

Lake 29 Improvement Project

LAKE COUNTY, CALIFORNIA
DISTRICT 1 – LAK – 29, (PM 23.6/31.6)
EA: 2981U/EFIS: 0100000090

Revised Partial Draft Environmental Impact Report/Environmental Assessment and De Minimis Section 4(f)



**Prepared by the
State of California Department of Transportation**

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.



May 2016

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA), which examines the potential environmental impacts of the proposed project located in Lake County, California. This document discusses what alternatives have been considered for the project, how the existing environment could be affected by the project, and the proposed avoidance, minimization, and mitigation measures. Caltrans, as assigned by the Federal Highway Administration (FHWA), is the lead agency under the National Environmental Policy Act (NEPA). Additionally, Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

This Revised Partial Draft EIR/EA is being recirculated in accordance with CEQA Guidelines §15088.5 (a) and (c) and 40 CFR 1502.9 (c) under NEPA to provide significant new information not previously addressed in the Draft EIR/EA for the Lake 29 Improvement Project, originally circulated for public review on July 10, 2007. The revised portions of the Draft EIR/EA being recirculated are Chapters 1-Proposed Project (partial), 2.2-Growth, 2.5-Utilities, Emergency Services, and Community Facilities, 2.7-Visual/Aesthetics, 2.8-Cultural Resources, the Biological Environment section (2.15-2.20), 2.21-Cumulative Impacts, Chapter 3- California Environmental Quality Act (CEQA) Evaluation, Chapter 4-Comments and Coordination (partial), Chapter 5-List of Preparers, Chapter 6-Distribution List, Chapter 7-References, Appendix L-Section 4(f), and other relevant appendices. Per CEQA Guidelines § 15088.5 (f)(2), Caltrans requests that reviewers limit their comments to the revised portions of this Partial Draft EIR/EA as set forth herein. For reference, the 2007 Draft EIR/EA can be found at: http://www.dot.ca.gov/dist1/d1projects/lake29/final_lake_29_draft_eir-ea.pdf.

What you should do?

- Please read this document.
- Additional copies of this document are available for review at:
 - Caltrans District 1, 1656 Union Street, Eureka, CA 95501
 - Lake County Library, 1425 North High Street, Lakeport, CA 95453
 - <http://www.dot.ca.gov/dist1/d1projects/lake29/index.htm>.
- Copies of the supporting technical studies are available upon request
- Caltrans welcomes your comments. If you have any comments regarding the new information for the proposed project, please send your written comments to Caltrans.
 - Send comments via postal mail to: Chris Quiney, California Department of Transportation, District 2, North Region Office of Environmental Management-R2, 1657 Riverside Drive (MS-30), Redding, CA 96001
 - Send comments via email to: chris.quiney@dot.ca.gov
 - Submit comments by the Deadline: July 7, 2016

What happens next?

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the FHWA, may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the California Department of Transportation, Attn: Chris Quiney, California Department of Transportation, District 2, North Region Office of Environmental Management-R1, 1657 Riverside Drive (MS-30), Redding, CA 96001; (530) 225-3174 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

SCH#: 2003022011
01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 010000090

Widen and improve State Route (SR) 29 from just east of its intersection with Diener Drive at Postmile (PM) 23.6 to west of the SR 175 junction at PM 31.6 in Lake County, California

**REVISED PARTIAL DRAFT ENVIRONMENTAL IMPACT
REPORT/ENVIRONMENTAL ASSESSMENT
and De Minimis Section 4(f)**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation

Cooperating Agencies: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service

Responsible Agencies: California Transportation Commission, State Office of Historic Preservation,
Central Valley Regional Water Quality Control Board

Trustee Agencies: California Department of Fish and Wildlife

May 19, 2016
Date of Approval

for 
CHARLES C. FIELDER
District Director, District 1
California Department of Transportation

The following persons may be contacted for more information about this document:

Chris Quiney, Environmental Branch Chief - R1
California Department of Transportation - District 2
North Region Office of Environmental Management
1657 Riverside Drive (MS-30)
Redding, California 96001



Summary

This Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project (i.e. proposed project and federal action) provides new information relevant to the proposed project that was not included in the Draft EIR/EA, originally circulated for public review and comment in July and August 2007.

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to improve State Route (SR) 29 in Lake County in order to improve east-west connectivity within this region of the state and manage/address projected traffic volumes on SR 29. In Lake County, the existing highway system consists primarily of two-lane facilities in rolling to mountainous terrain. This project would widen the existing two-lane highway to a four-lane divided expressway with access control. The project corridor is located between the communities of Lower Lake and Kelseyville and is approximately 8.0 miles in length. Due to funding constraints, the project would be constructed in phases over an indefinite timeframe. As funding becomes available, portions of the project would be programmed and constructed. The anticipated sequence of construction would be to first construct the segment from postmile (PM) 28.5 to 31.6, then the segment from PM 26.1 to 29.1, and lastly the segment from PM 23.6 to 26.9. Each phase would be built to expressway standards, including access control. Utilities would be relocated in corresponding phases.

The proposed project is a joint project by Caltrans and the FHWA and is subject to state and federal environmental review requirements. Project documentation has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under CEQA. Caltrans, as assigned by FHWA, is the lead agency under NEPA. In addition, FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. The NEPA determination of significance is based on context and intensity. Under NEPA, an Environmental Assessment (EA) can be prepared to determine whether a Finding of No Significant Impact can be made. Because NEPA considers the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. The manner in which the differences between the two processes are addressed must therefore take into account that NEPA does not compel mandatory findings of significance, and that some impacts determined to be significant under CEQA may not be determined significant under NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

Caltrans circulated a Draft EIR/EA for the Lake 29 Improvement Project on July 10, 2007 and accepted comments until August 27, 2007. A decision was made following circulation of the Draft EIR/EA to conduct additional environmental studies in response to comments received and, if necessary, recirculate the Draft EIR/EA for public review. The additional studies resulted in significant new information, and Caltrans has decided to revise and recirculate portions of the Draft EIR/EA to allow a meaningful opportunity for the public to comment pursuant to CEQA Guidelines 15088.5 (a) and (c) and 40 CFR 1502.9 (c) under NEPA. Recirculated portions include Chapters 1-Proposed Project (partial), 2.2-Growth, 2.5-Uilities, Emergency Services, and Community Facilities, 2.7-Visual/Aesthetics, 2.8-Cultural Resources, the Biological Environment section (2.15-2.20), 2.21-Cumulative Impacts, Chapter 3-California Environmental Quality Act (CEQA) Evaluation, Chapter 4-Comments and Coordination (partial), Chapter 5-List of Preparers, Chapter 6-Distribution List, Chapter 7-References, Appendix L-Section 4(f), and other relevant appendices. The remaining portions of the original Draft EIR/EA are not being recirculated. For these unchanged portions, information presented and effect determinations in the original Draft EIR/EA remain valid.

Per CEQA Guidelines § 15088.5 (f)(2), Caltrans requests that reviewers limit their comments to the revised portions of this Partial Draft EIR/EA as set forth herein. After receiving comments from the public and reviewing agencies, a Final EIR/EA will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final EIR/EA will include responses to comments received on the 2007 Draft EIR/EA and this Revised Partial Draft EIR/EA. If the decision is made to approve the project, a Notice of Determination (NOD) will be published for compliance with CEQA, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) and Record of Decision (ROD) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI would be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in accordance with Executive Order 12372.

S.2 Project Description

Four potential “build” alternatives were evaluated in the Draft EIR/EA circulated in 2007, plus a no build alternative. Following circulation of the Draft EIR/EA, three of the build alternatives were eliminated based on impacts to sensitive environmental resources (this decision is discussed further in Section 1.5.1). The current alternatives are as follows:

Alternative A—No Build Alternative

Alternative A is the No Build Alternative. The roadway would remain as it exists now, and no widening or realignment would occur.

Alternative D—Build Alternative

Alternative D proposes to widen SR 29 to a four-lane divided expressway with access control. This alternative would be approximately 8.0 miles in length and would begin at PM 23.6 and end at PM 31.6. Alternative D would run both north and south of the existing centerline in order to avoid sensitive environmental resources. It would also minimize large slope cuts, in order to minimize potential impacts and reduce project costs, though the design speed would remain at 68 mph.

S.3 Potential Impacts and Avoidance, Minimization, and Mitigation Measures

Potential impacts and avoidance, minimization, and mitigation measures are summarized in Table S-1 at the end of this section. Detailed information related to impacts and avoidance, minimization, and/or mitigation measures are provided in Chapter 2.



Table S-1 Potential Impacts, Caltrans Standard Practices and Specifications, Best Management Practices, Project Permanent Design Features, and Avoidance, Minimization, and/or Mitigation Measures

Environmental Factor (EIR/EA Section)		Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation
		No Build Alternative	Build Alternative D		
Land Use (2.1)		None	388 acres of new right of way acquisition	None	None
Growth (2.2)		None	Unlikely to induce growth	None	None
Farmlands & Timberlands (2.3)	Farmland (acres)	0	388 ¹ acres	None	None
	Williamson Act Farmlands	0	0	None	None
Community Impacts (2.4)	Business displacements	0	4 commercial acquisitions	Fair market value acquisition, relocation assistance	None
	Housing displacements	0	5 residential acquisitions	Fair market value acquisition, relocation assistance	None
Utilities/Emergency Services/Community Facilities (2.5)		None	Acquisition of a detached portion of the Konocti Conservation Camp Facility; relocation of electrical transmission lines and AT&T fiber optic cables	Preparation of a Traffic Management Plan, co-location of utilities where practicable, interagency coordination	None

¹ Although there is an increase in impacts (acres) from the 2007 Draft EIR/EA, the proposed project is not anticipated to result in a substantial impact to farmlands. Therefore, the Revised Partial Draft EIR/EA does not further discuss the additional impacts. The Final EIR/EA will include an updated Farmland section.

Environmental Factor (EIR/EA Section)	Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation
	No Build Alternative	Build Alternative D		
Traffic and Transportation (2.6)	Highway LOS expected to deteriorate to E by the year 2041	Improved level of service and volume/capacity ratio	Preparation of a Traffic Management Plan	None
Visual/Aesthetics (2.7)	None	Topographical feature change, vegetation loss, reduction of views of scenic resources from highway and residences in project area, and potential visual impacts from retaining walls and additional paved surfaces of the increased travel lanes and frontage roads.	Limit tree and vegetation removal, apply construction and design measures to blend project appearance with natural environment	Landscape Architect-prepared Revegetation Plan, Environmentally Sensitive Area (ESA) fencing, contour-graded cut slopes where practicable, use of native rock material, preservation of large rock outcroppings, aesthetic treatments
Cultural Resources (2.8)	None	Would not result in adverse effects to cultural resources included in or eligible for listing in the National Register of Historic Places	None	ESA Action Plan, Monitoring and late discovery plan, Archaeological studies synthesis document
Hydrology and Floodplains (2.9)	None	Temporary channel obstructions during construction, roadway construction within 100-year floodplain	None	None

Environmental Factor (EIR/EA Section)	Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation
	No Build Alternative	Build Alternative D		
Water Quality and Storm Water Runoff (2.10)	None	Impacts from operation of roadway; short term impacts from construction of roadway	Erosion and sediment control, adherence to National Pollutant Discharge Elimination System (NPDES) permit conditions, Contractor Prepared Storm Water Pollution Prevention Plan (SWPPP)	None
Geology, Soils, Seismic, Topography (2.11)	None	None	Adherence to Caltrans Seismic Design criteria and Uniform Building Code for Seismic Zone 3, site specific geotechnical boring and testing before construction	None
Hazardous Waste and Materials (2.12)	None	No known hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of aerially deposited lead or asbestos	Spill and leak containment material on site, pre-demolition surveys for asbestos and lead (naturally occurring and structure-related), site investigation	None

Environmental Factor (EIR/EA Section)	Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation	
	No Build Alternative	Build Alternative D			
Air Quality (2.13)	None	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Best management practices; Caltrans Standard Specifications for air pollution control, dust control during construction	None	
Noise (2.14)	None	None	None	None	
Natural Communities (2.15)	None	Permanent impacts to approximately 303.9 acres of natural communities including 2.3 acres of impacts to Valley Foothill Riparian	Limit tree and vegetation removal, Installation of two wildlife crossings	Fencing and avoidance of ESAs, Mitigation for riparian impacts including on and/or off-site creation, enhancement, and/or preservation of riparian habitat, Riparian habitat Mitigation Plan, Preservation of oak woodlands at an off-site location	
Wetlands (2.16)	Waters of the U.S. wetlands	None	Permanent impacts to approximately 0.03 acres	Erosion and sediment control, adherence to NPDES and regulatory permit conditions, SWPPP preparation	Fencing and avoidance of ESAs, Purchase of mitigation bank credits or contribution towards an approved in-lieu fee program

Environmental Factor (EIR/EA Section)		Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation
		No Build Alternative	Build Alternative D		
Wetlands (2.16)	Waters of the U.S. "other waters"	None	Permanent impacts to approximately 0.20 acres	Erosion and sediment control, adherence to NPDES and regulatory permit conditions, SWPPP preparation	Fencing and avoidance of ESAs, Purchase of mitigation bank credits or contribution towards an approved in-lieu fee program
Wetlands (2.16)	Waters of the State wetlands	None	Permanent impacts to approximately 12.01 acres	Erosion and sediment control, adherence to NPDES and regulatory permit conditions, SWPPP preparation	Fencing and avoidance of ESAs, Purchase of mitigation bank credits or contribution towards an approved in-lieu fee program
Wetlands (2.16)	Waters of the State "other waters"	None	Permanent impacts to approximately 1.63 acres	Erosion and sediment control, adherence to NPDES and regulatory permit conditions, SWPPP preparation	Fencing and avoidance of ESAs, Purchase of mitigation bank credits or contribution towards an approved in-lieu fee program

Environmental Factor (EIR/EA Section)	Potential Impacts		Caltrans Standard Practices and Specifications, Best Management Practices, and Permanent Project Design Features	Avoidance, Minimization, and/or Mitigation
	No Build Alternative	Build Alternative D		
Plant and Animal Species (2.17, 2.18)	None	Impacts to poor quality Northwestern pond turtle habitat; 6 special-status plant species; several bat species; raptor and migratory nesting birds habitat	Limit tree and vegetation removal, provisions for migratory bird protection in project plans	fencing and avoidance of ESAs, use of buffer zones, Preconstruction bat surveys and potential bat relocation / exclusion, preconstruction survey for Northwestern pond turtle
Threatened and Endangered Species (2.19)	None	<i>May affect, not likely to adversely affect</i> Burke's goldfields, Few-flowered navarretia, and Lake Co. stonecrop; Impacts to potential habitat for California red-legged frog; Impacts to habitat for Townsend's Big-eared bat	None	Fencing and avoidance of ESAs, Preconstruction survey for California red-legged frog, Preconstruction bat roosting surveys & potential TBEB relocation/exclusion, Installation of level spreader to maintain existing hydrology conditions in vicinity of vernal pools
Invasive Species (2.20)	None	None	Standard specifications to limit spread of invasive species	None
Cumulative Impacts (2.21)	None	None	None	None

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to improve State Route (SR) 29 in Lake County from east of the intersection with Diener Drive at postmile (PM) 23.6 to west of the junction with SR 175 at PM 31.6 (Figure 1-1 and Figure 1-2), in order to improve east-west² connectivity in this portion of the state and accommodate projected traffic volumes on SR 29. The proposed project (i.e. proposed project and federal action) is referred to as the Lake 29 Improvement Project.

This project would widen the existing two-lane highway to a four-lane divided expressway with access control. The project corridor is located between the communities of Lower Lake and Kelseyville and is approximately 8.0 miles in length. The project would likely be constructed in phases (segments) as funding becomes available. The most likely sequence of construction would be to construct the 8.0 miles in three segments, proceeding from west to east. It is proposed to first construct the segment from approximately PM 28.5 to 31.6, then the segment from PM 26.1 to 29.1, and lastly the segment from PM 23.6 to 26.9.

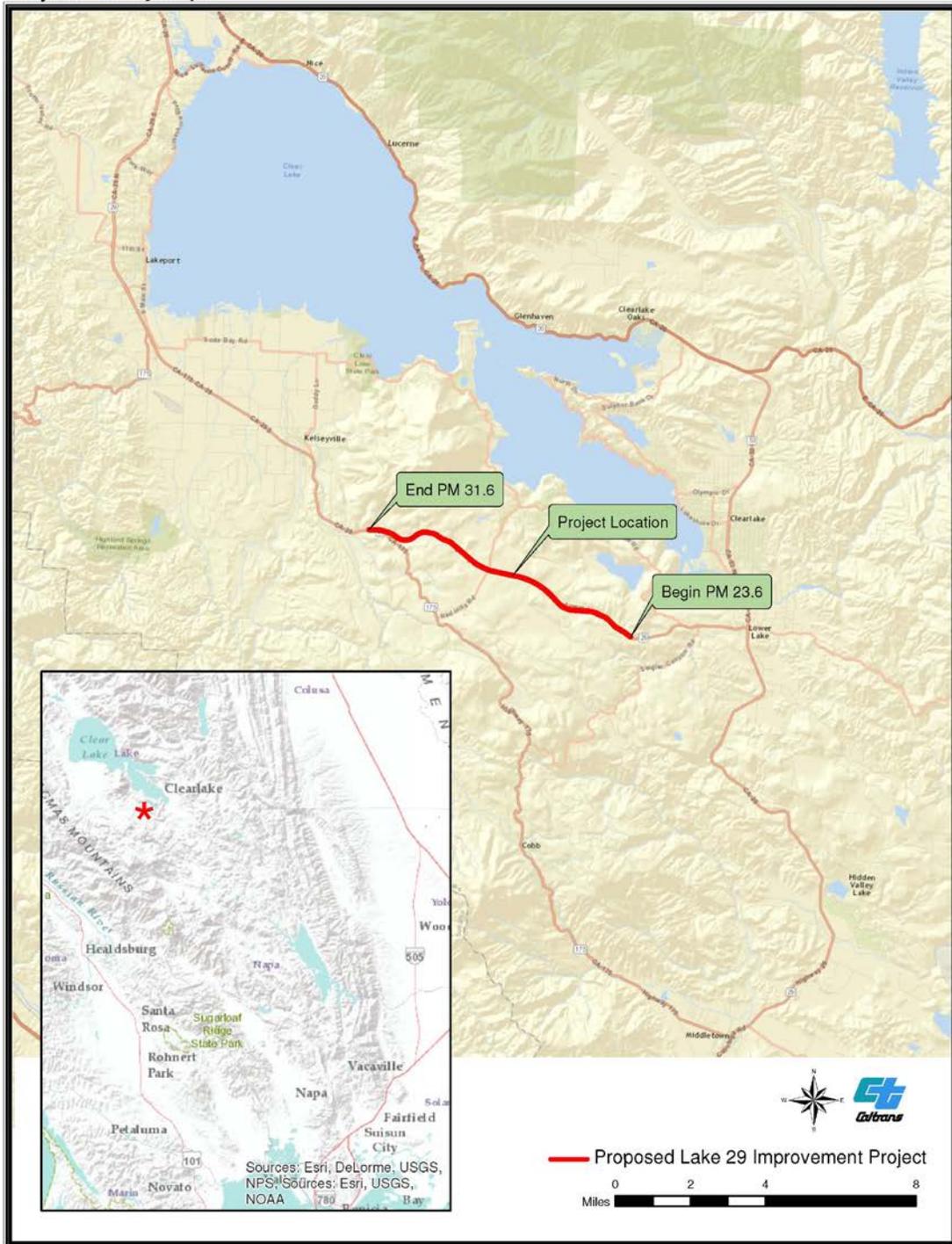
This project is programmed in the 2014 State Transportation Improvement Program (STIP). Funding in the 2014 STIP is provided by the Regional Improvement Program (RIP) 20.XX.075.600, the Interregional Improvement Program (IIP) 20.XX.025.700, and Demonstration Funds from the Transportation Equity Act-21 and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A legacy for Users (SAFETEA-LU). The project is also programmed in the 2014 State Highway Operation and Protection Program (SHOPP). Funding in the 2014 SHOPP is provided by the 20.XX.201.010 Highway Safety Improvement Program. The project is included in the Lake County/City Area Planning Council (APC) 2010 *Lake County Regional Transportation Plan* (RTP).

1.1.1 Existing Facilities

In Lake County, the existing highway system consists primarily of two-lane conventional undivided highways in rolling to mountainous terrain. The primary routes are SR 20, SR 53, and SR 29. SR 29 connects the Lake County area with Napa Valley, passing through the city of Lakeport (population approximately 5,000 and the county seat), and the communities of Kelseyville, Lower Lake, and Middletown (all with populations between 1,000 and 3,500).

² Although SR 29 is considered a northbound/southbound highway, the roadway trends east/west in the project corridor. Except where the specific direction of travel on SR 29 is discussed (northbound or southbound), or unless otherwise noted, the ultimate directions of east and west are used in this document.

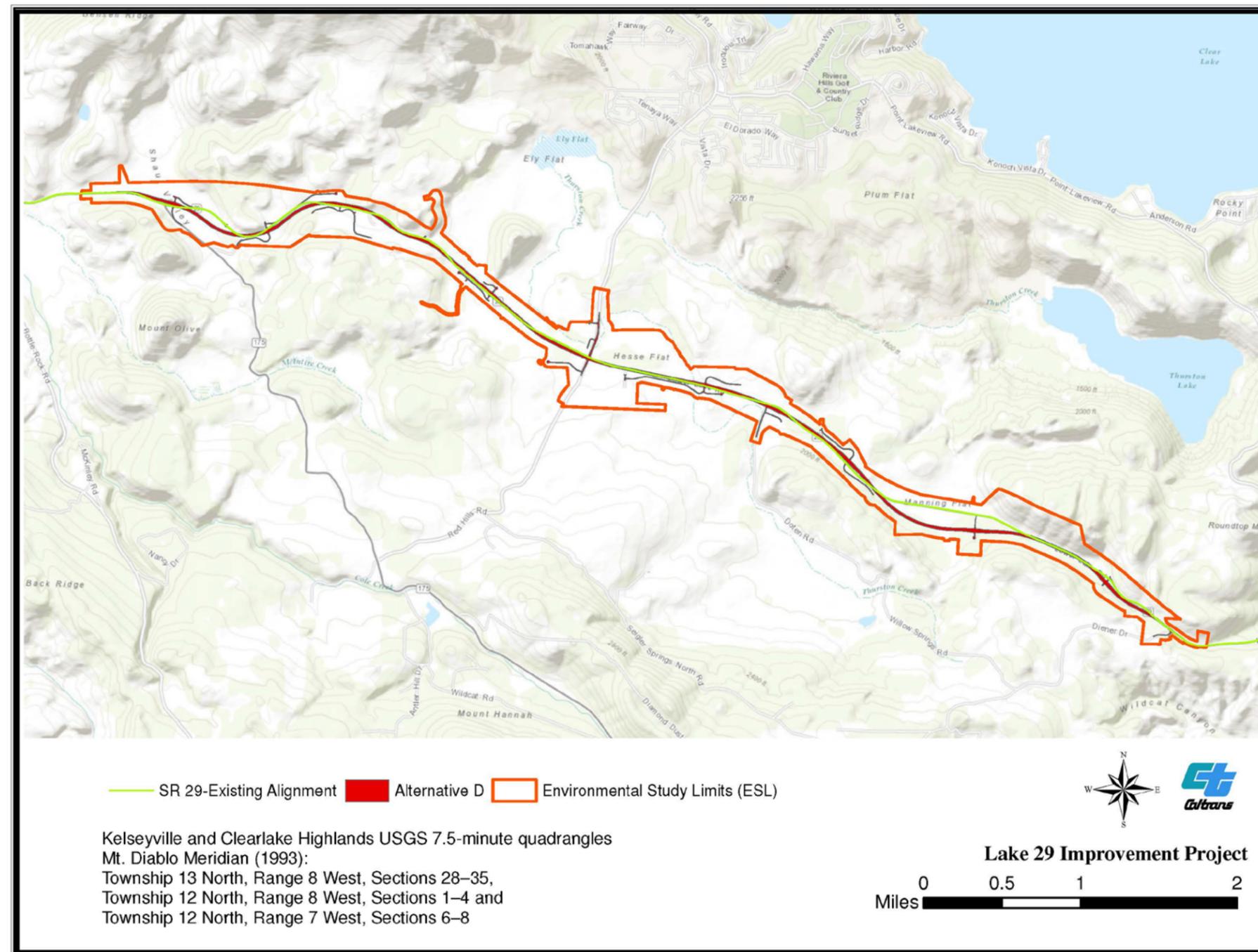
Project Vicinity Map



Sources: ESRI, DeLorme, NAVTEQ, TomTom, Intermap, Increment P Corp, GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, and the GIS User Community

Figure 1-1 Project Vicinity Map

Alternative D



Sources: ESRI, DeLorme, NAVTEQ, TomTom, Intermap, Increment P Corp, GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, and the GIS User Community

Figure 1-2 Project Map



Within the project limits, SR 29 is a two-lane conventional undivided highway facility, consisting of 12-foot lanes with 1-foot to 8-foot paved outside shoulders. This portion of SR 29 was originally a county road that was incorporated into the State Highway System in 1951. Limited geometric improvements were made to the road at that time. Since 1951, additional limited improvements have been made, but the facility has never been improved to a consistently applied design speed and the majority of the road follows the 1951 alignment. There are limited passing opportunities for the traveling public on this roadway segment, with roadway conditions often resulting in long queues of cars following slower-moving vehicles or trucks, creating congestion and unstable traffic flow. Widening SR 29 to a four-lane divided expressway would accommodate current and projected traffic volumes and improve safety.

Lake County residents use SR 29 primarily for utility trips within the county and interregional trips to the Napa Valley, Santa Rosa, and the Bay Area. The number of commuters in the area is growing rapidly. SR 29 is also used for recreational trips to and from the Napa Valley and the Bay Area. The highway is at the north end of the Napa Valley, and tourists visiting the wine country often extend their trips north on SR 29 to the fast-growing wine regions of Lake County.

SR 29 is of statewide significance as well. Together with SR 20 and SR 53 (around the south shore of Clear Lake), SR 29 forms the Lake County portion of the SR 20 Principal Arterial Corridor.³ This corridor provides a significant west-east connection in Northern California from United States Highway 101 (US 101) to Interstate 5 (I-5), connecting northwest California with the Central Valley. This route is vital for the interregional movement of people, goods, agriculture, and recreational travel across the northern part of the state (see Section 1.3.2 of the 2007 Draft EIR/EA).

1.2 Project Background

This section describes the history of the Lake 29 Improvement Project and the various alternatives that have been studied over the years. Several alternatives were eliminated during the early project development phases and scoping process. A description of the eliminated alternatives is included in Section 1.5.

³ “Principal Arterial Corridor” is a functional classification—the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

1.2.1 Project Development and Environmental Scoping History

In August 1988, Caltrans approved a Project Study Report (PSR) to upgrade SR 29 from PM 23.9 to PM 27.9 (Segment 1). A supplemental PSR for this segment was prepared and approved in 1999. This project was programmed in the 1998 STIP by amendment, and environmental studies began in early 2000.

Another PSR was approved in 1988 to upgrade SR 29 west of the above project from PM 27.9 to 31.1 (Segment 2). This project was programmed in the 1998 STIP for environmental studies, right of way, and engineering. Environmental studies were initiated in December 1998.

Between 1988 and 2002, the Project Development Team (PDT) considered numerous alternatives including passing lanes (identified as an interim improvement only) and various highway, expressway, and freeway alternatives⁴ on varying alignments with differing median widths.

In 2002, Segments 1 and 2 were officially combined in the 2002 STIP, the project description and postmiles were updated, and environmental studies for the combined segments were initiated.

A Notice of Preparation was sent to the State Clearinghouse on February 2, 2003. Comments were received from the Lake County Air Quality Management District, the California Department of Toxic Substances Control, the United States Bureau of Land Management, and the United States Fish and Wildlife Service (USFWS). A Notice of Preparation meeting was held March 6, 2003, at the Caltrans Venture Oaks office in Sacramento. The purpose of this meeting was to solicit participation from responsible and trustee agencies to determine the scope of the Environmental Impact Report for the project. Caltrans and the California Department of Fish and Wildlife (CDFW) were the only agencies in attendance.

In March 2003, Caltrans and FHWA initiated the National Environmental Policy Act/Clean Water Act Section 404 (NEPA/404) integration process for this project with the United States Army Corps of Engineers (USACE), the United States Environmental Protection Agency (USEPA), and USFWS. Although not a Signatory Agency, CDFW had been invited to participate in the NEPA/404 process for this

⁴ A conventional highway is a highway with no control of access, which may or may not be divided or have grade separations at intersections. An expressway is an arterial highway (a general term denoting a highway primarily for through traffic on a continuous route) with at least partial control of access,

project due to its role as a Trustee Agency. The NEPA/404 integration process integrates the requirements of both NEPA and Section 404 of the Clean Water Act and is formalized in a Memorandum of Understanding (MOU). Under the guidelines of the MOU, the integration process consists of three “checkpoints” that punctuate ongoing coordination efforts. These checkpoints are:

- Purpose and Need
- Identification of the range of alternatives to be studied in the draft Environmental Assessment (EA) or Environmental Impact Statement (EIS), including the criteria used to select and analyze the range of alternatives to be studied
- Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) and Conceptual Mitigation Plan

At each of these checkpoints, Caltrans sends the checkpoint item to the applicable Signatory Agencies for their “checkpoint response.” See section 4.6 for a more detailed description of the NEPA/404 integration process. NEPA/404 checkpoint requests and responses can be found in Appendix A of the 2007 Draft EIR/EA.

A public open house was held at Konocti Harbor Resort and Spa in Kelseyville on September 26, 2006. An invitation was mailed to property owners within the project area; tribal representatives; and local, state, and federal officials and agencies. The open house was advertised in the local newspaper, the *Lake County Record-Bee*, and on local radio stations. Approximately 50 people, mostly property owners within the project area, attended the open house. Section 4.5 provides additional information on public participation.

The Draft EIR/EA was circulated for public review from July 10, through August 27, 2007; a public hearing was held during this time as well. Following the public review period, Caltrans did not make findings pursuant to CEQA and NEPA due to escalating project cost estimates and a need to further evaluate the project alternatives and potential cost saving measures.

This Revised Partial Draft EIR/EA represents the current status of the proposed project and alternatives.

which may be divided and may have grade separations at intersections. A freeway is a divided arterial highway with full control of access and with grade separations at intersections.

1.4 Project Description

This section describes the proposed project and the design alternatives that were developed by a multidisciplinary team to achieve the project purpose and need⁵ while avoiding and/or minimizing environmental impacts. The alternatives are Alternative A (the No Build Alternative), and Alternative D (Build Alternative), which proposes to widen the existing two-lane conventional highway to a four-lane divided expressway with access control.

1.4.1 Alternative A—No Build Alternative

Alternative A is the No Build Alternative. The roadway would remain as it exists now, and no widening or realignment would occur.

1.4.2 Alternative D—Build Alternative

Alternative D proposes to widen SR 29 to a four-lane divided expressway with access control. The alternative would be approximately 8.0 miles long and would begin at PM 23.6 and end at PM 31.6.

Alternative D would run both north and south of the existing centerline. This alternative was specifically designed to avoid sensitive environmental resources and to reduce project costs by minimizing large cuts, thus decreasing the amount of excess earthen material. Both of these goals have been accomplished by adjusting the horizontal and vertical alignments. Tall cut slopes, constructed as part of Alternative D, would receive benching treatments to assist in slope stability and to enhance slope revegetation. Retaining walls would be constructed in two locations on the north side of the new expressway. Alternative D would provide stormwater drainage in the roadway median where necessary, with a grassy median and lateral ditch drainage feature. Two 12 by 12 ft. wildlife under-crossings would be installed to improve wildlife movement and minimize wildlife and vehicle collisions. One undercrossing would be installed near Manning Flat and another in Shaul Valley, both of which are strategic locations where wildlife is known to cross the existing roadway.

Cross Section

The typical cross section for Alternative D would consist of two 12-foot lanes, a paved 10-foot outside shoulder, a paved 5-foot inside shoulder, and a 46-foot grassy median. This median width was chosen to provide adequate room for acceleration/deceleration lanes, maintenance activities, and to improve safety. The

⁵ A detailed purpose and need statement can be found in the 2007 Draft EIR/EA.

minimum horizontal radius curve would be 1,969 feet, the minimum radius for a 68 mph facility.

Access

Alternative D would establish access control along 54 of the parcels adjacent to SR 29. This would require the relocation of 64 existing direct connections to SR 29 with a series of frontage roads; the frontage roads would connect to the Alternative D alignment at 12 at-grade intersections, while other direct connections to SR 175, SR 281, Red Hills Road, and Diener Drive would require location reconfigurations. Three of the at-grade intersections would replace the existing at-grade intersections of SR 29 with SR 175, SR 281, Red Hills Road, and Diener Drive, while the remaining nine new intersections would connect to 16 frontage road systems to provide access to the residences, businesses, and parcels currently being served by SR 29. Some loss of service would occur to portions of five parcels adjacent to SR 29; these portions may be acquired by the state, at the property owners request in order to avoid undue hardship to the property owners. Intersection spacing would generally be at 0.5 mile, with the closest spacing at 0.42 mile and the furthest at 0.97 mile. The SR 29/SR 281/Red Hills Road intersection would remain signalized and be redesigned for increased capacity, while the other 11 non signalized intersections would use standard left-turn, acceleration, and deceleration lanes.⁶ A 46-foot wide median would separate northbound and southbound traffic.

Right of Way

Right of way acquisition would be required for Alternative D, and utilities would need to be relocated.

Storm Water and Drainage Features

Alternative D would incorporate typical storm water control features. Roadside drainage ditches and brow ditches⁷ would be used in conjunction with attenuation basins to control stormwater runoff and reduce potential water quality impacts. Where feasible, cut and fill slopes would be revegetated. Drainage improvements would include the extension, replacement, and installation of new culverts as needed, as well as the replacement and installation of inlet and outlet treatments (such as headwalls) as needed.

⁶ Alternative D currently includes improvements to the intersection of SR 29 with Diener Drive. At this location, a left-turn pocket is planned on SR 29 for westbound traffic turning left onto Diener Drive.

⁷ A “brow ditch” is typically placed upslope of an excavation to help deflect surface runoff away from the excavation.

Caltrans would implement permanent design features as well as temporary and permanent Best Management Practices (BMPs) that would prevent erosion, increased sedimentation, water quality impacts, and the introduction or spread of noxious weeds. As Caltrans standard practice, soils adjacent to impacted stream channels would be adequately stabilized to prevent mobilization of sediment into the stream channels or adjacent riparian areas. All temporarily impacted areas would be restored to pre-construction contours and conditions upon completion of construction activities. Post construction, all disturbed areas would be stabilized and reseeded with a suitable cover crop that would not persist on site. A regionally appropriate California native seed mix would be applied during the first year to provide succession from the erosion control cover crop to native plants.

Additionally, the roadside drainage/stormwater control systems would incorporate several features, such as bioswales and detention basins, that would address the increase in impermeable surfaces. At Manning Flat, the roadside drainage/stormwater control system includes design features that would maintain existing flow patterns and volume of flow distributed to vernal pools downslope of the new alignment.

In locations adjacent to vernal pools, permanent design measures would be implemented so that the roadside drainage/stormwater control systems do not change vernal pool hydrology. Culverts would be replaced with new drainage systems that do not change the location, grade, or water-flow pattern. Overside drains would be strategically located to ensure roadside runoff stays within the same local basin at each vernal pool core area. Standard water quality construction best management practices (BMPs), a Stormwater Pollution Protection Plan (SWPPP), and a toxic materials control and spill response plan would be implemented to ensure water quality is preserved.

Vegetation Removal

Tree and vegetation removal would be required in order to construct the proposed project. Tree and vegetation removal would be limited to only that which is required to construct the project. As Caltrans standard practice, trees and large shrubs would be removed outside of the anticipated nesting/roosting season for migratory birds, raptors, and bats.

Traffic Control

A Traffic Management Plan (TMP) would be prepared to address traffic management and control during construction activities. The TMP would include coordination with

Emergency response agencies and transit services, including the notification of the dates and times of any construction-related traffic restrictions.

Construction Staging

Temporary haul roads, if required by the Contractor, would be constructed within the Environmental Study Limits (ESL; see Figure 1.1-2) and placed to avoid sensitive environmental resources. Placement of staging and stockpiling areas would also avoid sensitive environmental resources. No imported soil is currently anticipated. As the engineering design develops and cut and fill quantities are refined, imported borrow may be required. There is also the possibility that unsuitable material may be encountered and cannot be reused as fill, which would then become excess material for disposal at an approved off-site facility.

Relinquishment of Frontage Roads

Under Alternative D, portions of the existing SR 29 alignment would serve as frontage roads for the new alignment. According to Section 27 of the California Streets and Highway Code, the State of California shall relinquish to any county or city any portion of any state highway within the county or city that has been removed from the state highway system. Relinquishments are made by a resolution of the California Transportation Commission (CTC).

After construction of the proposed project, portions of the existing alignment that would serve as frontage roads would be relinquished to Lake County. Similarly, new frontage roads and private road facilities constructed as part of the project would also be relinquished. Coordination with Lake County would result in the execution of a Freeway Agreement signed by all jurisdictions involved and would provide the basis for the relinquishment action later taken by the CTC.

According to the California Streets and Highways Code, the State of California cannot “relinquish to any county or city any portion of any state highway that has been superseded by relocation until the department has placed the highway ... in a state of good repair.” This includes maintenance such as litter removal, weed control, and tree and shrub trimming, up to the time of relinquishment. Caltrans would seek to reach an agreement with Lake County as to what constitutes a “state of good repair” prior to the start of construction. The Streets and Highways Code use of the word “highway” includes bridges, culverts, curbs, drains, and all works incidental to highway construction, improvement, and maintenance. The process of presenting the highway in a state of good repair cannot include such work as roadway widening,

new construction, or major reconstruction. It may include preventive maintenance, such as sealing asphalt concrete surfaces.

1.5 Alternatives Considered But Eliminated From Further Discussion Prior to Draft Environmental Document

The 1988 PSR prepared for Segments 1 and 2 (PM 23.9 to 27.9 and PM 27.9 to 31.1) included four project alternatives: 1) no build, 2) passing lanes in both directions, 3) widening to a four-lane expressway, and 4) widening to a four-lane undivided highway. Both the expressway and highway alternatives considered widening to both sides of the existing centerline without upgrading the horizontal or vertical curves to meet current design standards.

By mid-1997, continued engineering design work had identified substantial cost increases to the 1988 PSR alternatives, as well as limitations in the ability of these alternatives to address roadway deficiencies. As a result, five additional build alternatives were developed to provide the necessary improvements, and in early 1999, a supplemental PSR was prepared for Segment 1. The six alternatives in the 1999 supplemental PSR included a no build alternative, a passing lane alternative, and four expressway alternatives of varying alignments with differing median widths. These alternatives all provided improved geometrics consistent with a 62 mph design speed throughout the project limits.

On May 20, 1999, a Project Development Team meeting was held in Lakeport. Representatives from Caltrans, CHP, the Lake County/City APC, and the Lake County Department of Public Works were in attendance. Alternatives presented at this meeting included the three build alternatives from the original 1988 Project Study Reports, as well as the five additional alternatives developed to provide the needed geometric improvements. All eight of the build alternatives were reviewed for consistency with long-range planning and the four-lane freeway/expressway Facility Standard identified in the 1998 Interregional Transportation Strategic Plan. At this meeting, it was decided to eliminate all alternatives that did not include upgrading the facility to meet current design standards, including the four-lane undivided conventional highway alternative, and all of the 1988 PSR alternatives were eliminated from further study.

During development of these alternatives, the decision to improve the geometric design raised new possibilities for analysis, specifically the possibility of a freeway alternative, as well as the possibility of considerable alignment shifts (one to the north

and one to the south) for Segment 2 (these alternatives were identified as Segment 2 alignments 1A and 1B, respectively). These alternatives were evaluated but later rejected due to significantly higher costs than the other alternatives. The freeway alternative was estimated to be double the cost of the expressway alternatives. In addition, a freeway alternative would likely have resulted in significantly greater adverse effects to sensitive environmental resources, because a freeway requires complete, rather than partial, control of access as well as grade separations at all intersections.

On April 25, 2001, another PDT meeting was held in Lakeport. Representatives from Caltrans, CHP, Lake County, and FHWA were in attendance. At this meeting, five alternatives were considered: A) the no build alternative, B) passing lanes with alignment corrections, C) four-lane expressway with a 22-foot median, D) four-lane expressway with a 36-foot median, and E) four-lane freeway with a 36-foot median. Additionally, three “sub-alternatives” were identified for further study for each of the expressway/freeway alternatives; one that would maintain the existing centerline, and two that would shift the proposed centerline to either the left (south) or right (north) of the existing centerline. At this time, the four-lane expressway with a 22-foot median alternative was eliminated from further consideration, as the 22-foot median would not provide the benefits of a 36-foot median in terms of consistency with previously improved segments of SR 29, safety, sight distance, drainage, and future planning.

In November 2001, following engineering work by Caltrans Design staff and the initial decision to combine Segments 1 and 2, further refinements to the alternatives were made. The naming convention of the alternatives was changed in order to merge the design and environmental processes of Segments 1 and 2. At this time, the basic alternatives under study were A) no build, B) passing lanes, C) four-lane expressway with a 36-foot median, and D) four-lane freeway with a 36-foot median. Early variations of the passing lane alternative, all proposed to construct passing lanes in the same locations, but included different levels of associated roadway improvements. The four-lane expressway alternatives at this time each had a 36-foot median and were differentiated by the location of the proposed centerline. C1 would maintain the existing centerline, C2 would shift the centerline 30 feet to the right (north) of the existing corrected centerline, and C3 would shift the centerline 30 feet to the left (south) of the existing corrected centerline. Alternatives C1, C2, and C3 were based on earlier expressway alternatives for Segment 1, and were carried through Segment

2 when these segments were combined for the 2002 State Transportation Improvement Program.

In December 2001, the Lake County/City APC formally eliminated the freeway alternative due to costs and funding constraints.

Upon initiation of the NEPA/404 process in March 2003, five alternatives were under consideration:

- Alternative A – No Build
- Alternative B – Passing Lanes. This alternative would construct two sets of passing lanes in both directions of travel. Northbound passing lanes would be provided from PM 25.7 to 26.7 and 28.6 to 29.8. Southbound passing lanes would be provided from PM 24.4 to 25.4 and 29.2 to 30.2.
- Alternative C1 – Four-Lane Expressway. This alternative would widen SR 29 to a four-lane expressway on the existing centerline and upgrade the existing nonstandard geometric features.
- Alternative C2 – Four-Lane Expressway. This alternative would shift the proposed C1 centerline 30 feet to the north of the existing centerline.
- Alternative C3 – Four-Lane Expressway. This alternative would shift the proposed C1 centerline 30 feet to the south of the existing centerline.

In late 2003, following the completion of the initial environmental analysis, a new expressway alternative was developed to minimize the environmental impacts of the project. Engineering design work began in early 2004. Alternative D was specifically designed to avoid sensitive environmental resources, including endangered plant species, and to reduce project costs by both reducing and balancing the amount of cut and fill required. Alternative D was designed with a 46-foot median, rather than the standard 62-foot median for this type of roadway, in order to reduce environmental impacts. The 46-foot median was chosen over the 36-foot median of earlier design alternatives in order to provide adequate room for acceleration/deceleration lanes and maintenance activities, minimize impacts to traffic during construction by providing enough room for construction of the new roadway at a revised profile grade, and improve safety. The 46-foot median would also provide a refuge for cross traffic at intersections by allowing vehicles to cross only two lanes of traffic at one time, rather than all four lanes. For these reasons, Alternatives C1, C2, and C3 were updated to include the 46-foot median as well.

An interchange option also was added to each of the expressway alternatives at this time to address the traffic volume issues at the SR 29/281/Red Hills Road intersection⁸.

In 2005, Caltrans proposed to the NEPA/404 signatory agencies that the passing lane alternative (Alternative B) be eliminated from further consideration as it did not meet the purpose and need of the project.

The purpose of this project is to provide a modern transportation facility that would accommodate current and anticipated future growth in the area. As early as 1988, the passing lane alternative had been identified as an interim improvement only, unable to meet the desired Level of Service⁹ (LOS) beyond the year 2005. Within the project limits, SR 29 currently operates at LOS D while the concept LOS (the desired LOS as established by the 1989 Route Concept Report) for this section of SR 29 is LOS C or better. LOS D is described as a situation in which traffic flow is unstable, speeds are subject to sudden change, and passing is difficult. The highway LOS is expected to deteriorate to E by the year 2041 if no capacity-increasing improvements are made, causing more congestion and added delays (Caltrans July 2015).

When passing opportunities are limited, “platoons” of vehicles develop, increasing driver frustration and the possibility of unsafe passing maneuvers. Due to the presence of a major intersection within the project limits (SR 29/SR 281/Red Hills Road), passing lanes of a sufficient length are not possible and vehicles would be unable to entirely break free of the platoons due to the insufficient length of the passing lanes. Rather, faster-moving vehicles would simply pass from one platoon to the next. As a result, the average speeds and LOS for Alternative B would have improved only slightly over both existing conditions and the projected conditions under the No Build Alternative.

At the December 14, 2005, NEPA/404 integration meeting, Caltrans, FHWA, and the NEPA/404 signatory agencies in attendance reached informal consensus regarding the elimination of Alternative B, and in late 2006 USEPA and USACE provided their formal agreement to the current range of alternatives.

⁸ A signal was constructed at the SR29/281/Red Hills Road intersection in 2007.

⁹ Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and convenience. LOS is measured on a graduated scale of A to F, in which A is unrestricted, free-flow travel and F is gridlocked, impeded movement.

1.5.1 Alternatives Considered in the Draft EIR/EA But Eliminated From Further Discussion in the Revised Partial Draft EIR/EA

As discussed in Section 1.2.1, after the Draft EIR/EA was circulated for public review in August 2007, Caltrans did not make findings pursuant to CEQA and NEPA and decided to further evaluate project alternatives and cost saving measures.

Consequently, project approval was postponed and a Value Analysis (VA) Team was assembled to further evaluate the project. Value Analysis is defined by Caltrans as “the process used to improve the quality and reduce the cost of transportation projects and other Caltrans programs.” A final VA report was issued on November 5, 2008. The report outlined recommendations that would result in performance and cost saving improvements for the project; recommendations included eliminating from further consideration the interchange options at the SR 29/281/Red Hills Road intersection for each of the expressway alternatives. Construction of a signalization project at the SR 29/281/Red Hills Road intersection in 2007 eliminated the need for an interchange.

As of 2015, the alternatives being considered were Alternatives C1, C2, C3, and D. Following further consideration of potential environmental impacts, it was determined that although Alternatives C1, C2, and C3 would meet the project purpose and need, they would not avoid sensitive environmental resources and would result in direct and indirect impacts to three state- and federally-listed endangered plants species: Burke’s goldfields, Few-flowered navarretia, and Lake County stonecrop. The three endangered plant species are found adjacent to SR 29, within the vernal pools located in Manning Flat and the vernal pools found north of the intersection of SR 29 and Doten road. Alternatives C1, C2, and C3 would all result in direct modification and/or destruction (i.e. take of species) to portions of these plant populations found at these locations. Alternatives C1, C2, and C3 would also result in indirect impacts to these plant populations due to the loss of seed bank and the disruption of hydrological connectivity and function within and adjacent to the remaining portions of the vernal pools. Due to the rarity of these species, the anticipated impacts would likely result in a finding of jeopardy (i.e. jeopardizing the continued existence of a species) under Section 7 of the Endangered Species Act. Subsequently, the PDT determined that it was unlikely that the project would be constructed if Alternative C1, C2, or C3 were selected.

In addition, implementation of Alternative C1, C2, or C3 would result in increased impacts to cultural resources, additional biological resources, and businesses,

compared to Alternative D. A summary of project alternatives and potential impacts is outlined in Table 1-1. In consideration of the anticipated impacts to the three state- and federally-endangered plant species and with the availability of other viable alternatives (No-Build Alternative and Alternative D), Alternatives C1, C2, and C3 were eliminated from further consideration.



Table 1-1 Summary of Project Alternatives and Potential Impacts

Potential Impact (EIR/EA Section)		No Build Alternative	Build Alternatives			
			C1	C2	C3	D
Land Use (2.1)		None	288 acres of new right of way ¹⁰	324 acres of new right of way	350 acres of new right of way	388 acres of new right of way
Growth (2.2)		None	Unlikely to induce growth	Unlikely to induce growth	Unlikely to induce growth	Unlikely to induce growth
Farmlands & Timberlands (2.3)	Total Farmland (acres)	0	387 acres	423 acres	446 acres	388 acres
	Williamson Act Farmlands	0	0	0	0	0
Community Impacts (2.4)	Business displacements	0	11 commercial acquisitions	10 commercial acquisitions	12 commercial acquisitions	4 commercial acquisitions
	Housing displacements	0	5 residential acquisitions	5 residential acquisitions	5 residential acquisitions	5 residential acquisitions
Utilities/Emergency Services (2.5)		None	Relocation of bus stop, relocation of electrical transmission lines and AT&T fiber optic cables, relocation of fiber optic regeneration station	Relocation of bus stop, relocation of electrical transmission lines and AT&T fiber optic cables, relocation of fiber optic regeneration station	Relocation of bus stop, relocation of electrical transmission lines and AT&T fiber optic cables, relocation of fiber optic regeneration station	Acquisition of part of the California Department of Forestry and Fire Protection and California Department of Corrections and Rehabilitation facility; relocation of electrical transmission lines and AT&T fiber optic cables

¹⁰ As Alternatives C1, C2, and C3 have been eliminated from further consideration primarily based on impacts to biological factors, Caltrans did not find it prudent to expend resources to update acreages for new right-of-way and Total Farmland.

Potential Impact (EIR/EA Section)	No Build Alternative	Build Alternatives			
		C1	C2	C3	D
Traffic and Transportation (2.6)	Highway LOS expected to deteriorate to E by the year 2041	Improved level of service and volume/capacity ratio	Improved level of service and volume/capacity ratio	Improved level of service and volume/capacity ratio	Improved level of service and volume/capacity ratio
Visual/Aesthetics (2.7)	None	Topographical feature change, vegetation loss, reduction of views of scenic resources from highway and residences in project area, and potential visual impacts from retaining walls and additional paved surfaces of the increased travel lanes and frontage roads.	Topographical feature change, vegetation loss, reduction of views of scenic resources from highway and residences in project area, and potential visual impacts from retaining walls and additional paved surfaces of the increased travel lanes and frontage roads.	Topographical feature change, vegetation loss, reduction of views of scenic resources from highway and residences in project area, and potential visual impacts from retaining walls and additional paved surfaces of the increased travel lanes and frontage roads.	Topographical feature change, vegetation loss, reduction of views of scenic resources from highway and residences in project area, and potential visual impacts from retaining walls and additional paved surfaces of the increased travel lanes and frontage roads.
Cultural Resources (2.8)	None	Potential impact to a portion of a prehistoric site found to be eligible for National Register of Historic Places (NRHP)	Potential impact to a portion of a prehistoric site found to be eligible for NRHP	Potential impact to a portion of a prehistoric site found to be eligible for NRHP	Would have No Adverse Effect to Cultural Resources included in or eligible for the NRHP
Hydrology and Floodplains (2.9)	None	Temporary channel obstructions during construction, roadway construction within 100-year floodplain	Temporary channel obstructions during construction, roadway construction within 100-year floodplain	Temporary channel obstructions during construction, roadway construction within 100-year floodplain	Temporary channel obstructions during construction, roadway construction within 100-year floodplain

Potential Impact (EIR/EA Section)		No Build Alternative	Build Alternatives			
			C1	C2	C3	D
Water Quality and Storm Water Runoff (2.10)		None	Impacts from operation of roadway; short term impacts from construction of roadway	Impacts from operation of roadway; short term impacts from construction of roadway	Impacts from operation of roadway; short term impacts from construction of roadway	Impacts from operation of roadway; short term impacts from construction of roadway
Geology, Soils, Seismic, Topography (2.11)		None	None	None	None	None
Hazardous Waste and Materials (2.12)		None	No known hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos
Air Quality (2.13)		None	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos
Noise (2.14)		None	None	None	None	None
Natural Communities (2.15)		None	Permanent impacts to approximately 298 acres of natural communities	Permanent impacts to approximately 310 acres of natural communities	Permanent impacts to approximately 294 acres of natural communities	Permanent impacts to approximately 303.9 acres of natural communities
Wetlands (2.16)	Total Section 404 wetlands of the U.S.	None	Permanent impacts to approximately 0.003 acres	Permanent impacts to approximately 0.05 acres	0 acres	Permanent impacts to approximately 0.03 acres

Potential Impact (EIR/EA Section)		No Build Alternative	Build Alternatives			
			C1	C2	C3	D
Wetlands (2.16)	Total Section 404 "other waters" of the U.S.	None	Permanent impacts to approximately 0.20 acres	Permanent impacts to approximately 0.20 acres	Permanent impacts to approximately 0.20 acres	Permanent impacts to approximately 0.20 acres
Wetlands (2.16)	Total wetlands of the State	None	Permanent impacts to approximately 14.20 acres	Permanent impacts to approximately 12.30 acres	Permanent impacts to approximately 14.50 acres	Permanent impacts to approximately 12.01 acres
Wetlands (2.16)	Total "other waters" of the State	None	Permanent impacts to approximately 1.40 acres	Permanent impacts to approximately 1.20 acres	Permanent impacts to approximately 1.70 acres	Permanent impacts to approximately 1.63 acres
Plant and Animal Species (2.17, 2.18)		None	Potential impact to Northwestern pond turtle habitat; 3 to 4 special-status plant species; several bat species; raptor and migratory nesting bird species	Potential impact to Northwestern pond turtle habitat; 3 special-status plant species; several bat species; raptor and migratory nesting bird species	Potential impact to Northwestern pond turtle habitat; 3 to 4 special-status plant species; several bat species raptor and migratory nesting bird species	Potential impact to Northwestern pond turtle habitat; 6 special- status plant species, several bat species, raptor and migratory nesting bird species
Threatened and Endangered Species (2.19)		None	Potential impacts to habitat for California red-legged frog; Likely to adversely affect Burke's goldfields, few- flowered navarretia, Lake County stonecrop; Potential impacts to habitat for Townsend's Big- eared bat	Potential impacts to habitat for California red-legged frog; Likely to adversely affect Burke's goldfields, few- flowered navarretia, Lake County stonecrop; Potential impacts to habitat for Townsend's Big- eared bat	Potential impacts to habitat for California red-legged frog; Likely to adversely affect Burke's goldfields, few- flowered navarretia, Lake County stonecrop; Potential impacts to habitat for Townsend's Big- eared bat	Potential impact to habitat for California red-legged frog; potential impacts to habitat for Townsend's Big-eared bat (Not likely to adversely affect)
Invasive Species (2.20)		None	None	None	None	None
Cumulative Impacts (2.21)		None	None	None	None	None

Table 1-2 Alternatives Considered But Eliminated From Further Study

Alternatives	Reason for Elimination from Further Study
Four-lane expressway with 14-foot median without upgrades to meet current design standards (from 1988 PSR for Segment 1 and Segment 2)	In May 1999, the PDT determined that all alternatives that did not include upgrading the existing facility to meet current design standards should be eliminated.
Four-lane undivided highway with 4-foot paved median without upgrades to meet current design standards (from 1988 PSR for Segment 1 and Segment 2)	In May 1999, the PDT determined that all alternatives that did not include upgrading the existing facility to meet current design standards should be eliminated.
Four-lane expressway with 22-foot median on varying alignments (from 1999 Supplemental PSR for Segment 1)	In May 2001, the PDT determined that all alternatives with a 22-foot median should be eliminated as the 22-foot median would not provide the benefits of a 36-foot median in terms of consistency with previously improved segments of SR 29, safety, sight distance, drainage, and future planning.
Four-lane expressway with a 36-foot median on Segment 2 alignments 1A and 1B	In September 2001, Segment 2 alignments 1A and 1B were dropped due to cost and funding constraints.
Four-lane freeway with a 36-foot median (presented at November 2001 PDT meeting)	In December 2001, the PDT formally eliminated the freeway alternative due to cost and funding constraints.
Passing Lanes	In late 2006, the passing lane alternative was formally eliminated, with consensus from USACE and USEPA, as this alternative does not meet the purpose and need of the project.

Table 1-3 Alternatives Considered in the Draft EIR/EA but Eliminated From Further Consideration in the Revised Partial Draft EIR/EA

Interchange Option for each expressway alternative	Construction of a signalization project in 2007 at the SR 29/281/Red Hills Road intersection eliminated the need for an interchange.
Alternative C1	In 2015, Alternative C1 was eliminated based on anticipated direct and indirect impacts to state- and federally-listed species, and the availability of other, viable alternatives.
Alternative C2	In 2015, Alternative C2 was eliminated based on anticipated direct and indirect impacts to state- and federally-listed species, and the availability of other, viable alternatives.
Alternative C3	In 2015, Alternative C3 was eliminated based on anticipated direct and indirect impacts to state- and federally-listed species, and the availability of other, viable alternatives.

1.6 Permits and Approvals Needed

The following permits, reviews, and approvals are required for project construction:

Federal Endangered Species Act (FESA)

In accordance with Section 7 of FESA, Caltrans prepared a Biological Assessment (BA) which documented and evaluated potential project-related impacts to federally threatened and endangered species known to occur within the ESL. The USFWS concurred with Caltrans' determination of *may affect, not likely to adversely affect* for the federally endangered Burke's goldfields, few-flowered navarretia, and Lake County stonecrop, and the federally threatened California red-legged frog. See section 2.19 for further discussion of threatened and endangered species.

National Emission Standards for Hazardous Air Pollutants

An asbestos survey would be completed prior to structure demolition activities. Lake County Air Quality Management District permits (National Emission Standards for Hazardous Air Pollutants [NESHAP]) are required for demolition.

Asbestos inspections for a NESHAP permit are performed by California Occupational Safety and Health Administration–certified inspectors. Regulated Asbestos Containing Materials (RACM) identified during the survey are noted on the NESHAP permit. All RACM would be abated by licensed asbestos contractors prior to demolition.

National Pollutant Discharge Elimination System Permit

On behalf of USEPA, the State Water Resources Control Board (SWRCB) has developed and issued a National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit for Caltrans (Order No. 2012-0011-DWQ) (Caltrans NPDES Permit) to regulate storm water discharges from all of Caltrans' right of way, properties, and facilities.

Caltrans would obtain coverage for storm water discharges associated with construction activities under Order No. 2009-0009-DWQ Statewide Construction General Permit (Statewide Construction General Permit). The SWRCB issues the Statewide Construction General Permit for all construction activities of 1 acre or greater, or a number of smaller projects that are part of a common plan of development with the total area exceeding 1 acre, or projects that have the potential to significantly impair water quality. Caltrans projects subject to the Statewide

Construction General Permit require a Storm Water Pollution Prevention Plan, while other projects smaller than 1 acre require a Water Pollution Control Program.

A Storm Water Pollution Prevention Plan would be prepared for the proposed project. The plan requires that pollution sources be identified, and it commits to implementing storm water pollution prevention measures to reduce pollutants in storm water discharges from construction sites both during and after construction.

Section 404 Nationwide Permit

A Nationwide Permit (Clean Water Act Section 404) would be required from USACE for impacts to wetlands and waters of the United States. Although USACE issues this permit, USEPA has oversight and override authority over the permit.

Section 401 Water Quality Certification

Projects that require a Section 404 permit from USACE are also required to obtain a Section 401 Water Quality Certification or Waiver from the Regional Water Quality Control Board (RWQCB).

Porter-Cologne Water Quality Control Act Waste Discharge Requirement

Pursuant to the California Water Code Section 13260, projects that propose to discharge waste (e.g. place fill material) that could affect the quality of waters of the state must file a report of waste discharge with the appropriate regional water quality control board.

Streambed Alteration Agreement

Pursuant to California Fish and Game Code Sections 1600 et seq., a Streambed Alteration Agreement would need to be obtained from the California Department of Fish and Wildlife (CDFW) for Alternative D, as the result of work that would occur within the bed, bank, or channel of streams within the project area.

State Historic Preservation Officer

In accordance with Section 106 of the National Historic Preservation Act, the State Historic Preservation Officer (SHPO) has provided concurrence with Caltrans' finding of *No Adverse Effect* for the proposed project.



Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization and/or Mitigation Measures

This chapter addresses the environmental impacts of the proposed project as well as identified avoidance, minimization, and mitigation measures that would be carried out as part of the project. Avoidance, minimization, and/or mitigation measures are discussed for each of the environmental factors covered in the following subsections.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered and no adverse impacts were identified: energy, paleontology, and timberlands. Consequently, there is no further discussion regarding these issues in this document. For discussions of environmental factors not included in this Revised Partial Draft EIR/EA, refer to the 2007 Draft EIR/EA.

Human Environment

2.2 Growth

2.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA Guidelines (Section 15126.2[d]), require that environmental documents “discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.”

2.2.2 Growth Inducement Analysis

The Caltrans *Guidance for Preparers of Growth-related, Indirect Impact Analyses* (Caltrans 2006) recommends the following six steps when assessing a project's potential growth-inducing impacts:

- Step 1: Review previous project information and decide on the approach and level of effort needed for the analysis.
- Step 2: Identify the potential for growth for each alternative.
- Step 3: Assess the growth-related effects of each alternative to resources of concern.
- Step 4: Consider additional opportunities to avoid and minimize growth-related impacts.
- Step 5: Compare the results of the analysis for all alternatives.
- Step 6: Document the process and findings of the analysis.

2.2.2.1 Geographic Study Area

The geographic study area for potential indirect growth-related impacts is made up of the area that would see significant improvements in accessibility as a result of the proposed project. This area, referred to as the commuter-shed, includes the origins and destinations most likely to be affected.

Alternative D is expected to result in a reduction of travel times of approximately 4 minutes, compared to projected travel times of the existing roadway environment. This equates to an improvement in accessibility of about 5 miles. Figure 2.2-1 shows the area in which this accessibility improvement would have the greatest effect: the project corridor, and a radius of 5 miles. This encompasses the communities of Clear Lake Riviera, Kelseyville, and Lower Lake.

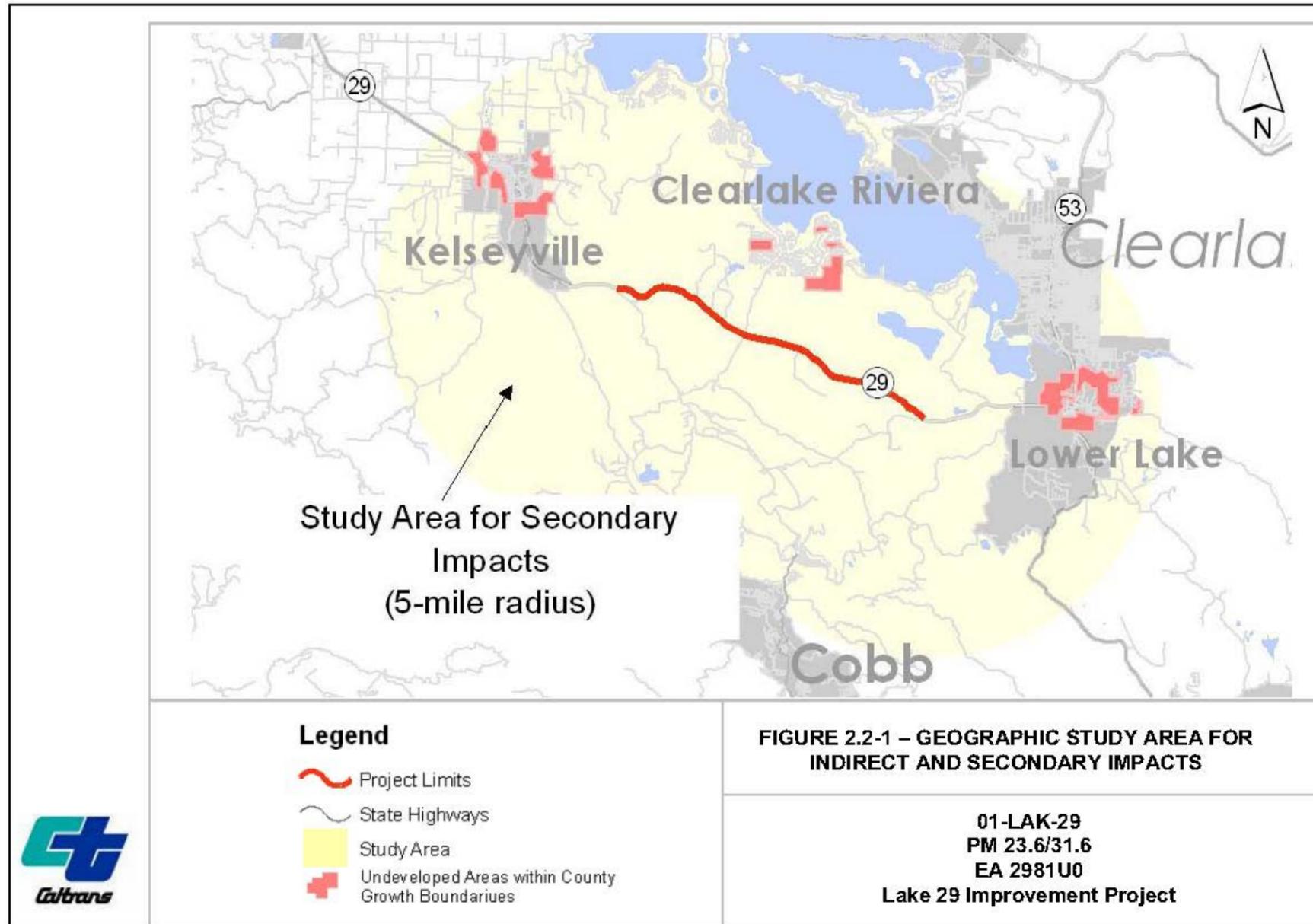


Figure 2.2-1 Geographic Study Area for Indirect and Secondary Impacts



2.2.2.2 Step 1: Methodology and Level of Effort

As the *Guidance for Preparers of Growth-related, Indirect Impact Analyses* (Caltrans 2006) states, adding lanes to a highway “could cause growth-related impacts” because new lanes “add capacity to an existing facility. These projects warrant closer consideration to determine whether an analysis of growth-related impacts would be necessary.”

The fact that the proposed project would be expected to reduce travel time suggests that a study of possible growth inducement is warranted.

Therefore, the methodology used is a qualitative analysis of factors contributing to and constraining growth in this area, and how the project would alter these opportunities and constraints. A combination of approaches, including the use of geographic information systems (GIS) software and traffic forecasts, are used to support this process of qualitative inference.

2.2.2.3 Step 2: Potential for Growth

No Build Alternative

Growth within the study area is anticipated to continue in a similar fashion as seen in recent years with residential and commercial development concentrated within designated Community Growth Boundaries. The 2008 Lake County General Plan identifies Community Growth Boundaries which have been officially adopted to separate land to be developed at urban densities from land to be developed at rural densities or for natural resource protection. Three separate Community Growth Boundaries are found within the study area encompassing the communities of Kelseyville, Lower Lake, and Clear Lake Riviera (Figure 2.2-2). As stated in the 2008 General Plan “Each of the Community Growth Boundaries contain enough vacant or underutilized land to accommodate a high, 3% average growth rate through the year 2030.” Local government plans and policies outlined in the General Plan generally constrain growth to these areas. Land Use Policy 2.2 of the General Plan, states that “The County shall encourage development within Community Growth Boundaries where public services such as water and sewer systems, schools, and roads already exist and capacity is sufficient.” Similarly, Land Use Policy 2.6 states that “The County shall limit urban development to the areas within designated Community Growth Boundaries.”



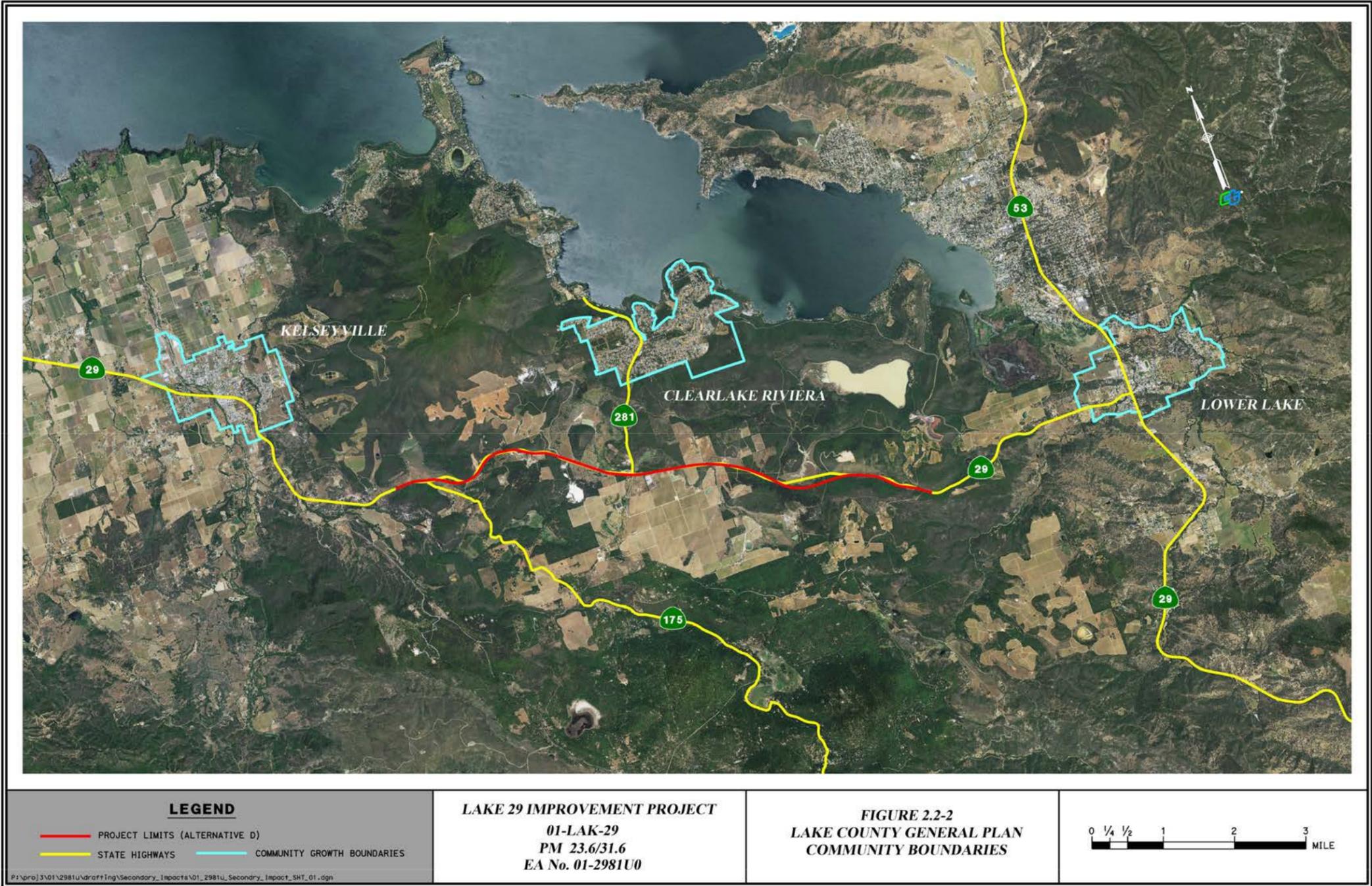


Figure 2.2-2 Lake County General Plan Community Boundaries



Although real estate costs have been on the rise, the lower cost of land and housing in Lake County relative to nearby Mendocino, Napa, and Sonoma counties is likely a promoting factor of growth in the area. According to the 2004 Wine Country Interregional Partnership Final Report, in 2002 Lake County was the only county within Wine Country which remains affordable based on a threshold of two wage earners per household (Wine Country IRP Final Report, 2004). In Napa, Mendocino, and Sonoma counties, the ratio of housing prices to average wages were such that, statistically, households needed more than two wage earners to afford a home.

Based on the 2008 Lake County General Plan and comparatively lower real estate costs, it is reasonably foreseeable that urban development would continue within the designated Community Growth Boundaries.

Substantial residential development outside of the Community Growth Boundaries is not anticipated as existing zoning ordinances¹¹ outside of these areas do not permit large scale residential development. The dominant land use designation outside of the Community Growth Boundaries is the Rural Lands category which allows for rural development including, but not limited to, single family residential development and agricultural production. Zoning for Agriculture, also prominent within the study area, aims to protect the County's agricultural resources and to prevent development incompatible with agricultural production. Rural Residential land use zoning, found in patches within the study area, allows for single-family residential development with small-scale agricultural activities. In these Rural Residential areas, the minimum lot size permitted is between five and 10 acres, resulting in the dispersed residential development that currently occurs along SR 29, SR 175, and SR 281.

In addition to zoning constraints, the rolling to mountainous terrain found outside of the Community Growth Boundaries is unsuitable for large scale residential and/or commercial development. As a result of the difficult terrain, the infrastructure needed to support extensive development including public facilities and services is currently not available. Due to the topography, the cost and effort to extend these services from the communities of Kelseyville, Clearlake Riviera, and Lower Lake, or create new public facilities and services is likely prohibitive. This presents a substantial obstacle to large-scale development outside of the Community Growth Boundaries. Individual parcels outside of these communities are currently served by groundwater wells and wastewater is treated by individual septic systems. The limited availability of these services is a major constraint to urban development. Public Facility and Services

(PFS) Policy 2.6 of the General Plan states that “The County shall not approve new use permits or subdivisions unless an adequate supply of quality water and wastewater treatment capacity is available or would be developed prior to breaking ground for construction.” Similarly, Policy 2.3 states that “The County shall, through the area plan process, designate locations and densities of urban and suburban land-uses in a manner that maximizes the use of existing water infrastructure before relying on system expansions.”

One area outside the Community Growth Boundaries that has the potential to see limited future commercial growth is the area surrounding the SR 29/281/Red Hills Road intersection. Development at this location would likely be intended to serve through traffic. This area is zoned for Community Commercial, with a small portion zoned as Resort Commercial northwest of the intersection and another small portion zoned as Service Commercial southeast of the intersection. The Community Commercial land use category permits a wide range of commercial retail and service commercial establishments. Typical permitted uses include gasoline service stations, eating and drinking establishments, public buildings, general merchandise stores, and professional offices. The Resort Commercial category allows a variety of commercial uses oriented toward tourists. Permitted uses include dining, entertainment services, wineries, and various types of lodging facilities. Service Commercial zoning identifies areas suitable for heavier commercial uses. Automotive-related services, construction sales and services, and heavy equipment sales and services are common within Service Commercial zoning. The SR29/281/Red Hills Road intersection has several small commercial services and is the turnoff to the community of Clearlake Riviera. The intersection’s northwest corner, “Kit’s Corner,” is made up of a gas station, convenience store, motel, and several small retail spaces. It is likely that development in accordance with these land use designations would continue as a result of forecasted growth in the area, however, this area is limited in size and is surrounded by land currently zoned and used for agricultural purposes.

Agricultural development is also anticipated outside of the Community Growth Boundaries. As stated above, the majority of land outside of the Community Growth Boundaries is designated as Rural Lands and Agricultural Land. Both the Rural Lands and Agricultural land use designations encourage the development of agricultural operations, including vineyards. With these zoning ordinances in place and in combination with rich soil types, favorable microclimates, and a growing wine

¹¹ Zoning ordinances were obtained from the Lake County General Plan (2008).

industry, the project area has seen an accelerated conversion of lands to vineyards. In Lake County, the total grape acreage increased by 326 acres and the total tonnage of wine grapes harvested increased by 25% from 2012 to 2013 (Lake County Department of Agriculture 2013 Crop Report). It is likely that the conversion of lands to agricultural purposes including vineyards would continue in areas favorable to such conversions.

Alternative D – Build Alternative

Alternative D would improve safety and reduce travel times along SR 29 within the geographic study area. As such, the proposed project has the potential to make the study area communities more attractive to development, relative to other locations within the county. Lower Lake, Kelseyville, and Clear Lake Riviera would likely be considered for new development that may otherwise be developed near Lakeport or other communities in Lake County. Growth within the Community Growth Boundaries of Lower Lake, Kelseyville, and Clear Lake Riviera is consistent with forecasted growth and Lake County’s goals and policies

The proposed project also has potential to influence growth in the immediate area surrounding the SR 29/281/Red Hills Road intersection. As stated above, growth in this area would likely be intended to serve through traffic (i.e. traveler services), however, this area is limited in size and is surrounded by land currently zoned and used for agricultural purposes. The proposed project would include controlled access to the parcels surrounding this intersection, thus limiting the location and quantity of development. Growth within this area would also be consistent with Lake County’s goals and policies.

Alternative D is not anticipated to noticeably influence the location, rate, type, and/or amount of forecasted growth outside of the established growth areas for the following reasons:

- The project would not provide new access to undeveloped areas.
- Motorized accessibility to surrounding areas, such as Napa and Sonoma Counties, remains limited. The limited accessibility in to these areas reduces the potential for development of large employment centers or commuter communities within the geographic study area, as travel time to outside locations remains a limiting factor.
- The project would result in a negligible reduction in travel times to employment centers outside of the study area in adjacent counties. The distance from the

communities found within the study area to these employment centers is nearly three times farther than the median commute times in Mendocino, Napa and Sonoma counties (18.4, 23.6 and 25.2 minutes, respectively, in 2014)(U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates).

- The project would not provide infrastructure, including public services and facilities (i.e. water/sewer services) needed to support extensive development, or remove constraints to providing such infrastructure.
- The project would not alter the existing terrain in such a way that would make it more suitable for development.
- The project would not construct a new highway interchange, thus would not create the need for new unplanned traveler services in an area not designated for such services.

2.2.2.4 Step 3: Growth-Related Effects and Resources of Concern

Resources of concern within the study area include, but are not limited to:

- State and federally listed species including:
 - Townsend’s big eared bat (*Corynorhinus townsendii*)
 - Clear Lake hitch (*Lavinia exilicauda chi*)
 - Burke’s goldfields (*Lasthenia burkei*)
 - Few flowered navarretia (*Naverretia leucocephala* ssp. *pauciflora*)
 - Lake County stonecrop (*Parvisedum leiocarpum*)
- Wetlands and Vernal Pools
- Cultural resources

No Build Alternative

Although Lake County has adopted “smart growth” policies which promote the preservation and enhancement of natural and cultural resources, it is reasonably foreseeable that there could be growth-related, indirect impacts to resources of concern under the baseline conditions (No Build Alternative). This would result primarily from the conversion of lands to vineyards, which has already contributed to habitat loss and fragmentation in the area.

Alternative D – Build Alternative

Construction of Alternative D would result in some direct and indirect effects to resources of concern, however, once built the proposed project has limited potential to influence growth and further affect resources of concern outside of the Community

Growth Boundaries. Notable growth-related impacts to resources of concern near the SR 29/281/Red Hills Road intersection are not anticipated as the proposed project would include controlled access to the parcels surrounding this intersection, thus limiting the location and quantity of development.

Development within the Community Growth Boundaries, as a result of the proposed project, is less likely to affect resources of concern as these areas were developed with consideration of known resources and in an effort to discourage uncontrolled development. Community Growth Boundaries were created to “provide greater certainty for both development and conservation goals” (2008 Lake County General Plan). Growth within these areas is consistent with Lake County’s goals and policies that aim to protect resources of concern.

As development projects are planned, either within or outside of the designated growth areas, they would be required to undergo environmental review and analysis and would be obligated to mitigate for significant impacts to environmental resources if feasible. Policy OSC-1.14 of the General Plan states that “prior to approving a specific plan or project, the County shall require a biological study to be prepared by a qualified biologist for proposed development within areas containing moderate to high potential sensitive habitat, sensitive wildlife species, and/or sensitive plant species.”

The proposed project is not anticipated to result in considerable additional growth-related impacts to resources of concern beyond what is anticipated for the No Build Alternative.

2.2.2.5 Step 4: Consider Additional Opportunities to Avoid and Minimize Growth-Related Impacts

While the proposed project is not anticipated to notably influence growth, the project includes the following project design features and standard procedures to avoid and minimize growth-related impacts:

- Alternative D closely follows the existing SR 29 alignment in order to minimize disturbance.
- Alternative D includes access control. This would prevent the addition of individual parcel driveways onto SR 29 and limit the location and quantity of developed areas. Access control points and frontage roads are located in areas that avoid known resources of concern.

- Alternative D does not alter the SR 29/281/Red Hills Road intersection in a manner that would result in the relocation of businesses to areas currently not experiencing development. Additionally, no interchanges would be constructed as part of the proposed project.
- The project has been developed in coordination with local and regional government and planning agencies and is in accordance with local planning goals and policies. The project is identified as “top priority” in the 2010 Lake County Regional Transportation Plan.

2.2.2.6 Step 5: Compare the Results of the Analysis for All Alternatives

It is reasonably foreseeable that impacts to resources of concern could occur under the No Build Alternative. This would result primarily from the continued conversion of lands to agricultural practices. Although residential development outside of the designated growth areas has the potential to impact environmental resources, due to the lack of infrastructure including public services and facilities, these impacts would be minor and would likely take place in the distant future.

The proposed project is not anticipated to cause notable growth beyond what is projected by local and regional planning agencies and would not affect the forecasted growth in a manner that would result in considerable additional impacts to resources of concern. The project is not anticipated to contribute to or accelerate the conversion of land to agricultural practices, and would not shift urban growth to areas not already considered for such growth.

2.2.2.7 Step 6: Process and Findings

Process

Traffic Information

The Caltrans Traffic Forecasting unit provided data on the reduction in travel time that would result from the proposed project.

Geographic Information Systems

GIS software was used to develop a study area for indirect and secondary impacts and to compare the existing urbanized area with the planned growth boundaries for the communities in the study area.

Planning Information

Lake County’s 2008 General Plan, and the Kelseyville, Clearlake Riviera, and Lower Lake Area Plans, served as the primary sources of information on growth trends,

community service availability, and resource conservation policies. Additionally, Caltrans staff discussed the project's potential to stimulate growth with Lake County planners and other stakeholders.

The report *IRP Actions to Address Jobs-Housing Imbalance and Imbalance Impacts* (IRP 2004) provides a wealth of data on projected commuting patterns in this region and was used in preparing this analysis.

Assumptions Included in Analysis

Development would be directed toward existing communities. According to the Lake County Community Development Department, the County has avoided extending infrastructure into parts of the county such as the proposed project corridor, where large-scale, high-density development would be inconsistent with surrounding land uses (see General Plan Land Use Policies 1.1, 2.1, and 2.6). This analysis assumes that the County's ability to control the location of infrastructure would continue to limit development outside of existing communities (i.e., Kelseyville, Lower Lake, and Clear Lake Riviera).

Findings

1. Under baseline conditions (No Build Alternative), continued growth within the study area is anticipated, with residential and commercial development concentrated within the Community Growth Boundaries and agricultural expansion outside of urban areas. Historical growth patterns, forecasted growth, relatively affordable real estate, and existing land use designations support this finding.
2. The potential for growth-related indirect impacts to resources of concern under baseline conditions is reasonably foreseeable.
3. The proposed project would make the study area's communities more attractive to development, relative to other locations within the county, by improving safety and reducing travel time along SR 29. As a result, Lower Lake, Kelseyville, and Clear Lake Riviera would likely be considered for new development that would otherwise be developed near Lakeport or the other communities in Lake County. Growth within the study area's communities is not anticipated to result in considerable impacts to resources of concern as these areas have been developed in consideration of known resources. As development projects are planned, they would be required to undergo environmental review and analysis and would be obligated to mitigate for significant impacts to environmental resources if feasible.

4. Construction of Alternative D has limited potential to influence growth in the immediate area surrounding the SR 29/281/Red Hills Road intersection. Notable growth-related impacts to resources of concern near the SR 29/281/Red Hills Road intersection are not anticipated as the proposed project would include controlled access to the parcels surrounding this intersection, thus limiting the location and quantity of development.
5. Alternative D has limited potential to influence growth outside of the designated growth areas. The proposed project would not remove key constraints to growth that would notably alter baseline conditions in terms of rate, location, quantity, and type of growth. These constraints include difficult topography and the lack in availability of infrastructure outside of the designated growth areas needed to support large scale residential development, extended travel times to employment centers, and limited accessibility to surrounding areas.
6. The proposed project would not alter forecasted growth in a manner that would notably contribute to impacts to resources of concern.

2.5 Utilities, Emergency Services, and Community Facilities

2.5.1 Affected Environment

2.5.1.1 Water and Wastewater

No community water or wastewater services are available in the project area. Individual parcels are served by groundwater wells and individual septic tanks. There are two small water distribution systems in the project area that are registered with the State Health Agency: Kit's Corner and the Konocti Conservation Camp. Both have their own water lines, with water supplied from wells.

Kelseyville is served by the Kelseyville County Waterworks District No. 3, and the Konocti Harbor area is served by the Mount Konocti Mutual Water Company. Neither of these services extend into the project area.

In Lower Lake, Lower Lake County Waterworks District No. 1 provides water. The Lake County Sanitation District provides wastewater treatment services. These service providers also do not extend into the project area.

2.5.1.2 Other Utilities

Pacific Gas and Electric Company (PG&E) owns and operates underground and aerial electric facilities within and adjacent to the proposed project. The electric facilities include the Konocti Substation just north of Kit's Corner, portions of the Hopland-Lower Lake and Konocti-Eagle Junction 60 kilovolt (kV) aerial electric transmission lines, 12 kV aerial electric distribution lines, and some underground 12 kV distribution facilities at the Kit's Corner business area complex.

Two long distance transcontinental AT&T fiber optic trunk lines are present in the project area; both are required to be underground at all times. The first line runs along SR 29 through the project area, with signal strength boosted by a regeneration station also located in the area. The second line is present at the east and west ends of the project, where after running next to SR 29 it then runs alongside Diener Drive and SR 175 within the project area. In addition to the transcontinental lines, overhead and underground communication lines are also present within the project limits.

In addition, aerial, overhead Mediacom lines run alongside northbound SR 29 before making a transverse crossing over SR 29 to eventually run alongside Diener Drive at the west end of the project.

2.5.1.3 Fire Protection

The Kelseyville Fire Protection District operates a fire station in Kelseyville. This fire department responds to emergency calls in the project area. The district also operates a substation, Station No. 4, in the Clear Lake Riviera community. The Lower Lake Fire Protection District has a fire station in the community of Lower Lake and an auxiliary station near Point Lakeview Road. This department responds to calls as far west as Diener Drive, the eastern edge of the project area.

The California Department of Forestry and Fire Protection (CAL FIRE) Kelsey-Cobb Station is located south of the project area, on SR 175 near the intersection of Red Hills Road. The CAL FIRE responds to wildland fire emergencies located outside of the jurisdictions of the local fire protection districts. According to an engineer at the Kelsey-Cobb Station, approximately 60% of this station's calls require personnel and equipment to pass through the project area. Annually, the Kelsey-Cobb Station's most active period is between the beginning of June and the first week in November.

2.5.1.4 Law Enforcement

The unincorporated area of Lake County is patrolled by the Sheriff's Department. Approximately 25 officers are on patrol in the county. The California Highway Patrol also maintains an office in Lake County with its officers patrolling state and local facilities.

2.5.1.5 Konocti Conservation Camp

Konocti Conservation Camp is a joint operation of the California Department of Corrections and Rehabilitation (CDCR) and CAL FIRE. The camp, located south of SR 29 in the project area, houses 115 male minimum-custody felons. This facility also includes housing for CDCR and CAL FIRE staff that opt to live on-site. Inmates are employed in public works/conservation projects and respond to emergencies that CAL FIRE normally responds to, including wildland fires, floods, earthquakes, search and rescue, and other disasters (Lake County Grand Jury 2001–2002). The facility also serves as a base camp facility in times of emergency, at which time its population can temporarily increase significantly. An additional housing facility complex for senior CAL FIRE and CDCR personnel is located adjacent to SR 29 within the project limits on a separate parcel detached from the main camp.

2.5.1.6 Hospitals

Redbud Community Hospital

Redbud Community Hospital in Clearlake serves southern Lake County. Facilities include a 24-hour emergency room, an intensive care unit, women's services, and home healthcare. The hospital has 70 physicians on staff (Adventist Health Hospitals 2002). Emergency responders in the project area usually bring emergency cases to this hospital.

Sutter Lakeside Hospital

Sutter Lakeside hospital in Lakeport is a 69-bed facility that includes a medical surgery wing, an intensive care unit, an urgent care center, and an obstetrics unit. The hospital is open 24 hours and includes outpatient services (Sutter Lakeside Hospital 2002).

2.5.1.7 Transit

Lake Transit provides five different bus routes that encompass Clear Lake and connect the largest communities in Lake County. One additional regional route connects Lakeport to Ukiah in Mendocino County and from there to Greyhound,

Amtrak, and additional Mendocino Transit authority routes. Four additional routes provide local community service within the towns of Lakeport and Clearlake/Lower Lake.

Bus Route 4 passes through the project area, running seven round trips daily between Lower Lake and Lakeport, with stops in Kelseyville. This route includes a stop at Kit's Corner. The Kit's Corner bus stop is also a transit point for bus riders, including school-aged children, transferring from Route 4 to Route 2 and/or Route 4A. Route 2 provides service to the southern communities of Cobb, Middletown, and Loch Lomond, while Route 4A provides service to the communities along State Route 281 and Soda Bay Road as well as Kelseyville, Finley, Big Valley Rancheria and Lakeport.

2.5.2 Environmental Consequences

Temporary Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to utilities, emergency services, or community facilities relative to the proposed project.

Alternative D

During roadway construction, emergency vehicles may need to stop temporarily or slow down in order to ensure that they can safely pass through the project area. Given the availability of response vehicles in this area (Kelseyville has personnel to the north and west of the project area, CAL FIRE has a station to the south, and Lower Lake has personnel to the west that could respond if needed), delays due to construction would not noticeably increase emergency response times. Fire prevention offices in this area, as well as medical emergency response teams in Clearlake and Lakeport, would be notified of the dates and times of construction-related traffic restrictions.

Transit service vehicles may also experience minor temporary delays due to traffic control during construction of the proposed project. Caltrans would notify and coordinate with local transit authorities to ensure proper function of transit services. The temporary delays would be minor and are not anticipated to result in a considerable inconvenience to transit service users.

As Caltrans standard practice, a Traffic Management Plan would be prepared to address traffic management and control during construction activities. Emergency response agencies and transit services would be notified of the dates and times of any construction-related traffic restrictions.

Relocation of utilities may result in short-term service interruptions, although with standard construction practices, such interruptions would be negligible.

Permanent Impacts

Konocti Conservation Camp

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to the Konocti Conservation Camp relative to the proposed project.

Alternative D

Alternative D would require the acquisition of a detached portion of the Konocti Conservation Camp facility that has been developed with two residences to provide optional housing for CDCR and CAL FIRE personnel. Several outbuildings are also located on the parcel. This state facility is detached from the main campus by one mile.

Transit

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to bus services in this area or the location of any bus stops relative to highway operations.

Alternative D

Alternative D would result in a minor increase in miles travelled for two bus routes, and a slight decrease in travelled miles for a third route. These small changes would not materially affect bus service in this area and would not alter the location of any bus stops.

Emergency Response Time

No Build Alternative

Given increased congestion on SR 29, emergency vehicle response times would likely increase in the future under the No Build Alternative.

Alternative D

Construction of Alternative D would improve accessibility, expedite emergency evacuations, provide a more defensible firebreak, and reduce emergency response times along SR 29.

Utility Relocation

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no relocations of utilities relative to highway operations.

Alternative D

Construction of Alternative D would require the relocation of approximately 16,500 feet of PG&E 60 kV electrical transmission lines. Pursuant to the California Public Utilities Commission's (PUC) General Order 131-D, special permitting is required for the relocation of more than 2,000 feet of privately owned power lines operating at voltages in excess of 50 kV. Alternative D would also require the relocation of approximately 43,500 feet of AT&T transcontinental fiber optic lines, with the majority of these lines located within the current State highway right-of-way.

The respective utility companies would be responsible for the relocation of utilities determined to be in conflict with the proposed project, including the acquisition of regulatory permits necessary to conduct the relocation work and any additional studies necessary to obtain permits or comply with PUC regulations. It is anticipated that the relocation of utilities would occur in phases which correspond to the phased construction of the proposed project. Caltrans has consulted with the utility companies to develop a preliminary utility relocation plan. The plan includes proposed utility corridors, pole locations, methods of construction, and access roads necessary to perform the relocation work and maintain the new facilities. Caltrans will continue to coordinate with the utility companies in order to develop a final relocation plan that will both minimize environmental impacts and ensure proper relocation and function of facilities and services.

It is anticipated that PG&E would need to relocate approximately 27 electric transmission poles and 142 electric distribution poles. Additional poles may also be required in the new corridors depending on the individual line profiles. Prior to the beginning of construction, PG&E would survey and stake new pole locations, frame and set the poles, and then string conductor (wire) on the new pole line. The existing pole line would need to be de-energized at the beginning and end of the relocated

segment so the new segment can be connected to the existing pole line. If the relocated segment precludes the use of guy wires, self-supporting tubular steel poles (TSP) may be required for angle points. Depending on the angle, a concrete foundation may also be required to provide adequate support. Existing poles range from 30 to 65 feet in height, with the majority at approximately 45 feet. Replacement poles would be the same height or, in some cases, taller than the existing poles. When practicable, electric distribution and transmission lines would share the same poles. The old poles on the abandoned alignment would be removed by cutting them off at ground level and hauling them off site for disposal at an approved facility. A construction work area of approximately 80 feet in diameter at each new transmission pole location and 50 feet in diameter at each new distribution pole location is required to conduct the above described work. Additionally, PG&E would require a vegetation clearing easement of 30 feet wide for an electric distribution line and 60 feet for an electric transmission line. No PG&E gas lines are present within the project limits.

Two AT&T underground fiber optic transcontinental communications cables would also be relocated prior to highway construction. The new segments of fiber optic cable would be installed via a combination of open trenching and directional boring. Temporary directional boring pits would be located inside of the AT&T Transcontinental utility corridor. Fiber optic cable on the old alignment would be abandoned in place. AT&T underground and aerial telecommunications lines would also be relocated. Approximately 55 AT&T poles would be relocated, in addition to the joint PG&E/AT&T poles described above. Where practicable, new aerial communication lines would share poles with PG&E's electric transmission and/or distribution lines.

Underground and aerial utilities would be placed within the same corridor, where feasible. In addition, existing utility corridors adjacent to State Route 29 but outside of the proposed state right-of-way would be utilized by co-location of utilities and the use of joint poles for aerial lines to the greatest extent possible. This would result in the consolidation of separate aerial runs for communication and power utilities.

Aerial communication and electrical service lines to residences, and other structures, would require reconnection.

Potential environmental impacts resulting from the relocation of utilities have been evaluated to the fullest extent possible based on the most current available

preliminary relocation plans; potential environmental impacts are evaluated in the following sections of this Revised Partial Draft EIR/EA:

- Visual/Aesthetics
- Cultural Resources
- Biological Environment

When final relocation plans are available, reevaluation of some resources may be necessary.

2.5.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.7 Visual/Aesthetics

2.7.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings (42 USC Section 4331[b][2]). To further emphasize this point, FHWA in its implementation of NEPA (23 USC Section 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state with “enjoyment of *aesthetic*, natural, scenic and historic environmental qualities” (California Public Resources Code [PRC] Section 21001[b]).

2.7.2 Affected Environment

2.7.2.1 Overview

The proposed project corridor generally follows low-lying areas crossing saddles of hills between valleys. Chaparral and mixed woodlands with oak and pine are visible on slopes at lower elevations, with annual grassland, agricultural and pasture lands located in the valleys. Freshwater marshes and vernal pools are visible immediately adjacent to the existing SR 29. Scenic resources visible from SR 29 include mountain

ranges, rolling hills, meadows, oak woodlands, orchards, vineyards, wetlands, and Mount Konocti.

Natural forms dominate the visual setting of the project corridor, although portions of the landscape in the valley areas has been converted to agricultural, grazing, residential, and commercial uses. Visible features include highway pavement, vehicles, post and wire fencing, and small signs. Utility poles and wires are visible in various locations. Buildings are few in number and include barns, storage buildings, and detached residences. The greatest concentration of buildings is around the SR 29/281/Red Hills Road intersection and includes Kit's Corner in the northwest quadrant, a real estate office and self-storage facility to the east, and several homes on the hillsides to the south.

Additional residences are located adjacent to Kelseyville Auto Salvage and Towing, on Herman Kascher Ranch Drive, on Seigler Springs Road to the south, on the hillsides north of the highway in the Clear Lake Riviera community west of SR 281 (Soda Bay Road), and near Old Lower Lake Road and SR 175 at the western project limit.

The project is in a visually sensitive area. Lake County has identified SR 29 as being part of a scenic corridor and Mount Konocti as a regionally significant visual resource. Important visual resources identified in the Lake County General Plan include flatlands, rolling hills, orchards, vineyards, and open meadows. SR 29 within the project limits is also a Caltrans DOT eligible Scenic Highway, although it has not been officially designated as such.

2.7.2.2 Visual Impact Assessment

A visual impact analysis was conducted to assess the visual quality of the existing landscape and estimate the potential impacts to existing views from the project. The methods used to evaluate visual impacts were based on the *Visual Impact Assessment for Highway Projects* guidelines (FHWA 1983). With this methodology, the visual environment was assessed for views from sensitive receptors that would be representative of the range of views of SR 29. Photographs were taken of representative views along the proposed project corridor, and visual simulations were prepared to give examples of potential visual impacts that would result from the proposed project. Results of the analysis were documented in a report titled *Visual Impact Assessment for the Lake 29 Improvement Project*, completed in April of 2007. An addendum to the Visual Impact Assessment (VIA) was produced in April of 2016,

which further analyzed impacts to the aesthetic character of the project area as a result of Alternative D, including potential impacts related to aerial electric and telecommunication utility relocations and improvements.

Key views were established in order to assess potential visual impacts as a result of the proposed project. A total of five Key Views, A through E, were selected that are representative of the existing visual environment (viewshed) and locations where visual impacts might be expected to occur from sensitive receptors. Figure 2.7-1 identifies the locations of these Key Views.

- **Key View A:** From a single-family residence on Herman Kascher Ranch Drive looking southeast toward SR 29 (Figure 2.7-2).
- **Key View B:** From SR 29 looking west toward the SR 29/SR 281/Red Hills Road intersection (Figure 2.7-3).
- **Key View C:** From a single-family residence looking north toward SR 29, with Mount Konocti visible in the distance (Figure 2.7-4).
- **Key View D:** From a single-family residence looking south toward SR 29 (Figure 2.7-5).
- **Key View E:** From a single-family residence looking north toward SR 29, with Mount Konocti visible in the distance (Figure 2.7-6).



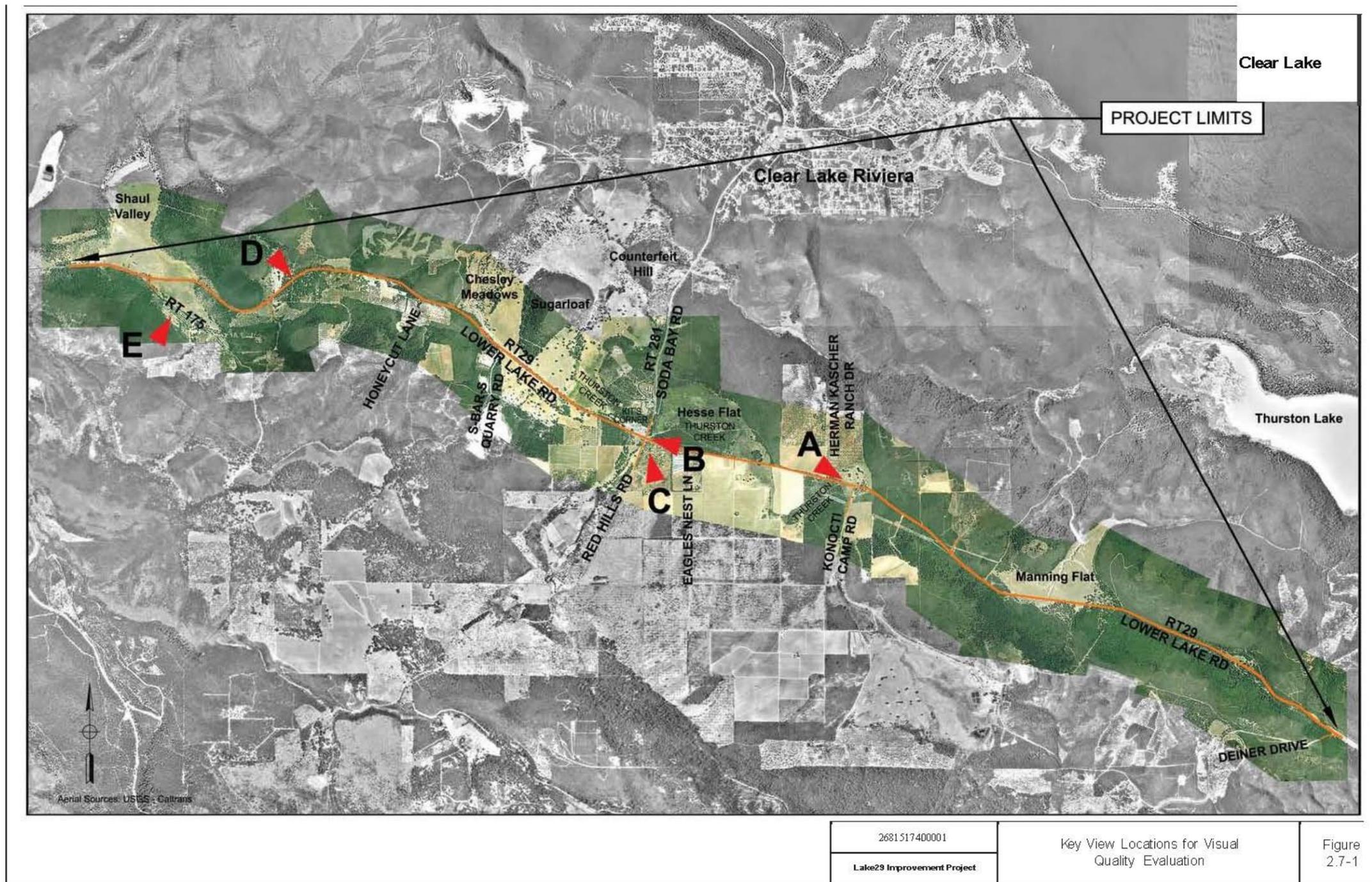


Figure 2.7-1 Key View Locations for Visual Quality Evaluation



The visual character of the landscapes within the views were evaluated. Views within the viewshed determined to be of high visual quality and character were identified as visual resources. Elements used to evaluate visible characteristics were line, form, color, and texture. Following this evaluation, the visual quality of the existing landscapes was assessed. Visual quality is a measure of the excellence of a view and is ranked low, medium, and high for each of the three criteria: vividness, intactness, and unity. These criteria are defined as follows (FHWA 1983):

- **Vividness:** The visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- **Intactness:** The visual integrity of the natural and human-built landscape and its freedom from encroaching elements.
- **Unity:** The visual coherence and compositional harmony of the landscape concerned as a whole.

A high value for any single criterion does not indicate a high-quality view; rather, all three criteria must be ranked high to indicate high quality. This ranking is subjective and is based on professional judgment. Each of the selected views were evaluated and ranked based on these criteria.



Key View A: From a single-family residence on Herman Kascher Ranch Drive looking southeast toward SR 29.

Vividness: High

The views of the meadows, orchards, mature trees, and surrounding hills are striking and memorable. Long-range views are available to the south across the highway providing a sense of connection with the rural environment and mountains to the south.

Intactness: Moderate

Views of the natural environment include many acres of undisturbed land. Constructed features that encroach upon the view include utility poles and lines and views of moving vehicles on the highway.

Unity: High

The compositional harmony in views of the natural environment and agricultural land uses to the south is pleasing and serene. Views of the highway do not disrupt the sense of unity to a great extent because of the dominance of the natural environment in the view.



View B: The view from SR 29 looking west toward the SR 29/281/Red Hills Road intersection. The sign to the right advertises Kit's Corner at the northwest quadrant of the intersection.

Vividness: Low

While views of the rolling hills in the distance are pleasing, the element of memorability is decreased by near views of pavement, vehicles, utility poles and lines, light poles, posts, and signs.

Intactness: Low

The constructed features including highway pavement, vehicles, utility poles and lines, light poles, posts, and signs encroach upon views of the natural environment and decrease the element of intactness of the view.

Unity: Low

The dominance of constructed features in the view, and especially views of the utility poles and lines that cross the horizon line, diminishes a sense of compositional harmony between the disturbed and undisturbed natural environment.



View C: The view from a single-family residence looking north toward SR 29, with Mount Konocti visible in the distance.

Vividness: High

Views of the natural environment are striking and memorable to the north from this single-family residence on Red Hills Road. Mt. Konocti is visible to the north. Hills and mountains surround the valley and a walnut orchard is visible in the foreground. Vehicles on SR 29 are screened by the trunks of the walnut trees.

Intactness: Moderate

The natural and undisturbed environment predominates in the view. However, the contrasting color of the slope cuts from quarry operations on the face of Mt. Konocti, as well as the road cut visible to the east of the quarry are quite noticeable, and encroach on views of the natural landscape and diminish the element of intactness of the view.

Unity: High

A high level of compositional harmony predominates in views north. Aesthetically pleasing views of sky and mountains in higher zones are in harmony with views of the orchard in the lower zone.



View D: The view from a single-family residence looks south at SR 29.

Vividness: Moderate

The residence is at the base of a hill. Views are short-range toward grassy slopes and an oak woodland. While not striking in terms of grandeur or unusual features, the view from the residence toward the rural woodland is pleasing and memorable. Decreasing the element of vividness are views of the highway pavement and vehicles, utility poles and wires, and fencing in the mid-range and near views.

Intactness: Low

The utility poles and lines, highway pavement, and fencing are constructed features that encroach upon the natural and undisturbed visual environment and diminish the element of intactness of the view.

Unity: Low

The intrusion of utility poles and lines within upper ranges of the view disrupts the compositional harmony or the separation and balance between the natural and constructed features visible within this rural setting.



View E: The view from a single-family residence on SR 175 looking north at SR 29 in the Shaul Valley below and Mt. Konocti in the distance to the north.

Vividness: High

Views are striking and memorable of Shaul Valley meadows, forested hillsides, rolling hills, Mt. Konocti, and sky.

Intactness: High

A high degree of intactness predominates in the view toward SR 29. Dropping the value from fully intact are views of the SR 29 and 175 pavement, moving vehicles on the highways, and utility poles and lines on SR 175. Because of the grand scale and predominance of undisturbed natural features in the view, the constructed features do not diminish the high degree of intactness in the view.

Unity: High

There is a pleasing compositional harmony in the view with undisturbed natural features in distant and mid-range views and constructed features seen in near and lower range views.

Table 2.7-1 Summary of the Visual Quality Evaluation of the Existing Visual Environment

View	Vividness	Intactness	Unity
A	High	Moderate	High
B	Low	Low	Low
C	High	Moderate	High
D	Moderate	Low	Low
E	High	High	High

Note: Where value judgments were made between two levels, e.g., moderate to low, the lower value was used for purposes of consistency in this table.

Viewer sensitivity or response was estimated based on the viewer’s use of the viewshed. For example, motorists driving through the project area, residents living in the vicinity with sustained views of the project, business owners and employees who work in the vicinity, motorists who are en route to recreation areas, and persons within recreational land uses. Sensitive receptors in the vicinity of the proposed project were identified as residential properties. Motorists are also included in the evaluation as sensitive receptors because the highway is a Caltrans DOT eligible Scenic Highway and a Lake County Scenic Highway.

2.7.3 Environmental Consequences

Temporary Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to the visual character of the existing environment relative to the proposed project.

Alternative D

Construction of the proposed project (un-segmented) would be expected to occur over a 48-month period. Viewers would see materials, equipment, workers, and the operations of construction, including earthmoving operations and moving/demolition of structures, during the construction process. Visual impacts of construction are unavoidable but would be temporary. Motorists and pedestrians would be exposed briefly to construction activities while passing through the construction zone. However, residents of adjacent homes would be exposed to these activities on a more continuous basis.

Permanent Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to the visual character of the existing environment relative to the proposed project.

Alternative D

Alternative D would result in permanent visual impacts that would change the character and quality of the existing visual environment in certain locations. These impacts would primarily result from tree and vegetation removal, construction of earthen embankments which would elevate the roadway, additional paved surfaces, and retaining walls. Whether or not the changes are perceived as adverse would depend on the sensitivity of the viewer, the degree of change, the design of the element being evaluated, and how well the new element would blend into the existing visual environment.

Visual Changes at Key Views

Photographic simulations from Key View Points (Figures 2.7-2 to 2.7-6) have been prepared to give examples of potential visual impacts that would result from construction of Alternative D. The potential change at each Key View is discussed below.

Key View A (Figure 2.7-2)

Vividness: Low

The existing views of the meadow, orchards, mature trees, surrounding hills and long-range views to the south are striking and memorable. Alternative D would construct an elevated highway with earth embankments. Long-range views would remain to the west and would be blocked to the south by the earth embankment. The sense of connection with the scenic resources in the natural environment to the south would be eliminated with the project, decreasing the element of vividness.

Intactness: Low

Constructed features are seen in existing views but do not dominate views within the natural environment. With the project, the earth embankment of the highway will dominate views to the south and encroach on existing scenic vistas.

Unity: Low

The earth embankment proposed with Alternative D decreases the compositional harmony of existing views of residents by blocking their views to the south. Existing views to the south included views across meadows, agricultural land uses, and the hills in the background that provided a sense of connection with the natural landscape to the south.

Key View B (Figure 2.7-3)

Vividness: Low

The highway would be widened, adding more pavement in the view. The utility poles, lines, roadway lights, and signals seen in the existing view and would continue to be in the view with Alternative D. Trees and other vegetation would be removed at the edges of road removing diversity of lines, forms, colors, and textures seen in vegetation and replacing it with pavement that is singular in line, form, color, and texture. The changes in the view would decrease the memorability of the view to a greater extent.

Intactness: Low

The constructed elements of the highway, moving vehicles, utility poles, and lines encroach on existing views and decrease the sense of intactness of views toward the intersection. With Alternative D, the degree of disturbance to the element of intactness would be similar to what is seen in the existing environment. New encroachments would be the installation of additional pavement. The element of intactness would remain the same with Alternative D.

Unity: Low

Existing views looking toward the intersection do not include a pleasing and harmonious balance between the natural and constructed elements. The additional pavement and removal of vegetation would further decrease the element of unity in the view.

Key View C (Figure 2.7-4)

Vividness: High

Existing views that are striking include Mt. Konocti to the north, hills and mountains to the north and west, and a walnut orchard in the foreground. The view would be affected minimally toward the north end of the orchard by Alternative D with the

Diamond Option 2 interchange. The SR 281/Red Hills Road overcrossing would be screened by the walnut orchard. However, between tree branches at the highest point of the road there may be brief views of trucks moving on the highway.

Intactness: Moderate

The natural and undisturbed landscape predominates in the view. The features that decrease the element of intactness in the existing view include views of the quarry on the face of Mt. Konocti and the road cut visible to the east across the face of the slope. Although vehicles would be seen at the north end of the orchard, trees would provide screening and the visual impact is not expected to be adverse.

Unity: High

Views from the single-family residence are very pleasing and maintain a high level of compositional harmony with predominantly uninterrupted layers of sky and mountains in the upper region and the orchard within the lower region of the view.

Key View D (Figure 2.7-5)

Vividness: Low

Existing views south from the residence are pleasing and include an undisturbed hillside with a dense oak woodland. With Alternative D, the trees would be removed within the lower half of the slope and an earthen embankment would be visible south. The memorability of views from the residence would be decreased and visual impacts from Alternative D would be adverse.

Intactness: Low

The existing utility poles and lines, highway pavement, vehicles on the highway (not shown) and fencing are constructed features that encroach upon the existing view of the natural environment and diminish the element of intactness in the view. With Alternative D as described above under “Vividness,” there would be an increased number of constructed features that would encroach on the natural environment, further diminishing the element of intactness in the view. Positive features with Alternative D would be the shift of the highway further away from the house.

Unity: Low

The intrusion of existing utility poles and lines within the existing view of the natural environment disrupts the compositional harmony between the natural and the constructed environments. With Alternative D, the existing poles and lines would still

be in the view and the constructed features described under “Vividness” would further decrease the compositional harmony of views from the residence.

Key View E (Figure 2.7-6)

Vividness: High

Alternative D would not impact the striking and memorable views experienced by the residents living on SR 175.

Intactness: High

While the project would introduce additional constructed features in the view including two additional lanes of pavement, removal of vegetation, earth embankments, and a retaining wall; a highway and vehicles are already seen in the existing view. The view is dominated by natural features. The encroachment of new features would not diminish the quality of intactness of the view from the residence on SR 175.

Unity: High

Alternative D would not diminish the element of unity. A harmonious balance between the natural environment and constructed features would still be present in the view from the residence.

Table 2.7-2 Summary of Visual Quality Evaluation Comparing the No-Build Alternative and Alternative D

Figure	Existing			Alternative D		
	Vividness	Intactness	Unity	Vividness	Intactness	Unity
2.7-2	High	Moderate	High	Low	Low	Low
2.7-3	Low	Low	Low	Low	Low	Low
2.7-4	High	Moderate	High	High	Moderate	High
2.7-5	Moderate	Low	Low	Low	Low	Low
2.7-6	High	High	High	High	High	High

Note: Where value judgments were made between two levels, e.g., moderate to low, the lower value was used for purposes of consistency in this table.



View from a single-family residence on Herman Kascher Ranch Drive, existing conditions (top) and simulated view of project Alternative D (bottom).

Figure 2.7-2 Key View A: SR 29 from Herman Kascher Ranch Drive



View west toward the SR 29/SR 281/Red Hills Road intersection, existing conditions (top) and simulated view of project Alternative D (bottom).

Figure 2.7-3 Key View B: SR 29/SR 281/Red Hills Road Intersection from SR 29



View from a single-family residence looking north toward the SR 29 and Mount Konocti, existing conditions (top) and simulated view of project Alternative D (bottom).

Figure 2.7-4 Key View C: View North Toward SR 29 and Mount Konocti from Southwest of SR 29/281/Road Hills Road Intersection



View from a single-family residence looking south, existing conditions (top) and simulated view of project Alternative D (bottom).

Figure 2.7-5 Key View D: View South Toward SR 29 from between Honeycut Lane and SR 175



View from a single-family residence looking north, existing conditions (top) and simulated view of project Alternative D (bottom).

Figure 2.7-6 Key View E: View North toward SR 29 and Mount Konocti from South of SR 175 near Western Project Limit

Summary of Potential Visual Impacts

Alternative D would alter the visual character of the existing environment in the valleys by raising the elevation of SR 29 on earth embankments. For motorists, the change would contrast with the existing character of the valleys and may be perceived as adverse. For residents with homes adjacent to SR 29 who have existing views across valleys and the natural environment, the embankments may partially screen their views, which may be perceived as an adverse visual impact.

Alternative D would also alter the visual character of the existing environment as a result of tree and vegetation removal. Where trees screen residents' existing views of SR 29, tree removal may be perceived as an adverse visual impact because views of SR 29 and vehicles would be unobstructed. This would be the case for residents who live west of Soda Bay Road and who have elevated vantage points overlooking the highway in the Chesley Meadows area to the west of the SR 29/SR 281/Red Hills Road intersection. When tree removal is combined with a new highway alignment that is closer to residences, as is the case east of Bayshore Marine and west of Kelseyville Auto Salvage and Towing (just west of Key View E; see Figure 2.7-1), the visual impacts may be perceived as adverse since residents would see unobstructed views of Alternative D at closer range than the current alignment.

Views of trees and wetlands contribute to the positive visual experiences of motorists who travel this scenic route. Where vegetation is removed, the change in the character of the natural environment may be perceived as adverse from the perspective of motorists. However, where the removal of vegetation opens up scenic vistas, motorists may perceive the change as a positive visual impact.

Additionally, the increased amount of pavement and roadway structures (e.g. concrete retaining walls) due to the widening of the highway and construction of frontage roads would likely be perceived as an adverse visual impact for both residents with homes adjacent to SR 29 and for travelling motorists. The constructed features would encroach upon views of the natural environment and decrease the natural character of the existing visual environment.

The relocation and/or placement of aerial electric and telecommunication utilities in areas where they currently do not exist would also alter the visual setting, however, aerial utilities already exist within the project area and thus relocating them or placing

new ones would not noticeably degrade the existing visual character or quality of project area.

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

Alternative D would have an effect on the existing visual character of certain locations within the project area. The changes may be perceived by some viewers as adverse; however, the potential impacts would be minimized by the incorporation of the following measures.

- Where the placement of rock slope protection is necessary, suitable native rock material would be used. The use of native rock would improve the visual character of the highway infrastructure and help it blend into the natural viewshed.
- In locations where it is practicable to do so, after evaluating geometric, geotechnical, constructability, and right of way requirements for safety and maintenance needs, large rock outcroppings which are unearthed during construction may be preserved in place in order to restore the diversity seen in the undisturbed and natural landscape. This would be done in consultation with the Caltrans Landscape Division.
- Aesthetic treatments, such as concrete formlining, would be applied to structures, where appropriate, in order to minimize the degree of visual impacts. Surface treatments would reflect the diversity of the surrounding visual environment.
- When practicable, native trees and vegetation that are to remain within and directly adjacent to the project area of direct disturbance would be designated as Environmentally Sensitive Areas (ESAs) and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Where cut slopes flatter than 1:1 are constructed, the top of the cut would be contour-graded, where practicable, to blend into existing topography.
- To the extent possible, where retaining walls and guardrails are needed, they would be designed to preserve motorists' views of the scenic features throughout the project limits.

- Duff and topsoil containing native seed stock would be removed and stockpiled separately from subsoils when practicable. The duff and topsoil would be used during revegetation efforts upon completion of construction activities where appropriate.
- Aerial utility relocations and improvements would require the placement of wooden and steel poles. In locations where steel poles are required, Corten steel may be used which gives the poles a “weathered” look to help blend into the existing visual environment.
- Larger cut slopes, where practicable as determined by the project Landscape Architect, Engineer, and Geologist, would utilize slope stepping techniques. A series of small steps would be incorporated into the slope as a way of providing areas favorable to vegetation establishment. Vegetation established along these steps will help to soften cut slopes and blend them into the surrounding natural environment.
- A revegetation plan would be prepared by the project landscape architect with consultation from Caltrans environmental staff. The revegetation plan would visually blend cut/fill slopes as well as other areas cleared by construction activities into the surrounding environment and would address the following:
 - The revegetation plan would be implemented to compensate for the loss and/or disturbance of vegetation within the project limits. The planting of native trees and shrubs would soften the appearance of earthen embankment and cut slopes in an effort to visually blend the roadway into the surrounding environment.
 - Revegetation planting would take place within the existing right of way on cut and fill slopes with a 2:1 ratio and flatter. All planting would be placed outside the highway clear recovery zone.
 - Plants selected for revegetation would be native species appropriate for the project area and would not include noxious or invasive weeds.
 - Trees and shrubs would be spaced and clustered in such a way as to mimic the surrounding natural environment.
 - Planting would take place in the fall and winter following the final construction season or as soon as feasible.
 - All revegetation areas would be maintained for three years through a plant establishment period. During this time plants would be provided appropriate care and replacement as to ensure their survivability during the time period. Once the plant establishment period ends, the area would be allowed to naturalize with no further monitoring or success criteria required.

2.8 Cultural Resources

2.8.1 Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations related to cultural resources are described in this section.

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP on Historic Preservation (36 Code of Federal Regulations [CFR] 800).

On January 1, 2004, a Section 106 Programmatic Agreement (106 PA) between the ACHP, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The First Amended Section 106 Programmatic Agreement among the ACHP, FHWA, SHPO, and Caltrans was executed and went into effect on January 1, 2014. The 106 PA implements the ACHP’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

Historic properties may be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties. See Appendix L of this document for specific information regarding Section 4(f).

Historical resources are also considered under the California Environmental Quality Act (CEQA), as well as CA Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires Caltrans to inventory state-

owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Caltrans' procedures under Section 5024 are stipulated within the *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code 5024 and Governor's Executive Order W-26-92 (PRC 5024 MOU)*, which was executed on December 22, 2014, and came into effect on January 1, 2015. This MOU brings Section 5024 compliance into conformity with the Section 106 PA to simplify Caltrans processes and provide additional streamlining.

2.8.2 Affected Environment

2.8.2.1 Method of Analysis

Pre-field Literature Search and Native American Consultation

Prior to conducting field surveys, a records search and literature review were conducted to identify previously recorded cultural resources within and/or adjacent to the proposed project area. Sources consulted included, but were not limited to, the Northwest Information Center of the California Historical Resources Information System at Sonoma State University, and the Sacred Lands File of the Native American Heritage Commission. Local historical societies and preservation groups were also contacted regarding information or concerns related to potential historic resources within the project area.

Similarly, local Native American groups were contacted regarding potential heritage values associated with the project location. Consultation with Native American groups continues to date.

Study Area

The study area for cultural resources is identified as the Area of Potential Effects (APE). As defined in 36 CFR § 800.16(d), an APE is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.”

An initial APE was established for the proposed project which formed a broad study corridor along SR 29 and encompassed the maximum limits of potential direct and

indirect effects associated with the proposed project alternatives. A specific APE was later delineated following the identification of Alternative D.

The APE for built environment resources includes parcels containing buildings, structures, and/or objects which may warrant consideration under state and/or federal laws and have the potential to be either directly or indirectly affected by the proposed project.

Cultural Resource Investigation and Documentation

Intensive field surveys have been conducted to locate and document previously recorded and newly identified cultural resources. Field methods involved surveyors who inspected the ground surface while walking a series of linear transects. Surveys also included the assessment of built environment resources, where the properties requiring formal evaluation were photographed and the physical appearance documented.

An Area of Direct Impacts (ADI) was delineated to encompass potential direct effects of ground-disturbing activities related to Alternative D. Subsurface investigations were then conducted within sites, or the portions of sites, identified within the ADI. Attachment 3 of the Section 106 PA states that “physical intrusion such as testing of archaeological sites should be focused on areas subject to reasonably foreseeable effects of the undertaking.” The subsurface investigations were conducted to: 1) determine if subsurface cultural resource deposits are present within the ADI; 2) evaluate the integrity and research value of cultural resource deposits in the ADI; and 3) assess the significance of cultural resource site areas within the ADI in terms of eligibility for the NRHP.

Throughout the life of the project multiple documents have been prepared in order to report the evaluation of cultural resources and ongoing consultation efforts.

Table 2.8-1 Cultural Resource Documentation

Documentation	Date
Historic Property Survey Report (HPSR), Archaeological Survey Report (ASR), & Historical Resource Evaluation Report (HRER)	March 2003
1 st Supplemental HPSR, ASR, HRER, & Archaeological Evaluation Report (AER)	August 2006
2 nd Supplemental HPSR, ASR, & AER	January 2008
Finding of Effect (FOE) with a finding of <i>Adverse Effect</i>	January 2008
3 rd Supplemental HPSR, ASR, AER, and Built Environment Memo	March 2015
Final FOE with a finding of <i>No Adverse Effect</i>	August 2015

2.8.2.2 Archaeological Resources

Archaeological resources possess both scientific and cultural values. The specific site locations of archeological resources are confidential in order to deter vandalism; therefore, only general locations associated with the proposed project are provided in this discussion.

Archaeological surveys for this project identified a total of 14 prehistoric archaeological sites, one archaeological site with both prehistoric and historic components, and eight historic-era sites/resources within the APE of Alternative D.

Table 2.8-2 Archaeological Resources within the APE of Alternative D

Site/Resource	Description	Location	Eligibility Determination
Prehistoric Archaeological Sites			
CA-LAK-440	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
CA-LAK-765	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
CA-LAK-773	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
CA-LAK-1555	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-1968	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-1969	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
CA-LAK-1970	Prehistoric archaeological site	Partially within ADI	Assumed eligible
CA-LAK-1972	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
CA-LAK-1979	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-1985	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-1986	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-2039	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-2040	Prehistoric lithic scatter	Entirely within ADI	Not eligible
CA-LAK-2198	Prehistoric lithic scatter	Partially within ADI	Assumed eligible
Historic-era Sites/Resources			
CA-LAK-1980H	Historic era refuse scatter	Partially within ADI	Not eligible
CA-LAK-1981H	Historic era refuse scatter	Entirely within ADI	Not eligible
CA-LAK-1982H	Historic era refuse scatter	Partially within ADI	Not eligible
CA-LAK-1983H	Historic era refuse scatter	Partially within ADI	Not eligible
CA-LAK-1984H	Historic era refuse scatter and former walnut tree orchard	Partially within ADI	Not eligible
P-17-002115	Historic era rock wall	Partially within ADI	Not eligible
P-17-002292	Abandoned road segment	Partially within ADI	Not eligible
P-17-002307	Abandoned road segment	Partially within ADI	Not eligible
Archaeological Site with Prehistoric and Historic Components			
CA-LAK-1967/H	Prehistoric lithic scatter & remains of historic homestead	Entirely within ADI	Not eligible

Of the sites evaluated, prehistoric site CA-LAK-1970, located partially within the ADI, contains a feature (Feature A) which was determined to be eligible for listing in the NRHP. Feature A can be firmly dated and contains a variety of data sets useful for addressing regional research issues (as documented in the 2006 Supplemental HPSR and 2015 3rd Supplemental HPSR). However, for purposes of the proposed project, Caltrans will assume eligibility for the entire site.

Six additional prehistoric archaeological sites, found partially within the ADI (CA-LAK-440, -765, -773, -1969, -1972, and -2198), were also evaluated. The portions of the sites located within the ADI were determined to not be eligible for listing in the

NRHP, however, since the evaluations were restricted to the ADI and the sites were not evaluated in their entirety, Caltrans, for purposes of the proposed project, will assume eligibility for these sites.

The remaining 16 archaeological sites and/or resources found within the APE of Alternative D were evaluated in their entirety and were determined to be ineligible for inclusion in the NRHP.

2.8.2.3 Built Environment Resources

The APE for the proposed project contains 21 improved parcels. Six of the parcels contain buildings, structures, or objects that required formal evaluation. After applying the eligibility criteria, Caltrans determined that none of the evaluated structures appear to be eligible for listing in either the NRHP or the California Register, and are not historical resources for the purposes of CEQA. The remaining 15 parcels contain structures that do not meet the 50-year age requirement for eligibility consideration or have no outstanding associations or characteristics that create sufficient significance to override the age requirement. In addition, no bridges or historic districts, eligible for listing in the NRHP, are located within the APE.

2.8.2.4 Ethnographic and Historical Overview

The project is located in Lake County, which was formed in May 1861 from a portion of Napa County. The county is home to Clear Lake, the traditional home of the Pomo tribe, and was not visited by Euro-Americans until the early part of the 19th century when a party of fur traders made camp near Lower Lake on their way to the Russian settlement at Fort Ross (*History of Napa and Lake Counties, California*, 47).

Ethnographic Overview

The survey area lies near the boundary between land inhabited by the Eastern and Southeastern Pomo at the time of European contact. The Wappo used this same area seasonally. The Eastern Pomo were organized into five main village communities and each occupied a defined territory composed of land habitually used for hunting, fishing, and gathering. The Southeastern Pomo were organized into three main village-communities, although little information exists regarding these settlements. Each Eastern and Southeastern Pomo village had a semi-subterranean ceremonial house and a sweathouse. Residences, made of lake reeds, were circular in shape and housed several related families.

Subsistence activities for both the Eastern and Southeastern Pomo consisted of hunting and gathering wild plants, fish, and game. The mainstay of their diet was acorn mush and dried fish supplemented with fresh meat and waterfowl, clams, greens, roots, bulbs, berries, and fruits. Groups followed an annual cycle of movements in response to seasonal availability of food resources. Main villages were occupied throughout the winter and during the spring when fish moved into nearby shallow waters of spawning areas. Exploited fish species included suckers, pikes, hitch, and chay. During late spring and early summer, populations moved to scattered encampments along the lakeshore and other areas to fish and gather plant resources. They returned to main villages in the midsummer to collect pinole seeds, and in the fall they moved to temporary camps in oak groves to harvest acorns.

Both the Eastern and Southeastern Pomo traded extensively with coastal groups. Traded items included salt cakes, basketry materials, bows and arrows, obsidian blades, magnesite beads, feathers, and animal skins. Clamshell beads, used as a medium for exchange, were acquired through both trade and during expeditions to the coast.

Historical Overview

In 1821, a band of Spanish soldiers under the leadership of Luis Arguello crossed Lake County after recapturing Indians who had escaped from various missions in the area. During the following two decades, trappers continued to cross Lake County, but the first bona fide settlement occurred in the late 1830s under Captain Salvadore Vallejo.

In 1839, Captain Vallejo and his brother Antonio Vallejo took possession of the Laguna de Lup-Yomi Grant, encompassing Clear Lake and surrounding lands. By the late 1840s, the Vallejos were seeking a buyer for their holdings in Lake County. Native rebellion against harsh treatment at their hands played a part in their decision. Subsequently, in 1847, the Vallejo brothers sold their rancho to brothers Benjamin and Andrew Kelsey and Charles Stone.

California statehood opened the door for prospective immigrants. Settlement began in earnest in about 1850, with the arrival of Walter Anderson, Robert Gaddy, J. Broome Smith, William Graves, and Jefferson Warden (*History of Napa and Lake Counties, California*, 63–64). At this time, Clear Lake Township was part of Mendocino County, later becoming part of Napa County in 1855 (*History*, 100; Mauldin 1968,

15). Lake County proper was formed in 1861, and the town of Lakeport was designated the county seat.

The project is located on the road between Lakeport and Lower Lake, which appears on General Land Office maps as early as 1877. SR 29 generally follows the route of the old Lakeport and Lower Lake Road, which appears on later historic maps as the “Lower Lake Road” (USGS 1943). The portion of SR 29 between Lower Lake and its junction with Route 175, which encompasses the project APE, was originally defined in 1959 as Legislative Route Number 243. North of this point to Kelseyville, SR 29 was Legislative Route Number 89, which was defined in 1933. In the vicinity of the project, SR 29 is also eligible for designation as a California Scenic Highway (Faigin 2006, “State Route 29”). During the 50-plus years since its adoption into the state highway system, SR 29 has been resurfaced numerous times but retains the original alignment overall. The proposed project, however, would realign the existing roadway in several areas to eliminate horizontal and vertical curves that do not meet current design standards.

2.8.2.5 Recent History

Lake County remains an important recreational area in Northern California for the boating and fishing opportunities on Clear Lake. Although it has always been predominantly agricultural, in recent years Lake County has seen more vineyards established within its borders. Views of vineyards have replaced rows of fruit and nut trees seen in previous decades, and wine tasting is available at several locations. In addition, with the construction of Konocti Harbor, the region continues to attract visitors from surrounding counties.

2.8.3 Environmental Consequences

According to federal regulations, an adverse effect would occur if the undertaking alters, directly or indirectly, any of the characteristics of a historic property or site that qualify it for the NRHP (36 CFR Section 800.5[a][1]). State regulations state “a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (PRC Section 21084.1).

2.8.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to cultural resources relative to the proposed project.

Alternative D

Indirect impacts such as introduction of visual, atmospheric, or audible elements normally do not diminish the integrity of elements contributing to the eligibility of an archaeological property. Thus, the proposed project would not result in temporary impacts to archaeological resources eligible or listed in the NRHP.

None of the built environment resources within the APE are eligible for listing in the NRHP or the California Register; therefore, no temporary impacts would occur to eligible built environment resources.

2.8.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to cultural resources relative to the proposed project.

Alternative D

Adverse effects to eligible or listed archaeological properties involve physical destruction or damage, as defined in 36 CFR Section 800.5(2)(i). Physical impacts to archaeological deposits are considered permanent, since integrity is a prerequisite when an archaeological property is considered for NRHP eligibility. This is particularly important for archaeological properties where spatial relationships of artifacts and features reveal patterns of past human behavior. Loss of site integrity may exclude the possibility of effectively addressing research topics that require recovery of chronologically distinct assemblages or consideration of small-scale positions of cultural remains.

Construction of the proposed project would result in physical destruction or damage to those portions of cultural sites within the ADI. Destruction and/or damage to cultural resources would primarily result from ground disturbance within cut and fill areas where the roadway prism would be widened and realigned. Ground disturbance would also result from utility relocation, temporary haul roads, construction of storm water and drainage features, and staging and stockpiling areas.

After the submittal of the Second Supplemental HPSR, a Finding of *Adverse Effect* was submitted to the SHPO as the prehistoric site CA-LAK-1970 would have been adversely affected as a result of the then proposed project. Additionally, a phased application of criteria of *Adverse Effect* was proposed for two archaeological sites (CA-LAK-1555 and -1972) as they had yet to be evaluated. The SHPO concurred that

site CA-LAK-1970 was the only site within the APE that would have been adversely affected in a letter dated March 4, 2008 (see Appendix M).

Following the 2008 Finding of Effect (FOE), various project design elements of Alternative D were modified, consequently altering the ADI of the proposed project. Alternative D impacts were then re-evaluated and determined to no longer alter the characteristics which make site CA-LAK-1970 eligible for listing in the NRHP. The proposed project no longer impacts Feature A which, as stated above, contains a variety of datasets useful for addressing regional research issues. The FOE was subsequently changed to *No Adverse Effect*. The SHPO concurred with this finding in a letter dated August 3, 2015 (see Appendix M). Sites CA-LAK-1555 and -1972 have since been evaluated and are discussed below.

For the purposes of the proposed project, six sites (CA-LAK-440, -765, -773, -1969, -1972, and -2198) are assumed eligible for the NRHP. However, it has been determined that impacts to the portions of these sites within the ADI of Alternative D would not reduce their potential eligibility for listing in the NRHP, resulting in a Section 106 Finding of *No Adverse Effect*. The SHPO provided concurrence with this finding in their 2008 and 2015 FOE letters.

In the 2015 FOE, SHPO incorrectly included site CA-LAK-1555 among the sites that would be assumed eligible. Caltrans has evaluated this resource in its entirety and has determined that it is not eligible for listing in the NRHP. Caltrans sent a letter to the SHPO on August 28, 2015, to clarify this error (see Appendix M). The SHPO has not provided a response.

The remaining sites (CA-LAK-1967/H, -1968, -1979, 1980H, -1981H, -1982H, -1983H, -1984H, -1985, -1986, -2039, -2040; P-17-002115; P-17-002292; P-17-002307), which were determined ineligible for the NRHP, would be directly impacted by the proposed project. None of the built environment resources within the APE are eligible for listing in the NRHP; therefore, no permanent impacts would occur to eligible built environment resources.

2.8.4 Section 4(f)

All cultural resources within the APE have been analyzed to determine whether they warrant protection under Section 4(f) of the U.S. Department of Transportation Act. Section 4(f) applies to all cultural resource sites that are listed or eligible for inclusion in the NRHP. As a result of this analysis, Caltrans has determined that construction of

Alternative D would result in a *de minimis* finding for all eligible and/or assumed eligible sites located within the project's APE. See Appendix L of this document for a detailed discussion regarding this finding.

2.8.5 Avoidance, Minimization, and/or Mitigation Measures

Although the proposed project would not result in adverse effects to cultural resources listed or eligible for listing in the NRHP, the following commitments would be incorporated into the project:

- Consultation with Native American groups would continue throughout the project.
- Known cultural resource sites located adjacent to the ADI would be designated as Environmentally Sensitive Areas (ESA) and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- A monitoring and late discovery plan will be prepared for the proposed project.
 - Caltrans, in consultation with Native American representatives, would develop and implement a monitoring plan for ground disturbing activities during project construction.
 - If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC), which would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact the Caltrans Resident Engineer and cultural staff so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

- A synthesis document will be prepared for all archaeological studies conducted for the proposed project. The document will summarize all cultural sites identified and investigated in conjunction with the project.

Biological Environment

2.15 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed in the Threatened and Endangered Species section (Section 2.19). Wetlands and “other waters” are discussed in Section 2.16.

2.15.1 Affected Environment

The project area occupies a series of small valleys (Manning Flat, Hesse Flat, and Shaul Valley) and low, intervening ridges within the rolling terrain south of Clear Lake. Elevations range from approximately 1,800 feet above mean sea level (MSL) in Shaul Valley at the western end of the Environmental Study Limits (ESL) to approximately 2,000 feet above MSL at the eastern end (Figure 1-2). Approximately 26% of the area within the ESL is developed, disturbed, or converted to intensive agricultural uses such as vineyards and orchards. The remaining 74% is relatively natural, although much of the area is used or has been historically used for grazing.

Thirteen different natural communities (not including wetland habitat types) are found within the ESL and were identified according to *A Manual of California Vegetation*, Second Edition (MCVII) (Sawyer, Keeler-Wolf, and Evans 2009). These natural communities comprise approximately 950.5 acres and can be divided into woodland, forest, chaparral, grassland, and riparian community types. Table 2.15-1 provides a summary of the natural community types and land uses mapped within the ESL.

Sensitive natural communities identified in local or regional plans, policies, and/or regulations, or by the California Department of Fish and Wildlife (CDFW), which include heritage oak woodlands and valley foothill riparian, are discussed in more detail below.

Table 2.15-1 Natural Communities and Land Use in the ESL

Natural Communities/Land Use	Area (Acres)	% of Total Area of ESL
Natural Communities		
Black Oak Woodland	199.2	15.4%
Blue Oak Woodland	73.0	5.7%
Blue Oak Woodland/Black Oak Woodland	2.2	0.2%
Valley Oak Woodland	3.7	0.3%
Valley Oak Woodland/Blue Oak Woodland	12.5	1%
Interior Live Oak Woodland	18.0	1.4%
Foothill Pine Woodland	14.6	1.1%
Chamise Chaparral	110.4	8.6%
Interior Live Oak Chaparral	137.9	10.7%
Northern Mixed Chaparral	122.6	9.5%
Knobcone Pine Forest	25.2	2.0%
Nonnative Grassland	139.9	10.8%
Valley Foothill Riparian	6.4	0.5%
Wetlands and Other Waters	84.9	6.6%
Total Natural Communities	950.5	73.6%
Other Land Uses		
Developed	99.5	7.7%
Disturbed/Ruderal	24.5	1.9%
Irrigated Pasture	4.9	0.4%
Orchard	117.1	9.1%
Vineyard	91.8	7.1%
Ornamental	2.4	.2%
Total Other Land Uses	340.1	26.4%
Total	1,290.6	100.0%

Note: Percentage totals may be greater or less than 100% due to rounding.

Oak Woodlands

Oak woodlands are an integral component of California's natural communities and provide food, foraging, nesting, and refuge habitat for wildlife species including insects, amphibians, reptiles, mammals, and birds. Four individual oak woodland and two mixed oak woodland communities were identified within the ESL, comprising of approximately 308.6 acres (approximately 24% of the total area within ESL). Black

oak woodland was identified as the most common, with smaller amounts of blue oak, interior live oak, and valley oak woodlands also present. The oak woodlands within the ESL are considered moderately degraded as they have been altered from native condition due to the introduction of invasive species, grazing practices, and edge effects of roads and agriculture. However, these oak woodlands continue to provide beneficial habitat for a wide variety of wildlife.

The California Senate passed a resolution effective September 1, 1990, protecting heritage oak stands. Senate Concurrent Resolution No. 17 (SCR No. 17) states that state agencies shall “assess and determine the effects of their land use decisions or actions within any oak woodland.” Oak woodlands protected by SCR No. 17 are defined as “a five-acre circular area containing five or more trees per acre of blue, Englemann, valley or coast live oak,” and the resolution requests that state agencies “preserve and protect native oak woodlands to the maximum extent feasible...or provide for replacement plantings.” Approximately 91.4 acres of oak woodlands protected under SCR No. 17 exist within the ESL and are comprised of blue oak woodland, blue oak/black oak mixed woodland, valley oak woodland, and valley oak/blue oak mixed woodland.

Valley-Foothill Riparian

Valley-foothill riparian (VRI) habitat is a sensitive natural community which occurs adjacent to water bodies such as rivers, streams, ponds, lakes, and marshlands. VRI habitat provides a source of food, cover from weather and predators, nesting habitat, favorable microclimates, and travel corridors for a wide variety of wildlife.

Within the project limits, VRI habitat is only found within the Thurston Creek watershed, mainly along Thurston Creek near the SR 29/SR 281/Red Hills Road intersection, and along an unnamed spring-fed tributary to Thurston Creek that roughly parallels Red Hills Road. Valley oak (*Quercus lobata*) and Arroyo willow (*Salix lasiolepis*) are the dominant tree species, with an understory composed of Himalayan blackberry (*Rubus armeniacus*), tall flat sedge (*Cyperus eragrostis*), rushes, and sedges (*Carex spp.*). Approximately 6.4 acres of VRI habitat exists within the ESL and 21.9 acres within the Thurston Creek watershed. This VRI habitat is under the jurisdiction of the CDFW.

The function and value of the VRI habitat located along Thurston Creek within the ESL, including at the SR 29/SR 281/Red Hills Road intersection, has become degraded due to commercial and agricultural development. Along Thurston Creek,

much of the riparian habitat is degraded due to regular livestock grazing and clearing activities for flood protection. The VRI habitat located along the unnamed spring-fed tributary has also become degraded as it has been reduced to a narrow corridor surrounded by orchards and farm roads.

Wildlife Corridors and Habitat Fragmentation

Various aquatic and terrestrial wildlife species, including birds, mammals, amphibians, and reptiles, likely use watercourses, such as Thurston Creek and associated riparian habitat, to travel through the project area. Similarly, contiguous blocks of upland habitat within the project area are also likely used as travel corridors by wildlife such as deer, mountain lion (*Puma concolor*), and coyotes (*Canis latrans*). Although wildlife utilize riparian and upland habitat as travel corridors within the project area, the project is not within an area designated as essential for connectivity at a regional level (CDFW 2015).

Because the project is located in a rural, largely unpopulated area, undeveloped habitat adjacent to SR 29, with the exception of the area around the SR 29/SR 281/Red Hills Road intersection to approximately two miles to the east, is largely contiguous. Within the project's watersheds¹² there are approximately 13,756 acres of land, 2,547 of which contain paved areas, building complexes or deer-fenced vineyards. The remaining 11,209 acres is accessible to resident and migratory wildlife and contains high quality forage, nesting, rearing, and shelter habitat. Of the 11,209 acres, approximately 10,207 is contiguous undeveloped land consisting mostly of well-established native habitat. Currently, the biggest obstructions to wildlife movement are the fenced vineyards and the existing highway.

Within the project area, the species most likely impacted by the current roadway are deer. Road kill data for other species is not regularly tracked so it is unknown what impacts there might be on medium sized mammals, birds, and/or bats. No road kill data for medium sized mammals, birds, and/or bats were recorded during project-related surveys. In order to analyze local movement of deer, roadkill data was collected from the Caltrans Integrated Maintenance Management Database and injury and/or property damage attributed to deer-vehicle collisions was collected from the Traffic Accident Surveillance and Analysis System (TASAS) database. Based on the data, hotspots for vehicle-deer collisions were identified in Shaul Valley, at the intersection of SR29/SR281/Red Hills Road, and at Manning Flat.

¹² See Section 2.16.2 and Figure 2.16-1 for information regarding the "project's watersheds."

2.15.2 Environmental Consequences

2.15.2.1 No-Build Alternative

The No-Build Alternative would not modify SR 29; therefore, there would be no changes to natural communities relative to the proposed project.

2.15.2.2 Alternative D

Table 2.15-2 summarizes the potential impacts to natural communities from Alternative D. In order to evaluate the level of project effects, the acres impacted as a result of the proposed project have been compared to the total amount of acres found within the project's watersheds. The project's watersheds represent a suitable home range for larger wildlife species and serves as the critical range for regional wildlife population stability.

Table 2.15-2 Alternative D Impacts to Natural Communities

Natural Communities	Impacts (acres)	% Loss in ESL	% Loss in Project's Watersheds
Black Oak Woodland	89.9	45.1%	13.9%
Blue Oak Woodland	21.4	29.3%	13.4%
Blue Oak Woodland/Black Oak Woodland	1.2	55.2%	55.2%
Valley Oak Woodland	1.7	45.2%	5.3%
Valley Oak Woodland/Blue Oak Woodland	7.9	63.2%	2.7%
Interior Live Oak Woodland	10.9	60.7%	2.9%
Foothill Pine Woodland	4.3	29.4%	29.4%
Chamise Chaparral	16.4	14.8%	0.5%
Interior Live Oak Chaparral	41.6	30.2%	3.9%
Northern Mixed Chaparral	38.7	31.6%	8.3%
Knobcone Pine Forest	12.0	47.7%	2.9%
Nonnative Grassland	55.6	39.7%	8.7%
Valley Foothill Riparian	2.3	36.3%	10.5%
Total Natural Communities	303.9	35.1 %	4.1%

Note: Acreage numbers may not equal total acreage due to rounding. Impact amounts include both temporary and permanent impacts.

Construction of Alternative D would result in impacts to approximately 303.9 acres of natural communities which represents a 4.1% loss of natural communities within the project's watersheds. Impacts to natural communities would be primarily due to project activities including excavation of cut slopes, placing of fill material, grading activities, the extension and replacement of culverts, and utility relocation. The

natural communities that would experience the most impacts from Alternative D are black oak woodland, interior live oak chaparral, and nonnative grassland.

Oak Woodlands

Approximately 1,737 acres of oak woodlands exist within the project’s watersheds. Of these, 719.1 acres are comprised of heritage oak woodlands protected under SCR No. 17. Construction of Alternative D would result in the removal of approximately 135.3 acres of oak woodlands resulting in a 7.7% loss within the project’s watersheds. Of the total oak woodland impacts, approximately 32.2 acres of heritage oak stands protected by SCR No. 17 would be impacted by the proposed project (Table 2.15-3) for a loss of 4.5% within the project’s watersheds.

Although construction of Alternative D would require the removal of oak woodlands, the proposed project would not limit geographic distribution (i.e. the project would not reduce species range) or result in isolation of oak woodland populations and therefore would not reduce genetic diversity. Additionally, the project would not reduce the function (i.e. wildlife habitat) of the remaining oak woodland communities within the project’s watersheds and would not noticeably alter the rural nature of the project area.

Therefore, the proposed project is not anticipated to result in considerable impacts to oak woodlands at a local (project’s watersheds) or regional (Inner North Coast Ranges District of the California Floristic Provenance) scale.

Table 2.15-3 Alternative D Impacts to Oak Woodlands Protected by Senate Concurrent Resolution No. 17

Oak Woodland Type	Impact (Acres)	% Loss in ESL	% Loss in Project’s Watersheds
Blue Oak Woodland	21.4	29.4%	13.4%
Blue Oak Woodland/Black Oak Woodland	1.2	55.2%	55.2%
Valley Oak Woodland	1.7	45.2%	5.3%
Valley Oak Woodland/Blue Oak Woodland	7.9	63.2%	2.7%
Total	32.2	35.3%	4.5%

Note: Impact amounts include both temporary and permanent impacts

Valley Foothill Riparian

Construction of Alternative D would remove approximately 2.3 acres of VRI habitat, primarily as a result of highway widening and construction of drainage features. This represents a 36.3% loss of VRI habitat within the ESL and a 10.5% loss within the project's watersheds. The majority of the impacts would take place at the SR29/SR281/Red Hills Road intersection.

As previously stated, the function and value of the VRI habitat located within the ESL has become degraded due to commercial and agricultural development. The VRI habitat that would be impacted as a result of the proposed project consequently provides lower quality wildlife habitat. Although this VRI habitat is not pristine, it continues to provide potential nesting, roosting, rearing, dispersal, and foraging opportunities for wildlife. As agricultural and commercial activities have reduced the VRI to a narrow swath, the beneficial attributes of what remains have become increasingly important.

Other Natural Communities

Although the proposed project would result in impacts to the remaining natural communities listed in Table 2.15-2, the project is not anticipated to limit geographic distribution due to the local and regional abundance of these natural communities.

Wildlife Corridors and Habitat Fragmentation

Project construction activities, including the presence of construction personnel and equipment, have the potential to temporarily disrupt terrestrial wildlife movement within the project area. In addition, the wider expressway, on an elevated roadbed, would likely permanently inhibit some species crossing, in particular deer. Project design features, such as wildlife undercrossings, fencing placed to direct wildlife towards the undercrossings, and at-grade culvert placement, would ensure that long-term impediments to wildlife movement within the project area would not considerably exceed existing conditions.

In instances where Alternative D diverges from the existing alignment and where frontage and/or access roads would be constructed, there is potential for habitat fragmentation. However, habitat fragmentation, beyond the existing conditions, is not expected to occur on a large scale because Alternative D largely parallels the existing alignment and, in many areas, would replace the existing roadway.

2.15.3 Avoidance, Minimization, and/or Mitigation Measures

- Oak trees protected by SCR No. 17, that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. The exclusion fencing would be installed six feet outside of the dripline of each specimen tree. The fencing is intended to prevent equipment operations in the proximity of protected trees from compacting soil, crushing roots, or colliding with tree trunks or overhanging branches.
- As stated above the proposed project would not result in considerable impacts to oak woodlands, including oak woodlands protected by SCR No. 17. However, in consideration of SCR No. 17, Caltrans would preserve in perpetuity 32.2 acres of heritage oak woodlands at an off-site location. This would include the provision of funding to a land managing agency or nonprofit organization for the purchase of land which provides habitat similar to that removed by the proposed project. The priority would be to preserve habitat within one or more of the project's four sub-watersheds. An operation and maintenance plan would be prepared that details how the land manager would operate and maintain the property in the long-term to retain the conservation values of the property. The goal is not to preserve an exact replica of the affected habitat concerning species frequency and density, but to preserve a self-sustaining habitat that would provide ecological functions similar to what was lost as a result of the proposed project.
- Riparian areas that are to remain within and directly adjacent to the project area of disturbance would also be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Where feasible, trees and vegetation would be trimmed rather than completely removed in an effort to allow the rootstock and seedbank to remain intact.
- Post Construction: New utility pole locations or replacement pole locations (areas within the temporary construction easement but outside of the permanent utility corridor) would be allowed to reseed and re-establish populations through natural succession. Along the fiber optic corridor, cleared areas would also be allowed to reseed and re-establish.

- At all Thurston Creek crossings, large, multi-barreled, natural substrate bottom box culverts would be installed. Box culverts would provide more space for wildlife passage than the existing pipe culverts. The box culverts would be designed to facilitate both aquatic and terrestrial wildlife movement.
- To offset impacts to Valley Foothill Riparian (VRI) habitat Caltrans proposes the on and/or offsite creation, enhancement, and/or preservation of riparian habitat at a 1.5:1 ratio. Therefore, the proposed mitigation would result in the on and/or offsite creation, enhancement, and/or preservation of approximately 3.45 acres of riparian habitat. With the creation or enhancement option, a limited amount of space may be available and suitable for planting on-site (within Caltrans operating right-of-way). Caltrans would accomplish the balance of the mitigation at an approved off-site location. For the off-site portion, Caltrans would secure land through acquisition or a conservation easement, or work with another state or federal agency to implement a project on other government lands. Caltrans would relinquish the land and long-term management responsibilities to an organization experienced in managing lands. The priority would be to preserve riparian habitat within one or more of the project's four sub-watersheds. If this cannot be accomplished or is not practical, Caltrans would look beyond the sub-watersheds to the greater 8-digit hydrologic unit code (HUC). Off-site creation can also be accomplished through the purchase of riparian mitigation bank credits. The preservation option would preserve existing riparian habitat on and/or offsite similar to the creation and enhancement options. This mitigation would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

A Mitigation Plan would be prepared that would include specific mitigation measures to offset impacts to riparian habitat. The plan would provide specific mitigation details, including approved mitigation sites, plan implementation design drawings, a planting plan which would include a list of species to be planted and planting densities, success criteria, and long term monitoring and management. The goal is not to create an exact replica of the affected riparian habitat considering species frequency and density, but to create a self-sustaining riparian habitat that would provide, once mature, ecological functions (nesting, roosting, rearing, and foraging opportunities) similar or better to what were lost as a result of the proposed project.

2.16 Wetlands and Other Waters

2.16.1 Regulatory Setting

Wetlands and “other waters” are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

The Section 404 permit program is administered by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA). The USACE regulates the discharge of dredge or fill material in “Waters of the United States” pursuant to Section 404 of the CWA. Any person, firm, or agency planning to alter or work in waters of the U.S., including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the CWA (33 USC 1344).

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE’s Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA’s Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the

U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and CDFW. In certain regions of California, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are generally defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section of the 2007 Draft EIR/EA for more details.

2.16.2 Affected Environment

An initial delineation of wetlands and “other waters” (i.e. perennial, intermittent, and ephemeral watercourses) potentially subject to regulation by the USACE and RWQCB was conducted between July 2002 and May 2003. In November 2003, a wetland delineation report and approved jurisdictional determination request was submitted to the USACE for concurrence with Caltrans’ estimate of waters of the U.S. In August 2004, a revised wetland delineation report, which addressed new area added to the ESL, and a revised approved jurisdictional determination request was submitted to the USACE. A third revision of the wetland delineation report which addressed impact calculation adjustments was submitted on March 22, 2005. The USACE provided concurrence with the revised approved jurisdictional determination on March 28, 2005. This verification of waters of the U.S. was valid for five years, expiring March 2010.

In March 2013, as part of the re-verification process, the ESL was resurveyed. An updated wetland delineation report was prepared and a new approved jurisdictional determination request was submitted to the USACE in August 2013. The analysis and findings of the updated report reflect the 2008 revised guidance on the CWA jurisdiction following the Supreme Court Decision in *Rapanos v. U. S.* and *Carabell v. U. S.* Using this revised CWA guidance, the March 2013 delineation effort re-verified previously identified wetlands and “other waters” and identified new wetlands and “other waters” within the delineation area. The delineation also determined some wetlands were no longer present due to natural (i.e. changes in hydrology) and human induced occurrences (i.e. conversion of undeveloped land to agricultural uses) and that a majority of the wetlands and “other waters” no longer met the post *Rapanos/Carabell* definition of waters of the U.S. This represents the difference in wetland and “other water” quantities between the 2007 Draft EIR/EA and this Revised Partial Draft EIR/EA. The wetlands and “other waters” which no longer meet the definition of waters of the U.S. continue to meet the definition of waters of the State. The USACE provided concurrence with the new approved jurisdictional determination in a letter dated May 29, 2014 (See Appendix G).

In 2015, based on vegetation-type present and updated information on northern volcanic ash flow vernal pools, a number of seasonal wetlands are now further identified as vernal pools. Additionally, during assessment of endangered species, the ESL was expanded at Hesse Flat and downstream of the project area on Thurston Creek in order to calculate potential indirect effects. Acreages of wetlands and “other waters” of the U.S. did not change as a result of these adjustments; however, because

of the expansion of the ESL, acreages of wetlands and “other waters” of the State have increased.

The ESL lies primarily within three closed watersheds separated by low ridges. A very small portion of the ESL is located in a fourth open watershed at the west end of the project limits (See Figure 2.16-1).

The Thurston Creek watershed (approximately 84% of the ESL) is the primary watershed within the ESL. Thurston Creek originates in the mountains just to the south of the project area. The perennial creek meanders extensively, in a generally south-to-north direction through the project area, before turning toward the east and terminating at Thurston Lake. All wetlands and “other waters” located within the Thurston Creek watershed, are considered waters of the State. These waters are not considered waters of the U.S. as they do not have direct hydrologic connectivity to navigable waters, interstate waters, territorial seas and/or other waters that may be used in interstate or foreign commerce.

The Shaul Valley watershed (approximately 11% of the ESL) consists of Shaul Valley and the surrounding hills. Intermittent and ephemeral flows in this watershed are collected by a small, unnamed channel that flows north and eventually dissipates throughout the valley floor. All wetlands and “other waters” located within the Shaul Valley watershed are considered waters of the State.

The third, unnamed, watershed (approximately 4% of the ESL) lies between the Thurston Creek and Shaul Valley watersheds. All water flows in and adjacent to an auto wrecking yard found at the low point of the watershed. All wetlands and “other waters” located within this unnamed watershed are considered waters of the State.

The Cole Creek watershed (approximately 1% of the ESL) is located west of the Shaul Valley watershed and drains into Cole Creek which drains into Clear Lake. The wetlands and “other waters” located within the Cole Creek watershed are considered waters of the U.S. as they have direct hydrological connectivity to navigable waters, i.e., the Sacramento River.

Wetland habitat types within the ESL were identified in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979) and include freshwater marsh, seasonal wetland, vernal pool, and irrigated pasture. The freshwater marshes, seasonal wetlands, and vernal pools all occur in relatively high clay content soils within the various flats and/or adjacent to ponds.

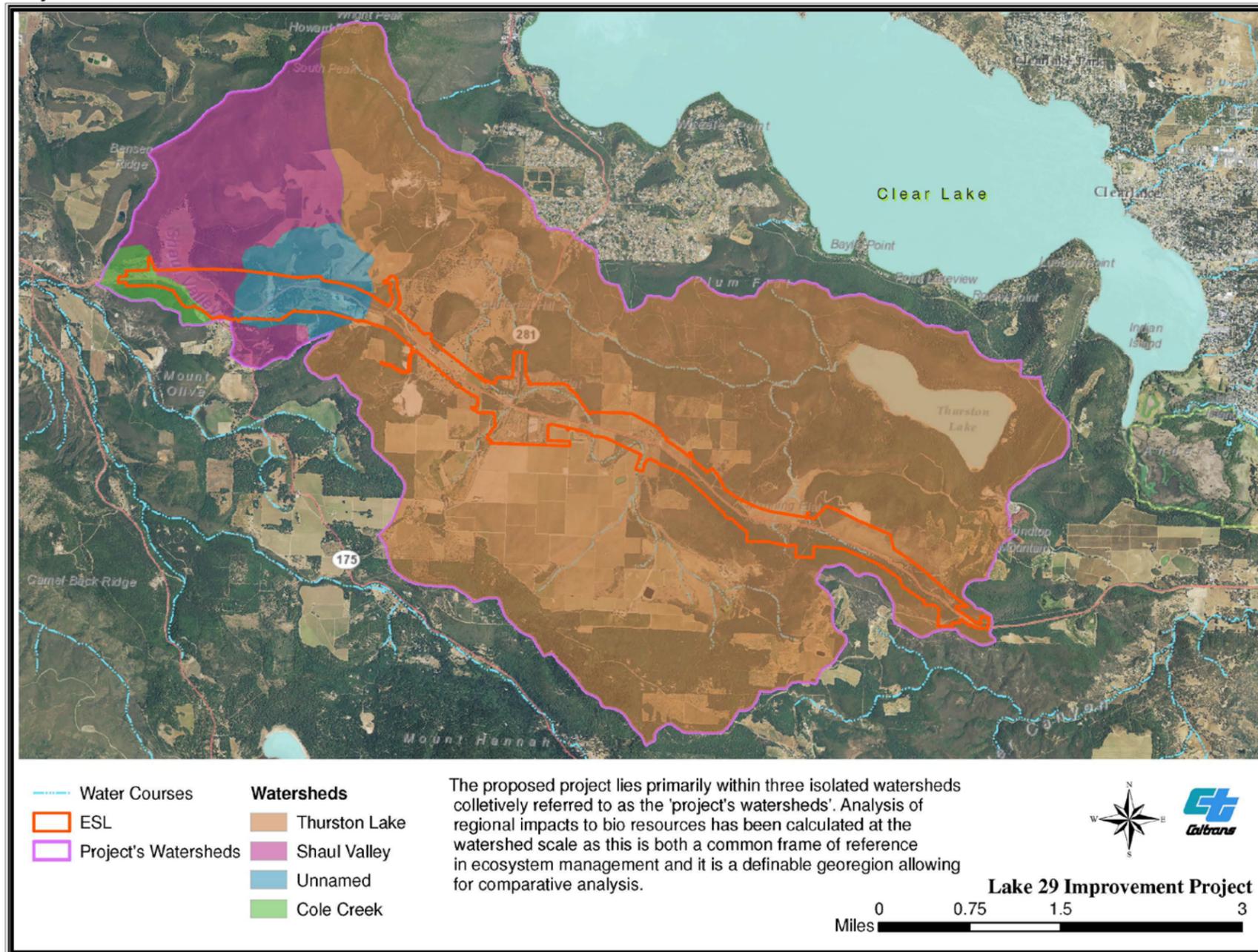
The type of wetland is dependent on the depth of the perched water table (deeper for fresh water marshes to very shallow [5 inches] for vernal pools) and the duration of ponded water. Both wetlands of the U.S. and wetlands of the State are found within the ESL. “Other waters” within the ESL consist of ephemeral, intermittent, and perennial watercourses and have been further described, per the 2008 USACE guidance, as relatively permanent waters, i.e., waters that flow continuously, at least seasonally (typically at least 3 months of the year) (perennial and some intermittent drainages) and non-relatively permanent waters, i.e., waters that do not have a continuous flow, at least seasonally (ephemeral and some intermittent drainages). The primary and only named watercourse within the ESL is Thurston Creek. Portions of Thurston Creek are identified as perennial; however, in the most recent four years (2011 to 2015) it has only maintained flow intermittently. Both Federal and State “other waters” are found within the ESL.

Table 2.16-1 summarizes the acreages of wetlands and “other waters” of the U.S. and of the State found within the ESL.

Table 2.16-1 Wetlands and “Other Waters” in ESL (Acres)

Type	Wetlands and “Other Waters” of the U.S.	Wetlands and “Other Waters” of the State	Total
Freshwater Marsh	0.0	45.7	45.7
Seasonal Wetland	0.9	26.2	27.1
Vernal Pools	0.1	8.2	8.3
Other Waters	0.3	3.6	3.9
Total	1.3	83.7	84.9

Project's Watersheds



Sources: ESRI, DeLorme, NAVTEQ, TomTom, Intermap, Increment P Corp, GEBCO, USGS, FAO, NPS, NRCAN, Gebase, IGN, Kadaster NL, Ordnance Survey, and the GIS User Community

Figure 2.16-1 Project Watersheds



The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by Fish and Game Code. All “other waters” in the ESL, including Thurston Creek, and the wetlands and riparian habitat directly associated with these watercourses, are under CDFW jurisdiction and will require a Streambed Alteration Agreement. Riparian habitat includes willows (*Salix sp.*), alders (*Alnus sp.*), and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Table 2.16-2 summarizes the acreages of CDFW jurisdictional areas within the ESL. The wetlands and “other waters” under CDFW jurisdiction overlap with and make up a subset of areas under USACE and/or RWQCB jurisdiction.

Table 2.16-2 CDFW Jurisdictional Areas in ESL

Habitat Type	Acres
Freshwater Marsh	41.6
Seasonal Wetlands	23.9
Vernal Pools	1.4
Total Wetlands	66.9
Ephemeral	1.8
Intermittent	1.7
Perennial	0.3
Total Watercourses	3.8
Total	70.7

Note: Riparian habitat under CDFW jurisdiction is discussed in Section 2.15

Freshwater Marsh

Freshwater marshes are more or less¹³ permanently flooded, although surface water may be absent from late summer through fall. Soils are saturated and oxygen-depleted, and support plants that can only grow under these “water-logged” conditions. Within the ESL, this community typically supports a relatively limited diversity of plant species and are often entirely dominated by one species. Freshwater marshes have formed in flat areas adjacent to Thurston Creek at Hesse Flat near the SR 29/SR 281/Red Hills Road intersection and along Eagles Nest Lane. The freshwater marshes within the ESL have been greatly disturbed due to agricultural practices and in some instances show evidence of attempts to drain these areas to improve agricultural value. Common freshwater marsh plant species in the ESL

include cattail (*Typha* sp.), hardstem bulrush (*Schoenoplectus acutus*), rushes (*Juncus* sp.), and occasional arroyo willows (*Salix lasiolepis*).

Seasonal Wetland

Seasonal wetlands have standing water or saturated soils only periodically (during winter and spring) with plant communities composed of more than 50% of species that to some degree are dependent on saturated, oxygen-deprived soils. They may form in areas just upslope from freshwater marshes, in areas with a fairly high water table or in shallow depressions. Seasonal wetlands occur in several areas within the ESL including along Thurston Creek at Doten Road down to Hesse Flat and in Shaul Valley. These seasonal wetlands have also been degraded due to agricultural practices and are often annually, mowed, disked, or grazed. Typical vegetation associated with seasonal wetlands within the ESL include cow clover (*Trifolium pretense*), shining pepperwort (*Lepidium nitidum*), popcorn flower (*Plagiobothrys* sp.), water chickweed (*Myosoton aquaticum*), hyssop loosestrife (*Lythrum hyssopifolia*), Mediterranean barley (*Hordium marinum*), English plantain (*Plantago lanceolata*), slender rush (*Juncus tenuis*), Coville's rush (*Juncus covillei*), foxtail (*Hordeum jubatum*) and common spike rush (*Eleocharis palustris*).

Vernal Pools

Vernal pools are a subset of seasonal wetlands. Like seasonal wetlands, they are only periodically saturated during winter and spring and have soils that are oxygen-deprived during this saturated period. Unlike seasonal wetlands, they only form in shallow depressions. These depressions have an impervious layer usually only inches below the surface which prevents water from infiltrating downward into the regional water table. The frequency and duration of ponding and saturation vary among vernal pools, depending on the size of the depression and its watershed, depth to the impervious subsurface layer, and patterns and amounts of rainfall. The duration of ponding is typically less than what a seasonal wetland experiences. The main factor, however, that differentiates vernal pools from seasonal wetlands is the presence of vernal pool-dependent plants.

Vernal pools are classified by geographic location and the type of impervious layer that allows ponding. All of the vernal pools within the ESL are northern volcanic ash

¹³ Due to the high variability of a California's Mediterranean climate just below average to drought years may not provide enough water to keep a marsh flooded or at minimum keep soils saturated year

flow vernal pools (NVAF VPs), which have an impermeable surface layer consisting of high clay content-volcanic ash. NVAF VPs are only found in the southern portion of Lake County, and are usually completely dry, including soils, by May or June. Within the ESL, NVAF VPs are present in Manning Flat, north of SR 29 near the intersection with Doten Road, adjacent to the auto wrecking yard at the west end of the project limits, and just west of the Shaul Valley watershed, adjacent to SR 29. The NVAF VPs located within the ESL support a variety of plant species, such as coyote thistle (*Eryngium constancei*), slender hairgrass (*Deschampsia elongata*), and needeleaf navarretia (*Navarretia intertexta*). They also often include very rare plant species which are protected under both the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA), such as Burke's goldfields (*Lasthenia burkei*), Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), and Lake County stonecrop (*Parvisedum leiocarpum*).

Irrigated Pasture

A large irrigated pasture occurs north of SR 29 and west of SR 281/Red Hills Road. Typical plant species include sedges (*Carex* sp.), rushes, Mediterranean barley, and dock (*Rumex* sp.). Though irrigated pastures may develop soils associated with wetlands over time and may contain plant species associated with wetlands, they are not considered federal or state jurisdictional wetlands because the hydrology present is not a natural occurrence, i.e., water is present due to human actions. Therefore, irrigated pastures are not further discussed in this document.

Other Waters

“Other waters” within the ESL include ephemeral, intermittent, and perennial watercourses. These watercourses do not have saturated soils year-round or vegetation dependent on saturated soils within the ordinary high water mark, except for some sections of Thurston Creek. Within the ESL, watercourse channels have hard and/or rocky bottoms. Ephemeral watercourses are not edged with water-dependent plant species. Some of the intermittent watercourses sustain enough flow or are associated with a water table that is close enough to the surface to support riparian vegetation such as willows and blackberries (*Rubus* sp.) along the edges. Perennial watercourses may support riparian vegetation such as willows and blackberries and have some emergent vegetation such as bulrushes or sedges. Because the ESL is almost entirely within three closed basins only a small portion of “other waters” are considered waters of the U.S. All other watercourses are subject to

around.

State jurisdiction only. “Other waters” are considered sensitive natural communities because they provide habitat and lifecycle needs for wildlife.

Many of the watercourses in the ESL have historically been channelized, realigned or dredged, including Thurston Creek. Thurston Creek’s associated riparian vegetation has been compromised by cattle grazing, drought, and adjacent agriculture development. As a result, the banks are prone towards erosion and the bed and bank lacks shading. In addition, the associated riparian vegetation along most of Thurston Creek within the ESL is of poor quality because it lacks complex canopy structure and contains a high proportion of native herbaceous vegetation vs. thriving woody-stemmed vegetation. Thus, habitat quality for “other waters” is moderate to low within the ESL.

2.16.3 Environmental Consequences

2.16.3.1 No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to wetlands or “other waters” relative to the proposed project.

2.16.3.2 Alternative D

The proposed project is expected to result in permanent impacts to approximately 12.04 acres of wetlands and 1.83 acres of “other waters” (acreage amounts include both waters of the U.S. and waters of the State and include areas under USACE, RWQCB, and CDFW jurisdiction). Table 2.16-3 lists the potential impacts to wetlands and “other waters” of the U.S. Table 2.16-4 lists the potential impacts to wetlands and “other waters” of the State. Table 2.16-5 lists the potential impacts to CDFW regulated areas.

Table 2.16-3 Potential Direct Impacts to Waters of the U.S.

Type	Temporary Impacts (Acres)	Permanent Impacts (acres)
Freshwater Marsh	0.00	0.00
Seasonal Wetland	0.06	0.03
Vernal Pool	0.00	0.00
Total Impacts to Jurisdictional Wetlands	0.06	0.03
Other Waters	0.02	0.20
Total Impacts to Wetlands and “Other Waters” of the U.S.	0.08	0.23

Note: Direct impacts refer to all wetlands and “other waters” of the U.S. within the cut and fill limits of the project. Areas outside of the cut and fill lines are not included in these calculations. Potential indirect effects are discussed below.

Table 2.16-4 Potential Direct Impacts to Waters of the State

Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Freshwater Marsh	0.65	4.34
Seasonal Wetland	1.53	7.62
Vernal Pool	0.02	0.04
Total Impacts to Wetlands of the State	2.20	12.01
Other Waters	0.10	1.63
Total impacts to Wetlands and “Other Waters” of the State	2.30	13.64

Note: Direct impacts refer to all wetlands and “other waters” of the state, within the cut and fill limits of the project. Areas outside of the cut and fill lines are not included in these calculations. Potential indirect effects are discussed below.

Table 2.16-5 Potential Impacts to CDFW Jurisdictional Areas (Acres)

Habitat Type	Temporary Impact	Permanent Impact
Freshwater Marsh	0.3	2.0
Seasonal Wetlands	1.4	5.7
Vernal Pools	0.1	0.4
Total Wetland	1.8	8.1
Ephemeral	0.1	1.4
Intermittent	0.0	0.3
Perennial	0.0	0.1
Total Watercourses	0.1	1.8
Total	1.9	9.9

Note: The wetlands and “other waters” under CDFW jurisdiction overlap with and make up a subset of areas under USACE and/or RWQCB jurisdiction; Impacts to riparian habitat under CDFW jurisdiction are discussed in Section 2.15.2

Temporary and permanent direct impacts to wetlands and “other waters” under USACE, RWQCB, and/or CDFW jurisdiction are expected to occur due to project activities, including excavation of cut slopes, placing of fill material, grading activities, and the extension and replacement of culverts. These project activities would result in both the fill of wetlands and “other waters” and the removal of associated vegetation.

Drainage system improvements are proposed throughout the project area, such as lengthening culverts to accommodate highway widening and realignment and to

improve the efficiency and safety of the highway drainage system. Some reconfiguration of existing watercourses would be required as a result of flood level requirements, including widening of the Thurston Creek channel near the SR 29/281/Red Hills Road intersection.

Indirect impacts caused by construction activities that often occur later in time may include: alteration of hydrology; erosion; increased sedimentation; and introduction of pesticides, predators, and weedy nonnative vegetation.

Although the wetlands and “other waters” to be impacted by the proposed project are moderately disturbed, as previously discussed, these habitat types continue to provide various biotic and abiotic functions and values. These wetlands and “other waters” provide foraging habitat for birds and bats targeting insects. The wetlands also help to protect water quality by capturing sediment and retaining pollutants from surface runoff. This abiotic function is critical for wildlife that inhabit these aquatic ecosystems and/or rely on them for foraging opportunities. Additionally, the wetlands and “other waters” to be impacted by the proposed project provide flood relief by capturing excess runoff during storm events and assist in groundwater recharge.

Caltrans would implement permanent design features as well as temporary and permanent Best Management Practices (BMPs) that would prevent erosion, increased sedimentation, water quality impacts, and the introduction or spread of noxious weeds. As Caltrans standard practice, soils adjacent to impacted stream channels would be adequately stabilized to prevent mobilization of sediment into the stream channels or adjacent riparian areas. All temporarily impacted areas would be restored to pre-construction contours and conditions upon completion of construction activities. Post construction, all disturbed areas would be stabilized and reseeded with a suitable cover crop that would not persist on site. A regionally appropriate California native seed mix would be applied during the first year to provide succession from the erosion control cover crop to native plants.

Additionally, the roadside drainage/stormwater control systems would incorporate several features, such as bioswales and detention basins, that would address the increase in impermeable surfaces. At Manning Flat, the roadside drainage/stormwater control system includes design features that would maintain existing flow patterns and volume of flow distributed to vernal pools downslope of the new alignment.

The new expressway would also maintain flow into and out of other identified wetlands and “other waters” and maintain floodway elevations along Thurston Creek

such that the quality of “other waters” and remaining wetland areas would be maintained. Thus, though there would be loss of habitat at the inlet and outlet of culverts and some wetlands and “other waters” would be filled, the remaining quality and function of “other waters” and wetland features within the ESL would not be greatly altered. See section 2.15.2.2 for information regarding impacts to riparian habitat under CDFW jurisdiction.

2.16.4 Avoidance, Minimization, and/or Mitigation Measures

- All wetlands and “other waters” that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans’ standard specifications, the project plans, and with guidance from Caltrans’ technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Riparian areas that are to remain within and directly adjacent to the project area of disturbance would also be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans’ standard specifications, the project plans, and with guidance from Caltrans’ technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Potential water quality impacts would be addressed with the avoidance and minimization measures discussed in Section 2.10.4 of the 2007 Draft EIR/EA.
- Mitigation for the permanent loss of wetlands and “other waters” of the U.S. and the State (under USACE, RWQCB, and/or CDFW jurisdiction) is proposed to include offsite mitigation through the purchase of mitigation credits at a wetland mitigation bank approved by the USACE. Mitigation banks are a highly effective way of mitigating permanent impacts to wetlands and “other waters” because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. Caltrans would purchase mitigation credits at a 1:1 ratio to ensure there is no net loss to wetlands. If bank credits are not available, Caltrans would contribute money to the USACE- and RWQCB-approved in-lieu fee program. Unlike a mitigation bank, mitigation sponsored by the in-lieu fee program has not been developed prior to project

impacts. Mitigation for impacts to wetlands and “other waters” would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

See section 2.15.3. for a discussion on the proposed mitigation for impacts to riparian habitat under CDFW jurisdiction.

2.17 Plant Species

2.17.1 Regulatory Setting

The USFWS and CDFW share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section (section 2.19) in this document for detailed information regarding these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. The proposed project is also subject to the Native Plant Protection Act found at Fish and Game Code, Sections 1900–1913, and California Environmental Quality Act, CA Public Resource Code, Sections 21000–21177.

2.17.2 Affected Environment

A records search and database review was conducted in order to generate a list of special-status plant species with potential to occur within the project area. This included accessing both the California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants*. Field surveys were subsequently conducted in order to determine the presence or absence of special-status species within the ESL and to evaluate potential project

impacts. Surveys were conducted throughout the ESL except where access was restricted by private landowners. The surveys were carried out in accordance with the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009) and the USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). Special-status plant survey reports were prepared in order to document the results of these field surveys and were submitted to both the USFWS and the CDFW in March 2015. The special-status plant species listed in Table 2.17-1 are those known to occur or with potential to occur within the ESL. A complete list of regional species of concern is included in Appendix H.

All of the special-status plant species known to occur or with potential to occur within the ESL have been assigned a California Rare Plant Rank (CRPR). This ranking system, created by the CNPS, was developed in an effort to categorize rarity in California's flora (CNPS 2015). All of the CRPR meet the definition of "rare" or "endangered" under CEQA. The special-status plants discussed below fall into the following California Rare Plant Ranks.

California Rare Plant Rank 1B

Three special-status plant species with a CRPR of 1B were found within the ESL during field surveys. Plants with a CRPR of 1B are rare throughout their range, have a limited range, and/or are endemic to California.

California Rare Plant Rank 2B

One special-status plant species with a CRPR of 2B was found within the ESL during field surveys. Plants with a CRPR of 2B are rare in California and would be ranked 1B except that they are common elsewhere. The listing of 2B plants is related to the importance of protecting the geographic range of a widespread species.

California Rare Plant Rank 3

One special-status plant with a CRPR of 3 was found within the ESL during field surveys. Plants with a CRPR of 3 are plants of which more information is needed in order to assign them to a different rank or to remove them from the rare plant listing.

California Rare Plant Rank 4

Seven special-status plants with a CRPR of 4 were found within the ESL during field surveys. Plants with a CRPR of 4 are ranked rare based on their limited distribution in California.



Table 2.17-1 Special-Status Plant Species Within the ESL

Scientific Name	Common Name	CRPR Status	Habitat Requirements	Habitat in ESL?	Species in ESL?	Rationale
<i>Eriastrum brandegeeeae</i>	Brandegee's eriastrum	CNPS 1B	Found in chaparral and cismontane woodlands from 1,300 to 3,280 feet.	Yes	Yes	Three populations of this species were identified within the ESL.
<i>Horkelia bolanderi</i>	Bolander's horkelia	CNPS 1B	Meadows and edges of vernal wet places in lower montane coniferous forest, chaparral, valley and foothill grasslands (1,475 to 3,610 feet).	Yes	Yes	20 populations of this species was identified within the ESL.
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	CNPS 1B	Chaparral, cismontane woodland, and lower montane coniferous forest, often on volcanic soils from 1,295 to 5,300 feet.	Yes	Yes	This species is common throughout the ESL.
<i>Viburnum ellipticum</i>	Oval-leaved viburnum	CNPS 2B	This species is a deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forest habitats.	Yes	Yes	One individual of this species was identified in 2003 near the eastern edge of the project south of SR 29.
<i>Micropus amphibolous</i>	Mt. Diablo cottonweed	CNPS 3	This species is an annual herb that occurs in rocky soils in broadleaf upland forest, chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	One population of this species was identified in the ESL.
<i>Limnanthes floccose</i> ssp.	Woolly meadowfoam	CNPS 4	This species occurs in moist meadows and vernal pools in chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	This species was identified in Manning Flat and in Shaul Valley within the ESL.

Table 2.17-1 Special-Status Plant Species Within the ESL

Scientific Name	Common Name	CRPR Status	Habitat Requirements	Habitat in ESL?	Species in ESL?	Rationale
<i>Leptosiphon acicularis</i>	Bristly leptosiphon	CNPS 4	This species is an annual herb that grows in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland.	Yes	Yes	This species was identified in Manning Flat and Shaul Valley within the ESL.
<i>Calochortus unifloris</i>	Large-flowered star tulip	CNPS 4	This species is found in coastal prairie and scrub, meadows and seeps, and North Coast coniferous forest habitats.	Yes	Yes	Two populations of this species were identified within the ESL.
<i>Toxicoscordion fontanum</i>	Small-flowered death camas	CNPS 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows, seeps, marshes and swamps, often on serpentine soils (50 to 3,280 feet).	Yes	Yes	One population of this species was identified in the ESL.
<i>Piperia Michaelii</i>	Michael's Piperia	CNPS 4	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest	Yes	Yes	A single plant was identified at the east end of the ESL, upslope of Diener Drive.
<i>Calyptridium quadripetalum</i>	Four-petaled pussypaws	CNPS 4	Chaparral, lower montane coniferous forest, usually on sandy or gravelly serpentine soils (1,030 to 6,690 feet).	Yes	Yes	Three small populations of this species were identified in the ESL.
<i>Antirrhinum virga</i>	Tall snapdragon	CNPS 4	This species is a perennial herb species that grows in lower montane coniferous forest habitats.	Yes	Yes	Three small populations of this species were identified at the east end of the ESL.

2.17.3 Environmental Consequences

2.17.3.1 No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to special status plants relative to the proposed project.

2.17.3.2 Alternative D

The special-status plant species with potential to occur in the ESL (Table 2.17-1) were evaluated to identify potential impacts as a result of Alternative D. Anticipated impacts related to the proposed project would occur as a result of project activities including, realigning and widening of the roadway, construction of drainage features, and utility relocation.

Brandeggee's Eriastrum

Three populations of this species have been identified within the ESL covering a combined area of approximately 1,008 square feet. The proposed project is not anticipated to directly or indirectly impact this species. The identified populations are found outside the area of direct disturbance, including the utility relocation corridors, and hydrology would not be altered in the vicinity of this population.

Bolander's Horkelia

Twenty small populations of this species were identified within the ESL and cover a combined area of approximately 0.9 acres. Alternative D would result in the permanent removal of four of these populations and the partial removal of another population, for a combined total loss of 0.1 acres. This represents an 11% loss of species and associated habitat within the ESL. However, because there are numerous small populations remaining within the ESL, project impacts are not anticipated to threaten genetic diversity nor limit geographic extent at a local or regional scale, and are considered minimal.

Alternative D would result in temporary impacts to one population located directly adjacent to the proposed roadway. As discussed above, the project would remove a portion of one population. Once constructed, the earthen embankment at this location could alter water flows to the remaining portion of this population and thus could potentially affect the remaining 0.02 acres. However, this population would likely spread and grow outward away from the earthen embankment, resulting in only a temporary impact.

Konocti Manzanita

Approximately 100 acres of Konocti manzanita are found within the ESL. Of these 100 acres, approximately 39.6 acres of Konocti manzanita would be removed as a result of the construction of Alternative D. Impacts to special status plants were primarily analyzed by comparing plant population data within the ESL with the anticipated project impacts. In all cases except in the evaluation of Konocti manzanita, it was found that there was not potential for a notable impact at the ESL level, thus it was determined that there would not be a notable impact at the project's watershed level because the ESL is a subset of the project's watershed area. However, the ESL does not represent the extent of the 'local' Konocti manzanita population. Though Konocti manzanita is endemic to California and found in only a few floristic provinces, it is not rare within its range and it is not rare within the project's watershed, so estimating loss within the ESL does not provide an accurate analysis of potential impacts. An accurate representation of impacts can be calculated based on the population of Konocti manzanita found within the project's watersheds. Approximately 1,180 acres of Konocti manzanita are found within the project's watersheds, thus, the removal of 39.6 acres represents a 3% loss of species and species' habitat within the local region. Approximately 1.2 acres may re-establish within utility pole temporary construction easements and approximately 1.9 acres may re-establish within the new fiber optic corridor as a result of natural reseeding from adjacent plant populations. Since this loss would occur within the central range and main geographic concentration of this species, permanent removal 39.6 acres is not anticipated to affect geographic extent or limit genetic diversity of Konocti manzanita.

Oval-Leaved Viburnum

During surveys conducted in 2003, only one shrub of this species was found within the ESL. Surveyors were unable to locate this occurrence in subsequent surveys conducted in 2007, 2011, and 2015, nor were additional occurrences identified in suitable habitat within the ESL. There are no other occurrences known to exist within the project's watersheds.

Based on survey results, this species is no longer thought to be present within the ESL. Since this species is a perennial woody shrub and no evidence of habitat destruction exists, its lack of presence suggests that the shrub has died of natural causes. Additionally, because oval-leaved viburnum seed is only viable (under ideal conditions) for a maximum of 10 years, it is reasonable to assume that the species no

longer exists within the ESL. The proposed project is not anticipated to directly or indirectly result in impacts to this species.

Mount Diablo Cottonweed

One population of this species was found within the ESL covering an area of approximately 1.5 acres. There are no other known occurrences within the project's watersheds. The proposed project is not anticipated to directly or indirectly impact this species. The identified population is found outside the area of direct disturbance, including the utility relocation corridors, and hydrology would not be altered in the vicinity of this population.

Woolly Meadowfoam

Seven populations of this species were identified within the ESL covering a combined area of approximately 17.4 acres. These are the only known occurrences within Lake County. Construction of Alternative D would permanently impact portions of five populations of this species at Shaul Valley, for a total loss of approximately 8.7 acres. This impact represents a 50% loss of species, seed bank, and associated habitat within the ESL and project's watershed.

While this project would remove a considerable amount of habitat, individuals, and seed bank, this loss is not anticipated to be detrimental to the long term survival of the remaining populations found within the ESL because the populations would not be reduced below the minimum number of individuals required for the populations to survive. In an 'average' rain year, the average number of plants found in the Shaul Valley populations is approximately 3,793,725 to 13,658,490 plants. A genetically viable breeding population needs to be at a minimum of 2000 or more individuals (Reed 2003, 2005; Schultze and Lynch 1997, Whitlock 2000). The project would result in the loss of approximately 1,873,565 to 6,744,834 plants leaving approximately 1,920,160 to 6,913,656 plants remaining; more than enough to maintain the 'biologic fitness' as measured by seed set and germination. Additionally, because portions of the existing populations would remain viable, the project would not reduce the geographic extent of this species.

Bristly Leptosiphon

Four populations of this species were identified within the ESL covering a combined area of approximately 8.3 acres. The proposed project would completely remove one of these populations resulting in the permanent loss of approximately 78 square feet of this species and associated habitat. This impact represents a 0.20% loss of species

and seed bank within the ESL. The project would not result in direct or indirect impacts to the remaining populations. The remaining populations are located outside of the project's area of direct disturbance, including utility relocation corridors, and hydrology would not be altered in the vicinity of these populations. The project is not anticipated to inhibit genetic diversity or reduce the range of this species as only a nominal population and seed bank loss would occur.

Large-Flowered Star Tulip

Two populations of this species occur within the ESL covering a combined area of approximately 425 square feet. The proposed project is not anticipated to directly or indirectly impact this species. The identified populations are found outside the area of direct disturbance, including the utility relocation corridors, and hydrology would not be altered in the vicinity of this population.

Small-Flowered Death Camas

One population of this species was found within the ESL, covering an area of approximately 0.2 acres. There are no other known occurrences within the project's watersheds. The proposed project would not directly or indirectly impact this species. The identified population is located outside of the area of direct disturbance, including the utility relocation corridors, and hydrology would not be altered in the vicinity of this population.

Michael's Piperia

A single plant of this species was found within the ESL during surveys conducted in 2003. Surveyors were unable to relocate this occurrence in subsequent surveys conducted in 2011, and 2015, nor were additional occurrences identified in suitable habitat within the ESL. Additionally, there are no other occurrences known to exist within the project's watersheds, Lake County or any neighboring counties. Based on survey results, it is reasonable to assume that this species is no longer present within the ESL. The proposed project is not anticipated to directly or indirectly impact this species as the occurrence identified in 2003 is likely no longer present and there are no known occurrences within and/or near the project area. Furthermore, the 2003 population was located outside of the area of disturbance.

Four-Petaled Pussypaws

Two populations of this species were identified within the ESL during surveys conducted in 2003. In 2011, surveyors were unable to relocate these two populations, however, an additional population was identified. There are no other known

occurrences within the project's watersheds. Presence of the two populations not located in the 2003 surveys is assumed based on the variable nature of annual plant distribution, propagation, and seed bank availability. Combined, the three populations cover an area of approximately 335 square feet. These are the only known populations within the project's watersheds.

Construction of Alternative D would result in the permanent removal of the population identified in 2011 and would also impact one of the assumed present populations identified in 2003, for a total loss of approximately 209 square feet of this species and/or suitable habitat which represents a loss of approximately 62% of the populations identified within the ESL. Off-setting potential project-related impacts is the abundance of suitable habitat throughout the ESL and project's watersheds. Loss of 209 square feet would not likely be notable in terms of impacts to the larger geographical population as this species is prevalent elsewhere in the Lake County area.

Tall Snapdragon

Three populations of this species were identified within the ESL covering a combined area of approximately 0.2 acres. Construction of Alternative D would result in approximately 784 square feet of temporary impacts to one population as a result of the utility relocation efforts. However, this disturbance is not anticipated to involve plant roots and/or top soil removal and plants located adjacent to the work area would remain. Natural re-establishment would likely occur and, thus, the project is not anticipated to result in permanent impacts to this species.

2.17.4 Avoidance, Minimization, and/or Mitigation Measures

Although the proposed project would not result in considerable impacts to special-status plant species, the following commitments would be incorporated into the project:

- Special-status plant species that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' specifications, the project plans, and with guidance from Caltrans' technical specialists. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.

- Additional surveys for special-status plant species would be conducted in areas where access was not granted by private land owners. Similarly, a final attempt to locate Oval-leaved viburnum would be conducted during the plant's flowering period prior to construction. If special-status plants are found in previously un-surveyed areas, Caltrans would further evaluate potential project impacts.
- During utility relocations, directional drilling, rather than other means that may involve clearing special status plants, would be considered and incorporated where feasible if it would result in reduced environmental impacts to special status plant species. At locations where there would only be utility pole removal, shrubs would be trimmed, but the rootstock and seedbank would remain intact.
- Post Construction: At new utility pole locations or replacement pole locations (areas within temporary construction easements but outside of the permanent utility corridor) native plants would be allowed to reseed and re-establish through natural succession. Along the fiber optic corridor, cleared areas would be allowed to reseed and re-establish through natural succession.
- If feasible, the seeds and/or seed bank and top soils within known special status plant locations impacted by the proposed project would be collected prior to construction. Post construction, the topsoil (including the seed bank) would be reapplied on suitable habitat within the Caltrans right-of-way where feasible.
- Known special status plant locations located within Caltrans' right-of-way would be added as environmentally sensitive areas to Caltrans Construction and Maintenance's district maps and databases.

2.18 Animal Species

2.18.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), and CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with special status animals that are not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.19 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife protection include the following:

- NEPA

- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife protection include the following:

- CEQA
- Section 1600 -1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

2.18.2 Affected Environment

Prior to conducting field surveys, a records search and database review was conducted in order to identify special-status animal species known to occur, or with the potential to occur within the ESL. This included accessing the CNDDDB, CDFW Lists of Animals Species of Special Concern, and the USFWS list of Birds of Conservation Concern (USFWS 2008). Field surveys were subsequently conducted to determine the presence or absence of special-status animal species within the ESL and to evaluate potential project impacts. Following field surveys, special-status animal survey reports were prepared in order to document the results of field surveys. Survey reports were submitted to both the USFWS and the CDFW in March 2015. Special status animal surveys and reports completed for the proposed project include:

- 2016 Natural Environment Study
- 2015 Bat Assessment (Bioacoustic & Structures Inspection) (reverification of 2003 findings)
- 2015 Bird Survey (Point Survey Counts) (reverification of 2003 findings)
- 2012 California Red-legged Frog (*Rana draytonii*) USFWS 2005-Protocol Species Survey Report (includes western pond turtle observations)
- 2011 Special Status Plant Survey Report per USFWS and CDFW protocols
- 2003 Bat Habitat Assessment (Habitat Evaluation, Bioacoustic Surveys, Structures Inspection, Mist Nets Surveys)
- 2002-2003 Bird Surveys (including northern spotted owl habitat and presence surveys, migratory birds point surveys accounts and raptor nests)

The special-status animal species listed in Table 2.18-1 are those known to occur, or are considered likely to occur, in the ESL. A complete list of regional species of concern is included in Appendix H. Threatened and endangered species are listed in Table 2.19-1.

Table 2.18-1 Special-Status Animals Potentially Occurring in the ESL

Scientific Name	Common Name	Protection Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Bats						
<i>Antrozous pallidus</i>	Pallid Bat	SSC	Day roost in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings. Foraging habitat includes chaparral, coastal scrub, desert wash, and Great Basin grassland.	Yes	Yes	Species caught in mist net during 2003 bat surveys, and detected within the ESL at several of the bioacoustic survey stations in 2003 and 2015.
<i>Lasiurus blossevillii</i>	Western red bat	SSC	Roosts primarily in trees, 2-40 feet above ground. Found in oak woodlands, lower coniferous forests, riparian forest, and riparian woodland.	Yes	Yes	Detected at a bioacoustic survey station in 2015 surveys
Birds						
<i>Contopus cooperi</i>	Olive-sided flycatcher	SSC, BCC	Found in open montane and boreal conifer forests; nest in mixed conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	Yes	Yes	Species detected within the ESL in 2003 surveys only. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Dendroica petechial bresteri</i>	Yellow warbler	SSC, BCC	Nests in riparian habitats. Prefers willows, cottonwoods, aspens, sycamores, and alders for both nesting and foraging. Also nests in montane	Yes	Yes	Species detected within the ESL In 2003 surveys only. Suitable nesting habitat present within the

Scientific Name	Common Name	Protection Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
			shrubby in open conifer forests.			ESL, but no nests were observed.
<i>Elanus leucurus</i>	White-tailed kite	CFP, BCC	Nests on rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Found in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Yes	Yes	Species detected within the ESL in 2003 surveys only. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Progne subis</i>	Purple martin	SSC	Uncommon to rare local summer resident. Occurs in valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, conifer forests and riparian habitats.	Yes	Yes	Five purple martin nests were identified within or adjacent to the ESL in 2003. Species were observed in 2015 in the same nesting area.
Reptiles						
<i>Actinemys marmorata</i>	Northwestern pond turtle	SSC	Associated with permanent or nearly permanent water sources with basking sites, in a wide variety of habitats. Nest sites may be found up to 0.3 mile from water.	Yes	Yes	Suitable habitat is present in Thurston Creek and occurrences have been recorded within close proximity to the ESL.

¹SSC = California Species of Special Concern; CFP = California Fully Protected Species; PSSC = California Proposed Species of Special Concern; BCC = Birds of Conservation Concern

Note: The Fringed myotis (*Myotis thysanodes*), Long eared myotis (*Myotis evotis*), Yuma myotis (*Myotis yumanensis*), Coopers hawk (*Accipiter cooperii*), Pacific slope flycatcher (*Empidonax difficilis*), and California thrasher (*Toxostoma redivivum*) were listed in the 2007 DEIR/EA as special status animal species. These species are not included in this table as they are no longer considered special status animal species.

2.18.3 Environmental Consequences

2.18.3.1 No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes to special status animals relative to the proposed project.

2.18.3.2 Alternative D

Bat Species

Construction of Alternative D would impact approximately 151.6 acres of potential roosting/foraging habitat and approximately 167.1 acres of forage-only habitat. Approximately 3.1% of suitable special-status bat habitat within the project's watersheds would be impacted by the proposed project. Table 2.18-2 provides a summary of acreage impacts by habitat type and the percent change in habitat located within the project's watersheds.

Table 2.18-2 Alternative D Impacts to Special-Status Bat Habitat

Habitat Type	Habitat Use	Total Acres within Project's Watersheds	Impact (Acres)	% Impacted
Oak Woodlands	Roost/Forage	1,737.0	133.0	7.7%
Chaparral	Forage	4,852.7	96.6	2.1%
Pine Forest	Roost/Forage	2,373.7	16.3	0.7%
Riparian	Roost/Forage	82.3	2.3	2.8%
Non-native grasslands	Forage	746.1	56.2	7.5%
Wetlands	Forage	498.0	14.3	2.9%
Total Habitat		10,289.80 acres	318.7	3.1%

Note: Impact amounts include both temporary and permanent project-related impacts. Temporarily impacted areas will provide suitable habitat once natural revegetation occurs, however, habitat use may change.

The proposed project would also require the removal of up to 15 man-made structures, which may provide potential roosting habitat. Due to limited access, not all of the structures have been surveyed. It is currently unknown if the un-surveyed buildings are occupied and until surveyed, presence is assumed. Of the surveyed structures, two were occupied by bats but were determined not to be maternal roosts.

Although the proposed project would result in the removal of suitable roosting/foraging habitat, including man-made structures, a notable amount of roosting/foraging habitat would remain within the project's watersheds. The proposed project would not considerably fragment day or night roosting habitat at a local

(project's watersheds) or regional level (Lake Co. Geo-region). Therefore project-related impacts as a result of habitat removal are negligible.

However, the removal of bat-occupied day, night, or maternity roosting habitat during the summer breeding period, including abandoned buildings and trees/snags with large cavities, could result in direct bat mortality. Similarly, the removal of bat-occupied buildings during the winter could result in the mortality of hibernating bats. Additionally, the disturbance of maternity roosts, as a result of construction activities, has the potential to result in abandonment and consequent mortality of young.

Without the implementation of the proposed avoidance, minimization, and mitigation measures, the removal of bat-occupied habitat and/or construction-related disturbance of maternity roosts would likely result in a take of special-status bats.

Minor temporary project impacts to bats could include possible disruption of breeding and foraging patterns, and increased stress on hibernating bats from the presence of construction equipment and personnel.

With the implementation of the proposed avoidance, minimization, and mitigation measures, the proposed project is not anticipated to result in the take of special-status bat species.

Raptor and Migratory Nesting Bird Species

It is Caltrans' standard practice to remove trees and shrubs outside of the nesting season. Therefore, the proposed project is not expected to result in the take of raptors, migratory song birds, eggs, or young. Construction of Alternative D would require the removal of approximately 275.3 acres, out of a total of 10,289.80 acres, of potential nesting/foraging habitat within the project's watersheds. Approximately 2.7% of suitable special-status bird habitat within the project's watersheds would be removed as a result of the proposed project. Table 2.18-3 provides a summary of acreage impacts by habitat type and the percent change in habitat located within the project's watersheds.

Table 2.18-3 Alternative D Impacts to Special-Status Bird Habitat

Habitat Type	Habitat Use	Total Acres within Project's Watersheds	Impact (Acres)	% Removed
Oak Woodlands	Nest/Forage	1,737.0	116.8	6.7%
Chaparral	Nest/Forage	4,852.7	82.0	1.7%
Pine Forest	Nest/Forage	2,373.7	13.9	0.6%
Riparian	Nest/Forage	82.3	1.8	2.2%
Non-native grasslands	Nest/Forage	746.1	48.8	6.5%
Wetlands	Nest/Forage	498.0	12.0	2.4%
Total Habitat		10,289.80 acres	275.3	2.7%

Note: Impact amounts include permanent project-related impacts only. Temporarily impacted areas will provide suitable nesting/foraging habitat once natural revegetation occurs.

Although the proposed project would result in the removal of suitable special-status bird habitat, a considerable amount of larger contiguous blocks of higher quality habitat would remain in the project's watersheds. The project would not notably fragment habitat for raptors or migratory bird species when evaluated at the project's watershed level because the proposed project largely parallels the existing alignment and the habitat removed would be primarily linear swathes of moderately degraded habitat in terms of vegetation diversity, habitat structure, and proximity to the existing SR 29.

Construction activities may temporarily disrupt normal foraging or movement patterns of raptors and migratory birds within the project vicinity. However, notable disruption is unlikely due to the proposed project's proximity to the highway system and the existing ambient noise.

Reptile Species

Although Northwestern pond turtle (NWPT) are known to be present in portions of Thurston Creek, there are no known occurrences within the proposed project's area of direct disturbance. The project is not anticipated to result in the take of NWPT based on species absence within the project's area of direct disturbance. Preconstruction surveys and NWPT relocation, in the unlikely event they are found, would reduce potential mortality to NWPT.

Construction of Alternative D would remove approximately 2 acres of poor quality NWPT aquatic habitat. These impacts would be primarily due to the excavation of cut slopes, placing of fill material, grading activities, the extension and replacement of culverts, and utility relocation. The aquatic habitat that would be impacted by the

proposed project lacks pools of slow-moving water and basking substrate. Additionally, the project would result in the removal of approximately 7.8 acres of potential upland nesting habitat. Compared to the available habitat within the project's watersheds, the project would only affect a nominal portion of potential local nesting, rearing, breeding, feeding or overwintering habitat. See Table 2.18-4 for a summary of NWPT habitat impacts.

Table 2.18-4 Alternative D Permanent Impacts to Northwestern Pond Turtle Habitat

Habitat Type	Total Area (Acres) of Suitable Habitat within the Project's Watersheds	Impacts (Acres)	% Removed
Aquatic	512.3	2.0	0.4%
Upland	679.7	7.8	1.1%
Total	1,192.0	9.8	0.8%

2.18.4 Avoidance, Minimization, and/or Mitigation Measures

Bat Species

- No work would occur within 500 feet of a known maternity roost between April 15 and September 1.
- No work would occur within 500 feet of a known winter roost site between October 15 and February 28.
- New lights would be downward-facing narrow spectrum lights with low UV content.
- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified biologist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified biologist prior to removal. Trees that are confirmed roosts would not be cut down until the biologist confirms that the roost is no longer occupied by bats
- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified biologist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be

postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.

- Suitable roosting trees would be surveyed by a qualified biologist prior to removal. Trees that are confirmed roosts would not be cut down until the biologist confirms that the roost is no longer occupied by bats.

Raptor and Migratory Nesting Bird Species

Although the proposed project is not expected to result in a take, nor would the project notably fragment habitat of raptors or migratory nesting bird species, the following commitments would be incorporated into the proposed project:

- Utility poles that are used, or have been used, for purple martin nesting would be relocated between August 1 and February 28, after a qualified biologist confirms that Purple martin are no longer present.
- No work would occur within a 100ft of an active purple martin nest between March 1 and August 1.
- During construction, if migratory or nongame bird nests are discovered that may be adversely affected by construction activities or an injured or killed bird is found, work would stop immediately within a 100-foot radius of the discovery. A qualified biologist would be notified for guidance on how to proceed. Construction activities would not resume within the specified radius of discovery until authorized.

NWPT

Although the project is not expected to result in a take of NWPT, nor would the project result in a considerable loss of suitable NWPT habitat, the following commitments would be incorporated into the proposed project:

- Environmental awareness training for construction personnel would be conducted prior to the onset of project activities. The training would include instructions on the identification of NWPT and the required procedures if NWPT are found within the project work area. If NWPT are encountered in the work area, construction would be required to stop in the immediate area of the sighting, and a qualified biologist contacted for guidance.
- Prior to the start of construction, a qualified biologist would survey suitable NWPT aquatic and upland habitats, to ensure no NWPT are present. If turtles are

- observed during surveys, they would be relocated outside of the construction area, to suitable habitat, by a qualified biologist.
- If a NWPT nest is found within the project impact area, CDFW would be contacted and an ESA would be established. Construction-related activities would be prohibited within the NWPT ESA and active nests would be monitored once per week during construction by a qualified biologist.
 - At all Thurston Creek crossings, large, multi-barreled, natural substrate bottom box culverts would be installed. Box culverts would provide more space for wildlife passage than the existing pipe culverts. The box culverts would be designed to facilitate both aquatic and terrestrial wildlife movement.
 - Water pumps would be screened with wire mesh screens no larger than 0.2 inch to prevent NWPT sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no NWPT, this measure is to ensure that turtles that were missed during the survey are not harmed or killed by water pumps.

2.19 Threatened and Endangered Species

2.19.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA, are required to consult with the US Fish and Wildlife USFWS and NOAA Fisheries 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. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and

threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. CDFW is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.19.2 Affected Environment

An evaluation of potential impacts to biological resources protected under FESA and/or CESA was conducted for the proposed project. Species considered under FESA were based on a list, provided by the USFWS, of federally threatened and endangered species potentially occurring within the project area. The complete list is included in Appendix I. This list does not include species under NOAA Fisheries jurisdiction as the proposed project does not have the potential to impact anadromous fish species. Similarly, databases managed by the CDFW were accessed in order to identify potentially occurring state listed species. Table 2.19-1 lists the state and federally threatened and endangered plant and animal species evaluated for potential impacts. This table also includes species proposed for listing under the FESA and/or CESA. The evaluation of state and federally listed species included field surveys, literature reviews, and coordination/consultation with regulatory agencies.

Information regarding species listed under FESA and/or CESA with no real potential to occur within the ESL, and thus no potential to be impacted by the proposed project, is documented in Table 2.19-1 and no further discussion is provided. If a species is known to occur in the ESL, or could potentially occur, additional discussion is provided for each species below.

Table 2.19-1 State and Federally Threatened and Endangered Species

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Amphibians						
<i>Rana aurora draytonii</i>	California red-legged frog (CRLF)	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation (state of dormancy, similar to hibernation) habitat.	Yes	No	No known existing populations in Lake County. CRLF were not observed during protocol level surveys. The project area is, however, located within a designated CRLF recovery area.
Birds						
<i>Strix occidentalis caurina</i>	Northern spotted owl (NSO)	FT, SCT	Found in north Coast, Klamath and western Cascade ranges from Del Norte to Marin County. Associated with dense old growth or mature forests dominated by conifers with topped trees or oaks available for nesting crevices.	Yes	No	The nearest nesting site is approximately 2.5 miles west of project limits. ESL contains some foraging but no nesting habitat. USFWS concurred that NSO do not have the potential to be impacted by the proposed project.*
<i>Agelaius tricolor</i>	Tricolored blackbird (TRBL)	SCE **	Habitat includes freshwater marshes with dense vegetation.	Yes	No	TRBL were not observed within the ESL during recent or historical surveys. ESL contains poor quality nesting habitat.

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo (YBCU)	FT, SE	Nests in riparian forests, along broad lower flood-bottoms of large rivers. Nests are typically found in riparian jungles of willow often mixed with cottonwoods with a lower story of blackberry, nettles, or wild grape.	No	No	No habitat present in or adjacent to ESL. Species not detected during surveys.
Fish						
<i>Oncorhynchus mykiss</i>	Steelhead – Northern California Distinct Population Segment	FT	Rearing and spawning occur in cool shaded streams in coastal and Central Valley tributaries that connect to the ocean.	No	No	Project is out of species range.
<i>Lavinia exilicauda chi</i>	Clear Lake Hitch (CLH)	ST	Adults found in deeper off shore zones of Clear Lake, Thurston Lake and associated reservoirs. Juveniles found in near shore shallow water habitat. Most but not all adults spawn up tributaries beginning in March or April after freshets from spring rains enter lake.	Yes	Yes	Species detected during electro-fishing surveys of Thurston Lake.

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Hypomesus transpacificus</i>	Delta smelt	FT, SE	Inhabits open waters of bays, tidal rivers, channels, and sloughs. Spawning occurs in freshwater (sometimes in slightly brackish water), primarily in tidal dead-end sloughs and channel edgewater.	No	No	Project is out of species range.
Invertebrates						
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE	Inhabit rather large, moderately turbid, cool-water, vernal pools that generally hold water until June. Has been found in the Central Valley and California coastal grasslands in sandstone depression pools, grassy swales, earthen slumps and basalt-flow depressed pools.	No	No	No habitat present within or adjacent to ESL. Species not known to exist in vicinity of project.
Mammals						
<i>Corynorhinus townsendii townsendii</i>	Townsend's big-eared bat (TBEB)	SCT	Cavity rooster. Roosts in lava tubes, caves, buildings, mines, etc.	Yes	Yes	In 2002-2003 was identified roosting in three structures within the ESL, and was detected foraging within the ESL. In 2015 observed winter and maternal roosting in abandoned houses. Also detected at echolocation survey stations.

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Martes pacifica</i>	Pacific fisher	FPT, SCT	Occupies intermediate to large-tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs, and rocky areas for cover and denning. Needs large areas of mature dense forest.	No	No	No suitable habitat in the ESL; species has not been observed in this region of California for several decades.
Plants						
<i>Lasthenia burkei</i>	Burke's goldfields	FE,SE	Occurs in select portions of Sonoma and Lake counties in vernal pools and intermittent swales.	Yes	Yes	Several populations were identified within vernal pools found within the ESL.
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Few-Flowered navarretia	FE,ST	Currently found only in Lake County in northern volcanic ash flow vernal pools.	Yes	Yes	Several populations were identified within vernal pools found within the ESL.
<i>Parvisedum leiocarpum</i>	Lake County stonecrop	FE,SE	Found on volcanic substrates in areas of impeded drainage, such as in and along vernal pools.	Yes	Yes	Several populations were identified within vernal pools found within the ESL.
<i>Eryngium constancei</i>	Loch Lomond coyote thistle	FE	Restricted to vernal pools in Lake-Napa Vernal Pool Region, three of which are northern volcanic ash flow vernal pools in Lake Co.	Yes	No	Species not detected during numerous protocol level botanical surveys.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-Flowered navarretia	FE,SE	Restricted to northern volcanic ash flow vernal pools in Lake County.	Yes	No	Species not detected during numerous protocol level botanical surveys.

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Orcuttia tenuis</i>	Slender Orcut grass	FT, SE	Associated with vernal pools	Yes	No	Species not detected during numerous protocol level botanical surveys.
*Per June 30, 2010 email correspondence from USFWS biologist Lisa Ellis.						
** The tricolored blackbird was given emergency State Endangered Species Status under CESA in December 2014. This listing provided 6 months of temporary protection but was allowed to expire in June 2015. February 19, 2016 the emergency status was reinstated (special order File ID # 2016-02226-2E). The effective date of current regulation is March 7 to September 6, 2016						
Note: The 2007 Draft EIR/EA included the Valley Elderberry Longhorn Beetle (VELB) (<i>Desmocerus californicus dimorphus</i>) as a federally threatened species potentially occurring within the ESL. However, based on VELB population ecology studies conducted by Dr. Marcel Holyoak, an ecology professor at UC Davis, the Lake 29 Improvement Project is outside of VELB range.						

¹ FE = Federal Endangered; FT = Federal Threatened; FPT = Federal Proposed Threatened; SE = State Endangered; ST = State Threatened; SCE = State Candidate Endangered; SCT = State Candidate Threatened

California Red-Legged Frog

The California red-legged frog (*Rana aurora draytonii*), listed as a threatened species under FESA, occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.

An initial habitat assessment was conducted in 2002 in order to evaluate the quantity and quality of California red-legged frog (CRLF) habitat available within the project area. Field surveys were then carried out to identify whether or not CRLF were present. In 2011, following the USFWS *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (USFWS 2005), Caltrans conducted another habitat assessment and presence-absence surveys. One additional protocol level CRLF presence-absence survey was conducted in 2012. No CRLF, of any life stage, were observed during surveys, nor is there record of this species currently occurring within the watersheds of the project area. Additionally, no populations of CRLF are known to currently exist within Lake County. Potentially suitable habitat in the project area has become infested with non-native predatory species such as warmwater fish, crayfish, and bullfrogs (*Rana catesbeiana*). Presence of these non-native species is likely to prevent the recolonization of suitable habitat by CRLF.

The USFWS has developed a recovery plan and identified core areas for recovery for CRLF. Core areas for recovery represent a system of areas that, when protected and managed for CRLF, should allow for long-term viability of existing populations and

re-establishment of populations throughout their historic range. Core areas are chosen for species recovery because they represent areas which support viable populations or because they have the potential to contribute to the connectivity of habitat and, thus, provide dispersal opportunities between existing populations. The project area is located within the Putah Creek-Cache Creek core recovery area in the North Coast Range Foothills and Western Sacramento River Valley recovery unit (CRLF Recovery Plan 2002). Though CRLF is thought to be locally extinct within the Putah Creek-Cache Creek watersheds in Lake County, these watersheds have been identified as core areas for recovery because they are believed to be historically occupied by CRLF, there is potential for re-establishment, and habitat connectivity elements are present.

Clear Lake Hitch

The Clear Lake hitch (*Lavinia exilicauda chi*) is listed as a threatened species under CESA and is confined to the Clear Lake Basin and associated lakes and ponds such as Thurston Lake and Lampson Pond (CDFW 2013). Clear Lake hitch (CLH) require lake and stream habitat for their various life stages. CLH typically spawn early spring, between February and May. Though some CLH spawn along lake shores, most spawn in low-gradient tributary streams often at the peak of a high flow event (e.g. during or after a heavy rain storm). CLH prefer low stream gradients, meander, riffle-pool-run stream structure, clean gravel, riparian shade, and refuge for recently hatched fry. During wet years CLH may also opportunistically spawn in water filled ditches, and flooded meadows, however, stranding and subsequent mortality is common if waters recede rapidly.

Records indicate that CLH historically occupied Thurston Lake. To confirm their presence, Caltrans and the CDFW conducted an electroshock-fish survey of Thurston Lake on July 29, 2015. The survey identified the presence of CLH in various life stages.

Although CLH in Thurston Lake are likely spawning up into Thurston Creek, there are a number of reasons which suggest that CLH do not travel upstream as far as the project area of disturbance: 1) the presence of approximately 5 river miles of high quality spawning/rearing habitat adjacent to Thurston Lake; 2) the lack of a defined creek channel through Ely Flat; 3) fish barriers at low or normal flow years between Ely Flat and SR 281; and 4) the presence of poor quality spawning/rearing habitat in Thurston Creek within the ESL.

The likelihood that spawning does not occur above Ely Flat is evidenced by the absence of CLH during all field surveys conducted since 2003, including surveys during peak flood waters. The lack of anecdotal or recorded evidence from long time land owner/managers with knowledge of Clear Lake hitch spawning habits also provides evidence supporting CLH absence within the project area of disturbance.

Townsend's Big-eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*), currently listed as a candidate for protection as a threatened species under CESA, is found in areas with a mosaic of woodland, grassland, and/or shrubland habitat.

Surveys for Townsend's big-eared bat (TBEB) were conducted in 2003 and 2015. The surveys evaluated habitat suitability for roosting and/or foraging by TBEB, which included potential tree and manmade structure (i.e. houses) roost habitat, within the ESL. Potential tree roosts were evaluated based on the diameter of the tree trunk and the presence of cavities, snags, or broken and rotted limbs. The exterior and interior of structures were evaluated for potential roosting habitat and surveyed for TBEB when access was granted by land owners. Foraging habitat surveys included the use of mist nets, night vision goggles, spotlights, and bioacoustics monitoring of bat calls. The surveys identified suitable roosting and foraging habitat and TBEB were observed in four structures within the ESL. However, two of these structures have since been removed by the land owners for reasons unrelated to the proposed project. Within the ESL, of the remaining structures, one structure has a long-established maternal roost within 300 feet of the proposed project.

Burke's Goldfields

Burke's goldfields (*Lasthenia burkei*) is listed as an endangered species under both CESA and FESA. This small annual plant, belonging to the sunflower family, occurs in vernal pools, seeps, and meadows.

Several populations of Burke's goldfields were identified during protocol level surveys. These populations were observed in the vernal pools at Manning Flat and in the vernal pools north of the intersection of SR 29 and Doten Road. The populations ranged from a few individuals to several thousand individuals.

Few-Flowered Navarretia

Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*) is listed as an endangered species under FESA and as a threatened species under CESA. This small annual plant which occurs in vernal pools, is only found in a 20-square mile area, and is only known from eight occurrences, six of which occur in Lake County.

Several populations of few-flowered navarretia were identified during protocol level botanical surveys conducted for the proposed project. These populations were observed in vernal pools at Manning Flat and in the vernal pools north of the intersection of SR 29 and Doten Road. Populations ranged from a few individuals to several thousands of individuals.

Lake County Stonecrop

Lake County stonecrop (*Parvisedum leiocarpum*) is an annual herb that is listed as endangered under both CESA and FESA. Lake County stonecrop is found on shallow volcanic substrates in areas of impeded drainage such as in vernal pools and rocky depressions in cismontane woodland and valley and foothill grassland habitats.

Lake County stonecrop is only found within a 10-square mile area and is known from six occurrences, all of which occur in Lake County. Of these occurrences two are located within the project area, found within the vernal pools at Manning Flat and in the vernal pools north of the intersection of SR 29 and Doten Road. Four populations were identified at Manning Flat with populations ranging from hundreds to tens of thousands of individuals. The Doten Road populations were not located during recent protocol level surveys, however, are presumed extant.

Rare plant surveys for Burke's goldfields, Few-flowered navarretia, and Lake County stonecrop were conducted and survey reports were prepared in accordance with the USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996), the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain* (modified from the USFWS 1996 document), and the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009).

Vernal Pool Core Areas

Per requirements of the Endangered Species Act of 1973, the USFWS has developed a recovery plan and identified core areas for recovery of threatened or endangered flora and fauna that occur exclusively or primarily within vernal pools. Both the Few-flowered navarretia and Lake County stonecrop are discussed in the USFWS *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005). Core areas for recovery are identified as areas that: 1) are occupied by threatened and/or endangered species; 2) have been historically occupied (pre 1985) by threatened and/or endangered species; 3) that provide connectivity between source populations, and/or 4) provide potential for re-establishment of threatened and/or endangered species populations. The ESL is located within the Boggs Lake-Clear Lake Core Area in the Lake-Napa Vernal Pool Region. Approximately 70.6 acres of vernal pool core area exists within the ESL.

2.19.3 Environmental Consequences

2.19.3.1 No Build Alternative

The No Build Alternative would not modify SR 29; therefore there would be no changes to federal and state listed species relative to the proposed project.

2.19.3.2 Alternative D

In accordance with Section 7 of FESA, a Biological Assessment (BA) was prepared which evaluated and documented potential impacts to federally threatened and endangered species known to occur or with potential to occur within the ESL. In the BA, Caltrans made the finding of *may affect, not likely to adversely affect* for the federally endangered Burke's goldfields, few-flowered navarretia, and Lake County stonecrop, and the federally threatened California red-legged frog. The BA was submitted to the USFWS on June 10, 2015. The USFWS concurred with this finding in a letter dated June 30, 2015 (Appendix N). As noted in Table 2.19-1, the plant species discussed in the BA are also protected under CESA. The CDFW was provided a copy of the BA and the USFWS concurrence documentation.

The BA also determined that the proposed project would have *no effect* to the following federally listed species:

- Northern Spotted Owl
- Yellow-Billed Cuckoo
- Conservancy Fairy Shrimp

- Steelhead
- Delta smelt
- Loch Lomond Coyote thistle
- Many-Flowered navarretia
- Slender Orcut grass

A Natural Environment Study (NES) has also been prepared for the proposed project which identifies existing biological resources within the project area and how the proposed project may affect these resources. The NES includes a summary of CESA consultation with the CDFW and also includes a statement of findings. As stated above, the CLH, Townsend's big-eared bat, Burke's goldfields, few-flowered navarretia, and Lake county stonecrop are protected under CESA. It has been determined that the proposed project would not result in a take of these state-listed species. If it is determined through further consultation that the proposed project would in fact result in a take of a state listed species, an Incidental Take Permit (ITP) would be required pursuant to Section 2081 of Fish and Game Code and Title 14 of the California Code of Regulations, Section 15357, under CEQA.

Potential impacts to threatened and endangered species are as follows:

California Red-Legged Frog

As discussed above no CRLF were identified during protocol level surveys, the CRLF recovery plan indicates that CRLF are assumed to be extirpated from the Putah Creek-Cache Creek core recovery area, which encompasses the project area, and all suitable habitat found within the project area contains non-native predatory species which preclude the presence of CRLF. Alternative D is not anticipated to result in a take of CRLF, such as destroying eggs or causing death of CRLF at any life stage.

Approximately 58 acres of CRLF core recovery area is found within the ESL. Of these 58 acres, 0.7 ac. of breeding, rearing, feeding and resting habitat and 0.5 ac. of aquatic dispersal-only habitat would be permanently impacted by Alternative D. As such, the proposed project would not alter the potential for species reestablishment or impede habitat connectivity within the ESL or the CRLF core recovery area.

As stated above, in accordance with Section 7 of FESA, the USFWS has concurred with Caltrans' finding of *may affect, not likely to adversely affect* for the federally threatened CRLF.

Clear Lake Hitch

Based on the following reasons, CLH are not expected to occur within the project area of disturbance: 1) the absence of CLH during project related surveys; 2) the lack of anecdotal and recorded observations of CLH above Ely Flat; 3) the presence of barriers in Ely Flat at normal to low-flow conditions; 4) the presence of poor quality habitat within the project's ESL; 5) and the presence of high quality spawning habitat in the first 5 river miles adjacent to Thurston Creek. Therefore; the proposed project is not anticipated to result in impacts to CLH of any life stage or impact suitable CLH spawning habitat.

Townsend's Big-eared Bat

Approximately 9,725.2 acres of suitable foraging habitat is found within the project's watersheds. Of these acres, approximately 278.5 acres of suitable foraging habitat would be removed by proposed project. This represents a 2.9% loss of suitable foraging TBEB habitat in the project's watersheds. The loss of 2.9% of suitable foraging habitat is considered negligible as a considerable amount of higher quality foraging habitat would remain within the project's watersheds.

Similarly, approximately 15 structures would be demolished, some of which provide roosting habitat. Due to the rural nature of the project area it is assumed that a considerable amount of suitable man-made structures would remain within the project's watersheds in addition to the natural cavern-like formations that exist. Thus, the removal of man-made structures as a result of the proposed project is considered inconsequential in terms of available TBEB roosting habitat.

Additionally, the proposed project would not notably fragment day or night roosting habitat at a local (project's watersheds) or regional level (Lake Co. Geo-region) as the habitat to be removed consists primarily of linear swathes of moderately degraded habitat in terms of vegetation diversity, habitat structure, and proximity to the existing SR 29. Therefore project-related impacts as a result of habitat removal are negligible.

However, the removal of bat-occupied day, night, or maternity roosting habitat during the summer breeding period, including abandoned buildings, could result in direct bat mortality. Similarly, the removal of bat occupied buildings during the winter could result in the mortality of hibernating bats. Additionally, the disturbance of maternity roosts, as a result of construction activities, has the potential to result in abandonment and consequent mortality of young.

There are approximately five structures with moderate to high potential for use by TBEB that would be removed as a result of the proposed project. Four of these structures likely only have the potential for non-maternity use which commonly includes approximately 2-10 individuals. If all five structures were used as a non-maternity roost, without the implementation of the proposed avoidance, minimization, and mitigation measures, the proposed project could result in the mortality of approximately 10 to 50 TBEB. One of the structures has not been inspected so it is unknown if it is being used by individuals or a maternal colony. Impacts for this house could be anywhere from approximately 2-10 individuals or 20-40 mothers/pups if occupied by TBEB. Therefore, the proposed project has the potential to result in the mortality of up to approximately 80 TBEB.

However, with the implementation of the proposed avoidance, minimization, and mitigation measures, the proposed project is not anticipated to result in the take of special-status bat species.

Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop

As previously stated, populations of Burke's goldfields, few-flowered navarretia, and Lake County stonecrop are found in the vernal pools located in Manning Flat and in the vernal pools north of the intersection of SR 29 and Doten Road. The proposed Alternative D alignment diverges from the existing SR 29 alignment at Manning Flat, specifically to avoid direct modification and destruction of these vernal pools, and maintains the existing alignment near Doten Road, also in order to avoid direct impacts. Therefore, Alternative D would not result in direct impacts to Burke's goldfields, few-flowered navarretia, or Lake County stonecrop.

The proposed project does, however, have the potential to result in indirect impacts to Burke's Goldfields, Few-flowered navarretia, and Lake County stonecrop through the disruption of the hydrological connectivity and function within and adjacent to the vernal pools at Manning Flat. The new expressway alignment would be constructed to the south of the existing SR 29 alignment, ranging from approximately 180 to 440 ft. upslope of the vernal pools. This location was chosen in an effort to avoid direct impacts to the threatened and endangered plants, minimize hydrologic impacts, and avoid the portion of Manning Flat located on the north side of SR 29 which contains additional vernal pools and a deep erosional feature currently detained by the existing SR 29 roadway. Consequently, placement of the new four-lane expressway upslope of the vernal pools would alter the existing overland hydrologic flow, thus potentially

altering the hydrological connectivity and function within and adjacent to the vernal pools. The new roadway prism and impermeable surface created as a result of the four-lane expressway would be expected to alter the amount, rate, and location of surface flow downslope of the new roadway. The new expressway would also have the potential to divert flows from one local watershed to another and/or increase sediment transport to the vernal pools. Though there are a lot of natural factors that reduce surface flow and/or channeling in this area such as dense vegetation, well-draining soils and flat terrain, without the implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would concentrate runoff, create surface flow where none currently exists, increase velocity where surface flow does exist, and potentially create erosion features above or into the vernal pool areas. If sediments were deposited in these vernal pools, this could decrease or eliminate the volume of ponded water which in turn could decrease or eliminate the duration of vernal pool seed saturation and thus impact seed germination and development. All of these impacts would be expected to alter species composition within the vernal pools at Manning Flat. If these indirect impacts resulted in the loss of the Burke's Goldfields, Few-flowered navarretia, and Lake County stonecrop populations at this location, there would not only be a loss in population but also a loss in genetic diversity potentially jeopardizing the long term survival and recovery of these species.

However, these potential indirect impacts would be avoided and/or minimized with the implementation of the proposed avoidance, minimization, and mitigation measures. The measures would ensure that all overland flow above the new roadway alignment would be returned to overland flow of equal velocity and volume below the proposed expressway. The measures would also ensure that all land downslope of the new alignment would experience the same surface flow conditions and quantities as currently experienced and that sediment would not be deposited within the vernal pools as a result of the proposed project. With these measures the proposed project would not alter hydrological connectivity within and/or adjacent to the vernal pools at Manning Flat and would not result in a take of these species.

Indirect impacts at the Doten Road vernal pools are not anticipated as the existing drainage system would be replaced with a new drainage system that would not change the location, grade, or water-flow pattern. Construction of the new expressway would not change slope or ponding function of the vernal pools at this location as the vernal pools at this location are located upslope of the existing and proposed alignment.

As previously stated, in accordance with Section 7 of FESA, the USFWS has concurred with Caltrans' finding of *may affect, not likely to adversely affect* for the federally endangered Burke's goldfields, Few-Flowered navarretia, and Lake County stonecrop.

Vernal Pool Core Areas

The Boggs Lake–Clear Lake Core Area, identified in the USFWS recovery plan for vernal pool species, consists of approximately 4,395 acres. Approximately 1.4 acres would be permanently removed by the proposed project. The vernal pool core areas that would be impacted by the proposed project do not contain habitat for the endangered plants discussed above. In addition, the project impacts would not reduce the potential of the remaining vernal pool core area to provide connectivity between source populations or provide for re-establishment of threatened and/or endangered species populations as the impacted portions represent a negligible proportion of the total core area.

2.19.4 Avoidance, Minimization, and/or Mitigation Measures

General

- A qualified biologist would conduct worker awareness training, regarding all state and federal threatened or endangered species, prior to the start of construction activities. Awareness training would be conducted for all new personnel before they can participate in construction activities. Awareness training would include the following:
 - A brief review of the each species biology, species' potential for presence, and guidelines that must be followed by all construction personnel to avoid take of the listed species.
 - Guidelines to prevent attraction of predators (e.g. trash-handling procedures).
 - Procedures to be followed if any dead or injured listed species is encountered.

California Red-Legged Frog

Although the proposed project is not anticipated to result in a take of CRLF, substantively change the potential for species reestablishment, or impede habitat connectivity at the project's watershed scale, the following commitments would be incorporated into the project:

- Prior to the start of construction, a qualified biologist would survey the project area within CRLF aquatic habitat. If CRLF (including eggs and tadpoles) are

encountered during surveys or at any time during project activities, construction would be postponed in the immediate area and USFWS would be notified immediately to determine how to proceed.

- Water pumps would be screened with wire mesh screens no larger than 0.2 inches to prevent CRLF tadpoles, sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no CRLF, this measure is to ensure that frogs that were missed during the survey are not harmed or killed by water pumps.

Clear Lake Hitch

No avoidance and/or minimization measures are required.

Townsend's Big-eared Bat

- No work would occur within 500 feet of a known maternity roost site between April 15 and September 1.
- No work would occur within 500 feet of an occupied known winter roost site between October 15 and February 28.
- New lights would be downward facing, narrow spectrum lights with low UV content.
- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified bat specialist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified bat specialist prior to removal. Trees that are confirmed roosts would not be cut down until a qualified bat specialist confirms that the roost is no longer occupied by bats.

Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop, and Vernal Pool Core Areas

- Within or adjacent to areas that are designated vernal pool core areas, work would be restricted to cut/fill lines and the minimum area needed to maneuver construction equipment.
- The existing roadway at Manning Flat would not be removed following completion of Alternative D. The existing roadway currently prevents a large erosional feature from impacting the vernal pools at Manning Flat. Energy

dissipater rock would be added to the outlet of an existing culvert where the erosional feature meets SR 29. The culvert would also be routinely inspected and maintained.

- Vegetated buffers between the new expressway and vernal pools would be maintained where feasible.
- Vernal pool core areas within Caltrans' right-of-way would be added as ESAs to Caltrans Construction Maintenance's district maps and databases.
- All vernal pool core areas that are to remain within and adjacent to the proposed project area would be delineated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Potential water quality impacts would be addressed with the avoidance and minimization measures discussed in Section 2.10.4 of the original Draft EIR/EA.
- In order to maintain current hydrology and prevent sediment from entering vernal pools, a temporary stormwater treatment system would be constructed downslope of the proposed alignment which would include, but not be limited to, the creation of temporary sediment basins and installation of temporary weir tanks.
- Post construction; in locations where vernal pool core areas are located adjacent to the new expressway, permanent right-of-way fencing would be installed in order to prevent incidental traffic from entering vernal pool core areas. Permanent right-of-way fencing would be placed with consideration of project design requirements and adjacent private property rights.
- A flow spreader system would be installed along the proposed expressway adjacent to Manning Flat in order to ensure that all overland flow above the new roadway alignment would be returned to overland flow of equal velocity and volume below the proposed expressway. The flow spreader system would ensure that all land downslope of the new alignment would experience the same surface flow conditions and quantities of flow as currently experienced. Flow spreaders are composed of:
 - Rock-lined ditches constructed upslope of the proposed expressway which would collect sheet flow and direct it to sediment retention systems at the inlet of cross culverts.
 - Cross culverts that would convey flow beneath the proposed expressway.

- Outlet weirs constructed of concrete that would turn the concentrated flow exiting the cross culverts into sheet flow and evenly spread the flow out across the downslope area.
- Energy dissipater rock placed immediately downslope of each weir paralleling the new roadway that would ensure the sheet flow does not re-concentrate as it leaves the outlet weirs. The energy dissipater rock would also act as an additional measure against velocity or volume increases potentially generated by the additional paved road surface from the proposed expressway. The flow spreader system would be capable of handling all expected flows including a 100-year flood event.
- For the first two winters, Caltrans would inspect the flow spreaders as soon as possible following storm events to ensure the proper function. After the first two winters, the flow spreader system would be inspected annually at a minimum.

2.20 Invasive Species

2.20.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

2.20.2 Affected Environment

Species identified during biological field surveys were compared to the California Department of Food and Agriculture, the California Invasive Plant Council, and the U.S. Department of Agriculture introduced, invasive, and noxious plants species lists. Within the project area, mature woodlands and dense chaparral are composed primarily of native species. However, existing grasslands, seasonal wetlands, and disturbed areas contain many invasive and/or noxious plant species such as starthistle (*Centaurea solstitialis*), French broom (*Genista monspessulana*), Barbed goatgrass (*Aegilops triuncialis*), Himalayan blackberry (*Rubus americanus*), and Fuller’s teasel

(*Dipsacus fullonum*). Although many nonnative plant species occur in the ESL, there are no large patches of invasive plant species found within the ESL. Aquatic environments within the project area contain non-native invasive species such as the bullfrog and signal crayfish (*Pacifastacus leniusculus*). Non-native birds are also present within the project area including the brown-headed cowbird (*Molothus ater*).

2.20.3 Environmental Consequences

2.20.3.1 No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no changes regarding invasive species relative to the proposed project.

2.20.3.2 Alternative D

Nonnative plant seeds could be transported to the project site from earthmoving and seeding equipment such as backhoes, bulldozers, and hydroseed trucks. In addition, project construction activities would disturb and remove native vegetation, which has the potential to increase the likelihood for nonnative or invasive species to become established throughout the project area. However, impacts would be negligible with the implementation of Caltrans' standard practices. Invasive species would be expected to neither increase nor decrease in population as a result of the proposed project.

It is Caltrans' standard practice to incorporate the following measures:

- In compliance with the Executive Order on Invasive Species, EO 13112, and guidance from the Federal Highway Administration (FHWA), the landscaping and erosion control included in the project would not use species listed as invasive. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
- All earthmoving equipment to be used during project construction would be thoroughly cleaned before arriving on the project site.
- All seeding equipment (e.g., hydroseed trucks) would be thoroughly washed offsite prior to beginning seeding work.
- If warranted, to avoid spreading nonnative species to off-site areas, all equipment would be thoroughly cleaned before leaving the site.

- Post construction, all disturbed areas would be stabilized and reseeded with a suitable cover crop that would not persist on site. A regionally appropriate California native seed mix would be applied during the first year to provide succession from the erosion control cover crop to native plants.

2.20.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required

2.21 Cumulative Impacts

2.21.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effects assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

2.21.2 Projects Considered for the Cumulative Impacts Analysis

For the purposes of addressing cumulative impacts in this document, other completed, proposed, and reasonably foreseeable projects in Lake County that have the potential to contribute to cumulative effects in the proposed project area were researched.

Sources of information included the 2010 Lake County RTP, the 2008 Lake County General Plan (Lake County 2008), the Lake County Community Development Department, the Lake County Department of Public Works, the City of Clearlake, and the Lake County/City Area Planning Council. Relevant completed, planned, and approved transportation, housing, commercial, and vineyard development projects in Lake County are listed in Table 2.21-1.

Table 2.21-1 Relevant Completed, Planned, and/or Approved Projects in the Vicinity of the Lake 29 Improvement Project¹⁴

Name	Location	Description	Size	Timeline/Status
N/A	SR 29 PM 9.00/20.70 (Middletown to Lower Lake)	Shoulder widening and truck climbing lane	N/A	Unknown
N/A	SR 53 PM 2.80/7.50 (in and near City of Clearlake)	Widen roadway	N/A	< 2020
Crimson Ridge West & South	Clear Lake Riviera vicinity	Vineyard	74.73 acres	Grading Permit Approved
Old Muddy Vineyard	Clear Lake Riviera vicinity	Vineyard	528.64 acres	Grading Permit Approved
Red Lava Vineyard	Clear Lake Riviera vicinity	Vineyard	80.93 acres	Grading Permit Proposed
Winters II & OM II	Clear Lake Riviera vicinity	Vineyard	159.67 acres	Complete
Thorn Hill Winery	Clear Lake Riviera vicinity	Vineyard	24.04 acres	Complete
Clear Lake Riviera	Clear Lake Riviera	Housing Development	2,860 units	Approved – buildout expected in 50 years
Forrest Glen Estates	Kelseyville	Housing Development	15 units	Tentative Map approved
Walnut Vista Estates	Kelseyville	Housing Development	6 units	Final map pending
Kaylee Court	Kelseyville	Housing Development	12 units	Tentative Map approved
John Van Eck	Soda Bay	Housing Development	16 units	Tentative Map approved

¹⁴ Projects were compiled based on available information, conversations with the Lake County Area Planning Council, Lake County Community Development Department, City of Clearlake, and review of recent environmental documents submitted to Lake County for approval. It is assumed that additional projects are continuously under consideration; this list may be updated during the Final EIR/EA process, if appropriate.



2.21.3 Cumulative Impact Analysis

The following resources have been identified for consideration in the cumulative impact analysis for the Revised Partial Draft EIR/EA:

- Visual/Aesthetics
- Cultural Resources
- Biological Resources
 - Natural Communities
 - Wetlands and Other Waters
 - Special-Status Plan Species
 - Special-Status Animal Species
 - Threatened and Endangered Species

2.21.3.1 Resource Study Area

A Resource Study Area (RSA) is a defined, geographic area within which the resources included in the cumulative impact analysis have been analyzed. A separate RSA is defined for each resource, rather than a single study area for all resources combined, and the boundaries of RSAs for cumulative impact analyses are often more broad than the boundaries used for analyzing impacts directly related to the project. RSAs are defined based on the anticipated combined impacts of the proposed project and other relevant projects.

2.21.3.2 Cumulative Visual/Aesthetic Impacts

The RSA for visual/aesthetic impacts is defined as the area that may be potentially impacted from a visual perspective as a result of the proposed project and relevant projects included in Table 2.21-1, and consists of the existing SR 29 within the project corridor and immediate surrounding area. This area is defined as the RSA for visual/aesthetic impacts because it consists of the area that would be impacted by the proposed project from a visual/aesthetic perspective. The proposed project would not result in impacts to the visual character of areas outside of the RSA, thus would not contribute to a potential cumulative visual/aesthetic impact outside of the RSA.

The proposed project would result in increased paved area, removal of vegetation, retaining walls and new cut/fill areas. The completed and proposed vineyard projects located within the RSA would also result in the removal of vegetation within the RSA and would alter views from sensitive receptors. These changes may be perceived as adverse and/or negative by some viewers; however, vineyards or other types of

agriculture may be perceived by some as a more desirable view compared to natural habitat or residential development.

Visual/aesthetic impacts related to the proposed project would be minimized and mitigated for with the implementation of the measures outlined in Section 2.7.4.1. It is assumed that the vineyard projects included in the cumulative impact analysis would also implement appropriate avoidance, minimization, and/or mitigation measures, in accordance with Lake County development requirements and guidelines. With implementation of the proposed minimization and mitigation measures the proposed project would not have a considerable contribution to any potential cumulatively considerable impacts to the visual environment.

2.21.3.3 Cumulative Cultural Resources Impacts

An RSA for cumulative cultural resources impacts has not been defined. Cultural resources are generally confidential, and impacts related to specific projects are analyzed and addressed on an individual basis.

The proposed project would not result in an adverse effect nor alter the significance of cultural resources listed or eligible for listing in the Nation Register of Historic Places (NRHP); therefore, the project would not contribute to a cumulative impact to cultural resources listed or eligible for listing in the NRHP. Other projects included in this cumulative impacts analysis would be subject to the same process, analysis, and requirements as the proposed project, and any impacts, cumulative or otherwise, potentially resulting from other projects would be addressed on an individual, project-by-project basis.

2.21.3.4 Cumulative Biological Impacts

The RSA for analyzing cumulative biological impacts is defined as the four watersheds collectively referred to as the ‘project’s watersheds.’ These watersheds are depicted in Figure 2.16-1: Project Watersheds. Analysis of cumulative, regional impacts to biological resources has been calculated at the watershed scale because this is both a common frame of reference in ecosystem management and it is a definable georegion allowing for comparative analysis. Projects listed in Table 2.21-1 that are within the RSA for the cumulative impact analysis for biological resources are the five vineyard projects.

Natural Communities

As discussed in Section 2.2.2.3, the conversion of natural communities, including oak woodlands and riparian habitat, to vineyards, and other agricultural uses is a trend within Lake County. Considering current Lake County zoning ordinances, as well as the potential for development of the projects listed in Table 2.21-1, the trend of converting undeveloped land to agricultural uses is expected to continue.

The proposed project would remove approximately 303.9 acres of natural communities (including valley foothill riparian habitat and heritage oak woodlands, discussed below). Several projects listed in Table 2.21-1 are located within the RSA for the cumulative impact analysis, including the five vineyard development projects, and it is assumed that development of these projects would also result in impacts to natural communities. The vineyard development projects would result in the loss of natural communities by replacing undeveloped land with a monoculture. Construction of the proposed project and the other projects listed in in Table 2.21-1 would not limit geographic distribution, or result in the reduction of genetic diversity of these natural communities, as the types of natural communities (excluding valley foothill riparian) described in Section 2.15 are abundant and widespread in the RSA. Therefore, the proposed project, in combination with relevant projects listed in Table 2.21-1, would not result in a cumulatively considerable impact to natural communities.

Valley Foothill Riparian

The proposed project would result in approximately 2.3 acres of impacts to Valley foothill riparian (VRI) habitat which is under the jurisdiction of the CDFW. The VRI habitat that would be removed as a result of the proposed project provides low quality wildlife habitat. The five vineyard development projects listed in Table 2.21-1 are not anticipated to result in notable impacts to VRI habitat as Lake County requires that development be set back from riparian corridors to avoid damage to habitat (Policy OSC-1.4 - Protect Riparian Corridors). The proposed project-related impacts to VRI habitat would be offset through on/and or offsite creation, enhancement, and/or preservation of riparian habitat; therefore there would be no incremental contribution to cumulative impacts to VRI habitat.

Oak Woodlands

The proposed project would result in impacts to approximately 135.3 acres of oak woodlands resulting in a 7.7% loss within the project's watersheds. Of the total oak woodlands impacts, approximately 32.2 acres of heritage oak woodlands protected

under Senate Concurrent Resolution (SCR) No. 17 would be impacted by the proposed project for a loss of 4.5% within the projects watersheds. Although construction of Alternative D would require the removal of oak woodlands, the proposed project would not limit geographic distribution (i.e. the project would not reduce species range) or result in isolation of oak woodland populations and therefore would not reduce genetic diversity. Additionally, the project would not reduce the function (i.e. wildlife habitat) of the remaining oak woodland communities within the project's watersheds and would not notably alter the rural nature of the project area.

The five vineyard development projects listed in Table 2.21-1 are anticipated to result in minimal impacts to oak woodlands. These impacts would be minimal as areas where oak woodlands thrive do not provide optimal conditions (e.g. slope aspect and soil type) for vineyard production. Additionally, vineyard development impacts would be controlled as Lake County places emphases on the conservation and management of oak woodlands (e.g. Lake County General Plan Policy OSC-1.13 - Management of Oak Woodland Communities).

The proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to result in a cumulatively considerable impact to oak woodlands, including oak woodlands protected under SCR No. 17.

Wetlands and "Other Waters"

The proposed project is expected to result in permanent impacts to approximately 12.04 acres of wetlands and 1.83 acres of "other waters" (acreage amounts include both waters of the U.S. and waters of the State and include areas under USACE, RWQCB, and CDFW jurisdiction). Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would likely not be constructed in wetland areas as soil types in wetlands are not favorable to vineyard production and would be required to comply with Lake County permits and policies (including Policy OSC-1.6 related to the management of wetlands); therefore, the vineyard projects are not anticipated to result in an impact, cumulative or otherwise, to wetlands. In addition, Lake County permits and policies require 50 to 100 ft. development setbacks on intermittent and perennial streams located within the Project's watersheds; no cumulatively considerable impacts to "other waters" are anticipated due to development of projects listed in Table 2.21-1.

As outlined in Section 2.16.4.2, project impacts would be offset through the purchase of mitigation credits at a wetland mitigation bank or through the monetary contribution to the USACE- and RWQCB-approved in-lieu fee program; mitigation measures are intended to result in no net loss of wetland and “other waters” function and values. Therefore, the proposed project would not contribute to a cumulative impact to wetlands and “other waters.” It is assumed that other projects included in the cumulative impact analysis would also implement appropriate avoidance, minimization, and/or mitigation measures, in accordance with USACE, RWQCB, CDFW, and Lake County development requirements and guidelines, as necessary.

Special-Status Plant Species

As discussed in Section 2.17, the proposed project is anticipated to result in impacts to special-status plant species. Potential cumulative impacts of the proposed project and other projects within the RSA to special-status plant species are discussed in this section. Special-status plant species with the potential to occur within the project limits, but for which the project would have no impact are not discussed further in this cumulative impact analysis.

Bolander’s horkelia

The proposed project would result in temporary and permanent impacts to Bolander’s horkelia (*Horkelia bolanderi*). However, because there are numerous small populations remaining within the project limits, project-related impacts are not anticipated to threaten genetic diversity nor limit geographic extent at a local or regional scale. The only other known populations of Bolander’s horkelia within the RSA are outside of the proposed projects limits and are located on the northern rim of Hesse Flat. Projects included in Table 2.21-1 are not located on the northern rim of Hesse Flat; no impacts to Bolander’s horkelia are anticipated due to the vineyard development projects listed in Table 2.21-1. Therefore, cumulative impacts to Bolander’s horkelia as a result of the proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to occur.

Konocti manzanita

The proposed project would result in temporary and permanent impacts to Konocti manzanita (*Arctostaphylos manzanita ssp elegans*). Since this loss would occur within the central range and main geographic concentration of this species, project impacts are not anticipated to affect geographic extent or limit genetic diversity of Konocti manzanita. Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development

projects, would contribute to additional removal of Konocti manzanita. However, since this removal would also occur within the central range and main geographic concentration of the species, removal of Konocti manzanita as a result of development of projects included in this cumulative impact analysis would not affect geographic extent or limit genetic diversity of the metapopulation of Konocti manzanita. The proposed project in combination with the projects included in the Table 2.21-1 that are within the RSA would not result in a cumulatively considerable impact to Konocti manzanita.

Woolly meadowfoam

The proposed project would result in temporary and permanent impacts to woolly meadowfoam (*Limnanthes floccose ssp floccosa*). While the proposed project would remove a notable amount of habitat, individuals, and seed bank, this loss is not anticipated to be detrimental to the long term survival of the remaining populations found within the project limits because the populations would not be reduced below the minimum number of individuals required for the populations to survive (2,000 or more individual plants). Additionally, because portions of the existing populations would remain viable, the project is not anticipated to reduce the geographic extent of this species.

There are no known existing populations of woolly meadowfoam within the project limits of the vineyard development projects; no impacts to woolly meadowfoam are anticipated due to the projects listed in Table 2.21-1. Therefore, cumulative impacts to Woolly meadowfoam as a result of the proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to occur.

Bristly leptosiphon

The proposed project would result in permanent impacts to bristly leptosiphon (*Leptosiphon acicularis*); however, the project is not anticipated to inhibit genetic diversity or reduce the range of this species, as only a nominal impact to population and seed bank loss would occur. There are no known existing populations of bristly leptosiphon within the project limits of the vineyard development projects listed in Table 2.21-1; no impacts, cumulative or otherwise, to bristly leptosiphon are anticipated due to development of projects listed in Table 2.21-1. Therefore, cumulative impacts to bristly leptosiphon as a result of the proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to occur.

Four-petaled pussypaws

The proposed project would result in permanent impacts to four-petaled pussypaws (*Calyptidium quadripetalum*). However, suitable habitat for four-petaled pussypaws is abundant throughout the project limits and RSA, and project-related impacts would not impact the larger geographical population, as this species is prevalent elsewhere in the Lake County area. There are no known existing populations of four-petaled pussypaws within the project limits of the vineyard development projects listed in Table 2.21-1; no impacts, cumulative or otherwise, to four-petaled pussypaws are anticipated due to development of projects listed in Table 2.21-1. Therefore, cumulative impacts to four-petaled pussypaws as a result of the proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to occur.

Tall or twig-like snapdragon

The proposed project would result in temporary impacts to tall or twig-like snapdragon (*Antirrhinum virga*). However, this disturbance is not anticipated to involve plant roots and/or top soil removal, and plants located adjacent to the work area would remain. Natural re-establishment would likely occur and, thus, the project is not anticipated to result in permanent impacts to this species. There are no known existing populations of tall or twig-like snapdragon within the project limits of the vineyard development projects listed in Table 2.21-1; no impacts, cumulative or otherwise, to tall or twig-like snapdragon are anticipated due to development of projects listed in Table 2.21-1. Therefore, cumulative impacts to tall or twig-like snapdragon as a result of the proposed project in combination with the relative projects listed in Table 2.21-1 are not anticipated to occur.

Special-Status Animal Species

As discussed in Section 2.18, the proposed project is anticipated to impact special-status animal species. Cumulative impacts of the proposed project and other projects within the RSA to special-status animal species that may be impacted by the proposed project are discussed in this section.

Bat Species

The proposed project would result in temporary and permanent impacts to two special-status bat species, the pallid bat (*Antrozous pallidus*) and Western red bat (*Lasiurus blossevillii*), including the removal of roosting and foraging habitat. However, a considerable amount of roosting and foraging habitat would remain

within the project's watersheds, and the proposed project would not considerably fragment day or night roosting and/or foraging habitat at a local or regional level. Additionally, implementation of the proposed avoidance, minimization, and mitigation measures outlined in Section 2.18 would reduce project-related impacts to special-status bat species and avoid take of special-status bat species. Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would contribute to additional removal of roosting and foraging habitat for special-status bat species. However, as stated above, the type of habitat associated with roosting and foraging habitat for special-status bat species is abundant on a local and regional level. It is assumed that other projects included in the cumulative impact analysis would implement similar avoidance, minimization, and/or mitigation measures, as appropriate, if development resulted in impacts to special-status bat species. No cumulatively considerable impacts to special-status bat species are anticipated due to the implementation of the proposed project and the development of projects listed in Table 2.21-1. Therefore, the proposed project would not contribute to a cumulatively considerable impact to special-status bat species.

Raptor and Migratory Nesting Bird Species

The proposed project would result in temporary and permanent impacts to four special-status bird species, the olive-sided flycatcher (*Contopus cooperi*), yellow warbler (*Dendroica petechial bresteri*), white-tailed kite (*Elanus leucurus*), and purple martin (*Progne subis*), including the potential temporary disruption of normal foraging and movement patterns during construction activities due to noise and the presence of construction equipment and personnel. However, this temporary disruption of foraging and movement patterns would be minimal due to the proposed project's proximity to the existing highway facility and existing ambient noise levels. The proposed project would also result in the permanent removal of nesting and foraging habitat. However, a considerable amount of nesting/foraging habitat would remain within the project's watersheds, and the proposed project would not considerably fragment nesting and/or foraging habitat at a local or regional level. Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would contribute to additional removal of nesting and foraging habitat for special-status bird species. However, as stated above, the type of habitat associated with nesting and/or foraging for special-status bird species is abundant on a local and regional level. No cumulatively considerable impacts to special-status bird species are anticipated due to

the implementation of the proposed project in combination with the development of projects listed in Table 2.21-1.

Reptile Species

The proposed project is not anticipated to result in the take of Northwestern pond turtle (NWPT) based on species absence within the project's area of direct disturbance. The project would result in permanent impacts to NWPT habitat, including the removal of nesting habitat. However, the habitat that would be impacted by the project is of poor quality, and compared to the available habitat within the project's watersheds, the project would only affect a nominal portion of potential local nesting, rearing, breeding, feeding or overwintering habitat.

Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, are not anticipated to contribute to impacts to NWPT or their habitat for several reasons: (1) vineyard conversion would not take place in aquatic habitat and/or wetlands, (2), upland habitat adjacent to aquatic habitat would remain abundant, as vineyard development generally occurs on steeper slopes and not adjacent to riparian habitat, and (3), Lake County permits and policies require 50 to 100 foot development setbacks on intermittent and perennial streams located within the Project's watersheds. No impacts to NWPT are anticipated as a result of the relative projects listed in Table 2.21-1, therefore, no cumulatively considerable impacts to the Northwestern pond turtle are anticipated.

Threatened and Endangered Species

As discussed in Section 2.19, the proposed project is anticipated to impact threatened and endangered species. Cumulative impacts of the proposed project and other projects within the RSA to threatened and endangered species that may be impacted by the proposed project are discussed in this section. Threatened and endangered species with the potential to occur within the project limits, but for which the project would have no potential to impact, are listed in Table 2.19-1 and are not discussed further in this cumulative impact analysis.

California red-legged frog

The proposed project would not result in the take of California red-legged frog (CRLF). The project would result in permanent impacts to CRLF Core Recovery Area, including approximately 0.7 acres of impacts to breeding, rearing, feeding, and resting habitat, and approximately 0.5 acres of impacts to aquatic-only dispersal

habitat. However, the Core Recovery Area is a large system of areas that allow for long-term species viability and represent a historic species range, and the proposed project is not anticipated to alter the potential for species reestablishment or impede habitat connectivity.

Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, while located within the Core Recovery Area, are not anticipated to contribute to impacts, cumulative or otherwise, to the CRLF as these projects are not anticipated to impact habitat which supports CRLF. As discussed above in the Wetland and Other Waters cumulative discussion, the vineyard projects would likely not be constructed in wetland areas as soil types in wetlands are not favorable to vineyard production. In addition, Lake County permits and policies require 50 to 100 ft. development setbacks on intermittent and perennial streams located within the Project's watersheds. Therefore, the proposed project in combination with the projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis would not contribute to a cumulatively considerable impact to CRLF.

Clear Lake hitch

While Clear Lake hitch (*Lavinia exilicauda chi*) are located near the proposed project area, in Thurston Lake, Thurston Creek, and associated wetlands, the proposed project would not result in impacts to Clear Lake hitch for reasons discussed in Section 2.19. The proposed project would have no impact to Clear Lake hitch habitat and would not result in any loss of species. The proposed project would have no contribution to cumulative impacts to Clear Lake hitch.

Townsend's big-eared bat

The proposed project would result in temporary and permanent impacts to the Townsend's big-eared bat (*Corynorhinus townsendii*), including the potential disruption of normal foraging and movement patterns during construction activities due to noise and the permanent removal of roosting and foraging habitat. However, a considerable amount of roosting and foraging habitat would remain within the project's watersheds, and the proposed project would not considerably fragment day or night roosting and/or foraging habitat at a local or regional level. Implementation of the proposed avoidance, minimization, and mitigation measures outlined in Section 2.18 would reduce project-related impacts to the Townsend's big-eared bat and avoid take of the Townsend's big-eared bat. Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard

development projects, would contribute to additional removal of roosting and foraging habitat for the Townsend's big-eared bat. However, as stated above, the type of habitat associated with roosting and foraging habitat for the Townsend's big-eared bat is abundant on a local and regional level. Therefore, the proposed project in combination with the projects listed in Table 2.21-1 would not result in a cumulatively considerable impact to the Townsend's big-eared bat.

Burke's goldfields, Few-flowered navarretia, Lake County stonecrop

The proposed project has the potential to result in indirect impacts to Burke's goldfields (*Lasthenia burkei*), Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), and Lake County stonecrop (*Parvisedum leiocarpum*), due to the potential disruption of hydrological connectivity and function within and adjacent to vernal pools. However, implementation of the avoidance, minimization, and mitigation measures (i.e. the level spreader) outlined in Section 2.18 would reduce project-related indirect impacts to the Burke's goldfields, Few-flowered navarretia, and Lake County stonecrop.

Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would not be constructed in areas containing vernal pools. In addition, projects included in this cumulative impact analysis would be required to comply with Lake County permits and policies (including Policy OSC-1.1, Policy OSC-1.6 related to the protection of rare and endangered species and management of wetlands), and are therefore not anticipated to result in an impact to Burke's goldfields, Few-flowered navarretia, or Lake County stonecrop. Therefore, the proposed project in combination with the projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis would not contribute to a cumulatively considerable impact to the Burke's goldfields, few-flowered navarretia, or Lake County stonecrop.

Vernal Pool Core Areas

While portions of the Boggs Lake-Clear Lake Vernal Pool Core Area are anticipated to be permanently impacted by the proposed project, project impacts would not reduce the potential of the remaining vernal pool core area to provide connectivity between source populations or provide for re-establishment of threatened and/or endangered species populations. Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would not be constructed in Vernal Pool Core Areas. In addition, projects included in this cumulative impact analysis would be required to

comply with Lake County permits and policies (including Policy OSC-1.6 related to the management of wetlands), and are therefore not anticipated to result in an impact, cumulative or otherwise, to Vernal Pool Core Areas. Therefore, the proposed project in combination with the projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis would not contribute to a cumulatively considerable impact to the Vernal Pool Core Areas.

Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement (EIS), or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "[significant effect on the environment](#)" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of [mandatory findings of significance](#), which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 Effects of the Proposed Project

This section of the document discusses the effects of the proposed project on the environmental factors presented in Chapter 2 of this Revised Partial Draft EIR/EA and provides the corresponding CEQA significance determinations. All significance determinations were made prior to the consideration of avoidance, minimization, and/or mitigation measures. Refer to Appendix O for the CEQA Checklist.

3.2.1 No Effects

Refer to the discussion at the beginning of Chapter 2 in the original Draft EIR/EA.

3.2.2 Less-Than-Significant Effects of the Proposed Project Growth

The proposed project would not result in significant growth-related impacts. The proposed project has the potential to make the communities of Lower Lake, Kelseyville, and Clear Lake Riviera more attractive to development, relative to other locations within the county. However, growth within the Community Growth Boundaries of these communities is consistent with forecasted growth and Lake County's goals and policies. Growth within the study area's communities is not anticipated to result in substantial impacts to resources of concern as these areas have been developed in consideration of known resources. As development projects are planned, they would be required to undergo environmental review and analysis and would be obligated to mitigate for significant impacts to environmental resources if feasible.

Alternative D has limited potential to influence growth in the immediate area surrounding the SR 29/281/Red Hills Road intersection. Substantial growth-related impacts to resources of concern near the SR 29/281/Red Hills Road intersection are not anticipated as the proposed project would include controlled access to the parcels surrounding this intersection, thus limiting the location and quantity of development.

Alternative D also has limited potential to influence growth outside of the designated growth areas. The proposed project would not remove key constraints to growth that would substantially alter baseline conditions in terms of rate, location, quantity, and type of growth. These constraints include difficult topography and the lack in availability of infrastructure outside of the designated growth areas needed to support large scale residential development, extended travel times to employment centers, and

limited accessibility to surrounding areas. See Section 2.2 for further discussion on growth.

Utilities, Emergency Services, and Community Facilities

The proposed project would not result in significant impacts to utilities, emergency services, or community facilities. The project would not result in permanent disruptions of services nor would community facilities be affected. See Section 2.5 for further discussion of utilities, emergency services, and community facilities.

Cultural Resources

The proposed project would not result in a substantial adverse change in the significance of cultural resources pursuant to California Code of Regulations §15064.5.

At the time the Draft EIR/EA was circulated for public review in 2007, Caltrans, in consultation with the SHPO, determined that the then proposed project would result in an adverse effect to site CA-LAK-1970. Chapter 3 of the 2007 Draft EIR/EA stated that mitigation would be required in order to reduce impacts to less than significant. In order to mitigate for adverse effects, a data recovery investigation was to be implemented, in accordance with a Memorandum of Agreement (MOA) between Caltrans and the SHPO.

Following public review of the 2007 Draft EIR/EA, various design elements of Alternative D were modified, subsequently altering the area of direct impact (ADI). Further evaluation determined that construction of Alternative D would no longer alter characteristics making site CA-LAK-1970 eligible for the California Register of Historic Places. The SHPO concurred with this finding in a letter dated August 3, 2015. Consequently, a data recovery investigation and MOA between Caltrans and the SHPO are no longer required. See Section 2.8 for further discussion on cultural resources.

Biological Resources

Natural Communities

With exception of riparian habitat, natural communities, including heritage oak woodlands protected under SCR No. 17, would not be significantly impacted by the proposed project.

Although construction of Alternative D would require the removal of oak woodlands, the proposed project would not limit geographic distribution (i.e. the project would not reduce species range) or result in isolation of oak woodland populations and therefore would not reduce genetic diversity. Additionally, the project would not reduce the function (i.e. wildlife habitat) of the remaining oak woodland communities within the project's watersheds and would not substantially alter the rural nature of the project area.

See Section 2.15 for further discussion of natural communities.

Wildlife Corridors and Habitat Fragmentation

The proposed project would not result in significant impacts related to wildlife corridors or habitat fragmentation. Project design features, such as wildlife undercrossings, fencing, and at-grade culvert placement, would ensure that long-term impediments to wildlife movement within the project area do not substantially exceed existing conditions. Additionally, habitat fragmentation, beyond baseline conditions (No-build Alternative), is not expected to occur on a large scale because Alternative D largely parallels the existing alignment and, in many areas, would replace the existing roadway. See Section 2.15 for further discussion on wildlife corridors and habitat fragmentation.

Special Status Plants

Special status plant species would not be significantly impacted as a result of the proposed project. The proposed project would not affect the geographic extent or limit genetic diversity of special status plant species. See to Section 2.17 for further discussion on special status plant and animal species.

Special Status Animal Species (Raptors, Migratory Nesting Bird Species, and Northwestern Pond Turtle)

The proposed project would not result in significant impacts to raptors or migratory nesting birds. The project is not expected to result in the take of raptors, migratory song birds, eggs, or young. Although construction of Alternative D would require the removal of approximately 320.7 acres of suitable habitat, a considerable amount of suitable habitat would remain within the project's watersheds and the project would not substantially fragment habitat for raptors or migratory bird species. See Section 2.18 for further discussion on raptors and migratory nesting bird species.

The proposed project would not result in significant impacts to the Northwestern Pond Turtle (NWPT). Based on species absence and the poor quality of existing habitat within the project disturbance area, the project is not anticipated to result in a take of NWPT. Additionally, the project would result in impacts to only a nominal portion of potentially suitable habitat, which has been determined to be of low quality. See Section 2.18 for further discussion of NWPT.

Threatened and Endangered Species (California Red-legged Frog, Clear Lake Hitch, Vernal Pool Core Area)

The proposed project would not result in significant impacts to California red-legged frog (CRLF). No CRLF, of any life stage, were observed during surveys, nor is there record of this species currently occurring within the watersheds of the project area. Additionally, no populations of CRLF are known to currently exist within Lake County. See Section 2.19 for further information regarding CRLF.

Similarly, the proposed project would not result in significant impacts to Clear Lake Hitch (CLH). The project is not anticipated to result in a take of this species as CLH are likely not present for the following reasons: 1) no CLH were observed within the project area of disturbance, 2) approximately five miles of high quality spawning/rearing habitat is found between the project area and Thurston Lake, 3) the lack of a defined creek channel through Ely Flat, 4) fish barriers exist at low to normal flow years between Ely Flat and SR 281, and 5) the proposed project would remove only a small portion of low quality habitat. In addition, work within potentially suitable habitat would take place when CLH are not present. See Section 2.19 for further information regarding CLH.

The proposed project would also not result in a significant impact to the Boggs Lake–Clear Lake Core Area. The Boggs Lake–Clear Lake Core Area, identified in the USFWS recovery plan for vernal pool species, consists of approximately 4,395 acres. Approximately 1.4 acres would be permanently removed by the proposed project. The vernal pool core areas that would be impacted by the proposed project do not contain habitat for the endangered plants discussed above. In addition, the project impacts would not reduce the potential of the remaining vernal pool core area to provide connectivity between source populations or provide for re-establishment of threatened and/or endangered species populations as the impacted portions represent a negligible proportion of the total core area.

Invasive Species

The proposed project would not result in significant impacts related to invasive species. Invasive species are already present within the project area. The implementation of Caltrans standard specifications and BMPs would ensure that impacts related to invasive species would be negligible. See Section 2.20 for further discussion on invasive species.

CEQA Mandatory Findings of Significance B (See Appendix O)

The following resources have been identified for consideration in the cumulative impact analysis for the Revised Partial Draft EIR/EA:

- Visual/Aesthetics
- Cultural Resources
- Biological Resources
 - Natural Communities
 - Wetlands and Other Waters
 - Special-Status Plan Species
 - Special-Status Animal Species
 - Threatened and Endangered Species

The incremental effects of the proposed project when viewed in combination with the effects created by the relative projects listed Table 2.21-1 would not result in cumulatively considerable impacts to cultural resources, natural communities (excluding Valley Foothill Riparian), special-status plants, special-status animals (raptors and migratory nesting bird species, Northwestern pond turtle), and threatened and endangered species (California red-legged frog, Clear Lake hitch, Burke's goldfields, few-flowered navarretia, Lake County stonecrop, Vernal Pool Core Areas). See section 2.21 for further discussion on cumulative impacts.

3.2.3 Significant Environmental Effects of the Proposed Project

Visual/Aesthetics

The proposed project would substantially alter the existing visual character within the project area. Significant impacts would primarily result from tree and vegetation removal, construction of earthen embankments which would elevate the roadway, additional paved surfaces, and retaining walls. However, with the implementation of

the proposed avoidance, minimization, and mitigation measures, these impacts would be reduced to less than significant. See Section 2.7 for further discussion on aesthetics.

Biological Resources

Riparian Habitat

The proposed project would require the removal of approximately 2.3 acres of Valley Foothill Riparian (VRI) habitat resulting in the loss of 36.3% of VRI habitat within the ESL and a 10.5% loss of VRI habitat within the project's watersheds. Project-related impacts would take place primarily in the area surrounding the SR 29/SR 281/Red Hills Road intersection. Although the VRI that would be impacted provides lower quality wildlife habitat, it continues to provide potential nesting, roosting, rearing, dispersal, and foraging opportunities for wildlife in the project area.

Considering the beneficial attributes of VRI habitat and the quantity that would be removed (approximately 1/3 of the VRI habitat located within the ESL), project-related impacts to VRI are considered significant. However, with the implementation of the proposed avoidance, minimization, and mitigation measures, impacts to VRI would be reduced to less than significant. See Section 2.15 for further discussion on riparian habitat.

Wetlands and Other Waters

The proposed project is expected to result in permanent impacts to approximately 12.04 acres of wetlands and 1.83 acres of "other waters" (acreage amounts include both waters of the U.S. and waters of the State and include areas under USACE, RWQCB, and CDFW jurisdiction). Although the wetlands and "other waters" to be impacted by the proposed project are moderately disturbed, as previously stated, these habitat types continue to provide various biotic and abiotic functions and values.

These wetlands and "other waters" provide foraging habitat for birds and bats targeting insects. The wetlands also help to protect water quality by capturing sediment and retaining pollutants from surface runoff. This abiotic function is critical for wildlife that inhabit these aquatic ecosystems and/or rely on them for foraging opportunities. Additionally, the wetlands and "other waters" to be impacted by the proposed project provide flood relief by capturing excess runoff during storm events and assist in groundwater recharge. In the context of a relatively water scarce environment, the impacts to wetlands and "other waters" of the U.S. and the State (under the USACE, RWQCB, and/or CDFW jurisdiction) as a result of the proposed project are considered significant. However, with the implementation of the proposed

avoidance, minimization, and mitigation measures, these impacts would be reduced to less than significant. See Section 2.16 for further discussion of wetlands and other waters of the U.S.

Special Status Animal Species (Bats)

The proposed project has the potential to result in significant impacts to special status bat species. Construction of Alternative D would require the removal of trees and manmade structures which if occupied by special-status bats could result in a substantial take of special-status bats. However, with the implementation of the proposed avoidance, minimization, and mitigation measures, the project is not anticipated to result in the take of a special-status bats, thus impacts would be reduced to less than significant. See Section 2.18 for further discussion on special status animal species and the proposed avoidance, minimization, and mitigation measures.

Threatened and Endangered Species (Townsend's Big Eared Bat, Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop)

The proposed project has the potential to result in significant impacts to Townsend's big-eared bat (TBEB), which is a candidate for protection as a threatened species under the California Endangered Species Act. The project requires the removal of TBEB habitat including man-made structures, which if occupied could result in the mortality of up to approximately 80 TBEB, considered a significant impact in consideration of their protection status. However, with implementation of the proposed avoidance, minimization, and mitigation measures, the proposed project is not anticipated to result in TBEB mortality and impacts would be reduced to less than significant.

The proposed project has the potential to result in significant impacts to Burke's goldfields, Few-flowered navarretia, and Lake County stonecrop. The project has the potential to result in significant indirect impacts through disruption of hydrological connectivity and function within and adjacent to vernal pools. Placement of the new four-lane expressway upslope of the vernal pools would alter the existing overland hydrologic flow. The new roadway prism and impermeable surface created as a result of the four-lane expressway would be expected to alter the amount, rate, and location of surface flow downslope of the new roadway. The new expressway would also have the potential to divert flows from one local watershed to another and/or increase sediment transport to the vernal pools. All of these impacts would be expected to alter species composition within the vernal pools at Manning Flat. If these indirect impacts

resulted in the loss of the Burke's Goldfields, Few-flowered navarretia, and Lake County stonecrop populations at this location, there would not only be a loss in population but also a loss in genetic diversity potentially jeopardizing the long term survival and recovery of these species. Due to the extreme rarity of these vernal pool plants, the potential indirect impacts of disrupting the hydrological connectivity and function within and adjacent to these vernal pools is considered a significant impact to these species. However, with the implementation of the proposed avoidance, minimization, and mitigation measures, the proposed project is not anticipated to result in the disruption of hydrological connectivity and function within and adjacent to vernal pools and impacts would be reduced to less than significant.

See Section 2.19 for further discussion of impacts to these species and the proposed avoidance, minimization, and mitigation measures.

CEQA Mandatory Findings of Significance A, B, and C (Appendix O)

A.) The proposed project has the potential to reduce the number of an endangered animal species (Townsend's big-eared bat). The project also has the potential to threaten to eliminate and reduce the number and restrict the range of three endangered plant species (Burke's goldfields, Few-flowered navarretia, and Lake County stonecrop). However, with the implementation of the proposed avoidance, minimization, and mitigation measures, the project would not result in the reduction of Townsend's big-eared bat populations and would not threaten to eliminate or reduce the number and restrict the range of Burke's goldfields, Few-flowered navarretia, and Lake County stonecrop.

See Chapter 2 and the above discussion regarding significant impacts to these species and the proposed avoidance, minimization, and mitigation measures.

B.) The following resources have been identified for consideration in the cumulative impact analysis for the Revised Partial Draft EIR/EA:

- Visual/Aesthetics
- Cultural Resources
- Biological Resources
 - Natural Communities
 - Wetlands and Other Waters
 - Special-Status Plan Species
 - Special-Status Animal Species
 - Threatened and Endangered Species

The incremental effects of the proposed project when viewed in combination with the effects created by the relative projects listed Table 2.21-1 would result in significant and cumulatively considerable impacts to visual/aesthetics, natural communities (Valley Foothill Riparian habitat), wetlands and “other waters”, special-status animals (bats), and threatened and endangered species (Townsend’s big-eared bat).

Visual

The proposed project would result in increased paved area, removal of vegetation, retaining walls and new cut/fill areas. The completed and proposed vineyard projects located within the Resource Sturdy Area described in Section 2.21.3 would also result in the removal of vegetation within the RSA and would alter views from sensitive receptors. These changes may be perceived as adverse and/or negative by some viewers. However, visual/aesthetic impacts related to the proposed project would be minimized and mitigated for with the implementation of the measures outlined in Section 2.7.4.1. It is assumed that the vineyard projects included in the cumulative impact analysis would also implement appropriate minimization and/or mitigation measures, in accordance with Lake County development requirements and guidelines. With implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would not have a significant contribution to any potential cumulatively considerable impacts to the visual environment.

Valley Foothill Riparian

The proposed project would result in impacts to approximately 2.3 acres of Valley foothill riparian (VRI) habitat. Considering the beneficial attributes of VRI habitat and the quantity that would be removed (approximately 1/3 of the VRI habitat located within the ESL), project-related impacts to VRI are considered significant.

Consequently, the proposed project would have a significant contribution to any potential cumulatively considerable impact to VRI habitat.

The five vineyard development projects listed in Table 2.21-1 are not anticipated to result in substantial impacts to VRI habitat as Lake County requires that development be set back from riparian corridors to avoid damage to habitat (Policy OSC-1.4 - Protect Riparian Corridors). Although the five vineyard projects are not anticipated to individually result in substantial impacts to VRI, the combination of these projects

with the proposed project would be expected to result in cumulatively considerable impacts to VRI habitat.

However, the proposed project-related impacts would be offset through on/and or offsite creation, enhancement, and/or preservation of riparian habitat; therefore the proposed project would not result in a significant incremental contribution to cumulative impacts to VRI habitat.

Wetlands and Other Waters

The proposed project is expected to result in permanent impacts to approximately 12.04 acres of wetlands and 1.83 acres of “other waters” (acreage amounts include both waters of the U.S. and waters of the State and include areas under USACE, RWQCB, and CDFW jurisdiction). Projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would likely not be constructed in wetland areas as soil types in wetlands are not favorable to vineyard production and would be required to comply with Lake County permits and policies (including Policy OSC-1.6 related to the management of wetlands); therefore, the vineyard projects are not anticipated to result in an impact, cumulative or otherwise, to wetlands. In addition, Lake County permits and policies require 50 to 100 ft. development setbacks on intermittent and perennial streams located within the Project’s watersheds; no cumulatively considerable impacts to “other waters” are anticipated due to development of projects listed in Table 2.21-1.

In a water scarce environment the impacts to wetlands and “other waters” (under both the USACE and RWQCB jurisdiction) as a result of the proposed project are considered significant. However, as outlined in Section 2.16.4.2, project impacts would be offset through the purchase of mitigation credits at a wetland mitigation bank or through the monetary contribution to the USACE- and RWQCB-approved in-lieu fee program; mitigation measures are intended to result in no net loss of wetland and “other waters” function and values. Therefore, with the implementation of the proposed mitigation measures the proposed project’s impacts would be reduced to less than significant and therefore would not contribute to a cumulatively considerable impact to wetlands and “other waters” of the State or the U.S.

Special-Status Animals (Bats)

The proposed project would result in temporary and permanent impacts to two special-status bat species, the pallid bat (*Antrozous pallidus*) and Western red bat (*Lasiurus blossevillii*), including the removal of suitable roosting and foraging habitat. The projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would contribute to additional removal of suitable roosting and foraging habitat for special-status bat species. However the type of habitat associated with roosting and foraging habitat for the above mentioned special-status bat species is abundant on a local and regional level.

Without the implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would have the potential to result in the removal of bat-occupied habit and/or construction-related disturbance of maternity roosts which would likely result in a significant take of special-status bats. The projects considered in the cumulative impact analysis would also have the potential to result in the removal of bat-occupied habit and/or construction-related disturbance of maternity roosts. However, with the implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would not result in the take of special-status bats and therefore would not result in a significant impact or contribute to a cumulatively considerable impact to special-status bats.

Threatened and Endangered Species (Townsend's big-eared bat)

The proposed project would remove approximately 278.5 acres of suitable Townsend's big-eared bat (TBEB) foraging habitat and would require the demolition of approximately 15 structures, some of which provide roosting habitat. The projects listed in Table 2.21-1 that are within the RSA for the cumulative biological impacts analysis, including the five vineyard development projects, would contribute to additional removal of suitable roosting and foraging habitat. However the type of habitat associated with TBEB roosting and foraging is abundant on a local and regional level.

The removal of TBEB-occupied day, night, or maternity roosting habitat during the summer breeding period, including abandoned buildings, could result in direct bat mortality. Similarly, the removal of bat occupied buildings during the winter could result in the mortality of hibernating bats. Additionally, the disturbance of maternity roosts, as a result of construction activities, has the potential to result in abandonment

and consequent mortality of young. The proposed project has the potential to result in the mortality of up to approximately 80 TBEB, considered a significant impact in consideration of their protection status. The projects considered in the cumulative impact analysis would also have the potential to result in the removal of bat-occupied habitat. However, with the implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would not result in the take of TBEB and therefore would not result in a significant impact or contribute to a cumulatively considerable impact to special-status bats.

C.) The proposed project would have a significant environmental effect which would cause adverse effects on human beings. Construction of Alternative D would result in permanent visual impacts that would change the character and quality of the existing visual environment in certain locations. These impacts would primarily result from tree and vegetation removal, construction of earthen embankments which would elevate the roadway, additional paved surfaces, and retaining walls. However, these impacts would be reduced to less than significant with the implementation of the proposed mitigation measures. See Section 2.7 for further discussion on visual impacts.

3.2.4 Unavoidable Significant Environmental Effects

The proposed project would not result in unavoidable significant environmental impacts.

3.3 Mitigation Measures for Significant Impacts under CEQA

CEQA defines mitigation as avoiding, minimizing, rectifying, reducing, and/or compensating for a significant impact. This section includes the proposed mitigation measures for each significant impact listed above. The avoidance and minimization measures included in Chapter 2 associated with environmental factors for which the proposed project would have a less than significant impact are considered standard construction, design, and/or stewardship features, and are not considered CEQA “mitigation,” thus they are not listed in this section.

Visual/Aesthetics

A revegetation plan would be prepared by the project landscape architect with consultation from Caltrans environmental staff. The revegetation plan would address the following:

- The revegetation plan would be implemented to compensate for the loss and/or disturbance of vegetation within the project limits. The planting of native trees and shrubs would soften the appearance of earthen embankment and cut slopes in an effort to visually blend the roadway into the surrounding environment.
- Plants selected for revegetation would be native species appropriate for the project area and would not include noxious or invasive weeds.
- Duff and topsoil containing native seed stock would be removed and stockpiled separately from subsoils when practicable. The duff and topsoil would be used during revegetation efforts upon completion of construction activities where appropriate.
- Planting would take place in the fall and winter following the final construction season or as soon as feasible.
- Revegetated areas would be properly maintained to ensure proper plant establishment.

Biological Resources

Riparian Habitat

To offset impacts to Valley Foothill Riparian (VRI) habitat Caltrans proposes the on and/or offsite creation, enhancement, and/or preservation of riparian habitat at a 1.5:1 ratio. Therefore, the proposed mitigation would result in the on and/or offsite creation, enhancement, and/or preservation of approximately 3.45 acres of riparian habitat. With the creation or enhancement option, a limited amount of space may be available and suitable for planting on-site (within Caltrans operating right-of-way). Caltrans would accomplish the balance of the mitigation at an approved off-site location. For the off-site portion, Caltrans would secure land through acquisition or a conservation easement, or work with another state or federal agency to implement a project on other government lands. Caltrans would relinquish the land and long-term management responsibilities to an organization experienced in managing lands. The priority would be to preserve riparian habitat within one or more of the project's four sub-watersheds. If this cannot be accomplished or is not practical, Caltrans would look beyond the sub-watersheds to the greater 8-digit hydrologic unit code (HUC). Off-site creation can also be accomplished through the purchase of riparian mitigation bank credits. The preservation option would preserve existing riparian habitat on and/or offsite similar to the creation and enhancement options. This mitigation would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

A Mitigation Plan would be prepared that would include specific mitigation measures to offset impacts to riparian habitat. The plan would provide specific mitigation details, including approved mitigation sites, plan implementation design drawings, a planting plan which would include a list of species to be planted and planting densities, success criteria, and long term monitoring and management. The goal is not to create an exact replica of the affected riparian habitat considering species frequency and density, but to create a self-sustaining riparian habitat that would provide, once mature, ecological functions (nesting, roosting, rearing, and foraging opportunities) similar or better to what were lost as a result of the proposed project.

Wetland and Other Waters

Mitigation for the permanent loss of wetlands and “other waters” of the U.S. and the State (under USACE, RWQCB, and/or CDFW jurisdiction) is proposed to include offsite mitigation through the purchase of mitigation credits at a wetland mitigation bank approved by the USACE. Mitigation banks are a highly effective way of mitigating permanent impacts to wetlands and “other waters” because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. Caltrans would purchase mitigation credits at a 1:1 ratio to ensure there is no net loss to wetlands. If bank credits are not available, Caltrans would contribute money to the USACE- and RWQCB-approved in-lieu fee program. Unlike a mitigation bank, mitigation sponsored by the in-lieu fee program has not been developed prior to project impacts. Mitigation for impacts to wetlands and “other waters” would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

Special Status Animal Species

Bats

- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified biologist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified biologist prior to removal. Trees that are confirmed roosts would not be cut down until the biologist confirms that the roost is no longer occupied by bats

Threatened and Endangered Species (Townsend's Big Eared Bat, Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop)

Townsend's Big Eared Bat

- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified bat specialist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified bat specialist prior to removal. Trees that are confirmed roosts would not be cut down until a qualified bat specialist confirms that the roost is no longer occupied by bats.

Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop

A flow spreader system would be installed along the proposed expressway adjacent to Manning Flat in order to ensure that all overland flow above the new roadway alignment would be returned to overland flow of equal velocity and volume below the proposed expressway. The flow spreader system would ensure that all land downslope of the new alignment would experience the same surface flow conditions and quantities of flow as currently experienced. Flow spreaders are composed of:

- Rock-lined ditches constructed upslope of the proposed expressway which would collect sheet flow and direct it to sediment retention systems at the inlet of cross culverts.
- Cross culverts that would convey flow beneath the proposed expressway.
- Outlet weirs constructed of concrete that would turn the concentrated flow exiting the cross culverts into sheet flow and evenly spread the flow out across the downslope area.
- Energy dissipater rock placed immediately downslope of each weir paralleling the new roadway that would ensure the sheet flow does not re-concentrate as it leaves the outlet weirs. The energy dissipater rock would also act as an additional measure against velocity or volume increases potentially generated by the additional paved road surface from the proposed expressway. The flow spreader system would be capable of handling all expected flows including a 100-year flood event.

- For the first two winters, Caltrans would inspect the flow spreaders as soon as possible following storm events to ensure the proper function. After the first two winters, the flow spreader system would be inspected annually at a minimum.

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team (PDT) meetings, interagency coordination meetings, the development of a project website, and public meetings. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.5 Public Outreach

A public open house was held at Konocti Harbor Resort and Spa in Kelseyville on September 26, 2006. The purpose of the open house was to inform the public, local officials, and all interested parties of the current status of the project. The open house was announced by distributing public notices and invitations to approximately 240 addresses. Each addressee received an invitation and a copy of the public notice. The invitations were mailed to property owners, residents living within the project area, and other interested parties who requested to be notified of project activity. Notices were also mailed to tribal representatives and local, state, and federal officials and agencies. The open house was advertised in the local newspaper, the Lake County Record-Bee, and on local radio stations.

The format of the public open house was informal, and this format was chosen to facilitate communications between the public and Caltrans. Maps, exhibits, and graphic displays were set up around the room, with Caltrans representatives available to answer questions. Attendees were encouraged to submit written comments on cards that were provided for this purpose. Approximately 50 people, mostly property owners within the project area, attended the open house, and a total of nine people commented (with one person commenting twice). Six written comments were received at the meeting, two additional comments were received by mail following the meeting, and another two comments were published as "Reader's Views" in the Lake County Record-Bee following the open house.

People chose to comment on a variety of topics. A summary of comment topics, as well as the number comments received on each topic, is presented below.

- General request for information (2)
- Comments on the proposed design including the alternatives, suggested changes to project limits, and concerns over access to properties (5)
- Concern about the potential for increased noise to residences (1)
- Support of the project (2)
- Comments about safety, including concerns about accidents within the project area as well as accidents on other segments of SR 29 (3)
- Concern about residential building construction occurring within the project limits (1)
- Comments not related to the project (1)

Following completion of the Lake 29 Improvement Project Draft EIR/EA, in accordance with CEQA and NEPA, Caltrans circulated the Draft EIR/EA for public review and comment for the required 45-day period, from July 10, 2007 through August 27, 2007. A notice was published in the Lake County Record-Bee on July 10, 2007, advertising the availability of the Draft EIR/EA and notice of a public hearing. In addition to the newspaper advertisement, letters were sent directly to individual and agency stakeholders, and all owners and occupants of property contiguous to the parcels on which the proposed project is located. A copy of the public notice was also posted in the Lake County Clerk's Office during the public review period. Copies of the Draft EIR/EA were distributed to interested individuals and organizations, appropriate agencies, and the Governor's Office of Planning and Research, State Clearinghouse. Copies of the Draft EIR/EA were also made available for public review during the comment period at the Lake County public library and at the Caltrans District Office on Union Street in Eureka.

During the circulation of the Draft EIR/EA, a public hearing was held at the Konocti Harbor Resort and Spa in Kelseyville on August 8, 2007. The meeting was conducted in an open-house format, where attendees were able to visit display stations, discuss the proposed project and the Draft EIR/EA with Caltrans' project staff, and enter formal comments into public record. Attendees were directed to make formal statements to a certified court reporter present at the meeting. Comment cards were also made available. Approximately 30 people attended the meeting, consisting mainly of properties owners within the project limits.

During the public hearing, a total of seven people entered formal statements with the court reporter and one person filled out a comment card. In response to the circulation of the Draft EIR/EA, an additional five comments were received by mail from various

state and federal agencies and one comment was received by email from a local governmental agency.

In consideration of the public and agency comments received and the subsequent value analysis process that occurred, Caltrans decided not to make findings pursuant to CEQA and NEPA and instead, decided to make refinements in the design of the proposed alternative and conduct additional environmental studies. The design changes and additional studies resulted in significant new information which is included in this Revised Draft EIR/EA.

This Revised Partial Draft EIR/EA is being recirculated pursuant to CEQA Guidelines 15088.5 (a) and (c) and 40 CFR 1502.9 (c) under NEPA. Comments received during the circulation of the 2007 Draft EIR/EA as well as comments received during circulation of this Revised Partial Draft EIR/EA will be included in the Final EIR/EA, along with Caltrans' responses.

Caltrans also maintains a Lake 29 Improvement Project website at:

<http://www.dot.ca.gov/dist1/d1projects/lake29/>.

4.6 NEPA/404 Integration

In March 1994, USACE, USEPA, USFWS, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), Federal Highway Administration (FHWA), Caltrans, and the Arizona and Nevada Departments of Transportation signed a formal Memorandum of Understanding (MOU) that integrated the NEPA process and the Clean Water Act Section 404 procedures, as well as improved coordination among stakeholder agencies. The NEPA/404 integration process was designed to implement Section 404 more effectively in its efforts to protect waters of the U.S., including wetlands, and the species of plants and animals that depend on this type of habitat.

In August 2000, prompted by a 1999 FHWA reorganization and changes in the USACE Nationwide Permit program, USACE, USEPA, USFWS, NOAA Fisheries, FHWA, and Caltrans ("Signatory Agencies") began working on a revised MOU, which was executed in April 2006. (The Arizona and Nevada Departments of Transportation did not participate in the new MOU.)

Under the old MOU, the integration process was required for any project that required FHWA or Federal Transit Administration action under NEPA and an individual permit from USACE. In 2000, additional interim thresholds were established, which required that the integration process be followed for any proposed federal-aid transportation projects in California that were likely to have impacts greater than 5 acres to special aquatic sites or impacts greater than 5 acres to other waters of the U.S. This project met the requirements of both the original MOU and the interim thresholds established in 2000. Under the new MOU, however, the integration process is only required for projects that are expected to have greater than 5 acres of permanent impacts to waters of the U.S. and for which an Environmental Impact Statement (EIS) will be prepared. Under the new MOU, the integration process can be applied to other projects (such as those with less than 5 acres of impacts to waters of the U.S. or for which an Environmental Assessment [EA] will be prepared) if all of the Signatory Agencies agree.

Following the execution of the new MOU, it was decided that it would be beneficial to continue to use the integration process for this project, although it was no longer required.

Under the guidelines of the new MOU, the integration process consists of three checkpoints, which punctuate ongoing coordination efforts. These checkpoints are:

- Purpose and Need
- Identification of the range of alternatives to be studied in the draft EA or EIS, including the criteria used to select and analyze the range of alternatives to be studied
- Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) and Conceptual Mitigation Plan

At each of these checkpoints, Caltrans sends the checkpoint item to the other Signatory Agencies for their “checkpoint response.” All Signatory Agencies may participate in the checkpoints, and the level of participation differs by agency and by checkpoint as described in Table 4-2.

Table 4-2 Signatory Agency Checkpoint Responses

Agency	Purpose and Need	Alternatives and Criteria	Preliminary LEDPA/ Conceptual Mitigation Plan
USACE	Agree/Disagree	Agree/Disagree	Concur/Non-concur
USEPA	Agree/Disagree	Agree/Disagree	Agree/Disagree
USFWS	Comment	Agree/Disagree	Agree/Disagree
NMFS	Comment	Comment	Agree/Disagree

In March 2003, Caltrans and FHWA initiated the integration process for this project with CDFW, USACE, USEPA, and USFWS. Although not a Signatory Agency, CDFW has also been invited to participate in the NEPA/404 process for this project due to its role as a Trustee Agency. An initial NEPA/404 integration meeting was held on March 3, 2003, in Sacramento.

Following the development of Alternative D, the NEPA/404 integration process was re-initiated in June 2005. In July 2005, NOAA Fisheries stated that as the project is not likely to affect resources under its jurisdiction, it did not foresee any need to comment on documents in the future.

Between June 2005 and August 2006, four additional NEPA/404 meetings were held. The primary purpose of these meetings was twofold: to obtain “Comment” or “Agreement” (as applicable) on the purpose and need, range of alternatives, and criteria for the selection of project alternatives; and to develop strategies to avoid three endangered plant species located within the project area.

Caltrans submitted the first “Request for Checkpoint Response” to USACE, USEPA, and USFWS on June 30, 2006. After this submittal and at the request of the responding agencies, the project purpose and need and range of alternatives were revised to address outstanding concerns. A second “Request for Checkpoint Response” was submitted to USACE, USEPA, and USFWS on October 24, 2006. On November 6, 2006, USEPA provided its formal “Agreement” with the project purpose and need, range of alternatives, and criteria for the selection of project alternatives. On December 29, 2006, USACE provided its formal “Agreement” to these same items.

The USFWS did not provide comments on the project purpose and need, alternatives selection criteria, or range of alternatives. Checkpoint requests and responses are included in Appendix A of the 2007 Draft EIR/EA.

As noted above, a primary goal of the NEPA/404 coordination meetings has been to develop strategies to avoid potential effects to Burke's goldfields, few-flowered navaretia, and Lake County stonecrop—three endangered plants located within the project area.

Caltrans has, to date, made substantial efforts to avoid potential direct and indirect effects to these plant species. Upon initiation of the NEPA/404 process in March 2003, five alternatives were under consideration: Alternative A (No Build), Alternative B (Passing Lanes), Alternative C1 (four-lane expressway on the existing centerline), Alternative C2 (four-lane expressway shifted 30 feet to the north of the existing centerline), and Alternative C3 (four-lane expressway shifted 30 feet to the south of the existing centerline). In late 2003, following the completion of the initial environmental analysis, a new expressway alternative was developed that would minimize the environmental impacts of the project by avoiding known resources. The resulting Alternative D substantially reduced impacts to all environmental resources, including these endangered plant species.

Alternative D was presented to the NEPA/404 agencies at coordination meetings in June and December 2005. To address remaining concerns regarding the direct effects to these plants, Caltrans shared a preliminary revised version of Alternative D with the NEPA/404 agencies at the August 16, 2006, coordination meeting. This version of Alternative D avoided all direct impacts to these plant species. The participating agencies raised additional concerns regarding potential indirect effects to these species resulting from their isolation between the existing and proposed roadways, as well as concerns that changes in hydrology in the project area could result in indirect effects to these species.

To address these outstanding concerns over potential indirect effects, Caltrans prepared another revision to Alternative D, which included substantial changes to the project alignment. Revisions were made at two primary locations along the project corridor where the endangered plants are known to occur, Manning Flat and the area surrounding the intersection of SR 29 and Konocti Camp Road. With these changes, Caltrans believes that Alternative D would not result in any direct or indirect effects to these species.

At the time the Draft EIR/EA was circulated for public review in 2007, the first two check points of the NEPA/404 integration process had been completed. As previously stated, in consideration of the public and agency comments received and the subsequent value analysis process that occurred, Caltrans did not make findings pursuant to CEQA and NEPA and decided to make refinements in the design of the proposed alternative and conduct additional environmental studies.

As work resumed on the Draft EIR/EA, following public circulation, it was decided that the formal NEPA/404 integration process would no longer be implemented for three reasons: 1) the project did not meet the requirements; 2) as a cost savings measure; and 3) discontinuing the formal process would not affect the level of coordination with respective agencies.

As discussed in Section 2.19, Caltrans in consultation with the USFWS determined that construction of Alternative D would not result in adverse direct or indirect effects to Burke's goldfields, few-flowered navarretia, or Lake County stonecrop.

Coordination with the USACE, USFWS, and the CDFW continues to date.

Chapter 5 List of Preparers

The following Caltrans staff contributed to the preparation of this Revised Partial Draft EIR/EA:

Aaron McKeon, Associate Environmental Planner. M.S. Regional Planning, Cornell University. Seven years of experience in preparing community impact assessments. Contribution: Community Impact Analysis.

Peter Bond, Senior Environmental Planner. M.S. City and Regional Planning, University of North Carolina-Chapel Hill; B.S. Design, Arizona State University. 16 years of experience preparing community impact assessments. Contribution: Community Impact Analysis.

James S. Hibbert III, Landscape Associate. B.A. Geography, University of Alaska at Fairbanks; 2nd B.L.A. Landscape Architecture, University of Oregon at Eugene; California Licensed Landscape Architect No. 5136. Six years of experience in landscape architecture. Visual Impacts Analysis review.

Jennifer M. White, Landscape Associate. B.S. Landscape Architecture, California State Polytechnic University, Pomona. 10 years of experience in landscape architecture. Contribution: Visual Impact Assessment, Utility Relocation Addendum.

James Williamson, Landscape Associate. B.S. Landscape Architecture, University of California, Davis. California Licensed Landscape Architect No. 5415. 10 years of experience in landscape architecture. Contribution: Visual/Aesthetics analysis review.

Jeff Haney, Associate Environmental Planner (Archaeology). M.A. Cultural Resource Management, California State University, Sonoma. 30+ years archaeological experience including 20+ years in California. Professionally Qualified Staff: Principal Investigator, Prehistoric Archaeology. Contribution: cultural resource compliance documents.

Joan Fine, Associate Environmental Planner (Architectural History). M.A. History, California State University, Sacramento; B.A. Environmental Studies (Natural Resources Management), University of California, Santa Barbara. 15 years of experience conducting historic architectural studies. Professionally Qualified Staff: Principal Architectural Historian. Contribution: cultural resource compliance document.

Julie Owen, Associate Environmental Planner (Natural Resources). M.A. Geography (Ecology and Natural Resource Management), University of Texas; B.A. Environmental Geography, California State University, Chico. 18 years of experience conducting biological studies and environmental analysis. Contribution: Biological Assessment and Natural Environment Study.

Shanna Zahner, Associate Environmental Planner (Natural Sciences). B.S. Wildlife Biology, Kansas State University. 15 years of experience in transportation project impact analysis, permitting, and mitigation services related to biological resources. Contribution: biological analysis and mitigation development.

Keith Pelfrey, Senior Environmental Planner (Biology). B.S. Biological Science, California Polytechnic State University, San Luis Obispo. 10 years of experience conducting biological studies and environmental analysis. Contribution: biological studies oversight.

Emiliano Pro, Associate Environmental Planner. B.S. Environmental Science (Wilderness Management), California State University, Humboldt. Eight years of experience conducting environmental planning and analysis, wildlife management, document preparation, research, and data collection. Contribution: environmental document preparation and review.

Julie McFall, Associate Environmental Planner. M.A. Geography and Planning, California State University, Chico; B.A. /B.A. Analytical Geography/Spanish literature, University of Wyoming. 15 years of experience in environmental analysis, geographical analysis, document preparation, research, and data collection. Contribution: environmental document preparation and review.

Chris Quiney, Senior Environmental Planner. B.S. Business Administration, California State University, San Diego. 22 years of experience with CEQA/NEPA compliance. Contribution: environmental document oversight.

Amber Kelley, Environmental Office Chief. Associate in Arts Degree Business and General, Shasta Community College, Redding, California. 9 Years of experience performing environmental studies, document preparation, and environmental document oversight, 14 years of experience in CEQA document review. Contribution: environmental document oversight.

Chapter 6 Distribution List

The following agencies, organizations, and individuals will be sent a copy or be provided access to an electronic version of this Revised Partial Draft EIR/EA. A notice of availability of this document has been sent to a much broader list that includes all owners and occupants of property contiguous to the parcels on which the proposed project is located.

Federal Agencies and Tribal Representatives

United States Army Corps of Engineers

Attn: Will Ness
Regulatory Branch
1325 J Street, Room 1513
Sacramento, CA 95814-2922

United States Department of Agriculture
Lakeport LPO
889 Lakeport Blvd.
Lakeport, CA 65453-5405

United States Department of Agriculture
Natural Resources Conservation Service - State Office
430 G Street, Suite #4164
Davis, CA 95616-4164

United States Department of Agriculture
Regional Office
430 G Street, Ste. 4168
Davis, CA 95616-4168

United States Department of Interior
California State Office
2135 Butano Drive
Sacramento, CA 95825

United States Department of Interior
Bureau of Indian Affairs, Pacific Region
2800 Cottage Way
Sacramento, CA 95825

United States Department of Interior
Bureau of Land Management
California State Office
2800 Cottage Way, Suite W-1623
Sacramento, CA 95825

United States Department of Interior
Bureau of Land Management
Ukiah Field Office
2550 North State Street
Ukiah, CA 95482

United States Department of Interior
Bureau of Reclamation
Mid-Pacific Region
Central California Area Office
Attn: Drew Lessard, Area Manager
7794 Folsom Dam Road
Folsom, CA 95630-1799

United States Department of Interior
Office of Environmental Policy
1849 C Street, NW
Washington, DC 20585

United States Environmental
Protection Agency
Region 9, Enforcement Division
Attn: Kathleen Johnson
75 Hawthorne St, Mail Code ENF-1
San Francisco, CA 94105

Habematolel Pomo of Upper Lake
Attn: Sherry Treppa, Executive
Council Chairperson;
Anthony Arroyo, Tribal Administrator
PO Box 516
Upper Lake, CA 95485

United States Fish and Wildlife
Service
Pacific Southwest Region
Attn: Ren Loehfener
2800 Cottage Way
Sacramento, CA 95825

Hinthil Environmental Resource
Consortium (HERC)
c/o Big Valley Band of Pomo Indians
2726 Mission Rancheria
Lakeport, CA 95453

United States Fish and Wildlife
Service
Sacramento Regional Office
Attn: Kellie Berry, Division Chief
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Koi Nation of Northern California
Attn: Daniel Beltran, Chairperson;
Robert Morgan, THPO
P. O. Box 3162
Santa Rosa, CA 95402

United States Forest Service Upper
Lake Ranger District
10025 Elk Mountain Road
Upper Lake, CA 95485

Hinthil Environmental Resource
Consortium (HERC)
c/o Big Valley Band of Pomo Indians
2726 Mission Rancheria
Lakeport, CA 95453

Big Valley Rancheria of Pomo Indians
Attn: Anthony Jack, Chairperson;
Sarah Ryan, Environmental Director;
Batsulwin Brown, Tribal Historic
Preservation Officer (THPO)
2726 Mission Rancheria Road
Lakeport, CA 95453

Redwood Valley Little River Band of
Pomo Indians
Attn: Debra Ramirez, Chairperson
3250 Road I
Redwood Valley, CA 95470

Elem Indian Colony
Attn: Augustin Garcia, Tribal
Chairman;
Karola Kennedy, Environmental
Director
PO Box 757
Lower Lake, CA 95457

Robinson Rancheria
Attn: Mike Schaver, Director-
Environmental
PO Box E. Highway 20
Nice, CA 95464

Scotts Valley Band of Pomo
Attn: Irenia Quitiquit, Director;
Shannon Ford, Tribal Administrator
1005 Parallel Drive
Lakeport, CA 95453

State Agencies

California Air Resources Board
1001 I Street
Sacramento, CA 95814

California Air Resources Board
Attn: Transportation Projects
P.O. Box 2815
Sacramento, CA 95812

California Department of Conservation
Division of Land Resource Protection
801 K Street, MS24-01
Sacramento, CA 95814

California Department of Corrections
and Rehabilitation
1515 S Street, Suite 350
Sacramento, CA 95814

California Department of Corrections
and Rehabilitation Konocti Camp
Attn: Lieutenant J. Auzenne
13044 Highway 29
Lower Lake, CA 95457

California Department of Fish and
Wildlife
Central Region-Habitat Conservation
Attn: Juan Torres, Caltrans Liaison;
Ben Ewing, District Fisheries
Biologist, Lake County
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

California Department of Forestry and
Fire Prevention
Sonoma-Lake-Napa Unit HQ
Attn: Chief Barry Bierman
1199 Big Tree Road
St. Helena, CA 94574-9711

California Department of Forestry and
Fire Prevention
1416 9th Street
PO Box 944246
Sacramento, CA 94244-2460

California Department of Forestry and
Fire Prevention,
Attn: Division Chief J. Wright
Konocti Conservation Camp
13044 Highway 29
Lower Lake, CA 95457

California Department of Forestry and
Fire Prevention,
Kelsey-Cobb Station
8948 Highway 175
Kelseyville, CA 95451

California Department of General
Services
Environmental Services Section
707 3rd Street, 4th floor
Sacramento, CA 95605

California Department of Housing and
Community Development
Housing Policy Division
P.O. Box 952053
Sacramento, CA 94252-2053

California Department of Parks and
Recreation
Anderson Marsh State Historic Park
8825 State Route 53
Lower Lake, CA 95457

California Department of Parks and
Recreation
Clear Lake State Park
5300 Soda Bay Road
Kelseyville, CA 95451

California Department of Parks and Recreation
Office of Historic Preservation
State Historic Preservation Officer
Attn. Julianne Polanco
1725 23rd Street, Suite 100
Sacramento, CA 95816

California Department of Parks and Recreation
Environmental Compliance
P.O. Box 942896
Sacramento, CA 94296-0001

California Department of Toxic Substances Control
1000 "I" Street
Sacramento, CA 95812-2828

California Department of Water Resources
Environmental Services Office
Dean Messer, Chief
PO Box 942836
Sacramento, CA 94236-0001

California Department of Water Resources Reclamation Board
1416 Ninth Street, Room 1601
Sacramento, CA 95814

California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5504

California Highway Patrol
Northern Division
Attn: Ruben Leal, Chief
2485 Sonoma Street
Redding, CA 96001

California Highway Patrol
P. O. Box 942898
Sacramento, California 94298-0001

California Highway Patrol
Attn: Lt. Dane Hayward
5700 Live Oak Drive
Kelseyville, CA 95451

California Integrated Waste Management Board
P.O. Box 4025
Sacramento, CA 95812-4025

California Native American Heritage Commission
Attn: Cynthia Gomez, Executive Secretary
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

California Native Plant Society
2707 K Street, Suite 1
Sacramento, CA 95816-5130

California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102

California Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

California State Clearinghouse
Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

California State Lands Commission
100 Howe Ave., Suite 100-South
Sacramento, CA 95825-8202

California State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812-0100

Central Valley Regional Water Quality
Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Native American Heritage
Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Local Agencies

City of Clearlake
Attn: Greg Folsom, City Manager;
Melissa Swanson, City Clerk;
Julie Burrow, Assistant Planner
14050 Olympic Drive
Clearlake, CA 95422

City of Clearlake
City Hall
14050 Olympic Drive
Clearlake, CA 95422

City of Clearlake
Community Development Department
Attn: Irwin Kaplan
14050 Olympic Drive
Clearlake, CA 95422

City of Lakeport
Attn: Margaret Silveria, City Manager;
Hilary Britton, Deputy City Clerk
225 Park Street
Lakeport, CA 95453

City of Lakeport
Community Development Department
Environmental Resources
Attn: Dan Chance, Associate Planner
225 Park Street
Lakeport, CA 95453

Clearlake Riviera Community
Association
Attn: Janin Smith-Citron, President
9689 State Highway 281
Kelseyville, CA 95451

Colusa County
Public Works Department
Attn: Scott M. Lanphier, Director
546 Jay Street
Colusa, CA 95932

Colusa County
Planning and Building Department
Attn: Stephen Hackney, Director
220 12th Street
Colusa, CA 95932

East Lake Resource Conservation
District (RCD)
Attn: Charlotte Griswold, President
889 Lakeport Blvd
Lakeport, CA 95453

Friends of Boggs Mountain
P.O. Box 735
Cobb, CA 95426

Glenn County
Planning and Public Works
Department
P.O. Box 1070
Willows, CA 95988

Kelseyville Business Association
3850 Main Street
Kelseyville, CA 95451

Kelseyville Fire Protection District
Attn: Robert L. "Mike" Stone
P.O. Box 306
Kelseyville, CA 95451

Kelseyville Unified School District
Attn: Cindy Baker, Transportation
Director
4410 Konocti Road
Kelseyville, CA 95451

Lake County
Attn: Matt Perry, County
Administrator
255 N. Forbes Street
Lakeport, CA 95453

Lake County
Agriculture Department
Attn: Steven Hajik, Commissioner of
Agriculture
883 Lakeport Blvd.
Lakeport, Ca 95453

Lake County
Air Quality Management District
2617 South Main Street
Lakeport, CA 95453

Lake County
Assessor
Attn: Richard, A. Ford, Assessor-
Recorder
255 N. Forbes Street
Lakeport, Ca 95453

Lake County
Community Development
Attn: Kevin Ingram, Director
255 N. Forbes Street
Lakeport, CA 95453

Lake County
Library-Lakeport Branch
Attn: Christopher Veach, Director
1425 N. High Street
Lakeport, CA 95453

Lake County
Library-Redbud Branch
14785 Burns Valley Rd
Clearlake, CA 95422

Lake County
Library-Upper Lake Branch
310 2nd Street
Upper Lake, CA 94585

Lake County
Office of Emergency Services
225 N. Forbes Street
Lakeport, CA 95453

Lake County
Public Works Department
Attn: Scott De Leon, Director
255 N. Forbes Street
Lakeport, CA 95453

Lake County Resource Management
Committee
255 N. Main Street
Lakeport, CA 95453

Lake County
Sheriff Department
Attn: Brian Martin
P. O. Box 489
Lakeport, CA 95453

Lake County Transit Authority
P.O. Box 698
Lower Lake CA 95457

Lake County/City Area Planning
Council (APC)
Attn: Lisa Davey-Bates, Executive
Director of Administration
367 N. State Street, Suite 204
Ukiah, CA 95482

Lake County/City Area Planning
Council
Philip J. Dow, Senior Transportation
Planner
367 N. State Street, Suite 206
Ukiah, CA 95482

Lake County/City Areawide Planning
Council
160 Fifth Street
Lakeport, CA 95453

Lake County Chamber of Commerce
875 Lakeport Blvd
Lakeport, CA 95453

Lake County Farm Bureau
65 Soda Bay Rd
Lakeport, CA 95453

Lake County Fire Protection District
14810 Olympic Drive
Clearlake, CA 95422

Lake County Historical Society
Attn. Greg Dills
P.O. Box 1011
Lakeport, CA 95453

Lake County Historical Society
Attn. Greg Dills
P.O. Box 1011
Lakeport, CA 95453

Lake County Record Bee
2150 S. Main Street
Lakeport, CA 95453

Lake County Transit Authority
Attn: Mark Wall
P.O. Box 99
Lower Lake CA 95457

Lakeport Fire District
Attn: Doug Hutchinson
445 N. Main Street
Lakeport, CA 95453

Lakeport Police Department
Attn: Brad Rasmussen, Chief of Police
916 N. Forbes Street
Lakeport, CA 95453

Local Agency Formation Commission
of Lake County
Attn: John Benoit, Executive Officer
P.O. Box 2694
Granite Bay, CA 96746

Mendocino Council of Governments—
Administration
Attn: Phil Dow, Executive Director
367 N. State Street, Suite 206
Ukiah, CA 95482

Mendocino Council of Governments—
Planning
Attn: Lisa Davey-Bates, Principal
367 N. State Street, Suite 204
Ukiah, CA 95482

Mendocino County
Planning and Building Services
Attn: Steve Dunncliff, Director
860 North Bush Street
Ukiah, CA 95482

Napa County
Planning Building and Environmental
Services Department
1195 Third Street, 2nd Floor
Napa CA 94559

North Coast Resource Conservation
and Development Council
P.O. Box 6417
Santa Rosa, CA 95401

Pacific Gas and Electric Company
14730 Olympic Drive
Clearlake, CA 95422

Pacific Gas and Electric Company
Service Planning Department
1575 High Street
Lakeport, CA 95453

Redbud Audubon
Attn: Robert Lyons, President and
Conservation Chair
Evelyn Wachtel, Conservation Chair
P.O. Box 5780
Clearlake, CA 95422

Sierra Club-Lake Group
Attn: Victoria Brandon, Conservation
Chair
15995 Lucy Circle
Lower Lake, Ca 95457

Sonoma County
Community Development Commission
1440 Guerneville Road
Santa Rosa, CA 95403

Upper Putah Creek Stewardship
Attn: Dwight Holford, Watershed
Coordinator
P.O. Box 27
Middletown, CA 95461-0027

Westlake Resource Conservation
Service
889 Lakeport Blvd.
Lakeport, Ca 95453

Federal Elected Officials

United States Congress
Mike Thompson
5th District-Napa District Office
2721 Napa Valley Corporate Drive,
Building 2
Napa, CA 94558

United States Senate
Barbara Boxer
501 I Street, Suite 7-600
Sacramento, CA 95814

United States Senate
Diane Feinstein
One Post Street, Suite 2450
San Francisco, CA 94104

State Elected Officials

California State Assembly,
4th District
Assembly member
Bill Dodd
Satellite District Office
885 Lakeport Blvd.
Lakeport, CA 95453

California State Senate, 2nd District
Senator Mike McGuire
P. O. Box 785
Ukiah, CA 95482

Local Elected Officials

Rob Brown
Lake County Board of Supervisors,
District 5
255 North Forbes Street
Lakeport, CA 95453

Jim Comstock
Lake County Board of Supervisors
District 1
255 North Forbes Street
Lakeport, CA 95453

Anthony Farrington
Lake County
Board of Supervisors
District 4
255 North Forbes Street
Lakeport, CA 95453

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Appendix G USACE Concurrence with Wetland Delineation



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

May 29, 2014

RECEIVED
STATE OF CALIFORNIA

JUN 16 2014

OFFICE OF DESIGN NORTH & ESB
REDDING

Regulatory Division (SPK-2003-00156)

Mr. Chris Quiney
California Department of Transportation
1031 Butte Street, Suite 205, MS 30
Redding, CA 96001

Dear Mr. Quiney:

We are responding to your August 13, 2013, request for an approved jurisdictional determination for the Lake 29 Expressway Project (EA 01-2981U). The approximately 1,237.71-acre site is located in Sections 1, 2, 6, 7, and 8, Township 12 North, Range 8 West, and in Sections 29 – 35, Township 13 North, Range 8 West, Mount Diablo Meridian, Latitude 38.9053°, Longitude -122.6694°, near Kelseyville, Lake County, California.

Based on available information, we concur with the estimate of waters of the United States, as depicted on the enclosed July 25, 2013, *Figure 9a-9b Wetland Delineation*, drawing prepared by Caltrans, and the enclosed 2013 *Figure D-1 to D-6 Aquatic Resources Map, Delineation of Wetlands and Waters of the United States*, drawing prepared by AECOM.

The approximately 1.272 acres of waters of the United States, including wetlands, identified on *Figure 9a-9b Wetland Delineation* are regulated under Section 404 of the Clean Water Act, since they are tributary to McIntire Creek, which flows to Cole Creek, then to Clear Lake, then Cache Creek, to Sacramento River, a Traditional Navigable Water.

The approximately 54.821 acres of water bodies identified on *Figure D-1 to D-6 Aquatic Resources Map* are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Federal Clean Water Act. Other Federal, State, and local laws may apply to your activities. *In particular, you may need authorization from the California State Water Resources Control Board and/or the U.S. Fish and Wildlife Service.*

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331.

A Notification of Appeal Process (NAP) and Request for Appeal (RFA) form is enclosed. If you request to appeal this determination you must submit a completed RFA form to the South Pacific Division Office at the following address: Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPDPDO, 1455 Market Street, 2052B, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

-2-

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 60 days from the date of this letter. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This determination has been conducted to identify the limits of Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2003-00156 in any correspondence concerning this project. If you have any questions, please contact Mr. Peck Ha at California North Branch Office, Regulatory Division, Sacramento District, U.S. Army Corps of Engineers, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at Peck.Ha@usace.army.mil, or telephone at 916-557-6617. For more information regarding our program, please visit our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,



Nancy Arcady Haley
Chief, California North Branch
Regulatory Division

Enclosures

cc: (w/o encls)

Mr. Keith Pelfrey, Caltrans, keith.pelfrey@dot.ca.gov
Mr. Elizabeth Lee, California Regional Water Quality Control Board, EMLee@waterboards.ca.gov
Mr. Paul Jones, U.S. Environmental Protection Agency, Region IX, Jones.Paul@epa.gov
Ms. Tina Bartlett, California Department of Fish and Game, TinaBartlett@wildlife.ca.gov
Mr. Ryan Olah, U.S. Fish and Wildlife Service, ryan_olah@fws.gov

Enclosure 2:

Table 5. Isolated Wetland Acreages within ESL2

Wetland Delineation ID	Watershed	Jurisdictional (Yes/No)	Area (Acres)
Palustrine Forested Wetland			
PFW1	Un-named basin	No	1.332
<i>Total Acreage of Palustrine Forested Wetland</i>			1.332
Freshwater Marsh			
FWM1	Thurston Lake	No	0.576
FWM2	Thurston Lake	No	0.001
FWM3	Thurston Lake	No	0.003
FWM4	Thurston Lake	No	8.118
FWM5	Thurston Lake	No	4.043
FWM6	Thurston Lake	No	3.489
FWM7	Thurston Lake	No	0.082
FWM8	Thurston Lake	No	0.087
<i>Total Acreage of Freshwater Marsh</i>			16.399
Irrigated Pasture			
IP1	Thurston Lake	No	4.906
<i>Total Acreage of Irrigated Pasture</i>			4.906
Seasonal Wetland			
SW2	Shaul Valley	No	0.001
SW3	Shaul Valley	No	4.463
SW4	Shaul Valley	No	0.012
SW5	Shaul Valley	No	0.015
SW6	Shaul Valley	No	13.099
SW7	Shaul Valley	No	0.100
SW8	Shaul Valley	No	0.532
SW9	Thurston Lake	No	0.261
SW10	Thurston Lake	No	0.021
SW11	Thurston Lake	No	0.040
SW12	Thurston Lake	No	0.366
SW13	Thurston Lake	No	0.356
SW14	Thurston Lake	No	0.217
SW15	Thurston Lake	No	0.241
SW16	Thurston Lake	No	0.665
SW17	Thurston Lake	No	0.773
SW18	Thurston Lake	No	0.135
SW19	Thurston Lake	No	4.813
SW20	Thurston Lake	No	2.054
SW21	Thurston Lake	No	1.666
SW22	Thurston Lake	No	0.007
SW23	Thurston Lake	No	0.041
SW24	Thurston Lake	No	0.460
SW25	Thurston Lake	No	0.001

Table 5. Isolated Wetland Acreages within ESL2

Wetland Delineation ID	Watershed	Potentially Federally Jurisdictional (Yes/No)	Area (Acres)
SW26	Thurston Lake	No	0.002
SW27	Thurston Lake	No	0.002
SW28	Thurston Lake	No	0.004
SW29	Thurston Lake	No	0.002
SW30	Thurston Lake	No	0.002
SW31	Thurston Lake	No	0.003
SW32	Thurston Lake	No	0.004
SW33	Thurston Lake	No	0.003
SW34	Thurston Lake	No	0.004
SW35	Thurston Lake	No	0.002
SW36	Thurston Lake	No	1.569
SW37	Thurston Lake	No	0.046
SW38	Thurston Lake	No	0.004
SW39	Thurston Lake	No	0.149
SW40	Thurston Lake	No	0.004
SW41	Thurston Lake	No	0.011
<i>Total Acreage of Seasonal Wetlands</i>			33.145
<i>Vernal Pool</i>			
VP1	Thurston Lake	No	0.031
VP2	Thurston Lake	No	0.001
VP3	Thurston Lake	No	0.002
VP4	Thurston Lake	No	0.001
VP5	Thurston Lake	No	0.001
VP6	Thurston Lake	No	0.433
VP7	Thurston Lake	No	0.037
VP8	Thurston Lake	No	0.011
VP9	Thurston Lake	No	0.356
VP10	Thurston Lake	No	0.005
<i>Total Acreage of Vernal Pools</i>			0.878
<i>Total Isolated Wetland Acreage</i>			54.821

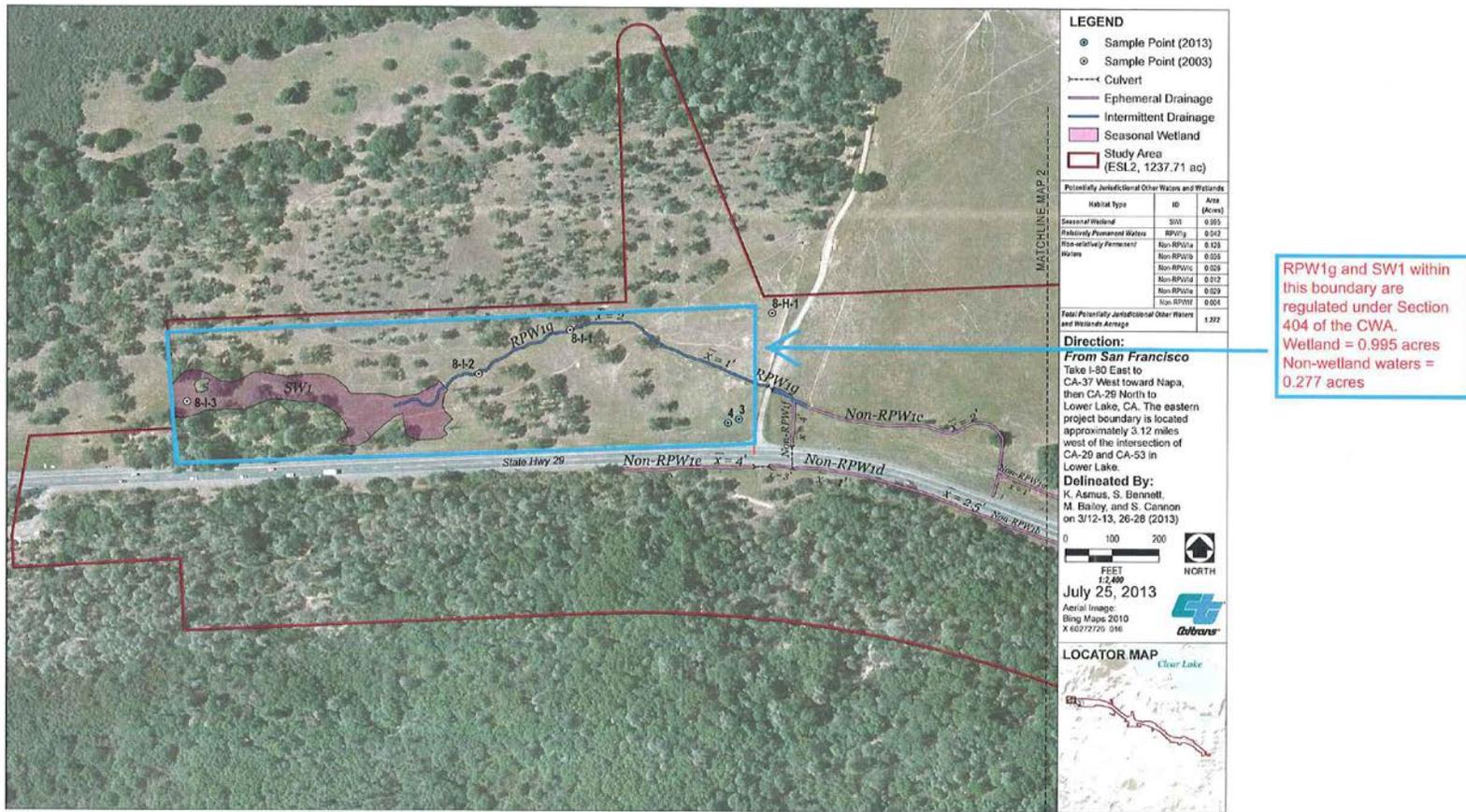
Source: Data compiled by AECOM in 2013

Enclosure 3

Table 4. Isolated Waters Acreages within ESL2

Wetland Delineation ID	Watershed	Jurisdictional (Yes/No)	Area (Acres)
Relatively Permanent Waters (RPW's)			
RPW1g approximately 100 ft	Shaul Valley Basin	No	0.006
RPW8c	Thurston Lake	No	0.019
RPW8b	Thurston Lake	No	0.134
RPW8d	Thurston Lake	No	0.276
RPW11b	Thurston Lake	No	0.245
<i>Total Acreage of RPW's</i>			<i>0.682</i>
Non-Relatively Permanent Waters (non-RPW's)			
Non-RPW1a	Shaul Valley Basin	No	0.128
Non-RPW1b	Shaul Valley Basin	No	0.036
Non-RPW1c	Shaul Valley Basin	No	0.026
Non-RPW1d	Shaul Valley Basin	No	0.012
Non-RPW1e	Shaul Valley Basin	No	0.029
Non-RPW1f	Shaul Valley Basin	No	0.004
Non-RPW2	Shaul Valley Basin	No	0.013
Non-RPW3a	Un-named Basin	No	0.001
Non-RPW3b	Un-named Basin	No	0.054
Non-RPW4	Shaul Valley Basin	No	0.002
Non-RPW5	Thurston Lake	No	0.077
Non-RPW6	Thurston Lake	No	0.007
Non-RPW7	Thurston Lake	No	0.066
Non-RPW8a	Thurston Lake	No	0.198
Non-RPW9	Thurston Lake	No	0.023
Non-RPW10	Thurston Lake	No	0.048
Non-RPW11a	Thurston Lake	No	0.002
Non-RPW12	Thurston Lake	No	0.005
Non-RPW13	Thurston Lake	No	0.223
Non-RPW14a	Thurston Lake	No	0.013
Non-RPW14b	Thurston Lake	No	0.127
Non-RPW14c	Thurston Lake	No	0.034
Non-RPW14d	Thurston Lake	No	1.117
Non-RPW15	Cole Creek	No	0.110
<i>Total Acreage of Non-RPW's</i>			<i>2.353</i>
Total Acreage of Isolated Waters			3.035

Source: Data compiled by AECOM in 2013



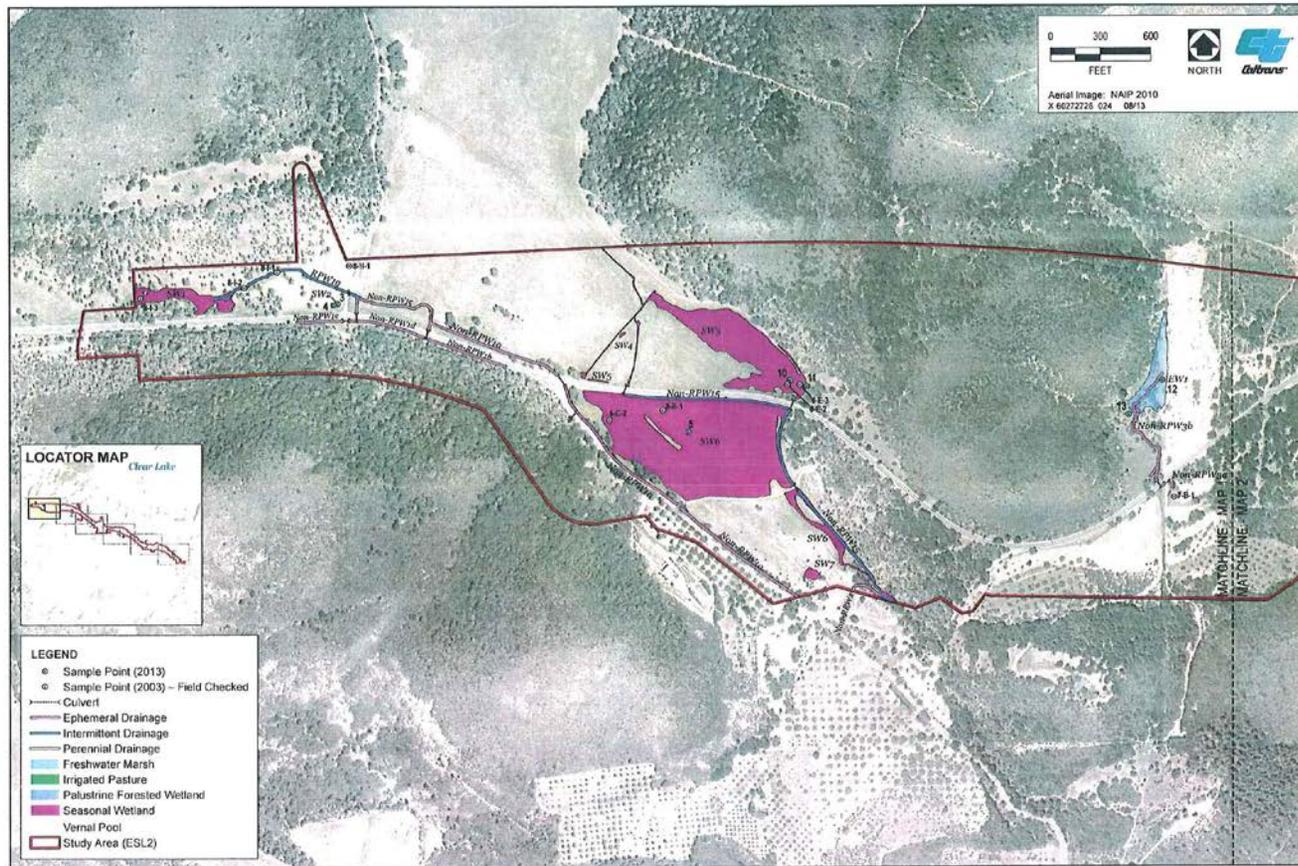
RPW1g and SW1 within this boundary are regulated under Section 404 of the CWA.
 Wetland = 0.995 acres
 Non-wetland waters = 0.277 acres

Figure 9a. Wetland Delineation



Figure 9b. Wetland Delineation

Appendix D Aquatic Resources Map

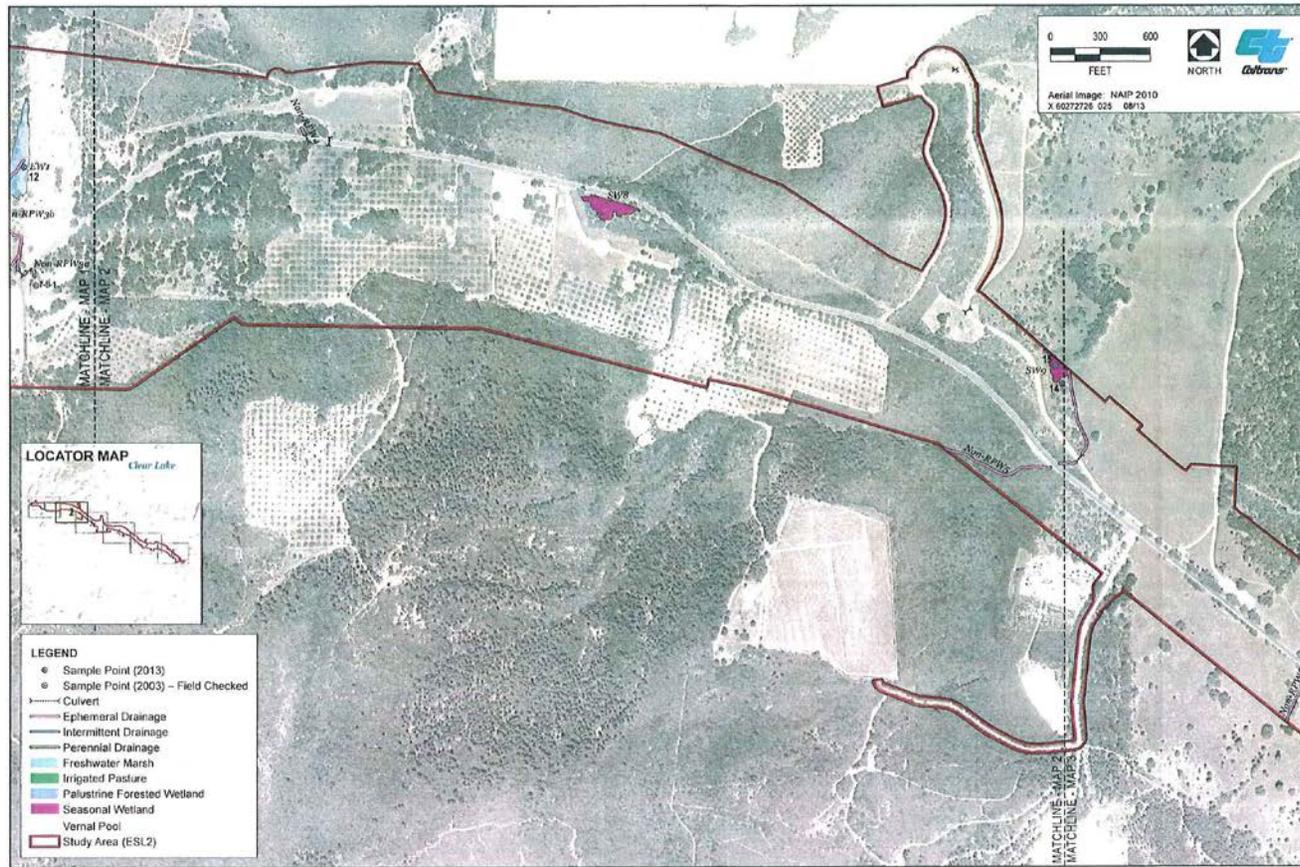


Source: Data compiled by AECOM in 2013

Figure D-1. Aquatic Resources Map

Caltrans District 1 Wetland Delineation Report

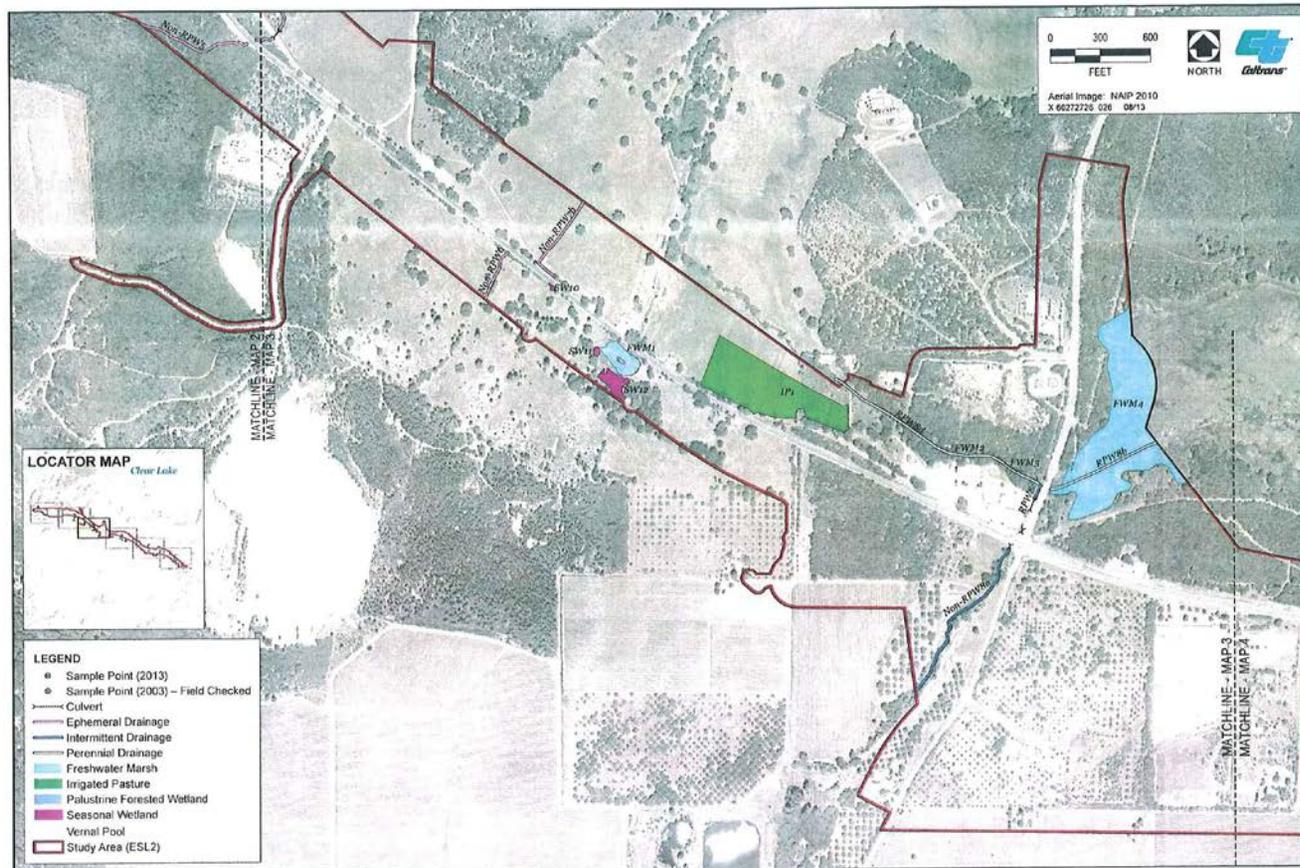
Appendix D Aquatic Resources Map



Source: Data compiled by AECOM in 2013
Figure D-2. Aquatic Resources Map

Caltrans District 1 Wetland Delineation Report

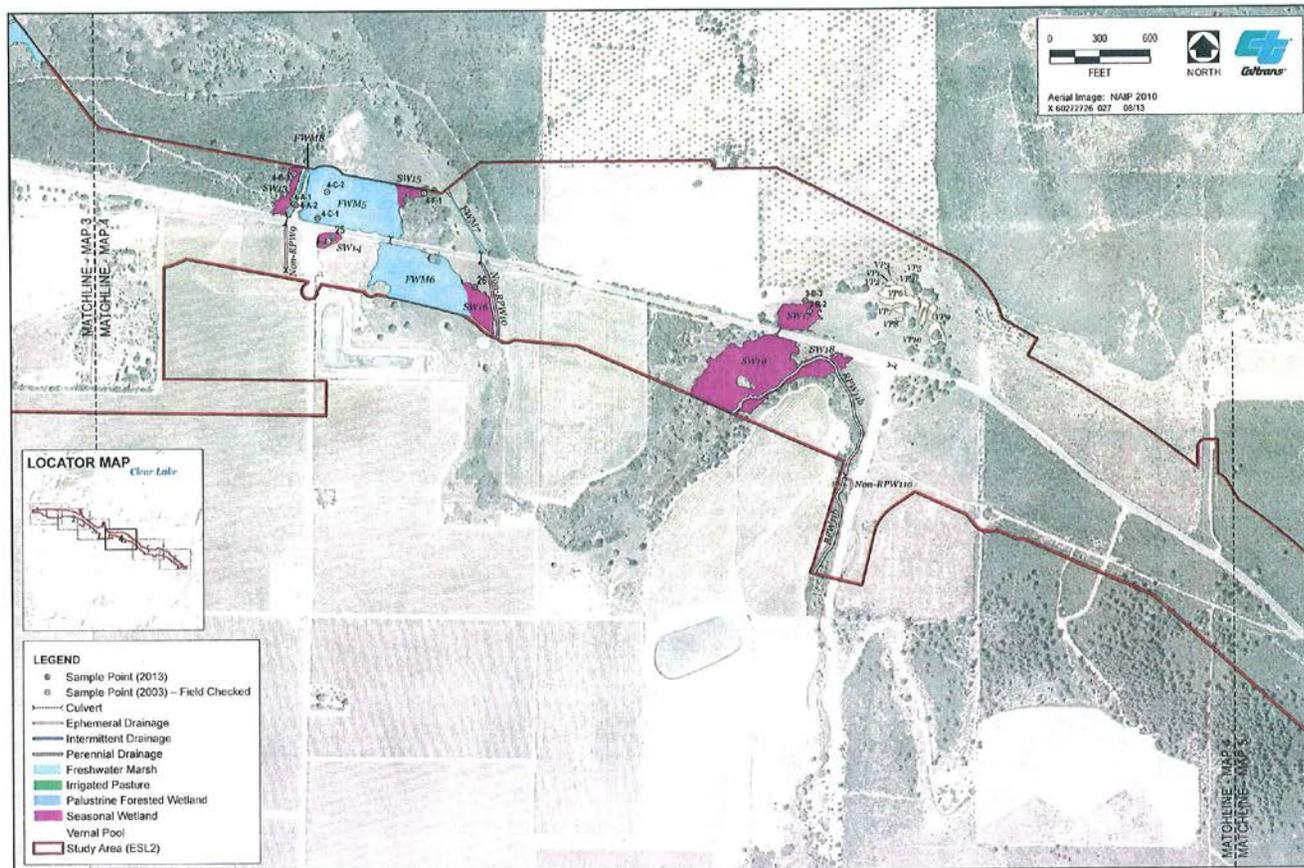
Appendix D Aquatic Resources Map



Source: Data compiled by AECOM in 2013
Figure D-3. Aquatic Resources Map

Caltrans District 1 Wetland Delineation Report

Appendix D Aquatic Resources Map

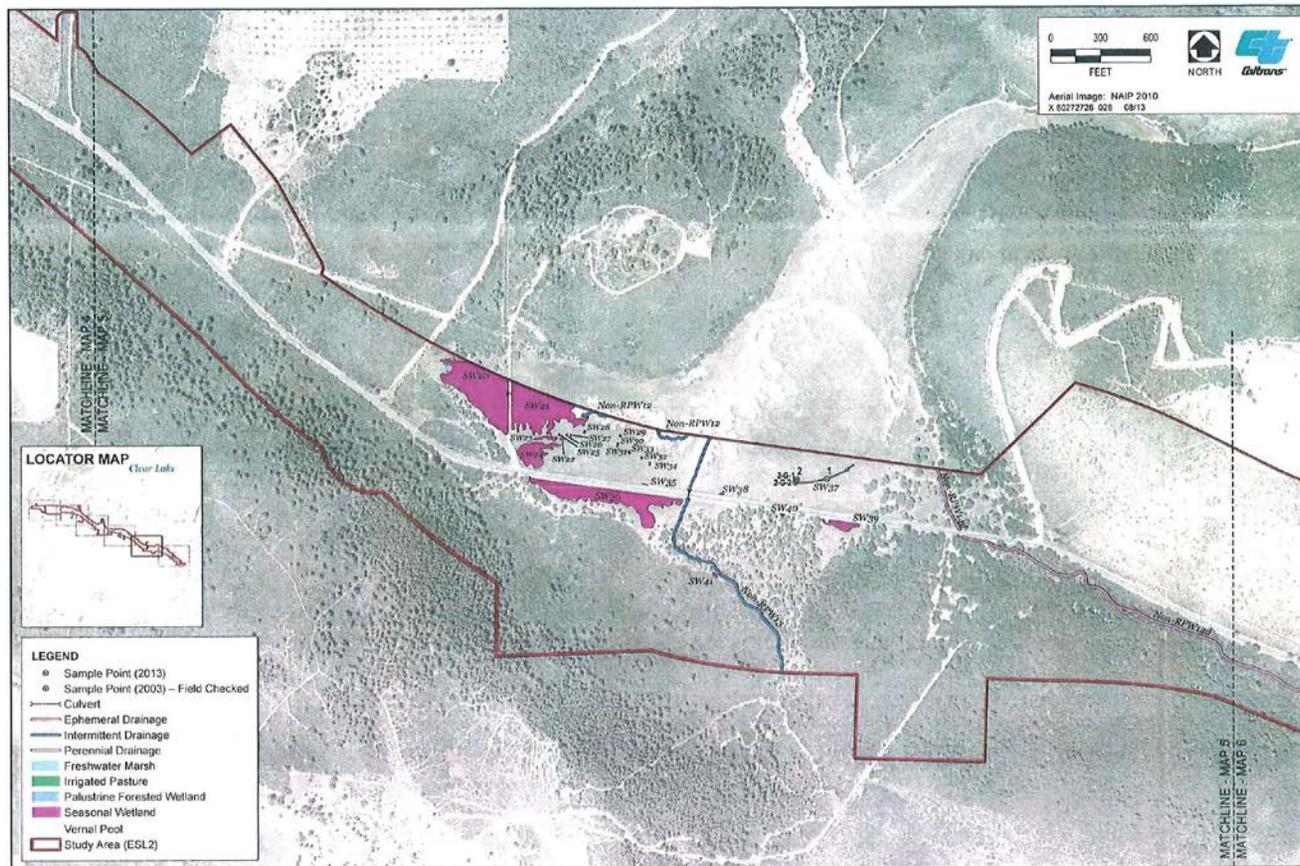


Source: Data compiled by AECOM in 2013

Figure D-4. Aquatic Resources Map

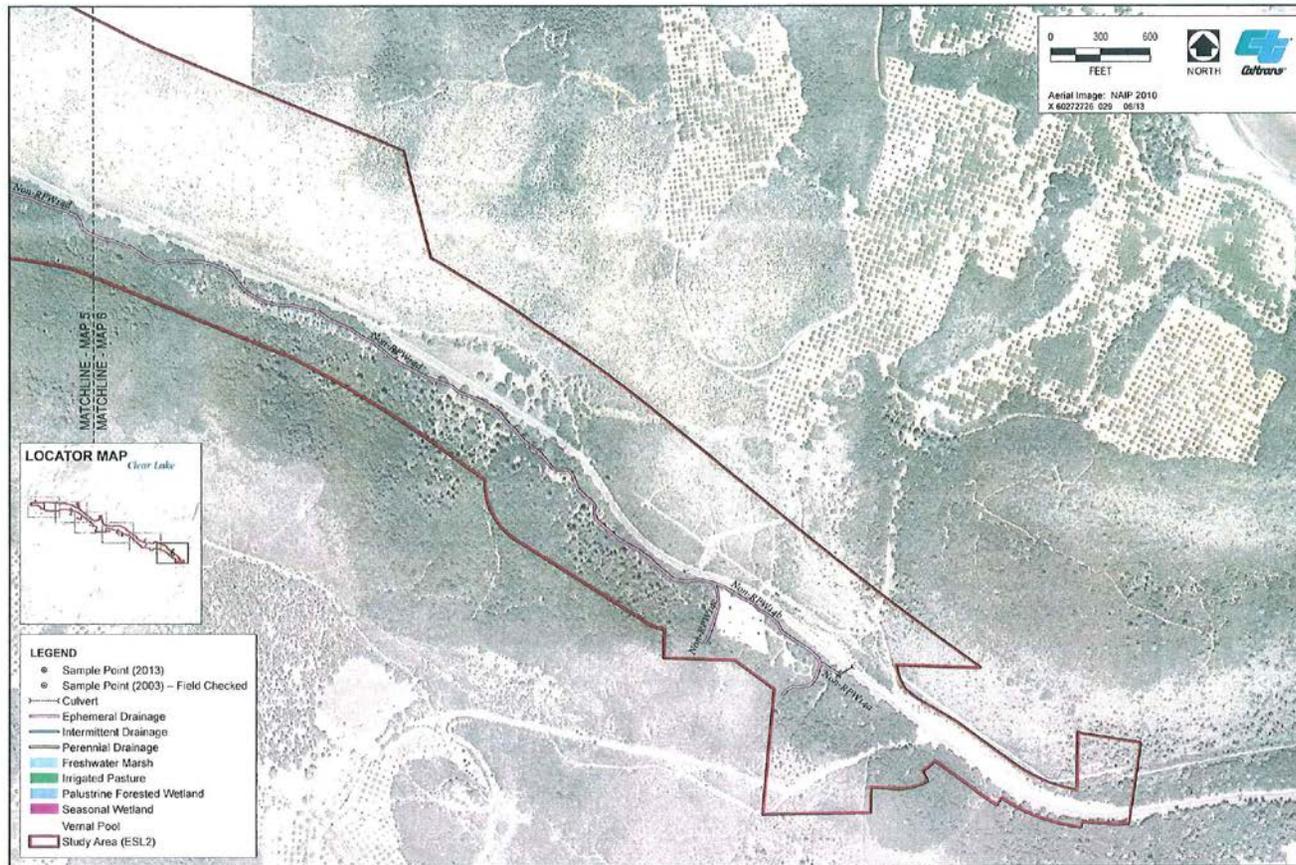
Caltrans District 1 Wetland Delineation Report

Appendix D Aquatic Resources Map



Source: Data compiled by AECOM in 2013
Figure D-5. Aquatic Resources Map

Caltrans District 1 Wetland Delineation Report



Source: Data compiled by AECOM in 2013

Figure D-6. Aquatic Resources Map

Appendix H Regional Species of Concern



Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	CSC	Day roost in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be open sites such as porches and open buildings. Hibernation sites are probably rock crevices. Grasslands, shrublands, woodlands and forest.	Yes	Yes	Species caught in mist net during bat surveys and detected at several echolocation survey stations within ESL.
<i>Corynorhinus townsendii townsendii</i>	Townsend's western big-eared bat	SCT	Roosts in lava tubes, caves, buildings, mines, etc.	Yes	Yes	Townsend's big-eared bat (<i>Corynorhinus townsendii</i>) was identified roosting in three structures within ESL and was detected foraging within ESL.
<i>Eumops perotis californicus</i>	Greater western mastiff bat	FSC; CSC	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Yes	No	Species not observed during bat surveys, but potential habitat occurs in ESL.
<i>Martes pennanti pacifica</i>	Pacific fisher	FSC; CSC	Intermediate to large-tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs, and rocky areas for cover and denning. Needs large areas of mature dense forest.	No	No	No suitable habitat in ESL; species has not been observed in this region of California for several decades.
<i>Myotis thysanodes</i>	Fringed myotis bat	FSC	Found in a wide variety of habitats. Optimal habitats include pinyon-juniper, valley foothill hardwood, and hardwood-conifer. Uses caves, mines, buildings, or crevices for maternity colonies and roosts.	Yes	Unknown	Species may have been detected at one of the survey stations, but a positive identification could not be reached. Potential habitat occurs in ESL, and species could be present.
<i>Myotis volans</i>	Long-legged myotis bat	FSC	Most common in woodland and forest habitats above 4,000 feet. Trees are important day roosts, and caves and mines are night roosts. Nursery colonies usually found under bark or in hollow trees but occasionally in crevices or buildings.	Yes	No	Species not observed during bat surveys, but potential habitat occurs in ESL.
<i>Perognathus inornatus</i>	San Joaquin pocket mouse	FSC	Typically found in dry open grasslands and scrub areas on fine-textured, friable soils in the Central and Salinas valleys.	Yes	No	ESL is out of known range for this species.
Birds						

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Accipiter cooperii</i>	Cooper's hawk	CSC	Nests in chiefly open woodlands, interrupted or marginal type. Nest sites are mainly in riparian growths of deciduous trees, as in canyon bottoms or river floodplains; also live oaks.	Yes	Yes	Species detected within ESL. Suitable nesting habitat present in ESL, but no nests were observed.
<i>Accipiter gentilis</i>	Northern goshawk	FSC; CSC	Nests within and in the vicinity of coniferous forests in red fir and Jeffrey and lodgepole pines, usually on north slopes near water. Uses old nests and maintains alternate sites. Preferred trees include red fir, lodgepole pine, Jeffrey pine, and aspens.	No	No	No suitable habitat in ESL. Species requires dense, mature, undisturbed forests.
<i>Accipiter striatus</i>	Sharp-shinned hawk	CSC	Nests mainly in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats, but prefers riparian areas. Prefers north-facing slopes with plucking perches. Nests close to water.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Agelaius tricolor</i>	Tricolored blackbird	FSC; CSC	Nests near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, cattail or tule marshes; also human-made structures. Their nests consist of a scrape on a depression or ledge in an open site.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Ammodramus savannamus</i>	Grasshopper sparrow	FSC	Nests in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower montane slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Uses scattered shrubs for singing perches. Loosely colonial while nesting.	Yes	No	Species not observed during bird surveys. Extremely rare in Lake County, but suitable habitat is available.
<i>Amphispiza belli belli</i>	Bell's sage sparrow	FSC; CSC	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in the south of the range. Nests are generally located on the ground beneath or within the lower branches of shrubby plants.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Aquila chysaetos</i>	Golden eagle	CSC	Nests and winters in rolling foothills and mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of the range. Large trees in open areas also used for nesting.	Yes	No	Species not observed in ESL, but potential habitat present.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Ardea herodias</i>	Great blue heron	Migratory	Colonial nester in large trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Yes	No	Special status only applies to rookery sites. No potential rookery sites occur in the project area.
<i>Asio flammeus</i>	Short-eared owl	FSC; CSC	Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Nesting found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields	Yes	No	Species not observed in ESL. Nearest records of this species are from the San Francisco Bay Area.
<i>Athene cunicularia</i>	Burrowing owl	FSC; CSC	Open, dry annual grasslands; deserts and scrublands.	Yes	No	Species not observed in ESL and not recorded from Lake County. No suitable burrows observed in ESL.
<i>Botaurus lentiginosus</i>	American bittern	FSC	Freshwater and saltwater marshes.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Brachyramphus marmoratus</i>	Marbled murrelet	FT, SE	Nests inland (up to 6 miles) along the coast, in old-growth redwood-dominated forests, often in Douglas firs; feeds near shore (ocean).	No	No	No suitable habitat in ESL.
<i>Buteo regalis</i>	Ferruginous hawk	FSC, CSC	Winters in open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Chaetura vauxi</i>	Vaux's swift	FSC; CSC	Nests in redwood, douglas fir, and other coniferous forests. Nests in large hollows of tree snags, often in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes. Fairly common in spring and fall.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Chlidonias niger</i>	Black tern	FSC; CSC	Nesting colony in freshwater lakes, ponds, marshes, and flooded agricultural fields. At coastal lagoons and estuaries during migration. Breeding primarily in Modoc Plateau region, with some breeding in Sacramento and San Joaquin valleys.	No	No	Nesting restricted to Modoc Plateau with some activity in Central Valley; migrates along the coast; no records from Lake County.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Chondestes grammacus</i>	Lark sparrow	FSC	Valley foothill hardwood, valley foothill hardwood-conifer, open mixed chaparral and similar brushy habitats, and grasslands with scattered trees or shrubs.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Circus cyaneus</i>	Northern harrier	CSC	Meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FC; SE	Nests in riparian systems along the broad lower flood-bottoms of larger river systems; requires dense riparian vegetation.	No	No	No suitable habitat present in ESL.
<i>Contopus cooperi</i>	Olive-sided flycatcher	FSC	Open montane and boreal conifer forests; nests in mixed-conifer forests.	Yes	Yes	Species detected within ESL. Suitable nesting habitat present in ESL, but no nests were observed.
<i>Cypseloides niger</i>	Black swift	FSC; CSC	Aerial; forages over forests and in open areas. Nests behind or next to waterfalls and wet cliffs. Nests in dark inaccessible sites with unobstructed flight path. Nest is a cup-like structure of mud, mosses, and algae.	No	No	Species not observed in ESL and is not known to occur in the area. No nesting habitat present in ESL.
<i>Dendroica occidentalis</i>	Hermit warbler	FSC	Mixed deciduous and coniferous forests; requires cool, dark forest for breeding.	Yes	No	Species not observed in ESL, but potential habitat present
<i>Dendroica petechia brewsteri</i>	Yellow warbler	CSC	Nests in riparian habitats and prefers willows, cottonwoods, aspens, sycamores, and alders for both nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Yes	Yes	Species detected within ESL. Suitable nesting habitat present in ESL, but no nests observed.
<i>Egretta thula</i>	Snowy egret	None	Locally common in the Central Valley all year. Feeds in shallow water or along shores of wetlands or aquatic habitats. Nests in protected beds of dense tules.	Yes	No	Potential habitat in Thurston Marsh, but species not observed during surveys.
<i>Elanus leucurus</i>	White-tailed kite	FSC	Nests on rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Found in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Yes	Yes	Species detected within ESL. Suitable nesting habitat present in ESL, but no nests observed.
<i>Empidonax traillii brewsteri</i>	Little willow flycatcher	FSC; SE	Extensive thickets of low, dense willows on the edge of wet meadows, at elevations between 2,000 and 8,000 feet.	No	No	Species not observed in ESL. May migrate through the area, but no nesting habitat present in ESL.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Eremophila alpestris actia</i>	California horned lark	CSC	Coastal regions and in the main part of the San Joaquin Valley and east to the foothills. Found in short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	Yes	No	Species not observed in ESL, but potential habitat present
<i>Falco mexicanus</i>	Prairie falcon	CSC	Dry, open terrain, either level or hilly; breeding sites located on cliffs. Forages far afield, in marshlands and on ocean shores.	Yes	No	Species not observed in ESL. Potential foraging habitat present in ESL, but no nesting habitat present.
<i>Falco peregrinus anatum</i>	American peregrine falcon	FD; FSC; SE	Nests near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, also human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	Yes	No	Species not observed in ESL. Potential foraging habitat present in ESL, but no nesting habitat present.
<i>Haliaeetus leucocephalus</i>	Bald eagle	FT (proposed for delisting); SE	Nests in large, old growth, or dominant live trees with open branches near ocean shores, lake margins, and rivers. Usually nests within 1 mile of water.	No	No	No suitable habitat in ESL.
<i>Icteria virens</i>	Yellow-breasted chat	CSC	California summer nesting resident. Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low dense riparian areas consisting of willows, blackberry, and wild grape, and forages within 10 feet of the ground.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Lanius ludovicianus</i>	Loggerhead shrike	FSC; CSC	Nests in broken woodlands, savannah, pinyon-juniper, joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Yes	No	Potential habitat present within ESL, but species not observed during surveys.
<i>Melanerpes lewis</i>	Lewis' woodpecker	FSC	Open deciduous and coniferous forests with brushy understory, and scattered snags, logged forests, river groves, or foothills.	Yes	No	Potential habitat present within ESL, but species not observed during surveys.
<i>Numenius americanus</i>	Long-billed curlew	FSC; CSC	Breeds in prairies and grassy meadows, generally near water. Nests in dry prairies and moist meadows. Nests on ground usually in flat area with short grass, sometimes on more irregular terrain, often near rock or other conspicuous object. Occurs on mudflats during migration and wintering.	Yes	No	Potential habitat present within ESL, but species not observed during surveys. Extremely rare in Lake County.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Otus flammeolus</i>	Flammulated owl	FSC	Montane forests, especially ponderosa pine; favors small openings, and edges and clearings with snags for nesting and roosting.	No	No	No suitable habitat in ESL.
<i>Pandion haliaetus</i>	Osprey	CSC	Nests in ocean shores, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Yes	No	Potential habitat present within ESL, but species not observed during surveys.
<i>Phalacrocorax auritus</i>	Double-crested cormorant	CSC	Resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. Also occurs in lacustrine and riverine habitats of the Central Valley and coastal slope lowlands.	No	No	No suitable habitat in ESL.
<i>Plegadis chihi</i>	White-faced ibis	FSC; CSC	Marshes, swamps, ponds and rivers, mostly in freshwater habitats. Nests in marshes and dense tule thickets; in low trees, on the ground in bulrushes or reeds, or on a floating mat. In the Central Valley of California, ibises preferentially selected foraging sites close to emergent vegetation.	No	No	No suitable habitat in ESL, and no records of this species from Lake County.
<i>Progne subis</i>	Purple martin	CSC	Uncommon to rare local summer resident. Occurs in valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, conifer forests and riparian habitats.	Yes	Yes	Five purple martin nests were identified within or adjacent to ESL.
<i>Riparia riparia</i>	Bank swallow	FSC; ST	Open and partly open situations, frequently near flowing water. Nests in steep sand, dirt, or gravel banks, in a burrow dug near the top of the bank, along the edge of inland water or along the coast, or in gravel pits, road embankments, etc.	No	No	No suitable habitat in ESL.
<i>Selasphorus rufus</i>	Rufous hummingbird	FSC	Coniferous forest, second growth, thickets and brushy hillsides, foraging in adjacent scrubby areas and meadows. During migration in winter, prefers open situations where rich in nectar-producing flowers are present.	Yes	No	Species could occur during migration but was not observed during bird surveys.
<i>Selasphorus sasin</i>	Allen's hummingbird	FSC	Chaparral, wooded canyons, gardens, mountain meadows, brushlands, and redwood forest edges.	Yes	No	Species could occur during migration, but was not observed during bird surveys.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Sphyrapicus ruber</i>	Red-breasted sapsucker	FSC	Nests in montane riparian, aspen, montane hardwood-conifer, mixed conifer, and red fir habitats, especially near meadows, clearings, lakes, and slow-moving streams. A fairly common winter resident throughout much of lowland, cismontane California, though uncommon in coastal lowlands from Los Angeles County south, and in the Central Valley.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT	Old-growth forests or mixed stands of old-growth and mature trees, occasionally in younger forests with patches of big trees. Nest in cavities or broken tops of big trees among high, multistory canopies.	Yes	No	Habitat is suboptimal. Nearest record is located 3 miles south of study area, near Mt. Hannah. Species not observed during USFWS protocol surveys and is not expected to occur in ESL.
Reptiles						
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	FSC; CSC	Associated with permanent or nearly permanent water sources with basking sites, in a wide variety of habitats. Nest sites may be found up to 0.3 mile from water.	Yes	Unknown	Suitable habitat present in Thurston Creek, and species could potentially occur in ESL. Several occurrences recorded within close proximity to ESL, but species was not observed during focused surveys within ESL.
Amphibians						
<i>Ambystoma californiense</i>	California tiger salamander	FSC (2 locally endangered populations); CSC	Most commonly found in annual grassland habitat, but also occurs in grassy understory of valley-foothill hardwood habitats. Sometimes found along stream courses in valley-foothill riparian habitats. Seasonal ponds or vernal pools are crucial to breeding. Permanent ponds or reservoirs are sometimes used as well.	No	No	ESL is out of known range for this species.
<i>Rana aurora aurora</i>	Northern red-legged frog	FSC; CSC	Breeding habitat typically consists of permanent or temporary water bordered by dense grassy or shrubby vegetation. Ranges from northern Humboldt County, California northward to Sullivan Bay, British Columbia. May extend southward along the coast to Marin County.	No	No	ESL is out of known range for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Rana aurora draytonii</i>	California red-legged frog	FT; CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Yes	No	Marginal habitat present. Species not observed in any potentially suitable habitat areas located within 1 mile of ESL during USFWS protocol surveys. Due to the lack of records in Lake County, the marginally suitable habitat in ESL, and the presence of many introduced species, California red-legged frog is unlikely to occur in ESL.
<i>Rana boylei</i>	Foothill yellow-legged frog	FSC	Partially shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying, with at least 15 weeks of running water to attain metamorphosis.	Yes	No	FYLF were not observed during amphibian surveys, there are no records of them occurring historically or currently within the project's watersheds, and the project's watersheds are isolated from watersheds where species are presumed extant. FYLF are assumed absent from the project area.
<i>Spea hammondi</i>	Western spadefoot toad	FSC; CSC	Occurs primarily in grassland habitats but also found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Yes	No	Potential habitat present, but ESL is out of the known range for this species. Not expected to occur.
Fish						
<i>Archoplites interruptus</i>	Sacramento perch	FSC; CSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water.	No	No	No suitable habitat in ESL.
<i>Hypomesus transpacificus</i>	Delta smelt	FT; ST	Sacramento–San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Seldom found at salinities greater than 10 parts per thousand (ppt). Most often in salinities less than 2 ppt.	No	No	No suitable habitat present in ESL.
<i>Hysterocarpus traski pomo</i>	Russian River tule perch	FSC; CSC	Requires clear, flowing water and abundant cover; limited to low elevation streams of the Russian River system.	No	No	ESL is out of known range for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Lavinia exilicauda chi</i>	Clear Lake hitch	CSC	Confined to Clear Lake and to associated lakes and ponds such as Thurston Lake and Lampson Pond. It spawns in intermittent tributary streams to Clear Lake, mainly Kelsey, Seigler Canyon, Adobe, Middle, Scotts, Cole and Manning creeks, and occasionally in other, unnamed tributaries.	No	No	No suitable habitat present in ESL.
<i>Oncorhynchus kisutch</i>	Southern Oregon/Northern California Coast coho salmon	FT	Accessible river reaches between Cape Blanco and Punta Gorda, which lie within watersheds of Del Norte Glen, Humboldt, Lake, Mendocino, Siskiyou, and Trinity counties.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus mykiss</i>	Northern California steelhead	FT	California coastal river basins from Redwood Creek south to the Gualala River.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	Populations occur and spawn in the Sacramento and San Joaquin rivers and their tributaries.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus mykiss irideus</i>	Central California Coast steelhead	FT	In California streams from the Russia River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa river (inclusive), excluding the Sacramento-San Joaquin River Basin.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus mykiss irideus</i>	South/Central California Coast steelhead	FT	In California streams from the Pajaro River (inclusive), to, but not including, the Santa Maria River.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus mykiss irideus</i>	Summer-run steelhead trout	FC; CSC	Northern California coastal streams south to Middle Fork Eel River.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Oncorhynchus tshawytsa</i>	California coastal chinook salmon	FT	Redwood Creek in Humboldt County south through the Russian River.	No	No	Project area within an isolated watershed; no access for anadromous fish.
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	FT; CSC	Slow-moving waters and dead-end sloughs of main rivers and Delta; shallow areas of bays. Unusually tolerant of brackish water. Spawns over flooded vegetation in tidal freshwater and euryhaline habitats of estuarine marshes and sloughs and slow-moving river sections.	No	No	No suitable habitat present in ESL.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
Invertebrates						
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus mexicana</i>). Prefers branches greater than 1 inch in diameter.	Yes	No	Based on VELB population ecology studies conducted by Dr. Marcel Holyoak, an ecology professor at UC Davis, the Lake 29 Improvement Project is outside of VELB range.
<i>Dubiraphia brunnescens</i>	Brownish dubiraphian riffle beetle	FSC	Known only from northeast shore of Clear Lake; occurs on exposed, wave-washed willow roots.	No	No	ESL out of known range for this species; not expected to occur.
<i>Syncaris pacifica</i>	California freshwater shrimp	FE; SE	Found in pool areas of low-elevation and low-gradient (generally less than 1%) streams. Currently known from streams in Napa, Marin, and Sonoma counties.	No	No	ESL out of known range for this species; not expected to occur.
Plants						
<i>Amsinckia lunaris</i>	Bent-flowered fiddleneck	CNPS 1B	Found in coastal bluff scrub, cismontane woodland, and valley and foothill grasslands (10–1,640 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Arctostaphylos canescens</i> ssp. <i>sonomensis</i>	Sonoma manzanita	FSLC; CNPS 1B	Chaparral, lower montane coniferous forest; blooms January–April. Sometimes found on serpentine soil (590–5,580 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	CNPS 1B	Chaparral, cismontane woodland, and lower montane coniferous forest, often on volcanic soils from 1,295 to 5,300 feet.	Yes	Yes	Species observed in several locations throughout ESL.
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	FSC; CNPS 1B	Serpentine and rocky soils in chaparral and openings in lower montane coniferous forest (1,475–3,280 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	FSLC; CNPS 1B	Commonly on serpentine in grassland or opening in chaparral, cismontane woodland, and valley and foothill grassland (1,050–2,300 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	Big-scale balsamroot	FSC; CNPS 1B	Found in valley and foothill grasslands and cismontane woodlands. Sometimes seen on serpentine (295–4,595 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Brodiaea californica</i> var. <i>leptandra</i>	Narrow-anthered California brodiaea	FSLC	Broadleafed upland forest, chaparral, and lower montane coniferous forest (360–3,000 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Brodiaea coronaria</i> ssp. <i>rosea</i>	Indian Valley brodiaea	SE; CNPS 1B	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, and meadows, in serpentine gravelly creek bottoms, and in meadows and swales (1,100–4,760 feet).	Yes	No	Species not observed in ESL, but potential habitat present.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Calyptridium quadripetalum</i>	Four-petaled pussypaws	CNPS 4	Chaparral, lower montane coniferous forest, usually on sandy or gravelly serpentine soils (1,035–6,695 feet).	Yes	Yes	Two populations of this species identified in ESL.
<i>Calystegia collina</i> ssp. <i>oxyphyla</i>	Mt. Saint Helena morning-glory	FSLC; CNPS 4	Serpentine soils in chaparral, lower montane coniferous forest, and valley and foothill grassland (1,000–3,315 feet).	No	No	No suitable habitat present in ESL.
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	Coastal bluff morning-glory	FSC; CNPS 1B	Coastal dunes, coastal scrub (50–345 feet).	No	No	No suitable habitat present in ESL.
<i>Cardamine pachystigma</i> var. <i>dissectifolia</i>	Dissected-leaved toothwort	CNPS 3	Lower montane coniferous forest and chaparral, usually on serpentine or rocky soils (840–6,890 feet).	Yes	No	No suitable habitat present in ESL.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>	Pink creamsacs	FSLC; CNPS 1B	Serpentine soils in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland (65–2,955 feet).	No	No	No suitable habitat present in ESL.
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	FSC; CNPS 1B	Chaparral, cismontane coniferous forest, and closed-cone forest on volcanic or serpentine soils from 245 to 3,495 feet.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Ceanothus divergens</i>	Calistoga ceanothus	FSC; CNPS 1B	Chaparral on rocky or volcanic soils from 560 to 3,120 feet.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	Dwarf soaproot	FSC; CNPS 1B	Serpentine soils in chaparral and valley and foothill grassland (790–3,180 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Cryptantha clevelandii</i> var. <i>dissita</i>	Serpentine cryptantha	FSC; CNPS 1B	Serpentine soils in chaparral (1,295–1,905 feet).	No	No	No suitable habitat present in ESL.
<i>Didymodon norrisii</i>	Norris's beard-moss	CNPS 2	Cismontane woodland, lower montane coniferous forest (1,970–5,580 feet).	Yes	Unknown	Suitable habitat present; species could potentially occur in ESL. Focused surveys were not conducted for mosses.
<i>Epilobium nivium</i>	Snow Mountain willowherb	FSC; CNPS 1B	Chaparral and upper montane coniferous forest (2,610–8,205 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Eriastrum brandegeae</i>	Brandegee's woolly-star	FSC; CNPS 1B	Chaparral and cismontane woodland, on barren volcanic soil; often in open areas (1,135–3,280 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Erigeron angustatus</i>	Narrow-leaved daisy	FSC; CNPS 1B	Serpentine soils in chaparral (265–495 feet).	No	No	No suitable habitat present in ESL.
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	FSLC; CNPS 3	Restricted to serpentine in coastal prairie, chaparral, and valley and foothill grassland from 35 to 1,640 feet.	No	No	No suitable habitat present in ESL.
<i>Eriogonum nervulosum</i>	Snow Mountain buckwheat	FSC; CNPS 1B	Serpentine soils in chaparral (985–6,910 feet).	No	No	No suitable habitat present in ESL.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Eryngium constancei</i>	Loch lomond button-celery	FE; SE; CNPS 1B	Vernal pools from 1,510 to 2,805 feet.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Erythronium helenae</i>	St. Helena fawn lily	FSLC; CNPS 4	Volcanic or serpentine soils in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (1,150–4,005 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Fritillaria pluriflora</i>	Adobe-lily	FSC; CNPS 1B	Chaparral, cismontane woodland, and valley and foothill grassland. Often on adobe soils (200–2,315 feet).	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Gratiola heterosepala</i>	Bogg's Lake hedge-hyssop	FSC; SE; CNPS 1B	Freshwater marshes and swamps, vernal pools. Usually found in clay soils of vernal pools and lake margins (35–7,795 feet).	Yes	No	Suitable habitat present in ESL. <i>Gratiola</i> sp. identified in ESL, but not <i>Gratiola heterosepala</i> . Species not observed during focused plant surveys.
<i>Hesperolinon adenophyllum</i>	Glandular western flax	FSC; CNPS 1B	Restricted to serpentine soils in chaparral, cismontane woodland, and valley and foothill grassland from 495 to 4,315 feet.	No	No	No suitable habitat present in ESL.
<i>Hesperolinon bicarpellatum</i>	Two-carpellate western flax	FSC; CNPS 1B	Restricted to serpentine in chaparral from 200 to 3,300 feet.	No	No	No suitable habitat present in ESL.
<i>Hesperolinon didymocarpum</i>	Lake County western flax	FSC; SE; CNPS 1B	Restricted to serpentine areas in chaparral, cismontane woodland, and valley and foothill grassland (1,085–1,200 feet).	No	No	No suitable habitat present in ESL.
<i>Hesperolinon drymarioides</i>	Drymaria dwarf-flax	FSC; CNPS 1B	Serpentine areas in closed-cone coniferous forest, chaparral, cismontane woodland, and valley and foothill grassland (330–3,710 feet).	No	No	No suitable habitat present in ESL.
<i>Hesperolinon serpentinum</i>	Napa western flax	FSC; CNPS 1B	Restricted to serpentine in chaparral from 165 to 2,625 feet.	No	No	No suitable habitat present in ESL.
<i>Horkelia bolanderi</i>	Bolander's horkelia	FSC; CNPS 1B	Meadows and edges of vernal wet places in lower montane coniferous forest, chaparral, and valley and foothill grasslands (1,480–3,610 feet).	Yes	Yes	One population of this species identified within ESL.
<i>Lasthenia burkei</i>	Burke's goldfields	FE; SE; CNPS 1B	Vernal pools and meadows from 50 to 1,970 feet.	Yes	Yes	Several populations of this species identified in ESL.
<i>Layia septentrionalis</i>	Colusa layia	FSLC; CNPS 1B	Chaparral, cismontane woodland, valley and foothill grassland; scattered colonies in fields and grassy slopes in sandy or serpentine soil (480–3,595 feet). Blooms April–May.	Yes	No	One population of this species identified just outside of ESL. Potential habitat occurs in ESL, but species was not identified in ESL during focused surveys.
<i>Legenere limosa</i>	Legenere	FSC; CNPS 1B	In wet areas and beds of vernal pools (3–2,890 feet).	Yes	No	Species not observed in ESL, but potential habitat present.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Linanthus jepsonii</i>	Jepson's linanthus	FSC; CNPS 1B	Chaparral and cismontane woodland on volcanic soils, from 330 to 1,640 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Lupinus antoninus</i>	Anthony Peak lupine	FSC; CNPS 1B	Upper and lower montane coniferous forest in open areas with surrounding forest; rocky sites (3,970–7,500 feet).	No	No	No suitable habitat present in ESL.
<i>Lupinus sericatus</i>	Cobb Mountain lupine	FSLC; CNPS 1B	Chaparral, cismontane woodland, broadleaved upland forest, and lower montane coniferous forest from 905 to 5,005 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Madia hallii</i>	Hall's madia	FSC; CNPS 1B	Restricted to serpentine soils in chaparral from 1,640 to 2,955 feet.	No	No	No suitable habitat present in ESL.
<i>Micropus amphibolous</i>	Mt. Diablo cottonweed	CNPS 3	Rocky soils in broadleaved upland forest, chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	One population of this species was identified in ESL.
<i>Mielichhoferia elongata</i>	Elongate copper-moss	CNPS 2	Grows on metamorphic rock in vernal moist areas (1,640–4,265 feet).	Yes	Unknown	Suitable habitat present; species could potentially occur in ESL. Focused surveys were not conducted for mosses.
<i>Monardella villosa</i> ssp. <i>globosa</i>	Robust monardella	FSLC; CNPS 1B	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland (330–1,970 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	FSC; CNPS 1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grasslands, lower montane coniferous forest; adobe or alkaline soils (20–3,120 feet). Blooms May–July.	Yes	No	Species not observed in ESL, but potential habitat present.
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Few-flowered navarretia	FE; ST; CNPS 1B	Vernal pools within volcanic ash flow from 1,315 to 3,120 feet.	Yes	Yes	Several populations of few-flowered navarretia were identified in ESL.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-flowered navarretia	FE; SE; CNPS 1B	Vernal pools within volcanic ash flow from 100 to 3,120 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Navarretia myersii</i> ssp. <i>deminuta</i>	Small pincushion navarretia	FSLC; CNPS 1B	Vernal pools on clay soils. Known from only one occurrence in Long Valley.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	FSC; CNPS 1B	Vernal pools in valley and foothill grasslands. Clay soils within nonnative grasslands (65–1,085 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Orcuttia tenuis</i>	Slender orcutt grass	FT; SE; CNPS 1B	Vernal pools, moderate to deep, with few weedy plants (100–5,695 feet).	Yes	No	Species not observed in ESL, but potential habitat present.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Panicum acuminatum</i> var. <i>acuminatum</i> (Jepson) (= <i>Dicanthelium lanuginosum</i> var. <i>thermale</i>)	Geysers dichantherium	SE; CNPS 1B	Closed-cone coniferous forest, riparian forest, valley and foothill grassland on hydrothermally altered soil. Known only from The Geysers geothermal area.	No	No	No suitable habitat present in ESL.
<i>Parvisedum leiocarpum</i>	Lake County stonecrop	FE; SE; CNPS 1B	Cismontane woodland, valley and foothill grassland, and vernal mesic depressions in volcanic outcrops from 1,200 to 2,595 feet.	Yes	Yes	Several populations of Lake County stonecrop were identified in ESL.
<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	CNPS 1B	Usually found on rocky soils in chaparral from 2,300 to 4,265 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Plagiobothrys lithocaryus</i>	Mayacamas popcorn-flower	FSC; CNPS 1A	Chaparral, cismontane woodland, and valley and foothill grassland (1,050–1,480 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Potamogeton zosteriformis</i>	Eel-grass pondweed	CNPS 2	Marshes and swamps (0–6,100 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Quercus douglasii</i> , <i>Quercus lobata</i> , <i>Quercus agrifolia</i>	Blue oak, Valley oak, Coast live oak	Protected by Senate Concurrent Resolution No. 17	Oak woodland, riparian and forest habitats.	Yes	Yes	Species observed throughout the project area.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	Marsh checkerbloom	FSC; CNPS 1B	Meadows and riparian forest on mesic soils, from 3,285 to 7,550 feet.	No	No	ESL out of documented habitat and elevation range.
<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	Socrates Mine jewel-flower	FSC; CNPS 1B	Occurs in serpentine chaparral and closed-cone forests from 1,575 to 3,185 feet.	No	No	No suitable habitat present in ESL.
<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	Freed's jewel-flower	FSC; CNPS 1B	Restricted to chaparral and cismontane woodland on serpentine from 1,610 to 4,005 feet.	No	No	No suitable habitat present in ESL.
<i>Streptanthus breweri</i> var. <i>hesperidis</i>	Green jewel-flower	FSC; CNPS 1B	Openings in chaparral and cismontane woodland on rocky and serpentine soils from 430 to 2,495 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Streptanthus morrisonii</i> ssp. <i>elatus</i>	Three-peaks jewel-flower	FSLC; CNPS 1B	Typically found in chaparral on serpentine from 295 to 2,875 feet.	No	No	No suitable habitat present in ESL.
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>	Kruckeberg's jewel-flower	FSC; CNPS 1B	Restricted to serpentine areas in cismontane woodland from 705 to 3,400 feet.	No	No	No suitable habitat present in ESL.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
<i>Tracyina rostrata</i>	Beaked tracyina	FSC; CNPS 1B	Cismontane woodland, and valley and foothill grassland (295–1,710 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
<i>Zigadenus micranthus</i> var. <i>fontanus</i>	Marsh zigadenus	CNPS 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows, seeps, marshes and swamps, often on serpentine soils (50–3,285 feet).	Yes	Yes	One population of this species observed in ESL.



Appendix I USFWS List of Special-Status Species



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2016-SLI-0576

December 31, 2015

Event Code: 08ESMF00-2016-E-01160

Project Name: Lake 29 Improvement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

<http://ecos.fws.gov/tails/extMod/ipacGetActivity/retrieveDocument.action?pdfFileName=/mnt/secure/webdocs/tails/11420/v3508105.pdf> and <http://ecos.fws.gov/ipac/project/HNWMDU3TXJDWTHBCYZ6K6DLBHE/regulatoryDocuments>

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

The table below outlines lead FWS field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project, and send any documentation regarding your project to that corresponding office. Therefore, the lead FWS field office may not be the office listed above in the letterhead. Please visit our office's website (<http://www.fws.gov/sacramento>) to view a map of office jurisdictions.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO
Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO

El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)

Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO
Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO

San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO

Shasta	Caltrans	By jurisdiction	SFWO/AFWO
Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)
Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
	Shasta Trinity National Forest		

Tehama	except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO
*Office Leads:			
AFWO=Arcata Fish and Wildlife Office			
BDFWO=Bay Delta Fish and Wildlife Office			
KFWO=Klamath Falls Fish and Wildlife Office			
RFWO=Reno Fish and Wildlife Office			
YFWO=Yreka Fish and Wildlife Office			

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Lake 29 Improvement Project

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2016-SLI-0576

Event Code: 08ESMF00-2016-E-01160

Project Type: TRANSPORTATION

Project Name: Lake 29 Improvement Project

Project Description: On State Route 29 between Kelseyville and Lower Lake upgrade an 8 mile stretch of 2-lane highway to a 4-lane expressway.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

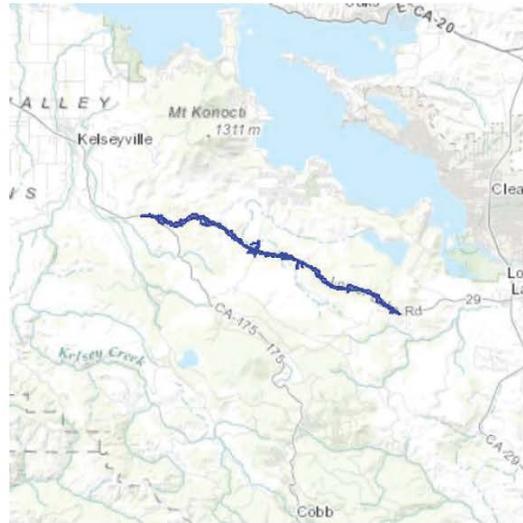
<http://ecos.fws.gov/ipac>, 12/31/2015 09:26 AM



United States Department of Interior
Fish and Wildlife Service

Project name: Lake 29 Improvement Project

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Lake, CA

<http://ecos.fws.gov/ipac>, 12/31/2015 09:26 AM



United States Department of Interior
Fish and Wildlife Service

Project name: Lake 29 Improvement Project

Endangered Species Act Species List

There are a total of 12 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog (<i>Rana draytonii</i>) Population: Entire	Threatened	Final designated	
Birds			
Northern Spotted owl (<i>Strix occidentalis caurina</i>) Population: Entire	Threatened	Final designated	
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>) Population: Western U.S. DPS	Threatened	Proposed	
Crustaceans			
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>) Population: Entire	Endangered	Final designated	
Fishes			
Delta smelt (<i>Hypomesus transpacificus</i>) Population: Entire	Threatened	Final designated	

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steelhead (<i>Oncorhynchus (=salmo) mykiss</i>) Population: Northern California DPS	Threatened	Final designated	
Flowering Plants			
Burke's goldfields (<i>Lasthenia burkei</i>)	Endangered		
Few-Flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=n. <i>pauciflora</i>))	Endangered		
Lake County stonecrop (<i>Parvisedum leiocarpum</i>)	Endangered		
Loch Lomond Coyote thistle (<i>Eryngium constancei</i>)	Endangered		
Many-Flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>)	Endangered		
Slender Orcutt grass (<i>Orcuttia tenuis</i>)	Threatened	Final designated	

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United States Department of Interior
Fish and Wildlife Service

Project name: Lake 29 Improvement Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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Appendix J Avoidance, Minimization, and Mitigation Summary

This appendix is limited to environmental factors included in this Revised Partial Draft EIR/EA; please refer to the original 2007 Draft EIR/EA for avoidance, minimization, and mitigation measures for all other environmental factors.

Avoidance and Minimization Measures

Utilities, Emergency Services, and Community Facilities

No avoidance, minimization, and/or mitigation measures are required.

Visual/Aesthetics

Alternative D would have an effect on the existing visual character of certain locations within the project area. The changes may be perceived by some viewers as adverse; however, the potential impacts would be minimized by the incorporation of the following measures.

- Where the placement of rock slope protection is necessary, suitable native rock material would be used. The use of native rock would improve the visual character of the highway infrastructure and help it blend into the natural viewshed.
- In locations where it is practicable to do so, after evaluating geometric, geotechnical, constructability, and right of way requirements for safety and maintenance needs, large rock outcroppings which are unearthed during construction may be preserved in place in order to restore the diversity seen in the undisturbed and natural landscape. This would be done in consultation with the Caltrans Landscape Division.
- Aesthetic treatments, such as concrete formlining, would be applied to structures, where appropriate, in order to minimize the degree of visual impacts. Surface treatments would reflect the diversity of the surrounding visual environment.
- When practicable, native trees and vegetation that are to remain within and directly adjacent to the project area of direct disturbance would be designated as Environmentally Sensitive Areas (ESAs) and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work, in accordance with

Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.

- Where cut slopes flatter than 1:1 are constructed, the top of the cut would be contour-graded, where practicable, to blend into existing topography.
- To the extent possible, where retaining walls and guardrails are needed, they would be designed to preserve motorists' views of the scenic features throughout the project limits.
- Duff and topsoil containing native seed stock would be removed and stockpiled separately from subsoils when practicable. The duff and topsoil would be used during revegetation efforts upon completion of construction activities where appropriate.
- Aerial utility relocations and improvements would require the placement of wooden and steel poles. In locations where steel poles are required, Corten steel may be used which gives the poles a "weathered" look to help blend into the existing visual environment.
- Larger cut slopes, where practicable as determined by the project Landscape Architect, Engineer, and Geologist, would utilize slope stepping techniques. A series of small steps would be incorporated into the slope as a way of providing areas favorable to vegetation establishment. Vegetation established along these steps will help to soften cut slopes and blend them into the surrounding natural environment.

Cultural Resources

Although the proposed project would not result in adverse effects to cultural resources eligible for listing in the NRHP, the following commitments would be incorporated into the project:

- Consultation with Native American groups would continue throughout the project.
- Known cultural resource sites located adjacent to the ADI would be designated as Environmentally Sensitive Areas (ESA) and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the

designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.

- A monitoring and late discovery plan will be prepared for the proposed project.
 - Caltrans, in consultation with Native American representatives, would develop and implement a monitoring plan for ground disturbing activities during project construction.
 - If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC), which would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact the Caltrans Resident Engineer and cultural staff so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
- A synthesis document will be prepared for all archaeological studies conducted for the proposed project. The document will summarize all cultural sites identified and investigated in conjunction with the project.

Biological Resources

- Natural CommunitiesOak trees protected by SCR No. 17, that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. The exclusion fencing would be installed six feet outside of the dripline of each specimen tree. The fencing is intended to prevent equipment operations in the proximity of protected trees from compacting soil, crushing roots, or colliding with tree trunks or overhanging branches.
- In consideration of SCR No. 17, Caltrans would preserve in perpetuity 32.2 acres of heritage oak woodlands at an off-site location. This would include the provision of funding to a land managing agency or nonprofit organization for the purchase of land which provides habitat similar to that removed by the proposed

project. The priority would be to preserve habitat within one or more of the project's four sub-watersheds. An operation and maintenance plan would be prepared that details how the land manager would operate and maintain the property in the long-term to retain the conservation values of the property. The goal is not to preserve an exact replica of the affected habitat concerning species frequency and density, but to preserve a self-sustaining habitat that would provide ecological functions similar to what was lost as a result of the proposed project.

- Riparian areas that are to remain within and/or directly adjacent to the project area of direct disturbance would also be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Where feasible, trees and vegetation would be trimmed rather than completely removed in an effort to allow the rootstock and seedbank to remain intact.
- Post Construction: New utility pole locations or replacement pole locations (areas within the temporary construction easement but outside of the permanent utility corridor) would be allowed to reseed and re-establish populations through natural succession. Along the fiber optic corridor, cleared areas would also be allowed to reseed and re-establish.
- At all Thurston Creek crossings, large, multi-barreled, natural substrate bottom box culverts would be installed. Box culverts would provide more space for wildlife passage than the existing pipe culverts. The box culverts would be designed to facilitate both aquatic and terrestrial wildlife movement.

Wetlands and Other Waters

- No construction activities would take place within standing or flowing waters. If required, dewatering plans would be approved by the appropriate permitting agencies prior to the commencement of construction activities.
- All wetlands and "other waters" that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work, in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project

activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.

- Riparian areas that are to remain within and directly adjacent to the project area of disturbance would also be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work, in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Potential water quality impacts would be addressed with the avoidance and minimization measures discussed in Section 2.10.4 of the 2007 Draft EIR/EA.

Plant Species

Although the proposed project would not result in considerable impacts to special-status plant species, the following commitments would be incorporated into the project:

- Special-status plant species that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work, in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Additional surveys for special-status plant species would be conducted in areas where access was not granted by private land owners. Similarly, a final attempt to locate Oval-leaved viburnum would be conducted during the plant's flowering period prior to construction. If special-status plants are found in previously un-surveyed areas, Caltrans would further evaluate potential project impacts.
- During utility relocations, directional drilling, rather than other means that may involve clearing special status plants, would be considered and incorporated where feasible if it would result in reduced environmental impacts to special status plant species. At locations where there would only be utility pole removal, shrubs would be trimmed, but the rootstock and seedbank would remain intact.

- Post Construction: At new utility pole locations or replacement pole locations (areas within temporary construction easements but outside of the permanent utility corridor) native plants would be allowed to reseed and re-establish through natural succession. Along the fiber optic corridor, cleared areas would be allowed to reseed and re-establish through natural succession.
- If feasible, the seeds and/or seed bank and top soils within known special status plant locations impacted by the proposed project would be collected prior to construction. Post construction, the topsoil (including the seed bank) would be reapplied on suitable habitat within the Caltrans right-of-way where feasible.
- Known special status plant locations located within Caltrans' right-of-way would be added as environmentally sensitive areas to Caltrans Construction and Maintenance's district maps and databases.

Animal Species

Bat Species

- No work would occur within 500 feet of a known maternity roost between April 15 and September 1.
- No work would occur within 500 feet of an occupied known winter roost site between October 15 and February 28.
- New lights would be downward-facing narrow spectrum lights with low UV content.

Raptor and Migratory Nesting Bird Species

Although the proposed project is not expected to result in a take, nor would the project notably fragment habitat of raptors or migratory nesting bird species, the following commitments would be incorporated into the proposed project:

- Utility poles that are used, or have been used, for purple martin nesting would be relocated between August 1 and February 28, after a qualified biologist confirms that Purple martin are no longer present.
- No work would occur within a 100ft of an active purple martin nest between March 1 and August 1.
- During construction, if migratory or nongame bird nests are discovered that may be adversely affected by construction activities or an injured or killed bird is found, work would stop immediately within a 100-foot radius of the discovery. A qualified biologist would be notified for guidance on how to proceed.

Construction activities would not resume within the specified radius of discovery until authorized.

NWPT

Although the project is not expected to result in a take of NWPT, nor would the project result in a considerable loss of suitable NWPT habitat, the following commitments would be incorporated into the proposed project:

- Environmental awareness training for construction personnel would be conducted prior to the onset of project activities. The training would include instructions on the identification of NWPT and the required procedures if NWPT are found within the project work area. If NWPT are encountered in the work area, construction would be required to stop in the immediate area of the sighting, and a qualified biologist contacted for guidance.
- Prior to the start of construction, a qualified biologist would survey suitable NWPT aquatic and upland habitats, to ensure no NWPT are present. If turtles are observed during surveys, they would be relocated outside of the construction area, to suitable habitat, by a qualified biologist.
- If a NWPT nest is found within the project impact area, CDFW would be contacted and an ESA would be established. Construction-related activities would be prohibited within the NWPT ESA and active nests would be monitored once per week during construction by a qualified biologist.
- At all Thurston Creek crossings, large, multi-barreled, natural substrate bottom box culverts would be installed. Box culverts would provide more space for wildlife passage than the existing pipe culverts. The box culverts would be designed to facilitate both aquatic and terrestrial wildlife movement.
- Water pumps would be screened with wire mesh screens no larger than 0.2 inch to prevent NWPT sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no NWPT, this measure is to ensure that turtles that were missed during the survey are not harmed or killed by water pumps.

Threatened and Endangered Species

General

- A qualified biologist would conduct worker awareness training, regarding all state and federal threatened or endangered species, prior to the start of construction activities. Awareness training would be conducted for all new personnel before

they can participate in construction activities. Awareness training would include the following:

- A brief review of the each species biology, species' potential for presence, and guidelines that must be followed by all construction personnel to avoid take of the listed species.
- Guidelines to prevent attraction of predators (e.g. trash-handling procedures).
- Procedures to be followed if any dead or injured listed species is encountered.

California Red-Legged Frog

Although the project is not anticipated to result in a take of CRLF, substantively change the potential for species reestablishment, or impede habitat connectivity at the project's watershed scale, the following commitments would be incorporated into the project:

- Prior to the start of construction, a qualified biologist would survey the project area within CRLF aquatic habitat. If CRLF (including eggs and tadpoles) are encountered during surveys or at any time during project activities, construction would be postponed in the immediate area and USFWS would be notified immediately to determine how to proceed.
- Water pumps would be screened with wire mesh screens no larger than 0.2 inches to prevent CRLF tadpoles, sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no CRLF, this measure is to ensure that frogs that were missed during the survey are not harmed or killed by water pumps.

Clear Lake Hitch

No avoidance and/or minimization measures are required.

Townsend's Big-eared Bat

- No work would occur within 500 feet of a known maternity roost site between April 15 and September 1.
- No work would occur within 500 feet of an occupied known winter roost site between October 15 and February 28.
- New lights would be downward facing, narrow spectrum lights with low UV content.

Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop, and Vernal Pool Core Areas

- Within or adjacent to areas that are designated vernal pool core areas, work would be restricted to cut/fill lines and the minimum area needed to maneuver construction equipment.
- The existing roadway at Manning Flat would not be removed following completion of Alternative D. The existing roadway currently prevents a large erosional feature from impacting the vernal pools at Manning Flat. Energy dissipater rock would be added to the outlet of an existing culvert where the erosional feature meets SR 29. The culvert would also be routinely inspected and maintained.
- Vegetated buffers between the new expressway and vernal pools would be maintained where feasible.
- Vernal pool core areas within Caltrans' right-of-way would be added as ESAs to Caltrans Construction Maintenance's district maps and databases.
- All vernal pool core areas that are to remain within and adjacent to the proposed project area would be delineated as ESAs and would be temporarily fenced with high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.
- Potential water quality impacts would be addressed with the avoidance and minimization measures discussed in Section 2.10.4 of the original Draft EIR/EA.
- In order to maintain current hydrology and prevent sediment from entering vernal pools, a temporary stormwater treatment system would be constructed downslope of proposed alignment which would include, but not limited to, the creation of temporary sediment basins and installation of temporary weir tanks.
- Post construction, in locations where vernal pool core areas are located adjacent to the new expressway, permanent right-of-way fencing would be installed in order to prevent incidental traffic from entering vernal pool core areas. Permanent right-of-way fencing would be placed with consideration of project design requirements and adjacent private property rights.

Invasive Species

No avoidance, minimization, and/or mitigation measures are required

Summary of Mitigation Measures for Significant Impacts under CEQA

Visual/Aesthetics

A revegetation plan would be prepared by the project landscape architect with consultation from Caltrans environmental staff. The revegetation plan would visually blend cut/fill slopes as well as other areas cleared by construction activities into the surrounding environment and would address the following:

- The revegetation plan would be implemented to compensate for the loss and/or disturbance of vegetation within the project limits. The planting of native trees and shrubs would soften the appearance of earthen embankment and cut slopes in an effort to visually blend the roadway into the surrounding environment.
- Revegetation planting would take place within the existing right of way on cut and fill slopes with a 2:1 ratio and flatter. All planting would be placed outside the highway clear recovery zone.
- Plants selected for revegetation would be native species appropriate for the project area and would not include noxious or invasive weeds.
- Trees and shrubs would be spaced and clustered in such a way as to mimic the surrounding natural environment.
- Planting would take place in the fall and winter following the final construction season or as soon as feasible.
- All revegetation areas would be maintained for three years through a plant establishment period. During this time plants would be provided appropriate care and replacement as to ensure their survivability during the time period. Once the plant establishment period ends, the area would be allowed to naturalize with no further monitoring or success criteria required.

Biological Resources

Natural Communities

To offset impacts to Valley Foothill Riparian (VRI) habitat, Caltrans proposes the on and/or offsite creation, enhancement, and/or preservation of riparian habitat at a 1.5:1 ratio. Therefore, the proposed mitigation would result in the on and/or offsite creation, enhancement, and/or preservation of approximately 3.45 acres of riparian

habitat. With the creation or enhancement option, a limited amount of space may be available and suitable for planting on-site (within Caltrans operating right-of-way). Caltrans would accomplish the balance of the mitigation at an approved off-site location. For the off-site portion, Caltrans would secure land through acquisition or a conservation easement, or work with another state or federal agency to implement a project on other government lands. Caltrans would relinquish the land and long-term management responsibilities to an organization experienced in managing lands. The priority would be to preserve riparian habitat within one or more of the project's four sub-watersheds. If this cannot be accomplished or is not practical, Caltrans would look beyond the sub-watersheds to the greater 8-digit hydrologic unit code (HUC). Off-site creation can also be accomplished through the purchase of riparian mitigation bank credits. The preservation option would preserve existing riparian habitat on and/or offsite similar to the creation and enhancement options. This mitigation would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

A Mitigation Plan would be prepared that would include specific mitigation measures to offset impacts to riparian habitat. The plan would provide specific mitigation details, including approved mitigation sites, plan implementation design drawings, a planting plan which would include a list of species to be planted and planting densities, success criteria, and long term monitoring and management. The goal is not to create an exact replica of the affected riparian habitat considering species frequency and density, but to create a self-sustaining riparian habitat that would provide, once mature, ecological functions (nesting, roosting, rearing, and foraging opportunities) similar or better to what were lost as a result of the proposed project.

Wetlands and Other Waters

Mitigation for the permanent loss of wetlands and "other waters" of the U.S. and the State (under the USACE, RWQCB, and/or CDFW jurisdiction) is proposed to include offsite mitigation through the purchase of mitigation credits at a wetland mitigation bank approved by the USACE. Mitigation banks are a highly effective way of mitigating permanent impacts to wetlands and "other waters" because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. Caltrans would purchase mitigation credits at a 1:1 ratio to ensure there is no net loss to wetlands. If bank credits are not available, Caltrans would contribute money to the USACE- and RWQCB-approved in-lieu fee program. Unlike a mitigation bank, mitigation sponsored by the in-lieu fee

program has not been developed prior to project impacts. Mitigation for impacts to wetlands and “other waters” would take place in phases correlated with the phased construction of the three project segments as discussed in the Chapter 1.

Special Status Animal Species

Bats

- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified biologist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified biologist prior to removal. Trees that are confirmed roosts would not be cut down until the biologist confirms that the roost is no longer occupied by bats

Threatened and Endangered Species

Townsend’s Big Eared Bat

- Preconstruction roosting surveys would be conducted prior to demolition of all buildings. The surveys would be conducted by a qualified bat specialist no more than 30 days prior to demolition. If bat roosts are encountered, demolition would be postponed until bats have been relocated. Relocation efforts would be coordinated with the appropriate regulatory agencies. Maternity roosts would be avoided and bat relocation efforts postponed until the offspring have fledged.
- Suitable roosting trees would be surveyed by a qualified bat specialist prior to removal. Trees that are confirmed roosts would not be cut down until a qualified bat specialist confirms that the roost is no longer occupied by bats.

Burke’s Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop

A flow spreader system would be installed along the proposed expressway adjacent to Manning Flat in order to ensure that all overland flow above the new roadway alignment would be returned to overland flow of equal velocity and volume below the proposed expressway. The flow spreader system would ensure that all land downslope of the new alignment would experience the same surface flow conditions and quantities of flow as currently experienced. Flow spreaders are composed of:

- Rock-lined ditches constructed upslope of the proposed expressway which would collect sheet flow and direct it to sediment retention systems at the inlet of cross culverts.
- Cross culverts that would convey flow beneath the proposed expressway.
- Outlet weirs constructed of concrete that would turn the concentrated flow exiting the cross culverts into sheet flow and evenly spread the flow out across the downslope area.
- Energy dissipater rock placed immediately downslope of each weir paralleling the new roadway that would ensure the sheet flow does not re-concentrate as it leaves the outlet weirs. The energy dissipater rock would also act as an additional measure against velocity or volume increases potentially generated by the additional paved road surface from the proposed expressway. The flow spreader system would be capable of handling all expected flows including a 100-year flood event.
- For the first two winters, Caltrans would inspect the flow spreaders as soon as possible following storm events to ensure the proper function. After the first two winters, the flow spreader system would be inspected annually at a minimum.



Appendix L

Section 4(f) De Minimis Determination and Resources Evaluated Relative to the Requirements of Section 4(f) for the Lake 29 Improvement Project

Regulatory Setting

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer (SHPO) is also needed.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), amended Section 4(f) legislation at 23

USC 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of a Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. The Federal Highway Administration's (FHWA) final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17. Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Section 4(f) Resources with *De Minimis* Impact Determination

Section 4(f) requires consideration of:

- Parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public
- Publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge
- Historic sites of national, state, or local significance, in public or private ownership regardless of whether they are open to the public, who's primary value warrants preservation in place (See 23 U.S.C. § 138(a) and 49 U.S.C. § 303(a))

When private institutions, organizations, or individuals own parks, recreational areas or wildlife and waterfowl refuges, Section 4(f) does not apply, even if such areas are open to the public. In contrast, Section 4(f) applies to all historic sites that are listed, or eligible for inclusion in the National Register of Historic Places (NRHP) at the local, state, or national level of significance regardless of whether or not the historic site is publicly owned or open to the public.

All archaeological and historic sites within the Section 106 Area of Potential Effects (APE) and all public parks, recreational facilities, and wildlife refuges within

approximately one-half mile of the project area have been analyzed to determine whether they are protected Section 4(f) resources and whether the project would “use” the properties. As a result of this analysis, Caltrans determined that no public parks, recreational facilities, or wildlife refuges that could potentially warrant Section 4(f) protection would be “used” by the proposed project. However, implementation of Alternative D would result in a “use” of seven prehistoric sites that warrant Section 4(f) protection as they are assumed eligible for listing in the NRHP for the purposes of the proposed project. See Section 2.8 of the Revised Partial Draft EIR/EA for further discussion of resource eligibility.

4(f) Resources with *De Minimis* Impact Determination

Site	Resource Type
CA-LAK-440	Prehistoric lithic scatter
CA-LAK-765	Prehistoric lithic scatter
CA-LAK-773	Prehistoric lithic scatter
CA-LAK-1969	Prehistoric lithic scatter
CA-LAK-1970	Prehistoric archaeological site
CA-LAK-1972	Prehistoric lithic scatter
CA-LAK-2198	Prehistoric lithic scatter

Description of Use of Section 4(f) Resources

A “use” of a Section 4(f) property is defined under 23 CFR 774.17 in three ways: 1) when land from a Section 4(f) property is permanently incorporated into a transportation facility or project (actual use); 2) when there is a temporary occupancy of Section 4(f) land that is adverse in terms of the statute’s preservation purposes as determined by specified criteria (23 CFR 771.135[p][7]); and 3) when proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (constructive use).

As a result of the proposed project, land from the above listed prehistoric archaeological resources would be permanently incorporated into the transportation facility. The proposed construction activities would result in direct impacts to the portions of these resources located within the Alternative D Area of Direct Impact (ADI). These impacts would result from ground disturbance required to construct the roadway prism (i.e. cuts and fills) and widen and realign the roadway. Impacts would also result from construction of storm water and drainage systems.

De Minimis Impact Determination

A *de minimis* impact is one that, after taking into consideration any measures to minimize harm (such as avoidance, minimization, mitigation or enhancement measures), results in either a Section 106 finding of No Adverse Effect or No Historic Properties Affected on a historic property; or a determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).

The impacts to the portions of these resources located within the ADI as a result of the proposed project are considered *de minimis* as they would not reduce their potential eligibility for listing on the NRHP, resulting in a Section 106 finding of *No Adverse Effect* for the proposed project. The SHPO concurred with the Section 106 finding of *No Adverse Effect* to the seven prehistoric sites that warrant Section 4(f) protection in letters dated March 4, 2008, and August 3, 2015. The 2015 letter included concurrence with the applicability of a *de minimis* impacts determination. Section 2.8 of the Revised Partial Draft EIR/EA provides further discussion regarding resource eligibility and SHPO concurrence.

Public Notice Process

A *de minimis* impact determination requires agency coordination and public involvement as specified in 23 CFR 774.5(b). This regulation has different requirements depending upon the type of Section 4(f) property. For historic sites, the consulting parties identified in accordance with 36 CFR Part 800 must be consulted. The official(s) with jurisdiction, in this case the SHPO, must be informed of the intent to make a *de minimis* impact determination and must concur with a Finding of *No Adverse Effect* or *No Historic Properties Affected* in accordance with 36 CFR Part 800. Compliance with 36 CFR Part 800 satisfies the public involvement and agency coordination requirements for *de minimis* impact findings for historic sites. Caltrans notified the SHPO regarding the intent to make a *de minimis* determination and a Finding of *No Adverse Effect* for the proposed undertaking in a letter dated July 1, 2015. As stated above, the SHPO concurred with these findings in a letter dated August 3, 2015

Avoidance, Minimization, and/or Mitigation Measures

- Known cultural resource sites located adjacent to the ADI would be designated as Environmentally Sensitive Areas (ESA) and would be temporarily fenced with

high visibility fabric fencing throughout all construction activities. ESA fencing would be installed by the contractor as the first order of work; in accordance with Caltrans' standard specifications, the project plans, and with guidance from Caltrans' technical specialist. All project activities would be restricted to the designated work area and all fencing, stakes, and flags would be maintained until completion of project activities.

- A monitoring and late discovery plan will be prepared for the proposed project.
 - Caltrans, in consultation with Native American representatives, would develop and implement a monitoring plan for ground disturbing activities during project construction.
 - If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC), which would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact the Caltrans Resident Engineer and cultural staff so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
- A synthesis document will be prepared for all archaeological studies conducted for the proposed project. The document will summarize all cultural sites identified and investigated in conjunction with the project.

Resources Evaluated Relative to the Requirements of Section 4(f)

This section discusses parks, recreational facilities, wildlife refuges and/or historic resources found within or next to the project area that do not trigger Section 4(f) protection because either: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

One recreational area within the project vicinity and 16 cultural resources within the project's APE were evaluated relative to the requirements of Section 4(f); Caltrans determined that these resources do not trigger the provisions of Section 4(f).

Recreational Areas

The Anderson Marsh State Historic Park, a California State Historic Park and nature reserve is located approximately one-half mile from the project area, between the cities of Lower Lake and Clear Lake, on State Route 53. This recreational area would warrant protection under Section 4(f), however, the provisions of Section 4(f) are not triggered as implementation of the proposed project would not result in a "use" of this property.

Facilities, Functions, and/or Activities Potentially Affected

All public facilities, functions, and activities of the Anderson Marsh State Historic Park would remain fully operational throughout construction and operation of the proposed transportation facility.

Accessibility

No designated access points would be obstructed during project construction and operation. Traffic control as a result of construction activities may result in minor temporary delays for motorist travelling through the project area, however, this delay would be temporary and is considered negligible regarding access to this recreational facility.

Visual

Although the project would modify the visual landscape within the project limits, the project would not result in visual impacts to the Anderson Marsh State Historic Park nor is the project area visible from the park.

Noise

Temporary construction noise from activities such as grading, pavement removal, and structure installation would result from the proposed project. Additionally, the project would increase capacity within the project limits which may result in higher noise levels. However, due to the distance from the project area, the Anderson Marsh State

Historic Park would not be impacted by noise generated from the construction and/or operation of the proposed transportation facility.

Vegetation

Vegetation impacts would be confined to the proposed project footprint, well outside of the Anderson Marsh State Historic Park boundaries.

Wildlife

Impacts to wildlife would also be confined to the proposed project footprint. The project would not impair recreational attributes related to wildlife of the Anderson Marsh State Historic Park.

Air

The proposed project may result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust, sometimes referred to as windblown dust or PM10, would be the primary short-term construction impact which may be generated during excavation, grading and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature.

The proposed project is included in the approved Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) for Lake County and conforms to the state implementation plan for air quality. The proposed project would not substantially affect the protected activities, features, or attributes of the Anderson Marsh State Historic Park.

Water Quality

Implementation of the proposed project would not have a substantial effect on surface water quality, groundwater quality, or beneficial uses of water. Impacts to water quality would be minimized through the implementation of construction site best management practices, and permanent and temporary stormwater design features. The primary surface waters in the project area include Thurston Creek and its tributaries. Thurston Creek flows into Thurston Lake, both contained within a closed watershed. Due to the distance from the proposed project, the protected activities,

features, or attributes of the Anderson Marsh State Historic Park would not be affected.

Conclusion

Land from the Anderson Marsh State Historic Park would not be permanently incorporated into the transportation facility; the project would not result in a temporary occupancy of this recreational area; and no proximity impacts (constructive use) that substantially impair the purpose of this resource would occur. The proposed project would not affect the activities, features, or attributes which qualify this State Historic Park as a Section 4(f) resource. Therefore, the provisions of Section 4(f) would not be triggered.

Cultural Resources

A formal evaluation of cultural resources within the APE identified six built environment resources, seven prehistoric archaeological sites, eight historic-era sites/resources, and one archaeological site with prehistoric and historic components that do not warrant Section 4(f) protection.

The following built environment resources located within the APE were determined ineligible for inclusion on the NRHP, and thus do not trigger the provisions of Section 4(f):

Property	Description
7130 Highway 29	Residence
7703 Highway 29	Residence
7733 Highway 29	Residence
7900 Highway 29	Barn
7909 Highway 29	Residence
8140 Highway 29	Residence

The following archaeological sites located within the APE were determined ineligible for inclusion on the NRHP, and thus do not trigger the provisions of Section 4(f):

Site	Resource Type
Prehistoric Archaeological Sites	
CA-LAK-1555	Prehistoric lithic scatter
CA-LAK-1968	Prehistoric lithic scatter
CA-LAK-1979	Prehistoric lithic scatter
CA-LAK-1985	Prehistoric lithic scatter
CA-LAK-1986	Prehistoric lithic scatter
CA-LAK-2039	Prehistoric lithic scatter
CA-LAK-2040	Prehistoric lithic scatter

Historic-era Sites/Resources	
CA-LAK-1980H	Historic era refuse scatter
CA-LAK-1981H	Historic era refuse scatter
CA-LAK-1982H	Historic era refuse scatter
CA-LAK-1983H	Historic era refuse scatter
CA-LAK-1984H	Historic era refuse scatter and former walnut tree orchard
P-17-002115	Historic era rock wall
P-17-002292	Abandoned road segment
P-17-002307	Abandoned road segment
Archaeological Site with Prehistoric and Historic Components	
CA-Lak-1967/H	Prehistoric lithic scatter & remains of historic homestead

For additional information on historic resources, see Section 2.8 of the Recirculated Partial Draft Environmental Impact Report/Environmental Assessment.



Appendix M SHPO Concurrence

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**



P.O. BOX 942898
SACRAMENTO, CA 94296-0001
(916) 653-8824 Fax: (916) 653-8824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

March 4, 2008

Gregory P. King
Department of Transportation
Division of Environmental Analysis, MS 27
P.O. Box 942874
Sacramento, Ca 94274-0001

RE: Finding of Adverse Effect for the Lak-29 Expressway Project, 01-LAK-29 (P.M.
23.6031.60), FHWA030421A

Dear Mr. King:

Thank you for requesting my comments on the above cited submittal. My staff has reviewed the documentation you provided and I would like to offer the following comments.

You have requested my concurrence in your determination that the above cited undertaking will have an adverse effect on historic properties. Of the twenty-one archeological and historic resources that exist within the area of potential effect for the preferred alternative, only one property (CA-LAK-1970) will be adversely affected by implementation of the proposed undertaking. Two properties (CA-LAK-1555 and -1972) have yet to be fully evaluated. However, you have correctly concluded that pursuant to 36 CFR § 800.5 the undertaking will have an adverse effect on historic properties eligible for the National Register of Historic Places. I concur with your determination and look forward to continuing consultation to resolve the adverse effects to historic properties.

If my staff can be of any further assistance, please contact Dwight Dutschke or Susan Stratton at 916-653-9134.

Sincerely,

A handwritten signature in cursive script that reads "Susan K. Stratton for".

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR., Governor

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**



1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

August 3, 2015

Reply In Reference To: FHWA_2015_0316_001

Jody Brown
Chief, Cultural Studies Office
Department of Transportation
Division of Environmental Analysis, MS27
1120 N Street
P.O. Box 942874
Sacramento, CA 94274-0001

RE: Request for Finding of No Adverse Effect Concurrence on Third Supplemental HPSR for Proposed Lake 29 Expressway Project in Lake County, California

Dear Ms. Brown,

Thank you for continuing consultation regarding the above referenced undertaking in accordance with Section 106 of the National Historic Preservation Act, and its implementing regulations at 36 CFR §800. The California Department of Transportation (Caltrans) has evaluated the significance of identified properties and determined National Register of Historic Places (NRHP) eligibility within the undertaking's Area of Potential Effects (APE), and is requesting my concurrence on their determinations of eligibility and finding of effect for the above referenced undertaking in accordance with 36 CFR §800.4(d)(2).

The undertaking proposes to widen and realign SR-29 in the communities of Lower Lake and Kelseyville in Lake County, California. The proposed improvements would create a 4-lane divided expressway with access control, according to the selected Alternative (Alternative D/the Avoidance Alternative) for the design of the project.

By letter dated March 16, 2015, Caltrans submitted a Third Supplemental HPSR in response to refinement of the preferred alternative design and newly gained access to privately-owned parcels in the alignment. In a letter dated June 10, 2015, I requested additional information regarding the evaluation of historic archaeological sites; disagreed with Caltrans' determination that the portions of sites CA-LAKE-1555, LAK-1970, LAK-1972, and LAK-2198 within the Area of Direct Effects (ADI) for this undertaking do not contribute to the eligibility of the sites; disagreed that the sites are not eligible for listing on the National Register of Historic Places (NRHP); and disagreed with Caltrans' proposal to apply the Section 4(f) exception [23 CFR 774.13(b)]. In response, Caltrans has provided information regarding the evaluation of the historic-era archaeological sites. Additionally, in a telephone meeting on June 24, 2015, Caltrans and Jessica Tudor of my staff agreed that if Caltrans would assume eligibility of CA-LAKE-1555, LAK-1970, LAK-1972, and LAK-2198 for the purposes of this undertaking, no further archaeological testing was required for the undertaking. Additionally, it was agreed that should Caltrans agree to conditions including establishing an Environmentally Sensitive Area (ESA) for the portions of these sites that could be avoided, monitoring, and preparation of a synthesis document of the studies completed for the undertaking thus far, that my office would agree with a finding of No Adverse Effects with conditions. Caltrans has agreed to move forward to the next step of the Section 106 process by assuming that sites CA-LAKE-1555, LAK-1970, LAK-1972, and LAK-2198 are eligible for listing on the NRHP under Criterion D for the purposes of this undertaking, and by agreeing to the conditions as stated above.

Ms. Brown
August 3, 2015

FHWA_2015_0316_001
Page 2 of 2

Additionally, Caltrans has informed my office that they have determined that a *De Minimis* finding is appropriate for this undertaking under Section 4(f). Caltrans is seeking my concurrence with the following:

1. Historic-era archaeological sites CA-LAK-1981H, CA-LAK-1982H, CA-LAK-1983H, and CA-LAK-1984H are not eligible for inclusion on the NRHP under any criteria. I concur.
2. CA-LAKE-1555, LAK-1970, LAK-1972, and LAK-2198 will be assumed eligible for listing on the NRHP under Criterion D. I concur.
3. Caltrans will impose conditions to include: an ESA be established to protect portions of CA-LAKE-1555, LAK-1970, LAK-1972, and LAK-2198 that lie outside of the ADI; a monitoring and late discovery plan will be implemented for these sites; and a synthesis document will be prepared for the archaeological studies conducted for this undertaking. With enforcement of these conditions, Caltrans proposes that a finding of No Adverse Effect is appropriate for this undertaking. I concur.

Thank you for seeking my comments and considering historic properties as part of your undertaking. I look forward to continuing consultation with Caltrans regarding this undertaking. If you require further information, please contact Jessica Tudor of my staff at 916-445-7016 or at jessica.tudor@parks.ca.gov.

Sincerely,



Julianne Polanco
State Historic Preservation Officer

STATE OF CALIFORNIA—STATE TRANSPORTATION AGENCY

EDMUND G. BROWN JR. Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 654-3567
FAX (916) 653-7757
TTY (916) 653-4086



*Serious drought.
Help save water!*

August 17, 2015

Ms. Julianne Polanco
State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, CA 95816

01-LAK-29
K.P. 37.98-50.85
P.M. 23.60-31.60
EA 01-2981U0

Re: Submittal of Finding of No Adverse Effect for the Proposed Lake 29 Expressway Project

Dear Ms. Polanco:

The California Department of Transportation (Caltrans), is continuing consultation with the State Historic Preservation Officer (SHPO) as part of its NEPA assignment of federal responsibilities by the Federal Highway Administration (FHWA), effective October 1, 2012 and pursuant to 23 USC 327.

Caltrans District 03/North Region, is considering alternative designs to improve a 12.87 km (8.00 mile) section of State Route (SR) 29 between the communities of Lower Lake and Kelseyville in Lake County, California. The proposed project would widen and realign the highway to create a 4-lane divided expressway with access control. Caltrans has identified Alternative D (the Avoidance Alternative) as the preferred alternative design for the project. Because Section 106 consultation for this undertaking began in 2003, the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federally-Aided Highway Program in California* (PA) cannot be used for this project. The PA attachments, however, may be used as guidance for non-PA projects, in accordance with the Caltrans Environmental Handbook Volume II.

In a letter dated August 3, 2015, the SHPO concurred with a *No Adverse Effect (FNAE)* in accordance with 36 CFR 800.5(b) with conditions imposed for the undertaking as a whole. This concurrence was based on additional information provided by CSO and Caltrans District 3 our office by telephone and electronic communication. Caltrans promised it would provide a document to further support the *Finding of No Adverse*

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to enhance California's economy and livability"*

August 28, 2015

Page 2 of 2

Effect as discussed in our previous meetings. The current FNAE document affirms Caltrans commitment to fulfill conditions that would be imposed which include:

- Implementation of an Environmentally Sensitive Areas (ESA) Action Plan.
- Preparation of a late discovery and monitoring plan.
- Preparation of a synthesis of archaeological research undertaken to date for the project.

For purposes of clarification correspondence between Caltrans and the SHPO incorrectly included site CA-LAK-1555 among those sites that will be assumed eligible, even though this site was evaluated in its entirety and is completely within the ADI. The correct finding for this individual site only should be *No Historic Properties Affected*.

Please contact me at (916) 654-3567 or by email at kelly.hobbs@dot.ca.gov or Jeff Haney, Associate Environmental Planner (Archaeology), at (530) 741-7114 if you have any questions regarding this document.

Thank you for giving this matter your prompt attention.

Sincerely,



Kelly Hobbs, Chief
Section 106 Coordination Branch
Cultural Studies Office
Caltrans

Enclosure: Finding of No Adverse Effect for the Proposed State Route 29 Expressway Project, Lake County, California

cc: EPro, Caltrans Project Coordinator
CQuiney, Caltrans Senior Environmental Planner
BBrown, THPO, Big Valley Rancheria of Pomo Indians
DBeltran, Chairperson, Koi Nation

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Appendix N USFWS NLAA Concurrence and Correspondence



In Reply Refer to:
08ESMP00-2013-
I-0523-2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846



JUN 30 2015

Mr. Chris Quiney
Environmental Branch Chief, R1
California Department of Transportation, District 2
1657 Riverside Drive
Redding, California 96001

Subject: Informal Consultation on the Lake 29 Expressway Project, Lake County, California
(Caltrans Fed. ID# 01-2981U-LAK-29-PM 23.6-31.6)

Dear Mr. Quiney:

This letter is in response to the California Department of Transportation's (Caltrans) June 10, 2015, request for initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Lake 29 Expressway Project (proposed project) in Lake County, California. Your request, which included the revised June 2015 *Lake 29 Expressway Project – Biological Assessment* (biological assessment), was received by the Service on June 16, 2015. At issue are the proposed project's effects on the federally-listed as endangered Burke's goldfields (*Lasthenia burkei*) (goldfields), few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*) (navarretia), and Lake County stonecrop (*Sedella leiocarpa*) (stonecrop) (collectively, the endangered plants) and the federally-listed as threatened California red-legged frog (*Rana draytoni*) (frog). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action we are consulting on is the widening and relocation of the existing Lake 29 highway by Caltrans and the Federal Highway Administration (FHWA). Caltrans has assumed FHWA's responsibilities under the Act for this consultation in accordance with Section 1313, Surface Transportation Project Delivery Program, of the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012. The MAP-21 is described in the National Environmental Policy Act assignment Memorandum of Understanding between FHWA and Caltrans (effective October 1, 2012) and codified in 23 U.S.C. 327. This response is provided under the authority of the Act, and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Pursuant to 50 CFR §402.12(f), you submitted a biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, but is not likely to adversely affect the goldfields, the navarretia, the stonecrop, and the frog. The proposed project is not within designated or proposed critical habitat for any federally-listed species.

Mr. Chris Quincy

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In considering your request, we based our evaluation of your findings on the following: 1) the March 17, 2014 [sic], letter initiating formal consultation and the enclosed March 2015 *Lake 29 Expressway Project – Biological Assessment*, September 2011 *Special-Status Plants Survey Report for the Lake 29 Expressway Project, Lake County*, and October 2012 *California Red-Legged Frog (Rana draytonii) Protocol Survey Report – Lake 29 Expressway Project*; 2) the April 16, 2015, site visit attended by representatives of the Service and Caltrans; 3) the June 10, 2015, revised letter initiating informal consultation and the enclosed revised June 2015 *Lake 29 Expressway Project – Biological Assessment*; 4) Service File Numbers 1-1-06-1-1219 and 2013-1-0523, which contain previous correspondences between the Service and Caltrans regarding the proposed project; and 5) additional information available to the Service.

Description of the Action

The existing 2-lane Lake 29 highway will be widened into a 4-lane expressway from Post Mile (PM) 23.6, just east of Diener Drive, to PM 31.6, west of the junction with State Route 175, between the communities of Lower Lake and Kelseyville. The current highway does not meet current design standards or projected traffic volumes and exceeds statewide average collision rates. The new expressway will consist of 10-foot paved outer shoulders and 12-foot lanes separated by a 36-foot grass median with 5-foot paved inside shoulders. Construction of the new expressway will involve ground clearing, earthwork, culvert installation, replacement, and removal, and relocation of utilities. The proposed project may be completed in three phases, depending on funding. If phased, the proposed project will be completed in 200 working days over two seasons, 250 working days over two seasons, and 350 working days over three seasons. Unphased, the proposed project is expected to be completed in 620 working days over four construction seasons.

In order to prevent adverse effects to the endangered plants, Caltrans has designed the following specific construction scenarios at the portions of the action area that fall within the Boggs Lake-Clear Lake Vernal Pool Core Area (discussed below):

Manning Flat

The proposed new expressway alignment will be constructed entirely outside of Manning Flat, diverging south from the existing Lake 29 highway, which currently transects the flat. Because Manning Flat consists of highly erodible soil, a system of flow spreaders will be installed along the length of the new expressway in order to maintain the existing overland hydrologic flow (see Figure 1). Flow spreaders are composed of:

- Rock-lined ditches on the upslope of the new expressway that collect sheet flow and direct the water through 18-inch cross-culverts beneath the roadway;
- Sediment retention systems at the inlet of each cross-culvert;
- Outlet weirs that turn the concentrated flow from the culverts into sheet flow, evenly spread across the corresponding section of downslope area; and

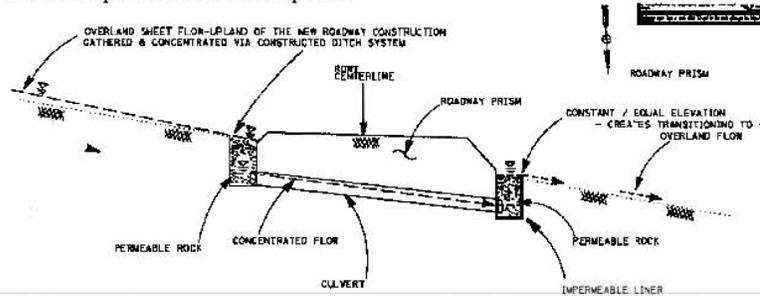
Mr. Chris Quincy

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- Approximately 1-2 feet of rock slope protection (RSP) at the edge of the outlet weirs as additional insurance against velocity or volume increases generated by the paved road surface.

The flow spreader system is expected to be able to handle runoff up to a 100-year flood event. For the first two winters, Caltrans will inspect the flow spreaders as soon as possible following storm events to ensure that the system is working properly. After the first two winters, the flow spreader system will be inspected annually at a minimum. Construction at Manning Flat is expected to be completed within 100 working days in a single construction season.

Figure 1. Conceptual Detail of a Flow Spreader



A large deep-erosional feature bisects Manning Flat, which began when the flat was last drained in 1915. The drainage has headcut into the flat, but is prevented from continuing by the existing Lake 29 highway. In addition, two vernal pools which support the endangered plants (discussed in detail below) back up against the existing highway. Therefore, the pavement of the existing highway will not be removed following completion of the new expressway alignment. Additional RSP will be placed where the headcut meets the existing highway. Culverts beneath the existing highway will be periodically inspected and maintained in working order.

Doten Road Flat

The proposed new expressway alignment generally follows the existing Lake 29 highway alignment at Doten Road Flat. The existing corrugated steel pipe culvert that allows water flow between either side of the existing highway will be replaced with a new drainage system without any changes to location, grade, or water-flow pattern. Construction at Doten Road Flat is expected to be completed within 100 working days in a single construction season.

Hesse Flat

The new expressway alignment closely follows the existing Lake 29 highway alignment in the area of Hesse Flat. Existing culverts will be replaced in their same locations, and water from outside the flat will be directed towards bioswales and permeable soils also outside the flat. Thurston Creek will be maintained at existing water flows. Construction at Hesse Flat is expected to be completed within 250 working days in two construction seasons.

Mr. Chris Quiney

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Conservation Measures

In addition, Caltrans has proposed the following conservation measures in order to prevent adverse effects to the endangered plants and the frog:

- The contractor will clearly delineate the limits of the work area, including Environmentally Sensitive Areas (ESA). No vegetation removal or ground-disturbing activities will occur prior to the delineation of project limits and installation of ESA fencing. The fencing will be installed in accordance with applicable permits, with project plans/specifications, and with guidance from Caltrans' technical specialists. Inspection of the ESA fencing installation will be conducted by the environmental construction liaison to ensure proper placement;
- All project activities will be restricted to the designated work area and all fencing, stakes, and flags will be maintained until the completion of project activities. Within or adjacent to frog aquatic habitat, work will be limited to only that which is necessary to construct the proposed project. Within or adjacent to Manning, Doten Road, and Hesse Flats, work will be restricted to cut/fill lines and the minimum area needed to maneuver construction equipment (approximately 10-12 feet);
- Before any ground-disturbing activities are initiated, the selected contractor will be required by Caltrans' contract specifications to prepare and implement a Stormwater Pollution Projection Plan (SWPPP) that includes erosion control measures and construction waste containment measures to ensure that water features are protected during and after project construction. The SWPPP will describe the best management practices (BMPs) that the contractor intends to use to prevent erosion and sedimentation during and after construction;
- Before any onsite project activities are initiated, the contractor will implement a toxic materials control and spill response plan. Equipment refueling will only occur at staging areas where fuel will not enter floodplains;
- Within 24 hours prior to the onset of ground-disturbance activities, a Service-approved biologist will survey the project area within frog aquatic habitat for all life stages of the frog. If frogs (including eggs and tadpoles) are encountered at any time during project activities, construction activities will cease in the area and the Service will be notified to determine how to proceed;
- A Service-approved biologist will conduct worker environmental awareness training for the construction workers prior to the start of construction activities. Awareness training will be conducted for new personnel before they can participate in construction activities. Awareness training will include a brief review of the biology of the frog and guidelines that must be followed by all construction personnel to avoid take of the frog. The Service-approved biologist will appoint a biological monitor (e.g., the crew foreman) who will be responsible for ensuring that all crewmembers comply with the guidelines;

Mr. Chris Quiney

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- All work on stream banks or within stream channels will be confined to the low-flow/no-flow period, typically May through October;
- Construction-related debris will not be stockpiled in or near aquatic areas and will be managed and removed per Caltrans' standard specifications and associated regulations and permits;
- Water pumps will be screened with wire mesh screens no larger than 0.2 inch to prevent frog tadpoles, sub-adults, and adults from entering the pump system;
- All food-related trash will be disposed of in closed containers and removed from the project area at least twice per week during the construction period to prevent attracting predators to the action area;
- Temporary fills will be removed within 30 days after completion of work at a given location and/or prior to the onset of the rain season. These areas will be returned to their pre-construction contours and treated with erosion control seed mix;
- All weed abatement herbicide applications will be per manufacturer and California Department of Pesticide Regulation standards;
- Post-construction, all disturbed areas will be stabilized and reseeded with a suitable cover crop that will not persist on site. A regionally appropriate California native seed mix will be applied during the first year to provide succession from the erosion control cover crop for the establishment of native plants;
- Post-construction, permanent right-of-way (ROW) fencing will be installed, at minimum, in areas upslope of Manning Flat and downslope of Doten Road and Hesse Road Flats such that incidental traffic is prevented from entering from the Caltrans ROW;
- The Boggs Lake-Clear Lake Vernal Pool Core Area within Caltrans' ROW will be added as ESAs to Caltrans' Construction Maintenance district maps and databases in order to avoid future construction or maintenance-related impacts.

Boggs Lake-Clear Lake Vernal Pool Core Area

The proposed project is located in the Lake-Napa Vernal Pool Region, as described in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005). Core areas within each Vernal Pool Region have been identified. These core areas support high concentrations of vernal pool species, are representative of a given species range, and are where recovery actions are focused. Portions of the proposed project fall within the Boggs Lake-Clear Lake Core Area. The Boggs Lake-Clear Lake Core Area is composed of seven separate areas and was given a Zone 1 ranking in the Recovery Plan due to the presence of several highly restricted species, including the navarretia and the stonecrop.

Manning Flat, Doten Road Flat, and Hesse Flat are each mapped as areas within the Boggs Lake-Clear Lake Core Area, generally following the presence of the Oxalis Variant Silt Loam soil. The

Mr. Chris Quiney

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soil supports Northern Volcanic Ashflow Vernal Pools, which are only found in Lake County. Oxalis Variant Silt Loam is high in silt content, very high in clay content, and is friable, known under certain circumstances to catastrophically erode.

Manning Flat

Manning Flat historically supported a single, large, closed-basin Northern Volcanic Ashflow Vernal Pool, similar to nearby Boggs Lake and Loch Lomond, also parts of the Boggs Lake-Clear Lake Core Area. Manning Flat was drained in the early 1870s and again in 1915. After 1915, a deep-erosional feature began and continues to headcut into the flat. The primary branch of the headcut is currently halted by the existing Lake 29 highway. The flat is now a grassland with 20 vernal pools within the action area for the proposed project. The proposed project was designed to avoid direct effects to all of the vernal pools and maintain the existing hydrology of the flat. There is an existing manmade swale upslope of the vernal pools on the south side of the existing highway and in between the pools and the proposed new expressway alignment. Although the swale likely captures overland flow before it reaches the vernal pools, the proposed project contains additional design features in order to maintain the existing hydrology of Manning Flat (described above).

Doten Road Flat

It is unknown if Doten Road Flat historically resembled a classic Northern Volcanic Ashflow Vernal Pool, but there is evidence that the hydrology has been altered. Thurston Creek likely once swung through the flat, but is now channelized on the opposite side of the existing Lake 29 highway from the flat. The portion of the flat where the creek may have meandered is now a seasonal wetland that exchanges water with a second seasonal wetland on the south side of the existing highway through a culvert. There are 10 vernal pools on Doten Road Flat, one of which appears to have been created or altered. The proposed project was designed to avoid direct effects to all of the vernal pools and maintain the existing hydrology of the flat. In addition, the vernal pools are upslope of both the existing and proposed alignments. The new alignment will remove 0.5 acre of this portion of the Boggs Lake-Clear Lake Vernal Pool Core Area, which represents less than 5% of the Doten Road Flat area and a very small proportion of the total 4,395 acres in the entire core area. The portion that will be removed does not contain habitat for the endangered plants.

Hesse Flat

Although Hesse Flat may have once functioned as a Northern Volcanic Ashflow Vernal Pool, it is currently a stream and wetland complex dominated by emergent freshwater marsh. At this location, Thurston Creek is now a channelized system of ditches that exits the flat through a box culvert beneath the adjacent Soda Bay Road. Some areas along the southern edge of the flat support common vernal pool plant species. Work along Soda Bay Road will remove 0.03 acre of this portion of the Boggs Lake-Clear Lake Vernal Pool Core Area. The portion that will be removed does not contain habitat for the endangered plants.

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*Endangered Plants and California Red-legged Frog*Burke's Goldfields

There are 30 occurrences of the goldfields characterized as extant in the California Natural Diversity Database (CNDDDB), five of which are in Lake County (CNDDDB 2015). Two of these occurrences are Manning Flat (#6) and Doten Road Flat (#39). Caltrans conducted botanical surveys of known locations in 2007 and detected the goldfields at Manning Flat. Botanical surveys of the entire action area plus the full extent of the core area locations at the three flats were conducted by ICF and Sycamore Environmental Consultants in 2011. At Manning Flat, approximately 10,000 plants were detected in vernal pools on the flat, including the two vernal pools that back up against the existing Lake 29 highway. At Doten Road Flat, approximately 5,000 plants were detected in 7 of the 10 vernal pools.

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the goldfields. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the range of the species and the species is known to occur within the action area. Due to the fact that the proposed project was designed to avoid direct impacts to the goldfields and maintain existing hydrology at Manning and Doten Road Flats, the additional monitoring to ensure that the proposed design features function correctly, the small amount (0.5 acre) of impact to the Boggs Lake-Clear Lake Vernal Pool Core Area, and the additional conservation measures proposed by Caltrans, the Service believes that adverse effects to the goldfields are extremely unlikely to occur, and are therefore discountable for the purposes of this consultation.

Few-flowered Navarretia

The navarretia was previously known from only 8 occurrences within a 20-square-mile-area in Lake and Napa Counties (Service 2008), including Manning Flat (CNDDDB occurrence #4) and Hesse Flat (#5). The navarretia was not detected within the action area during the 2007 botanical surveys. During the 2011 botanical surveys, the navarretia was detected in two of the vernal pools on Manning Flat, including one of the vernal pools that backs up against the existing Lake 29 highway. The navarretia was also detected at Doten Road Flat, where it had not previously been observed. The navarretia was not detected at Hesse Flat during either survey. The last known date of detection of the navarretia at Hesse Flat is 1990 (CNDDDB 2015).

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the navarretia. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the range of the species and the species is known to occur within the action area. Due to the fact that the proposed project was designed to avoid direct impacts to the navarretia and maintain existing hydrology at Manning and Doten Road Flats, the additional monitoring to ensure that the proposed design features function correctly, the small amount (0.5 acre) of impact to the Boggs Lake-Clear Lake Vernal Pool Core Area, the negative survey results at Hesse Flat, and the additional conservation measures proposed by Caltrans, the Service believes that adverse effects to the navarretia are extremely unlikely to occur, and are therefore discountable for the purposes of this consultation.

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Lake County Stonecrop

The stonecrop is historically known from only 6 occurrences within a 10-square-mile-area in Lake County (Service 2009), including Manning Flat (CNDDDB occurrence #3) and Doten Road Flat (#4). Two of the occurrences are possibly extirpated. The stonecrop was detected at Manning Flat during both the 2007 and 2011 surveys. The stonecrop was not detected at Doten Road Flat during either survey. The last known date of detection of the stonecrop at Doten Road Flat is 1986 (CNDDDB 2015).

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the stonecrop. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the range of the species and the species is known to occur within the action area. Due to the fact that the proposed project was designed to avoid direct impacts to the stonecrop and maintain existing hydrology at Manning and Doten Road Flats, the additional monitoring to ensure that the proposed design features function correctly, the small amount (0.5 acre) of impact to the Boggs Lake-Clear Lake Vernal Pool Core Area, and the additional conservation measures proposed by Caltrans, the Service believes that adverse effects to the stonecrop are extremely unlikely to occur, and are therefore discountable for the purposes of this consultation.

California Red-legged Frog

The proposed project is located in the North Coast Range Foothills and Western Sacramento River Valley Recovery Unit, as described in the *Recovery Plan for the California Red-legged Frog* (Service 2002). Core areas within each Recovery Unit have been identified. These core areas represent a system of areas that, when protected and managed for the frog, will allow for long-term viability of existing populations and reestablishment of populations within the historic range. The proposed project falls within the Cache-Putah Creek Core Recovery Area in the historic range of the frog, which was identified as important for connectivity between known populations and the potential for reestablishment.

There are no known extant occurrences of the frog within 30 miles of the proposed project area (CNDDDB 2015). There are four historic occurrences of the frog in Lake County collected along State Route 175 between 1945 and 1961, with the closest approximately 6 miles from the proposed project (AmphibiaWeb 2015). In 2012, a protocol-level survey for the frog was conducted by consultants to Caltrans within the action area. Eleven aquatic features were identified as potential habitat for the frog; however, no frogs were detected during the survey. All of the aquatic features supported mosquitofish and 10 were inhabited by bullfrogs. A total of 1.2 acre of suitable aquatic habitat for the frog will be permanently lost due to construction of the proposed project.

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the frog. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the historic range of the species and the species has the potential to occur within the action area. Due to the lack of known extant occurrences of the frog in Lake County, the negative protocol-level survey results, and the additional conservation measures proposed by

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Caltrans, the Service believes that adverse effects to the frog are extremely unlikely to occur, and are therefore discountable for the purposes of this consultation.

Therefore, unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed project, no further action pursuant to the Act is necessary.

If you have questions regarding this response, please contact Lily Douglas, Fish and Wildlife Biologist (lily_douglas@fws.gov) at the letterhead address, (916) 414-6600, or by e-mail.

Sincerely,



Kellie J. Berry
Chief, Sacramento Valley Division

cc:

Ms. Nancy Arcady Haley, U.S. Army Corps of Engineers, Sacramento, CA

Mr. Juan Lopez Torres, California Department of Fish and Wildlife, Rancho Cordova, CA

Mr. Chris Quiney

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- AmphibiaWeb. 2015. University of California. Berkeley, California. <http://amphibiaweb.org/>. Accessed 19 June 2015.
- California Natural Diversity Database (CNDDDB). 2015. Biogeographic Data Branch, Department of Fish and Wildlife. Sacramento, California. Accessed 18 June 2015.
- U.S. Fish and Wildlife Service (Service). 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Region 1, Portland, Oregon. viii + 173 pp.
- _____. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxii + 574 pp.
- _____. 2008. Few-flowered Navarretia (*Navarretia leucocephala* ssp. *pauciflora*) 5-Year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. June 2008. 21 pp.
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Supporting documentation for all California Environmental Quality Act (CEQA) checklist determinations is provided in Chapters 2 and 3 of the original Draft Environmental Impact Report/Environmental Assessment (EIR/EA) and this Revised Partial Draft EIR/EA. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2 in the original Draft EIR/EA. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapters 2 and 3 of the original Draft EIR/EA and the Revised Partial Draft EIR/EA.

CEQA Environmental Checklist

01-Lake-29	23.8/31.6	2981U
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IV. BIOLOGICAL RESOURCES: Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. GREENHOUSE GAS EMISSIONS: Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) 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 it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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 which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) 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 flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XI. MINERAL RESOURCES: Would the project:				
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

XIV. PUBLIC SERVICES:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>