proposed project (mitigated) would annually generate 3,943 metric tons of carbon dioxide equivalent (MT CO₂e/year) at buildout. Although this level of GHG emission is not considered a significant impact, it is greater than the emissions generated under the No Project, Saratoga Way Extension Only Alternative.

Noise

The No Project, Saratoga Way Extension Only Alternative would result in substantially less construction noise than the project and would likely avoid a significant project-related impact because construction of the Saratoga Way Extension would occur much farther away from nearby houses than the proposed project construction. However, the Alternative would not avoid the project's significant impact associated with increased roadway noise because this roadway noise increase is attributed mostly to the opening of the proposed Saratoga Way Extension. However, overall, the Alternative would result in substantially reduced noise impacts.

Geology and Soils

The No Project, Saratoga Way Extension Only Alternative would require less soil movement and would preserve most of the site's natural vegetation. The proposed project would result in less-than-significant impacts related to soil erosion with implementation of mitigation measures. Also, the Draft EIR identifies

mitigation measures to reduce impacts associated with development on fill material. These potential impacts and the mitigation measures required to reduce the impacts would also apply to the Alternative.

Hazards and Hazardous Materials

The No Project, Saratoga Way Extension Only Alternative would require much less soil disturbance than the proposed project. No existing soil contamination was detected; however, NOA was detected in several samples taken across the project site. Although less soil disturbance would be required under the Alternative, similar mitigation measures would be required to reduce potential impacts related to NOA.

Public Services

The No Project, Saratoga Way Extension Only Alternative would not generate any demand for public services beyond existing conditions. The proposed project would generate additional demand for public services, but the additional demand would be accommodated without the need for expansion of facilities, and the project impact is considered less than significant.

Utilities and Energy Conservation

Under the No Project, Saratoga Way Extension Only Alternative, no increased demand for public utilities would be generated. The proposed project, on the other hand, would generate additional demand for water supply, wastewater treatment, solid waste disposal, and electricity and gas service. All of these services can be provided to the proposed project without expansion of existing facilities. Water supply is constrained under future conditions, and impact associated with these constraints were analyzed in the County's General Plan EIR.

Summary

Implementation of the No Project, Saratoga Way Extension Only Alternative would result in the construction of the Saratoga Way extension and would leave most of the site undeveloped. Under this Alternative, fewer impacts related to water quality, cultural resources, and biological resources would occur, although similar mitigation measures would be required for construction activities. Also, because no residential development would occur, the Alternative would not generate vehicle trips and would require no construction of buildings or internal roadways. For this reason, impacts related to emissions of air pollutants during construction and operation would be lower under the Alternative. Because the Alternative would place construction activities much further from noise-sensitive land uses, it would avoid the proposed project's significant impact related to short-term construction noise. However, the Alternative would not avoid the project's significant impact related to increased roadway noise due to increased traffic using the Saratoga Way connection. As described above, the Alternative's traffic impacts, once mitigated, would be substantially similar to the proposed project. The No Project, Saratoga Way Extension Only Alternative would result in an overall lower level of impact to the environment than the proposed project.

Similar to the No Project, No Development Alternative, although no residential development would occur on the project site, in order to meet the County's housing needs, residential development would likely need to be provided elsewhere in the County. This could result in significant environmental impacts, but because the specific locations are unknown, the type and level of environmental impact are unknown.

6.3.3 Alternative 3: Reduced Density

The Reduced Density Alternative assumes development of the project site at the lowest density contemplated under the County's General Plan land use designation for the project site: High Density Residential (HDR). The General Plan's HDR designation allows residential development at a density ranging from one to five dwelling units per acre. Therefore, assuming the lowest density of one dwelling unit per acre, the Reduced Density Alternative would include a total of 122 single-family units (almost 200 fewer units than the proposed project). The County's General Plan (Objective 2.2.3) encourages clustered development to preserve natural topography. Therefore, this reduction in density would be accomplished primarily by

clustering lots. Even with clustering, the average lot size would likely be somewhat larger than the proposed project, due to the additional space and flexibility. Clustering of smaller lots to allow for increased open space and parkland would reduce the overall development footprint of the proposed project, and the alternative would involve less grading. Under the Reduced Density Alternative, opportunities would likely exist for maintaining a more natural topography in some areas of the project site. Because this alternative includes fewer dwelling units, fewer roads would be needed, and overall impervious surface area would be reduced. The Reduced Density Alternative would include the Wilson Boulevard extension and Saratoga Way connection similar to the proposed project.

EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use Compatibility

Similar to the proposed project, the Reduced Density Alternative would be consistent with the County's General Plan designation (HDR) for the site. Also similar to the proposed project, single-family residential use is consistent with the existing surrounding single-family development. Impacts related to land use compatibility would be considered *similar* to the proposed project.

Population, Employment, and Housing

The Reduced Density Alternative would provide 122 housing units, result in a population increase of 357 residents, and would be consistent with the County's General Plan. Similar to the proposed project the alternative would not displace existing housing or residences. The impacts associated with the Reduced Density Alternative would be *similar* to the proposed project.

Hydrology and Water Quality

Under the Reduced Density Alternative, there would be nearly 200 fewer homes than included under the proposed project. These homes would be clustered to maintain existing topography and there would be flexibility to provide increased setback from the onsite water feature. The Reduced Density Alternative would also include fewer roadways, and there would be less overall impervious surface area, which would increase surface water infiltration, reduce sedimentation and urban pollutants in stormwater runoff. The Reduced Density Alternative would still require a drainage system, and construction of the Alternative would still require mitigation measures (similar to the proposed project) to protect existing waterways from stormwater pollution.

Biological Resources

The Reduced Intensity Alternative would require less soil disturbance and clustering of homes would provide increased opportunity for preservation of existing onsite vegetation and species protection. However, even though the amount of soil disturbance would be reduced, construction of the Reduced Intensity Alternative would not likely completely avoid any of the potential effects associated with the proposed project and would likely require similar mitigation measures to the proposed project.

Cultural Resources

One known cultural resource was identified on the project site. Both the Reduced Density Alternative and the proposed project would be designed to avoid impacts to that resource. Regarding unknown cultural resources, although the Reduced Density Alternative would require less ground disturbance, it would still require the same mitigation measures for protecting unknown cultural resources.

Aesthetic and Visual Resources

The Reduced Density Alternative would require less alteration of existing site topography, and the development would be clustered, leaving larger areas of natural vegetation than the proposed project. Ridgeline development could potentially be avoided. Implementation of the proposed project would result in less-than-significant impacts related to scenic vistas, visual character, and light and glare; however, the

Reduced Intensity Alternative would result in a visual character that is somewhat more similar to the existing natural setting.

Transportation and Circulation

With nearly 200 fewer units than the proposed project, the Reduced Density Alternative would generate substantially less traffic (over 60 percent fewer trips). The reduced trip generation may eliminate the need for some of the mitigation measures identified for the proposed project; however, it may not eliminate the need for all of the mitigation measures. Overall the Reduced Density Alternative would result in *less* impact than the proposed project.

Air Quality

With nearly 200 fewer units than the proposed project, the Reduced Density Alternative would require less construction and would generate fewer construction-related emissions than the proposed project. The Reduced Density Alternative would also generate fewer vehicle trips and would therefore generate fewer operations-related emissions than the proposed project. The proposed project's air-quality-related impacts would be reduced to a less-than-significant level by implementation of mitigation measures. Similar mitigation measures would likely be required for the Reduced Density Alternative.

Climate Change

The Reduced Density Alternative would require less construction and would generate fewer construction-related GHG emissions than the proposed project. The Reduced Density Alternative would also generate fewer vehicle trips and would generate less demand for energy. Although the proposed project would result in a less-than-significant impact related to GHG (after implementation of mitigation measures), the Alternative would emit less GHG than the proposed project.

Noise

The Reduced Density Alternative would result in fewer structures and roads and would require less overall site preparation and construction. The clustering of homes may also provide site planning opportunities, such that construction areas could be located further away from existing sensitive receptors. This could avoid a significant impact of the proposed project related to construction noise. Whether or not avoidance of this impact could occur would depend upon specific site plan design associated with the Alternative. Because the Alternative also include the connection of Saratoga Way, the Alternative would not avoid significant noise impacts to existing sensitive receptors associated with the increased traffic levels on existing Saratoga Way (resulting from opening up the new roadway connection). It is anticipated that the noise impacts associated with the Reduced Density Alternative would be *less* than the proposed project, but not significantly less (because it may not be feasible to design the site plan such that construction-noise impacts would be avoided).

Geology and Soils

Under the Reduced Density Alternative, there would be nearly 200 fewer homes than included under the proposed project. These homes would be clustered to maintain existing topography. The Reduced Density Alternative would require less soil movement and would provide opportunity for preserving more of the site's natural vegetation. The proposed project would result in less-than-significant impacts related to soil erosion with implementation of mitigation measures. Also, the Draft EIR identifies mitigation measures to reduce impacts associated with placing structures on fill material, which could expand or settle. These potential impacts and the mitigation measures required to reduce the impacts would also apply to the Reduced Density Alternative.

Hazards and Hazardous Materials

The Reduced Intensity Alternative would require less soil disturbance than the proposed project. No existing soil contamination was detected; however, NOA was detected in several samples taken across the project site. Although less soil disturbance would be required under the Reduced Intensity Alternative, similar mitigation measures would be required to reduce potential impacts related to NOA.

Public Services

Even though it would result in nearly 200 fewer dwelling units than the proposed project, the Reduced Intensity Alternative would result in increased demand for public services. Similar to the proposed project, the demand for public services would be accommodated without the need for expanding or constructing new facilities.

Utilities and Energy Conservation

With nearly 200 fewer units than the proposed project, the Reduced Density Alternative would generate substantially less demand for energy, water, wastewater treatment, and solid waste disposal than the proposed project.

Summary

Under the Reduced Density Alternative, development of residences and roadways would still occur, but at a much lower density. This lower density reduces the overall construction effort and allows for some flexibility for impact avoidance and preserving more natural vegetation. Also, fewer residences generate less traffic and less demand for energy and other utilities, thus reducing pollutant and GHG emissions. Because the Reduced Density Alternative would still involve soil disturbing construction activities, impacts related to ground disturbance and alteration of the land (biological resources, cultural resources, aesthetics, geology and soils, hydrology and water quality, and hazardous materials) would be less than the project, but would likely require similar mitigation measures to minimize impacts. However, because the Reduced Density Alternative would generate less traffic and utilities demand, the Alternative would result in slightly less impact related to utilities (including long-term water supply), traffic, air quality, and climate change. Regarding noise, the Reduced Density Alternative might be able to be designed to avoid the project's significant construction noise impact. This avoidance cannot be confirmed, but it is likely that there would be increased distance from existing sensitive receptors and the construction noise impact would be less. Overall, the Reduced Density Alternative would result in less impact than the proposed project.

However, assuming a strong market demand for single-family homes, a reduced number of units on the project site would likely result in demand for development of those units elsewhere in the County. Therefore, it should be understood that although implementation of the Reduced Density Alternative would likely result in a slight reduction to the environmental impact at the project site, the demand for those units elsewhere could result in other unknown environmental impacts, which could be less than, or greater than those associated with the proposed project.

6.3.4 Alternative 4: Maximum General Plan Buildout Alternative

The Maximum General Plan Buildout Alternative would develop the maximum number of units allowed on the site under the existing General Plan land use designation. The project site's existing HDR land use designation allows single-family residential development at densities from one to five dwelling units per acre. The General Plan therefore allows a maximum of 605 dwelling units to be developed on the 121-acre project site, which is 288 more units than included under the proposed project (a 91 percent increase in units over the proposed project). Because the project site is arguably the closest property in El Dorado County to the major employment centers of Folsom and City of Sacramento, increasing density at this site would likely result in lower vehicle miles traveled (VMT) than if those 288 additional units were developed elsewhere in the County to meet the County's housing needs. This is because many of the other areas within the County that could be developed with these additional units are farther away from major employment centers. In contrast to the Reduced Density Alternative, the likely reduction in VMT would result in an overall reduction in the County's future GHG emissions.

EVALUATION OF ENVIRONMENTAL EFFECTS

Because this Alternative would increase the development intensity occurring on the project site, it would result in a larger development footprint, a more intense construction program, increased population generation and demand for utilities and services, and increased traffic generation than the proposed project. Implementation of this Alternative would consequently result in potentially greater impacts than the proposed project in nearly all of the environmental issue areas, including population employment and housing, hydrology and water quality, biological resources, cultural resources, aesthetics and visual resources, transportation and circulation, air quality, noise, geology and soils, hazards and hazardous materials, public services, and public utilities. The discussion below focuses on Land Use Compatibility and Climate Change.

Land Use Compatibility

The Maximum General Plan Buildout Alternative would be consistent with the General Plan and would be required to be consistent with General Plan policies. Although the Alternative would be developed at a density greater than the surrounding residential development, the resulting single-family homes would be considered a compatible land use with the surrounding lower density homes.

Climate Change

At the project level, because the Maximum General Plan Buildout Alternative results in greater trip generation and energy consumption than currently exist on the project site, the GHG emissions of the Alternative, itself, would be greater than the proposed project. However, the Maximum General Plan Buildout Alternative could, as described above, result in a future countywide reduction in VMT due to the placement of housing closer to employment centers and subsequently reducing overall GHG. Because Climate Change is a long-term, cumulative issue, and because the increased trip generation and energy consumption associated with the Alternative’s increase in units would also occur if those units were placed elsewhere in the county, the overall impact related to Climate Change, compared to placement of the additional units elsewhere in the county, would likely be reduced.

Summary

Although the Maximum General Plan Buildout Alternative would be consistent with the General Plan and could result in a reduction of countywide VMT (thereby reducing countywide GHG emissions), because the impacts associated with all of the other environmental issue areas would be greater, implementation of the Maximum General Plan Buildout Alternative would result in overall greater impacts than the proposed project.

6.3.5 Comparative Evaluation of Environmental Effects

Table 6-1 identifies which project objectives are met by the alternatives described above.

Table 6-1 Objectives Achieved by Project Alternatives				
Project Objectives	Objective Met?			
	Alternative 1	Alternative 2	Alternative 3	Alternative 3
Implement the County’s general plan by directing growth to areas with moderate topography, located amongst already developed lands, with access to services, schools, and transportation systems.	No	No	Yes	Yes
Implement the County’s general plan by directing higher density residential development to Community Regions and Rural Centers and encouraging the enhancement of residential environments to include access to parks and trails.	No	No	Yes	Yes
Implement the County’s general plan by providing urban/suburban type development within lands designated for urban development to ensure the preservation of large expanses of open space and agricultural lands within the county.	No	No	Yes	Yes

Table 6-1 Objectives Achieved by Project Alternatives				
Project Objectives	Objective Met?			
	Alternative 1	Alternative 2	Alternative 3	Alternative 3
Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's general plan.	No	Yes	Yes	Yes
Provide a broad range of residential product types.	No	No	Yes	Yes
Offer a range of designs and amenities to meet the needs of the changing demographics of the county, including families, empty nesters, and active adults.	No	No	Yes	Yes
Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.	Yes	Yes	Yes	Yes
Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.	No	No	Yes	Yes
Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.	No	No	Yes	Yes
Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.	No	No	Yes	Yes
Implement the general plan strategies and methods for achieving its vision and goals of sustainable growth and economic development.	No	No	Yes	Yes

Source: Ascent 2015

Table 6-2 summarizes the environmental analyses provided above for the project alternatives.

Table 6-2 Comparison of the Environmental Impacts of the Alternatives in Relation to the Proposed Project					
Environmental Topic	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Land Use Compatibility	LTS	Similar	Similar	Similar	Similar
Population, Employment, and Housing	LTS	Similar	Similar	Similar	Greater
Hydrology and Water Quality	LTSM	Less	Less	Less	Greater
Biological Resources	LTSM	Less	Less	Less	Greater
Cultural Resources	LTSM	Less	Less	Less	Greater
Aesthetic and Visual Resources	LTS	Less	Less	Less	Greater
Transportation and Circulation	LTSM	Greater	Similar	Less	Greater
Air Quality	LTSM	Less	Less	Less	Greater
Climate Change	LTSM	Less	Less	Less	Less
Noise	SU	Substantially Less*	Substantially Less*	Less	Greater
Geology and Soils	LTSM	Less	Less	Less	Greater
Hazards and Hazardous Materials	LTSM	Less	Less	Less	Greater
Public Services	LTSM	Less	Less	Less	Greater
Utilities and Energy Conservation	LTS	Less	Less	Less	Greater

Notes: * Avoids or minimizes a significant and unavoidable impact associated with the proposed project.
 NI=No Impact LTS = Less Than Significant Impact LTSM = LTS with Mitigation SU = Significant and Unavoidable

Source: Ascent Environmental 2015

6.3.6 Environmentally Superior Alternative

The No Project, Saratoga Way Extension Only Alternative would result in reduction in the degree of project-related impacts for most of the environmental issues and avoids significant project impacts. Unlike the No Project, No Development Alternative, the No Project, Saratoga Way Extension Only Alternative remains consistent with the County's transportation plan. Therefore, the No Project, Saratoga Way Extension Only Alternative would be considered the Environmentally Superior Alternative. However, implementation of the No Project, No Development Alternative would only meet two of the project objectives (related to provision of infrastructure and conservation of natural resources). Also, implementation of the No Project, Saratoga Way Extension Only Alternative would require provision of additional housing elsewhere in the County to meet the County's housing supply projections (which included high density residential units at the project site). This could result in significant environmental impacts, but since it is unknown where the housing would be provided (multiple sites would be possible) the type and level of environmental impact are unknown.

CEQA Guidelines Section 15126.6(e)(2) states that when the no project alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives. As discussed above, the No Project, Saratoga Way Extension Only Alternative would only achieve two of the project's objectives. Therefore, because it would result in less overall environmental impact than the proposed project, the Reduced Intensity Alternative would be considered environmentally superior. However, in a strong housing market, the reduction of nearly 200 units on the project site would likely result in demand for development of those units elsewhere in the County. This could result in other unknown environmental impacts, which could be less than, or greater than those associated with the proposed project.

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9 ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
AB 32	California Global Warming Solutions Act of 2006
AFY	acre-feet per year
amsl	above mean sea level
ARB	California Air Resources Board
ASTM	American Society for Testing and Materials
ASWA	Alternate Saratoga Way Alignment
ATCM	Airborne Toxic Control Measure
AWSC	all-way stop controlled
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BMPs	best management practices
BUSD	Buckeye Union School District
CAA	federal Clean Air Act
CAA	federal Clean Air Act
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPs	criteria air pollutants
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife's
CEC	California Energy Commission
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIP	El Dorado County Capital Improvement Program
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level

CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ -equivalent
CRHR	California Register of Historical Resources
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DOC	California Department of Conservation
DOF	California Department of Finance
DWQ	Division of Water Quality
EDCAQMD	El Dorado County Air Quality Management District
EDCTC	El Dorado County Transportation Commission
EDCWA	El Dorado County Water Agency
EDD	California Employment Development Department
EDHCSD	El Dorado Hills Community Service District
EDHFD	El Dorado Hills Fire Department
EDHWTP	El Dorado Hills Water Treatment Plant
EDHWWTP	El Dorado Hills Wastewater Treatment Plant
EDUHSD	El Dorado Union High School District
EDUs	equivalent dwelling units
EID	El Dorado Irrigation District
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FTA	Federal Transit Administration

GDPUD	Georgetown Divide Public Utility District
General Plan	El Dorado County General Plan
GHG	greenhouse gas
gpm	gallons per minute
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HDR	High Density Residential
HVAC	heating/ventilating/air conditioning
in/sec	inches per second
INRMP	Integrated Natural Resources Management Plan
ITE	Institute of Transportation Engineers
IWRMP	Integrate Water Resources Master Plan
lbs/day	pounds per day
LDL	Larson Davis Laboratories
L _{dn}	day-night sound level
L _{eq}	equivalent continuous sound level
LID	Low Impact Development
L _{max}	maximum sound level
L _{min}	minimum sound level
LOS	level of service
L _{xx}	percentile-exceeded sound level
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
mgd	million gallons per day
MMT	million metric tons
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MS4s	municipal separate storm sewer systems
MT CO ₂ e/year	metric tons of carbon dioxide equivalent
MTCO ₂ e/year	metric tons of carbon dioxide-equivalent per year
MTP	Metropolitan Transportation Plan

NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAT	no action taken”
NCIC	North Central Information Center
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO ₂	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
open space district	OS
OSHA	Occupational Safety and Health Administration
outdoor	ambient
OWMP	El Dorado County Oak Woodland Management Plan
ozone	photochemical smog
pc/ln/mi	passenger cars/lane/mile
PD	planned development
PG&E	Pacific Gas and Electric
PM	Particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter of 10 micrometers or less
PM _{2.5}	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
PPV	peak particle velocity
PRC	Public Resources Code
psi	pound-per-square-inch

RCD	El Dorado County Resource Conservation District
RMS	root-mean-square
ROG	reactive organic gas
RTP	El Dorado County Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWQCB	regional water quality control board
SACOG	Sacramento Area Council of Governments
SB	Senate Bills
SCS	Sustainable Communities Strategy
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Metropolitan Utilities District
SO ₂	sulfur dioxide
SSSC	side-street stop controlled
SWMP	storm water management plan
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
T-BACT	BACT for TACs
TIA	<i>Traffic Impact Analysis</i>
TM	Test Method
TMP	Traffic Management Plan
UCMP	University of California Museum of Paleontology's
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation / United States Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
VdB	vibration decibels
VELB	valley elderberry longhorn beetle
VMT	vehicle miles traveled
VOCs	volatile organic compounds
vpd	vehicles per day

Water Pollution Act	Water Pollution Prevention and Control Act
WERS	Western El Dorado Recovery Systems
WRDMPs	Water Resources Development and Management Plans
WRSRR	Water Resources and Service Reliability Reports
WSA	water supply assessments
WTP	Water Treatment Plant