Lake 29 Improvement Project

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

Final 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.

November 2016

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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

STATE ROUTE 29
LAKE 29 IMPROVEMENT PROJECT

The California Department of Transportation (Caltrans) has determined that Alternative D will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. The EA provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA.

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.

11/23/16
Date

TIMOTHY CRAGGS
Caltrans Acting District Director, District 1
California Department of Transportation

SCH#: 2003022011
01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090

Widen and improve State Route (SR) 29 from 0.2 miles (0.1 KM) South of Diener Drive to 0.6 miles (0.9 KM) North of the SR 175 Intersection in Lake County, California

FINAL 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, California Department of Fish and Wildlife

Trustee Agencies: California Department of Fish and Wildlife

11/23/16
Date of Approval

TIMOTHY CRAGGS
Acting District Director, District 1
California Department of Transportation

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Summary

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 in a rural area of Lake County between the communities of Lower Lake and Kelseyville and is approximately 8.0 miles in length. The project would begin near Diener Drive at PM 23.6 and end just west[1] of the SR 29/175 intersection at PM 31.6. 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. Right of way would be acquired and 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 to be significant under NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

[1] 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.

A Draft EIR/EA was prepared for the Lake 29 Improvement Project and was circulated for public review[2] and comment from July 10, 2007 through August 27, 2007. Following circulation of the Draft EIR/EA, 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. In response to comments received during the public review period additional environmental studies were conducted. The additional studies resulted in significant new information, and Caltrans 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. The Revised Partial Draft EIR/EA was circulated from May 24 through July 7, 2016. Comments were received on both the Draft EIR/EA and the Revised Partial Draft EIR/EA. The comments and a Caltrans response to each comment are included in Section 4.5 of this Final EIR/EA. This Final EIR/EA also includes the identification of Alternative D as the preferred alternative. If the decision is made to approve the project, a Notice of Determination (NOD) will be published for compliance with CEQA, and a Finding of No Significant Impact (FONSI) will be issued in 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.1 Purpose and Need

The growth in both population and through traffic in Lake County has created the need for increased capacity along SR 29. This corridor serves the local communities of Lakeport, Kelseyville, Lower Lake, and Middletown, as well as automobile and commercial truck traffic traveling between United States Highway 101 (US 101) and Interstate 5 (I-5). The current highway is a rural two-lane road that lacks the capacity to safely and effectively accommodate anticipated traffic growth. By expanding the section of highway to four lanes with controlled access, capacity would be increased and highway safety would be significantly improved. In addition, the new expressway would assist in achieving the long-range plan to divert traffic from communities on the northern end of Clear Lake, where pedestrian and nonmotorized traffic safety have been an ongoing concern. The proposed project would accommodate local and state transportation planning goals as set forth in the Lake County/City Area Planning Council's 2010 *Lake County Regional Transportation Plan* (RTP)[3] and the Caltrans 2015 *Interregional Transportation Strategic Plan* (ITSP).

S.2 Project Description

Four potential "build" alternatives (Alternatives C1, C2, C3, & D) were evaluated in the Draft EIR/EA, plus a no build alternative. Following circulation of the Draft

[2] See Section 4.5 for a detailed discussion of the public review process.

[3] See Chapter 7, *References*, for full citations of all reports and documents referred to in this document. When available, World Wide Web addresses are also provided in Chapter 7. Free access to the World Wide Web is available at many libraries, including all branches of the Lake County Library.

EIR/EA, Alternatives C1, C2, and C3 were eliminated based on their potential to result in substantial unavoidable impacts to sensitive environmental resources. This decision was addressed in the Revised Partial Draft EIR/EA and is discussed further in Section 1.5.1 of this Final EIR/EA. 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 relative to the proposed project.

Alternative D—Build Alternative

Alternative D proposes to widen SR 29 from a two-lane conventional undivided highway to a four-lane divided expressway with access control. This alternative would be approximately 8.0 miles in length and would begin near Diener Drive at PM 23.6 and end just west of the SR 29/175 intersection at PM 31.6. Alternative D, developed as the Avoidance Alternative, would realign SR 29 to run both north and south of the existing centerline in order to avoid sensitive environmental resources. This includes the realignment of SR 29 of approximately 200 ft. to 465 ft. to the south of the vernal pools at Manning Flat in order to avoid direct impacts to three state and federally endangered plant species. Alternative D 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.

The typical cross section would consist of two 12-foot lanes in each direction with 10-foot paved outside shoulders. A 46-foot median, which would include five foot paved inside shoulders and a 36 foot grassy area, would separate the traveled lanes. This median width was chosen to provide adequate room for acceleration/deceleration lanes, maintenance activities, and to improve safety.

Access control would be established along the proposed alignment by removing the existing direct connections to SR 29 and constructing a series of frontage roads that would provide access to the residences, businesses, and parcels currently being served by SR 29. The frontage roads would connect to the Alternative D alignment at nine newly constructed at-grade intersections. These intersections would be non-signalized and would use standard left-turn, acceleration, and deceleration lanes. The newly constructed frontage roads would also connect to the three existing at-grade intersections of SR 29 with SR 175, SR 281/Red Hills Road, and Diener Drive. These intersections would be redesigned for increased capacity and safety.

Alternative D also includes utility relocation, acquisition of right of way, upgrade and installation of drainage and storm water control systems, installation of permanent and temporary access roads, traffic control during construction, offsite disposal of excess earthen material, and the relinquishment of portions of the existing alignment that would serve as frontage roads to Lake County. Additionally, two wildlife under-crossings would be installed to improve wildlife movement in the area and to reduce potential incidents involving wildlife and vehicles.

Alternative D is identified as the preferred alternative by the Project Development Team (PDT) as it would meet the project purpose and need while minimizing impacts to environmental resources.

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 mitigation measures is provided in Chapter 2.

S.4 Areas of Potential Controversy

CEQA Guidelines (Section 15123) and NEPA Regulations (40 Code of Federal Regulations [CFR] 1502.12) require the Summary to identify areas of controversy known to the lead agency including issues raised by other agencies and the public.

S.4.1 Community Impacts

Alternative D would require both residential and business displacements/relocations. Community impacts, including displacements/relocations, are discussed in Section 2.4.

S.4.2 Noise

Residents within the project area have expressed concern about potential increased noise levels. Potential noise impacts are discussed in Section 2.14.

S.4.3 Endangered Plants

Burke's goldfields (*Lasthenia burkei*) is a federal and state listed endangered species and a California Native Plant Society (CNPS) List 1B species. Several populations of Burke's goldfields were identified within the project area.

Lake County stonecrop (*Parvisedum leiocarpum*) is an annual herb that is a federal and state listed endangered species and a CNPS List 1B species. Several populations of Lake County stonecrop were identified within the project area.

Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*) is federally listed as endangered, state listed as threatened, and is a CNPS List 1B species. Several populations of few-flowered navarretia were found within the project area.

Caltrans has, to date, made substantial efforts to avoid potential direct and/or indirect effects to these plant species. See Section 2.19 for information regarding these endangered plants.

S.4.4 Wetlands and Other Waters of the U.S.

Within the Environmental Study Limits (ESL) for this project, wetland types include freshwater marsh, seasonal wetland, and vernal pool. Alternative D would result in impacts to wetlands. Potential impacts to wetlands and other waters of the U.S. are discussed in Section 2.16.

S.5 Permits and Approvals Needed

The following permits or approvals must be issued before construction can commence:

- U.S. Army Corps of Engineers (USACE) Section 404 Nationwide Permit under the Federal Clean Water Act
- Regional Water Quality Control Board (RWQCB) Section 401 Certification
- Porter-Cologne Water Quality Control Act Waste Discharge Requirements (WDR) issued by the RWQCB
- California Department of Fish and Wildlife (CDFW) 1602 Streambed Alteration Agreement
- U.S. Fish and Wildlife Service (USFWS) consultation under Section 7 of the Federal Endangered Species Act
- Formal concurrence from the State Historic Preservation Officer (SHPO) with Caltrans findings in regard to cultural resources
- Lake County Air Quality Management District permits (National Emission Standards for Hazardous Air Pollutants [NESHAP]) required for structures demolition.
- National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit
- Statewide Construction General Permit

Table S-1 Summary of 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	Alternative D		
Land Use (2.1)		None	401 acres of new right of way acquisition	None	None
Growth (2.2)		Continued residential and commercial development mainly concentrated within the designated Community Growth Boundaries	Limited potential to induce growth	None	None
Farmlands & Timberlands (2.3)	Farmland (acres)	0	401 acres	None	None
	Williamson Act Farmlands	0	0	None	None
Community Impacts (2.4)	Business displacements	0	3 commercial acquisitions	Fair market value acquisition, relocation assistance	None
	Housing displacements	0	5 residential acquisitions	Fair market value acquisition, relocation assistance	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	Alternative D		
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
Traffic and Transportation (2.6)	Highway LOS expected to deteriorate to E by the year 2041	Improved level of service, volume/capacity ratio, and safety	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 or the California Register of Historical Resources	None	ESA Action Plan, Monitoring and late discovery plan, Archaeological studies synthesis document

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	Alternative D		
Hydrology and Floodplains (2.9)	None	Temporary channel obstructions during construction, roadway construction within 100-year floodplain	None	None
Water Quality and Storm Water Runoff (2.10)	None	Impacts from operation of roadway; short term impacts from construction of roadway; Increased storm water runoff due to the increase in impervious surface	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 active 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	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 and creation of heritage 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	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	Alternative D		
Plant and Animal Species (2.17, 2.18)	None	Impacts to poor quality Northwestern pond turtle habitat; 6 special-status plant species; three 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, work windows
Threatened and Endangered Species (2.19)	None	*May affect, not likely to adversely affect* Burke's goldfields, Few-flowered navarretia, and Lake Co. stonecrop; Impacts to potential habitat for California red-legged frog	None	Fencing and avoidance of ESAs, Preconstruction survey for California red-legged frog, Installation of level spreader to maintain existing hydrology conditions in vicinity of vernal pools
Invasive Species (2.20)	None	None	Standard specifications to avoid the spread of invasive species	None
Cumulative Impacts (2.21)	None	None	None	None

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List of Abbreviated Terms

AB	Assembly Bill
ACS	American Community Survey
ADI	Area of Direct Impact
APC	(Lake County/City) Area Planning Council
APE	Area of Potential Effects
Basin Plan	Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (RWQCB 1998)
BMP	Best management practice
Cal/OSHA	California Occupational Safety and Health Administration
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDC	California Department of Conservation
CDCR	California Department of Corrections and Rehabilitation
CDF	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CEQ	Council for Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CNPS	California Native Plant Society
CO	Carbon monoxide
CTC	California Transportation Commission
CWA	Clean Water Act
dBA	A-weighted decibel
Dbh	Diameter at breast height
DRIR	Draft Relocation Impact Report
DWR	California Department of Water Resources
EA	Environmental Assessment

EIR	Environmental Impact Report
EIR/EA	Environmental Impact Report/Environmental Assessment
EIS	Environmental Impact Statement
ESA	Environmentally Sensitive Area
ESL	Environmental Study Limits
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FSC	Federal Species of Concern
FSLC	Federal Species of Local Concern
g	Gravity
GHG	Greenhouse gas
GIS	geographic information system
I-5	Interstate 5
IPCC	(United Nations and World Meteorological Organization) Intergovernmental Panel on Climate Change
IRIS	(United States Environmental Protection Agency) Integrated Risk Information System
IRP	Wine Country Interregional Partnership
ISA	Initial Site Assessment
ITSP	Interregional Transportation Strategic Plan (Caltrans 1998)
LEDPA	Least Environmentally Damaging Practicable Alternative
$L_{eq}(h)$	The noisiest hour expressed as the energy-average of the A-weighted noise level occurring during a one-hour period
LOS	Level of service
MCE	Maximum credible earthquake
MLD	Most likely descendant
MOU	Memorandum of Understanding
mph	Miles per hour
MSAT	Mobile source air toxic
MVM	Million vehicle miles
M_w	Moment magnitude
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NATA	National Air Toxics Assessment
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NEPA/404	National Environmental Policy Act/Clean Water Act Section 404
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen dioxide
NOA	Naturally occurring asbestos
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service (formerly the SCS)
NRHP	National Register of Historic Places
O_3	Ozone
PA	Programmatic Agreement
PCB	Polychlorinated biphenyl

PDT	Project Development Team
PG&E	Pacific Gas and Electric Company
PM	Post Mile
PRC	California Public Resources Code
PSR	Project Study Report
RTP	Regional Transportation Plan
RACM	Regulated Asbestos Containing Materials
RWQCB	Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SCS	Soil Conservation Service (now the Natural Resources Conservation Service)
SHPO	State Historic Preservation Officer
SHPSR	Supplemental Historic Property Survey Report
SO_2	Sulfur dioxide
SPCA	Society for the Prevention of Cruelty to Animals
SR	State Route
STIP	State Transportation Improvement Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TeNS	Technical Noise Supplement (Caltrans 1998b)
TNAP	Traffic Noise Analysis Protocol (Caltrans 1998a)
US 101	United States Highway 101
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
V/C	Volume to capacity
V:H	Vertical to horizontal
VMT	Vehicle Miles of Travel

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 1.2-1 and Figure 1.4-1), in order to improve east-west 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. 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 in phases (segments). 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 (Segment 2C), then the segment from PM 26.1 to 29.1 (Segment 2B), and lastly the segment from PM 23.6 to 26.9 (Segment 2A). Construction funding is currently only available for Segment 2C.

This project is programmed in the 2016 State Transportation Improvement Program (STIP). Funding in the 2016 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 2016 State Highway Operation and Protection Program (SHOPP). Funding in the 2016 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).

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.[4] 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).

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.

[4] "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.

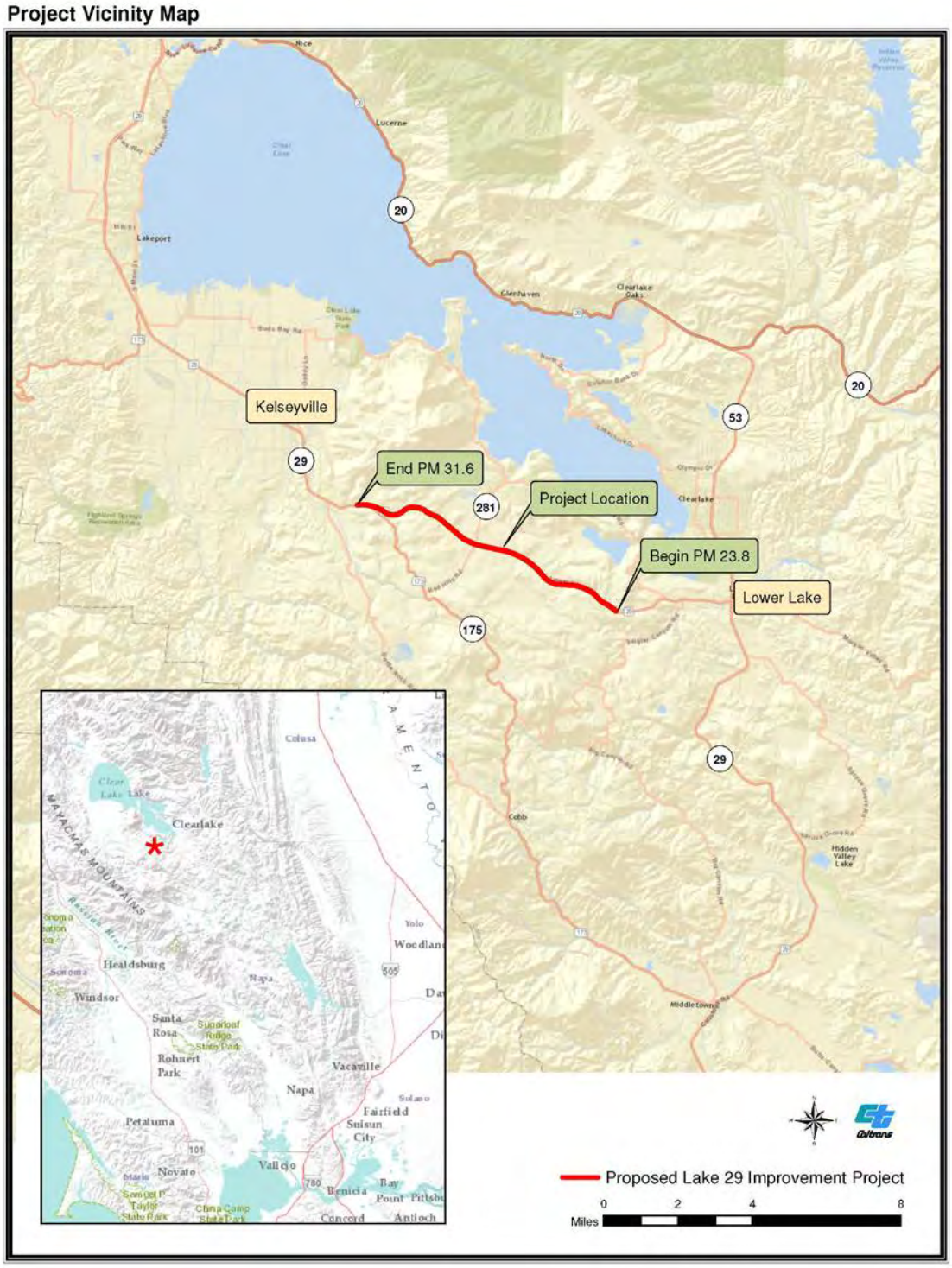


Figure 1.2-1 Project Vicinity Map

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 alternatives[5] 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 of a joint Environmental Impact Report/Environmental Assessment (EIR/EA) 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 EIR 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

[5] 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, 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.

Environmental Protection Agency (USEPA), and USFWS. Although not a Signatory Agency, CDFW had been invited to participate in the NEPA/404 process for this 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.

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 interested parties of the current status of the project. 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.

A Draft Environmental Impact Report/Environmental Assessment (EIR/EA) was prepared and 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. In response to comments received during the public review period additional environmental studies were conducted. The additional studies resulted in significant new information, and Caltrans 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. The Revised Partial Draft EIR/EA was circulated from May 24 through July 7, 2016. During this public review period another public hearing was held. Section 4.5 provides additional information on public participation.

This Final EIR/EA represents the current status of the proposed project. Alternative D has been selected as the preferred alternative as it meets the project purpose and need while avoiding and minimizing impacts to environmental resources (see Section 1.5).

1.3 Purpose and Need

1.3.1 Project Purpose

The purpose of this project is to:

- Facilitate the efficient flow of goods and service through Lake County.
- Provide a modern transportation facility that will provide adequate capacity to accommodate anticipated traffic growth.
- Provide a facility with the potential for diverting through traffic (including through truck traffic) from north shore SR 20.
- Accommodate local planning goals as set forth in the 2010 Lake County RTP.
- Help achieve the goals of the Caltrans 2015 *Interregional Transportation Strategic Plan* (ITSP).
- Improve the safety and operation of SR 29.

1.3.2 Project Need

The need to provide a safe, reliable and modern transportation facility along SR 29 has been long recognized. SR 29 is a Federal Aid Primary Route that together with SR 20 and SR 53 (around the south shore of Clear Lake) forms the Lake County portion of the SR 20 Principal Arterial Corridor from U.S. Highway 101 (US 101) to Interstate 5 (I-5). In 1988 the Lake County/City Area Planning Council (APC) and Caltrans joined in a cooperative effort to determine appropriate Route Concepts for state highway routes in Lake County and to establish highway development priorities. The Route Concept selected for this Principal Arterial Corridor was a four-lane freeway/expressway with a “C” concept level of service (LOS)[6].

[6] 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.

The development of basic industries in Lake County has been impeded by the difficulty of transporting goods in and out of the county. The *2010 Lake County RTP* goal for the State Highway System is to "Provide a safe, well-maintained and efficient State highway network that addresses regional and statewide mobility needs for people, goods and services." Policies the Lake County APC will use to achieve this goal include:

- Implement projects and strategies to encourage trucks and inter-regional traffic to use the Principle Arterial Corridor (includes portions of SR 20, 29, and all of 53) for travel through Lake County.
- Encourage improvements to State Routes 20 (where applicable), 53, and 29, that facilitate safe and efficient truck traffic.

While the 1998 ITSP objectives focus is on connecting all urban, urbanizing, and high-growth areas to the trunk system at expressway or freeway standards, the objectives of the 2015 ITSP focus on improving the interregional movement of people and freight in a safe and sustainable manner that supports the economy. The 2015 ITSP identifies 11 Strategic Interregional Corridors. These corridors are typically characterized by high volumes of freight movement and significant recreational tourism. These corridors have been identified as the most significant interregional travel corridors in California.

This project, as proposed by Caltrans and FHWA, would widen SR 29 to a four-lane divided expressway with access control. The project is approximately 8 miles in total length and is located between the communities of Lower Lake and Kelseyville.

The locations and concepts for the termini of this project are logical. The proposed project would start at the top of the Glasgow Grade (Diener Drive), about 3.3 miles west of the community of Lower Lake. The top of the Glasgow Grade marks the end of two lanes heading in the northbound direction, and congestion increases with this loss of the second lane. For southbound traffic, the 4-mile transition length between the SR 29/281/Red Hills Road intersection and Diener Drive would provide traffic a sufficient distance to disperse, allowing for an even flow of vehicles from the improved facility headed downhill to the unimproved facility east of Diener Drive. The proposed project would end just west of the SR 29/SR 175 intersection, which would address the "directional split" encountered at this location with traffic volumes increasing in the southbound direction caused by traffic turning onto southbound SR

29 from SR 175. This end point would also allow for the realignment of the SR 29/SR 175 intersection to meet current standards.

Lake County has experienced rapid growth in both population and vehicular travel in the last 20 years, and traffic forecasts indicate vehicular volumes on this section of SR 29 are expected to increase approximately 60 percent over the next 30 years. Currently, SR 29 within the project limits operates at LOS D or E. If no capacity-increasing improvements are made, there would be increased delay in the corridor. Additionally, the SR 29/281/Red Hills Road intersection, a high volume location in the corridor, currently operates at LOS C and is expected to drop to LOS D in 28 years with the No Build Alternative. Implementation of the proposed project with improvements to turning movements at the SR 29/281/Red Hills Road intersection would improve the LOS and decrease traffic queuing and delays in the corridor.

The proposed project is expected to significantly improve overall safety to motorists by providing a modern four-lane facility that meets current design standards. Improvements to the horizontal and vertical alignment, addition of lanes that would create safer passing opportunities, removal of fixed objects, widening of shoulders, and the addition of a 46-foot median would provide safety benefits to motorists in terms of increased sight distance, enhanced recovery areas, separation of traffic, and minimized exposure to fixed objects. Additionally, the proposed project is expected to improve overall safety for bicyclists; providing widened shoulders that bicyclists can use, thus reducing modal conflicts.

A collision analysis in the project area between April 1, 2007, and March 31, 2012, showed 137 collisions, 68 of which resulted in injuries and seven of which were fatal. The collision rate for the mainline section of SR 29 overall is 1.08 collisions per million vehicle miles (MVM) traveled versus the statewide average collision rate of 1.10 per MVM. An analysis conducted for the portion of SR 29 between PM 27.9 and PM 31.6, however, revealed that this segment has an actual collision rate of 1.45 collisions for every MVM traveled, which is 1.4 times the statewide average collision rate for similar roadway facilities. The fatal collision rate for this segment is 0.085 collisions per MVM which is 3.5 times greater than the statewide average rate of 0.023 collisions per MVM. Because this project would be built to the most current design standards, it is reasonable to assume that the collision rate would be at or below the statewide average, and that the collision rate would be reduced by almost 60 percent.

Finally, upgrading SR 29 to a four-lane expressway would potentially divert interregional traffic (including trucks) from the "Main Street" communities along the north shore (including Nice, Lucerne, Glenhaven, and Clearlake Oaks), where the safety of pedestrians and non-motorized traffic as well as traffic noise have been ongoing concerns. This 23-mile segment of SR 20 as of 2007 was designated a Pedestrian Safety Corridor as a result of a collaborative effort between Caltrans, the California Highway Patrol (CHP), and local businesses and residents. Ultimately, it is envisioned that through-traffic (including truck traffic) between US 101 and I-5 will use the SR 20 Principal Arterial Corridor (including this segment of SR 29) around the south shore of Clear Lake.

1.4 Project Description

This section describes the proposed project and the design alternative that was developed by a multidisciplinary team to achieve the project purpose and need 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. Logical termini and independent utility were considered during the development of alternatives in order to ensure a meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they were fully evaluated.

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. This alternative would be approximately 8.0 miles long and would begin near Diener Drive at PM 23.6 and end just west of the SR 29/175 intersection at PM 31.6. Due to funding constraints, the project would be constructed in phases over an indefinite timeframe. 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.

Alternative D would realign SR 29 to run both north and south of the existing centerline (Figure 1.4-1) while utilizing as much of the existing alignment as possible. This alternative was specifically designed to avoid sensitive environmental resources including the realignment of SR 29 of approximately 200 ft. to 465 ft. to the south of the vernal pools at Manning Flat in order to avoid direct impacts to three state and federally endangered plant species. Alternative D was also designed 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. Retaining walls would be constructed in two locations on the north side of the new expressway. Two 12 ft. by 12 ft. wildlife under-crossings would be installed to improve wildlife movement in the area and to reduce potential incidents involving wildlife and vehicles. 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 would consist of two 12-foot lanes in each direction with 10-foot paved outside shoulders. A 46-foot median, which would include five foot paved inside shoulders and a 36 foot grassy area, would separate the traveled lanes. This median width was chosen to provide adequate room for acceleration/deceleration lanes, maintenance activities, and to improve safety. The 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 the proposed alignment by removing the existing 64 direct road connections (which serve 54 parcels) to SR 29 within the project limits and constructing a series of frontage roads that would provide access to the residences, businesses, and parcels currently being served. 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. Some loss of access 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

intervals, 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.[7]

Right of Way

Right of way acquisition would be required and utilities would need to be relocated. Alternative D would require the acquisition of approximately 329 acres of land, as well as approximately 72 acres of land for the proposed utility corridor. Right of way would be acquired commensurate with the segment in construction and the corresponding right of way needs. See Figure 1.4-1 for the proposed right of way limits.

Storm Water and Drainage Features

Alternative D would incorporate typical storm water control features. Roadside drainage ditches and brow ditches[8] would be used in conjunction with attenuation basins to control storm water runoff and reduce potential water quality impacts. Where feasible, cut and fill slopes would be revegetated. Tall cut slopes, constructed as part of Alternative D, would receive benching treatments to assist in slope stability and to enhance slope revegetation. 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. Alternative D would also provide storm water drainage in the roadway median where necessary, with a grassy median and lateral ditch drainage feature.

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

[7] 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.

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

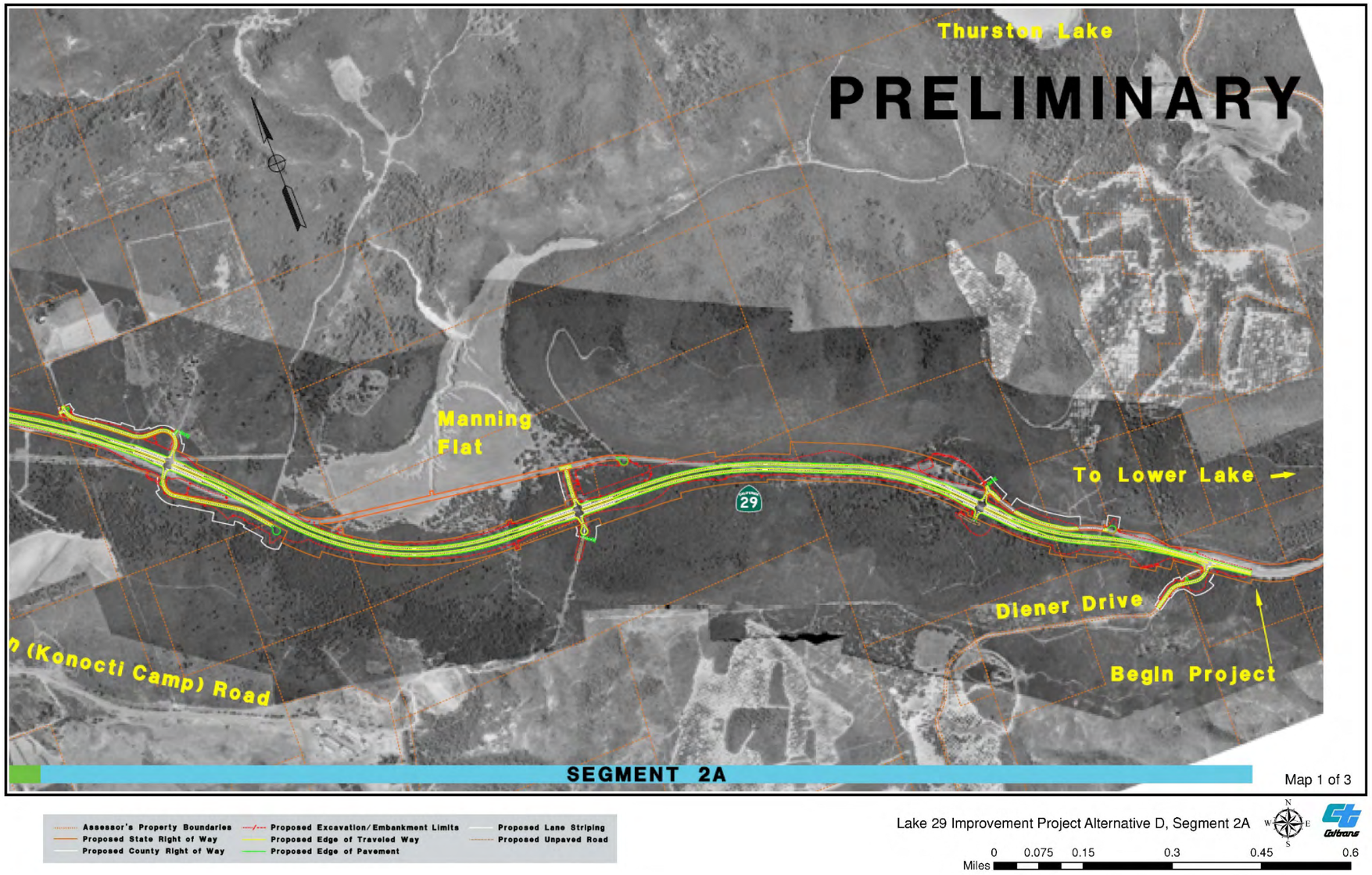


Figure 1.4-1a Project Vicinity Map

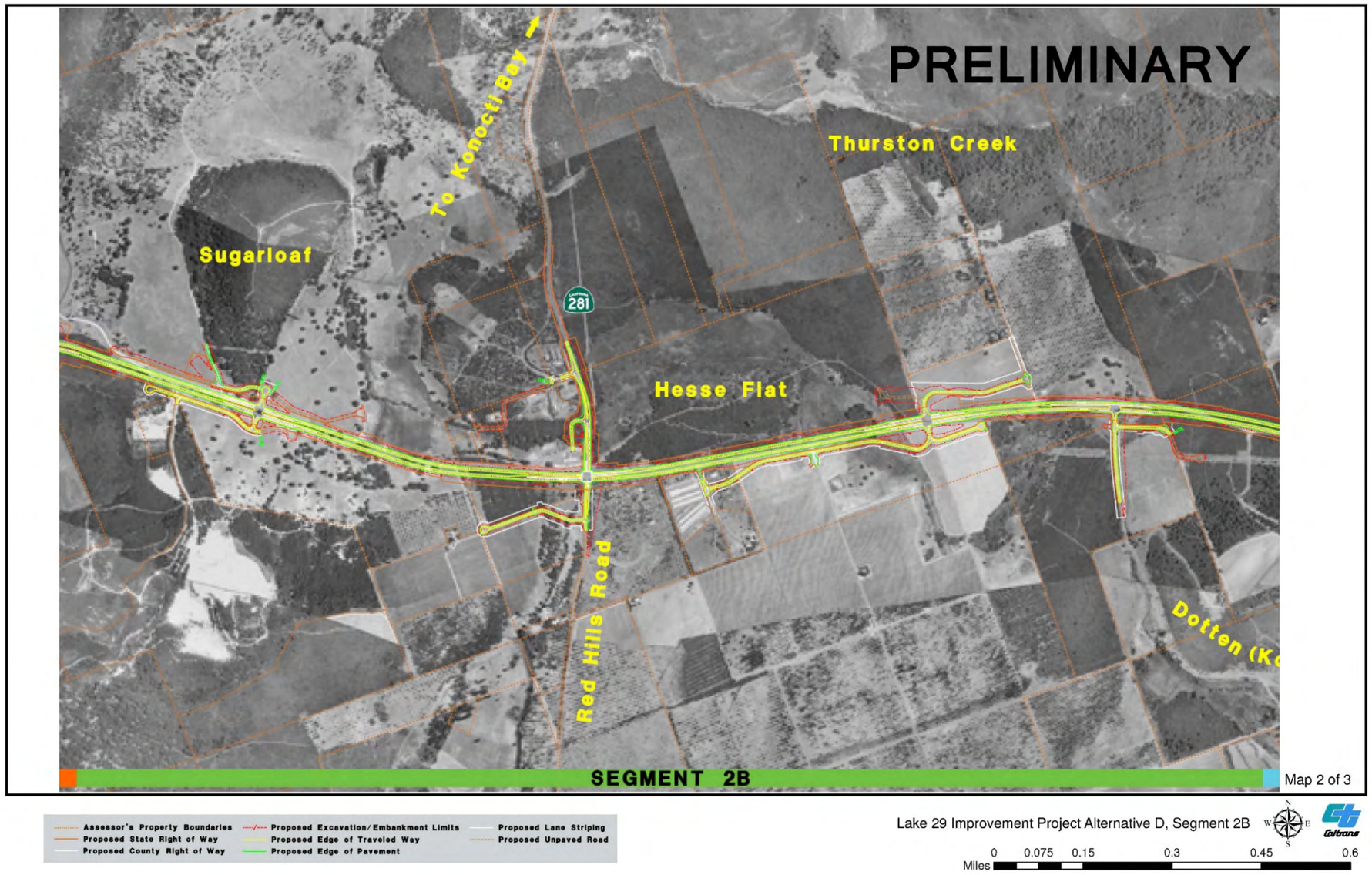


Figure 1.4-1b Project Vicinity Map

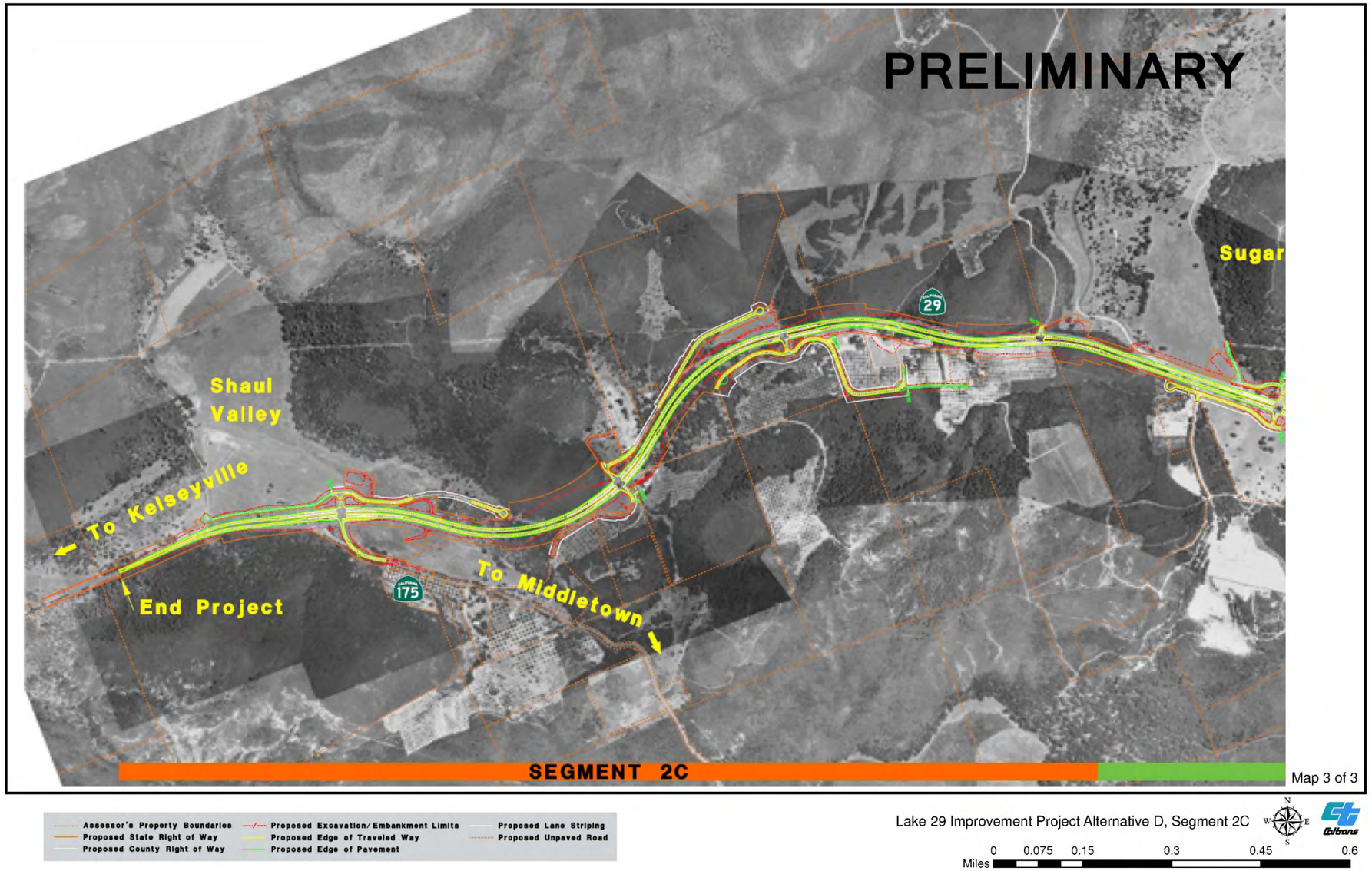


Figure 1.4-1c Project Vicinity Map

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/storm water 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/storm water 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/storm water 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 Storm Water 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 1.4-2) 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.

For additional project description-related information Caltrans maintains a Lake 29 Improvement Project website at: http://www.dot.ca.gov/dist1/d1projects/lake29/.

Alternative D

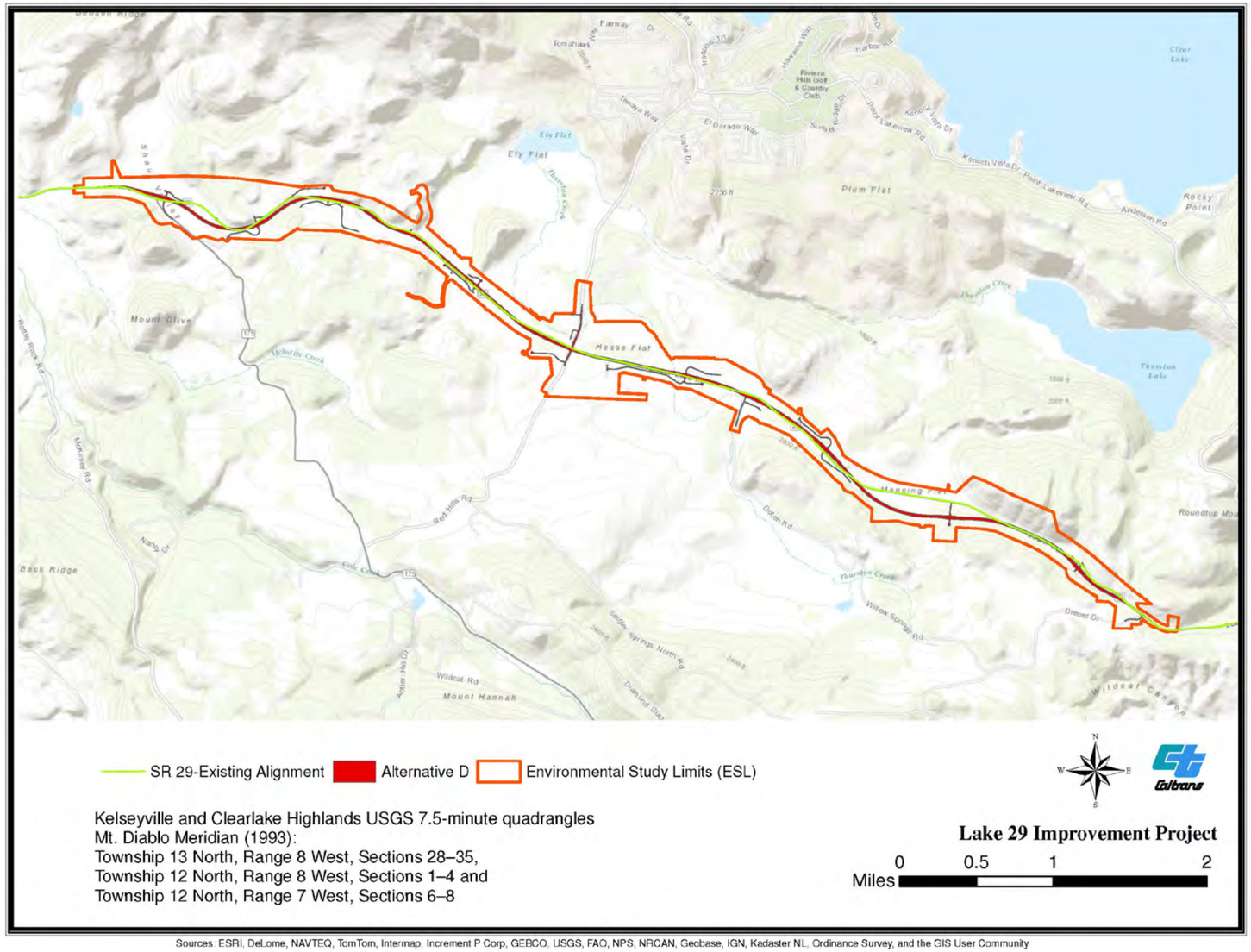


Figure 1.4-2 Project ESL Map

1.5 Identification of the Preferred Alternative

At the time of the public circulation of the Draft EIR/EA, the proposed project included four “build” alternatives; Alternatives C1, C2, C3, and D. As previously discussed Alternative D, developed as the Avoidance Alternative, was designed in order to minimize environmental impacts, most notably by realigning SR 29 to the south of the vernal pools at Manning Flat in order to avoid direct impacts to three state- and federally-endangered plant species. Following public circulation of the Draft EIR/EA it was determined that Alternatives C1, C2, and C3 would result in substantial unavoidable impacts to these species. Alternative D was determined to result in the fewest impacts to sensitive environmental resources, including the endangered plant species, and thus was preliminarily identified as the Caltrans preferred alternative. Subsequently, Alternatives C1, C2, and C3, were removed from further consideration. For further discussion on the removal of Alternatives C1, C2, and C3 see section 1.7.

Following the circulation of the Revised Partial Draft EIR/EA, a PDT meeting to officially select the preferred alternative was held on October 11, 2016, which included members from various Caltrans functional departments along with representatives from the Lake County/City Area Planning Council and the Lake County Public Works Department. After comparing and weighing the benefits and impacts of all feasible alternatives, the PDT identified Alternative D as the preferred alternative.

Alternative D was chosen as the preferred alternative because it would meet the purpose and need of the proposed project while avoiding and minimizing impacts to environmental resources. Although the No Build Alternative would not result in impacts to environmental resources relative to the improvement of SR 29, it does not address the need for improvements on SR 29 within the project limits. SR 29 within the project limits currently consists of a two-lane conventional undivided highway. Consequently, there are limited passing opportunities for the traveling public, with roadway conditions often resulting in long queues of cars following slower-moving vehicles or trucks, creating congestion and unstable traffic flow. Alternative D would provide a modern four-lane transportation facility that meets current design standards and, therefore, would accommodate current and projected traffic volumes and improve safety within the project limits. Contrary to the No Build Alternative, Alternative D is consistent with local plans and policies including the 2010 Lake

County RTP and the 2015 ITSP. See Table S-1 for a comparison of Alternative D and the No Build Alternative.

As discussed in the following sections, various build alternatives have been removed from further consideration. These alternatives either did not meet the project's purpose and need or they would result in substantial adverse impacts to environmental resources.

1.6 Alternatives Considered But Eliminated From Further Discussion Prior to the Draft EIR/EA

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 PDT 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 STIP.

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 intersection[9].

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 LOS beyond the year 2005. Within the project limits, SR 29 currently operates at LOS D and E 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 2016d).

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.

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

1.7 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 protected 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 Federal 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. Table 1.7-1 provides a comparison of potential impacts from Alternatives C1, C2, C3, and D. 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 1.7-1 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	401 acres of new right of way
Growth (2.2)		Continued residential and commercial development mainly concentrated within the designated Community Growth Boundaries	Limited potential to induce growth	Limited potential to induce growth	Limited potential to induce growth	Limited potential to induce growth
Farmlands & Timberlands (2.3)	Total Farmland (acres)	0	387 acres	423 acres	446 acres	401 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	3 commercial acquisitions
	Housing displacements	0	5 residential acquisitions	5 residential acquisitions	5 residential acquisitions	5 residential acquisitions

[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
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 a detached portion of the Konocti Conservation Camp Facility; relocation of electrical transmission lines and AT&T fiber optic cables
Traffic and Transportation (2.6)	Highway LOS expected to deteriorate to E by the year 2041	Improved level of service, volume/capacity ratio, and safety	Improved level of service, volume/capacity ratio, and safety	Improved level of service, volume/capacity ratio, and safety	Improved level of service, volume/capacity ratio, and safety
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.

Potential Impact (EIR/EA Section)	No Build Alternative	Build Alternatives			
		C1	C2	C3	D
Cultural Resources (2.8)	None	Potential impact to a portion of a prehistoric site found to be eligible for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR)	Potential impact to a portion of a prehistoric site found to be eligible for the NRHP and the CRHR	Potential impact to a portion of a prehistoric site found to be eligible for the NRHP and the CRHR	Would have No Adverse Effect to Cultural Resources included in or eligible for the NRHP or the CRHR
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
Water Quality and Storm Water Runoff (2.10)	None	Impacts from operation of roadway; short term impacts from construction of roadway; Increased storm water runoff due to the increase in impervious surface	Impacts from operation of roadway; short term impacts from construction of roadway; Increased storm water runoff due to the increase in impervious surface	Impacts from operation of roadway; short term impacts from construction of roadway; Increased storm water runoff due to the increase in impervious surface	Impacts from operation of roadway; short term impacts from construction of roadway; Increased storm water runoff due to the increase in impervious surface
Geology, Soils, Seismic, Topography (2.11)	None	None	None	None	None
Hazardous Waste and Materials (2.12)	None	No known active hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known active hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known active hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos	No known active hazardous waste sites, routine construction material use (oil, concrete, diesel), possible occurrence of lead or asbestos

Potential Impact (EIR/EA Section)		No Build Alternative	Build Alternatives			
			C1	C2	C3	D
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
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	Impacts to poor quality Northwestern pond turtle habitat; 3 to 4 special-status plant species; 3 bat species; raptor and migratory nesting bird species	Impact to poor quality Northwestern pond turtle habitat; 3 special-status plant species; 3 bat species; raptor and migratory nesting bird species	Impacts to poor quality Northwestern pond turtle habitat; 3 to 4 special-status plant species; 3 bat species; raptor and migratory nesting bird species	Impacts to poor quality Northwestern pond turtle habitat; 6 special-status plant species, 3 bat species, raptor and migratory nesting bird species

Potential Impact (EIR/EA Section)	No Build Alternative	Build Alternatives			
		C1	C2	C3	D
Threatened and Endangered Species (2.19)	None	*Likely to adversely affect* Burke's goldfields, few-flowered navarretia, Lake County stonecrop; Impacts to potential habitat for California red-legged frog	*Likely to adversely affect* Burke's goldfields, few-flowered navarretia, Lake County stonecrop; Impacts to potential habitat for California red-legged frog	*Likely to adversely affect* Burke's goldfields, few-flowered navarretia, Lake County stonecrop; Impacts to potential habitat for California red-legged frog	*May affect, not likely to adversely affect* Burke's goldfields, Few-flowered navarretia, and Lake Co. stonecrop; Impacts to potential habitat for California red-legged frog
Invasive Species (2.20)	None	None	None	None	None
Cumulative Impacts (2.21)	None	None	None	None	None

Table 1.7-2 Alternatives Considered But Eliminated From Further Study Prior To The Draft EIR/EA

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 1.7-3 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.

1.8 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 of structures including, but not limited to, residences and outbuildings.

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 structures 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), as the result of work that would occur within the bed, bank, or channel of streams within the project area including drainage improvements such as the installation of new culverts.

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 potential 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 factors were considered and no adverse impacts were identified: energy, paleontology, and timberlands. When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have substantial energy impacts. Additionally, no paleontological or timberland resources would be impacted by the proposed project. Consequently, there is no further discussion regarding these environmental factors in this document.

Human Environment

2.1 Land Use

2.1.1 Land Use Planning

Because the proposed project location is within an unincorporated area of Lake County, the most pertinent planning document is the Lake County General Plan (Lake County 2008). In addition, the county has adopted area plans, which are relevant to the project, for Kelseyville to the west of the project area (the Kelseyville Area Plan, dated 1995), Lower Lake to the east of the project area (the Lower Lake Area Plan, dated 1988), and Clearlake Riviera to the north of the project area (Rivieras Area Plan, adopted January 2007). Other planning documents applicable to the project area include:

- *Lake County Regional Transportation Plan* (RTP) 2010 (adopted by the Lake County/City Area Planning Council [APC] in October 2010)

- *Lake County Regional Bikeway Plan* (adopted by the Lake County/City APC in August 2011)
- *State Route 20 Corridor Study* (Dow and Associates, August 2000)

Policies in these plans that are pertinent to the proposed project are summarized below.

2.1.1.1 Lake County General Plan

In 2008, Lake County released a General Plan, providing an update to the county's 1981 General Plan. The General Plan is a guidance document that addresses a range of issues, from land use and transportation to resource use and preservation. Many of the issues addressed in the General Plan only indirectly apply to the proposed project. The following goals and policies are relevant to the proposed project and its potential impacts.

> Land Use Goal 1: To encourage the overall economic and social growth of the county while maintaining its quality of life standards.
>
> Land Use Policy 1.1, Smart Growth: The County shall promote the principals of smart growth….
>
> Land Use Goal 2: To clearly differentiate between areas within Lake County appropriate for higher intensity urban services and land uses (i.e., high density residential, high density commercial, and industrial) from areas where rural or resource use should be emphasized.
>
> Land Use Policy 2.1, Available Infrastructure: The County shall encourage residential growth to locate in existing urban areas where infrastructure is available and capacity is sufficient. The county shall ensure that development does not occur unless adequate infrastructure capacity is available for that area.
>
> Land Use Policy 2.6, Community Growth Boundaries: The County shall limit urban development to the areas within designated Community Growth Boundaries….
>
> Transportation Goal 1: To provide and plan for a unified, coordinated, and cost-effective countywide road and highway system that ensures safety, maintains adequate levels of service, and the efficient movement of people and goods.
>
> Transportation Policy 1.1, Provision of Adequate Road Network: The County shall establish a road network to accommodate projected growth in traffic volume resulting

from residential development, commercial and tourism expansion, and geothermal activity and other industrial development.

Transportation Policy 1.4 Conformance with Regional Transportation Plan: The County should continue to upgrade the road system to reduce traffic accidents, improve circulation, and maintain its physical condition, in conformance with the priorities and recommendations established in the Regional Transportation Plan.

Transportation Policy 1.9, Truck Routes: To reduce heavy truck traffic in residential areas and near noise sensitive land uses, the County shall ensure truck routes are designated in a manner such that traffic noise impacts are minimized.

Transportation Policy 1.10, Construction Methods: The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.

Health and Safety Goal 3 (Air Quality): To reduce the generation of air pollutants and promote non-polluting activities to minimize impacts to human health and the economy of the County.

Health and Safety Policy 3.9, Air Quality Analysis: The County may require an analysis of potential air quality impacts associated with significant new developments through the environmental review process, and identification of appropriate mitigation measures prior to approval of any major development project.

Health and Safety Policy 3.10, Dust Suppression During Construction: The County shall require dust-suppression measures for grading activities and asbestos dust hazard mitigation plans for projects located in Naturally Occurring Asbestos Areas.

Noise Goal 1: To protect County residents from the harmful exposure of excessive noise and prevent incompatible land uses from encroaching upon existing and planned land uses.

Noise Policy 1.8, Coordination with Caltrans: The County should work closely with Caltrans to mitigate noise levels and associated impacts on sensitive receptors near existing and proposed State facilities by requiring noise buffering or insulation measures.

Open Space, Conservation and Recreation Goal 1 (Biological Resources): To preserve and protect environmentally sensitive significant habitats, enhance biodiversity, and promote healthy ecosystems throughout the County.

Open Space, Conservation and Recreation Goal 2 (Scenic Resources): To preserve and protect existing viewsheds and visual quality found in the County.

Open Space, Conservation and Recreation Policy 2.4, Roadway Improvement Guidelines: Within the designated scenic corridors, roadway improvements should be constructed in a manner which minimizes roadway width and thus, reduces domination of the view by road surface; and conforms to the natural contours of the land and minimizes extensive grading and removal of roadside vegetation.

Open Space, Conservation and Recreation Goal 8 (Cultural Resources): To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

Agricultural Resources Goal 1 (Agricultural Protection): To preserve and maintain a viable and diverse agricultural industry within the county.

Agricultural Resources Policy 1.7, Avoid Extension of Infrastructure into Agricultural Areas: Extension of services, such as sewer and water lines and roadways, into areas preserved for agriculture use should be avoided. Where necessary, they should be located in public rights of way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.

2.1.1.2 Lower Lake Area Plan

A portion of the proposed project would be located in the extreme western edge of the area covered by the Lower Lake Area Plan. This plan, adopted by Lake County in 1988, outlines the goals for the Lower Lake community, issues that must be addressed in order to maintain orderly future growth, and the county's policies toward development and resource preservation in this area. Historically, Lower Lake's economic core has been located on Main Street in the downtown area, east of the State Route (SR) 29/SR 53 intersection. At the time the Lower Lake Area Plan was being prepared, the amount of traffic passing through the area on SR 29 and SR 53 had begun to attract commercial development. The Lower Lake Area Plan anticipates that the transportation corridors, as well as downtown, will attract commercial development oriented toward providing services to tourists in the future. The plan states: "Commercial lands, which are intended to provide services for highway related uses, travelers and tourists, are located adjacent to State Route 29 on the western fringe of the community and east of State Route 53 along Cache Creek in the northwest corner of the community" (Lake County 1988, 6–7).

2.1.1.3 Kelseyville Area Plan

The proposed project would not be located in the area covered by the Kelseyville Area Plan. However, because Kelseyville is located along SR 29 west of the project area, development in Kelseyville is directly related to the amount of traffic on SR 29, and a project on this route would affect many of the community's residents.

Kelseyville is a relatively small, rural community with growth potential. Kelseyville's plan focuses on the need to provide community services and preserve resources. The plan encourages improvements to SR 29:

> Circulation Policy 5.2a-10: "The County should support the upgrading of Route 29 to a four-lane facility, including the implementation of interim projects to create additional passing opportunities" (Lake County 1995, 5–24).

2.1.1.4 Rivieras Area Plan

Most of SR 29 in the project area is included in the Rivieras Planning Area, which primarily includes the communities on the south side of Clear Lake that are accessed from SR 281. Development in this area is guided by the Rivieras Area Plan (adopted January 2007). The plan projects that population in the Rivieras area will grow from 4,900 in 2000 to over 7,000 in 2025, an increase of 1,500 housing units. Because the Rivieras Area Plan is primarily aimed at residential areas, few of its policies, goals, and objectives directly apply to the proposed project. At the same time, the plan is intended to preserve the Rivieras Planning Area's resources as new development is contemplated, and the proposed project would affect many of these resources.

Resources discussed in the Rivieras Area Plan that could be affected by the project include agricultural land, viewsheds, the area's rural character, transit facilities, waterways, vegetation and wildlife, and bicycle and pedestrian access. Applicable objectives and policies are discussed below.

> Vegetation and Wildlife Policy 3.3.1a: Migratory corridors to allow wildlife to move between areas of suitable habitat shall be required around developed and developing areas.
>
> Resources Objective 3.4.1b: Protection of agricultural lands and operations from conflicting uses.
>
> Visual Resources Objective 3.5.2a: To take measures to protect and enhance scenic resources in the Rivieras Planning Area and promote a visually appealing environment.

Visual Resources Objective 3.5.2b: To maintain the rural character of the planning area.

Visual Resources Policy 3.5.2a: The county shall encourage utility lines to be installed underground wherever possible. Where installing utilities underground is not practical, lines shall be sited in a manner that minimizes their visual intrusion.

Housing Objective 5.2.1: Provide for orderly growth of the planning area corresponding to available infrastructure.

Housing Policy 5.2.1a: High-density housing, such as apartments, should not be developed within the Rivieras planning area until appropriate infrastructure is available for the residents of those developments, including sewer, water and public transit.

Streets and Highways Objective 5.3.1: Improve the operation and safety of both the State Highway and County Road Systems within the Planning Area.

Streets and Highways Policy 5.3.1a: Support efforts by Caltrans to expand upon and improve traffic safety of the highway system. Encourage Caltrans to consider the installation of wildlife underpasses.

Transit Objective 5.3.2: Provide for the transit needs of the residents of the Planning Area.

Transit Policy 5.3.2b: Encourage bus stops near population centers in the planning area to facilitate public transit use.

2.1.1.5 State Route 20 Corridor Study

In August 2000, the Lake County/City APC released the results of the *State Route 20 Corridor Study*, which was undertaken to examine the SR 20 Principal Arterial Corridor in Colusa, Lake, and Mendocino counties.[11] As a transportation corridor, this route includes SR 20 from United States Highway 101 (US 101) in Mendocino County to the junction with SR 29 in Upper Lake; SR 29 from Upper Lake to the junction with SR 53 in Lower Lake (around the south shore of Clear Lake); SR 53 from Lower Lake to the junction with SR 20; and SR 20 east to Interstate 5 (I-5). Because SR 29 within the project area forms a part of this corridor, the findings and plans included in this study are relevant to the proposed project.

The study emphasizes the importance of the SR 20 Principal Arterial Corridor to Northern California's employers and residents. The SR 20 corridor and SR 299

[11] The SR 20 Principal Arterial Corridor continues east of I-5 in the Sacramento Valley, connecting with Interstate 80 (I-80) in the high Sierras and to I-80 via SR 49 in Auburn (Placer County).

provide the only significant connections between I-5 and US 101 in Northern California, and these two routes are over 100 miles apart. The proposed corridor improvements are likely to have beneficial impacts on the regional economy. The study states:

> The route currently provides connections for truck freight transport between the US 101 and I-5 corridors, and is the only significant access route for local counties, cities and communities to the rest of California. The employment, economic development and investment enhancement opportunities associated with corridor improvements are as important a goal for the corridor areas as meeting traffic flow and access needs (Dow and Associates 2000, 4).

The Corridor Concept Plan as presented in this study for this portion of the SR 20 Principal Arterial Corridor is as follows:

- Make SR 20 a four-lane freeway/expressway from US 101 (north of the city of Ukiah) east to the junction with SR 29, then southerly on SR 29 (South Shore) to the junction with SR 53, then northerly on SR 53 to the junction with SR 20 (North Shore).
- Make SR 20 a two-lane conventional highway, fully improved, with passing lanes easterly from the junction with SR 53 through eastern Lake County and the foothills of Colusa County to the junction with I-5 in the city of Williams.

The *State Route 20 Corridor Study* presented the following conclusion on the potential social and economic consequences of the proposed plan:

> As a result of this Study, it is apparent that it will take more than highway improvements to change the economic environment in the rural counties that depend on the Corridor facilities for access. Improvements to travel time and increased traffic safety along the Corridor can be a real catalyst for economic investment. Better access to markets and developable land within the Corridor may provide the incentive for job creation so badly needed along the Principal Arterial Routes involved (Dow and Associates 2000, 34).

2.1.1.6 Lake County Regional Transportation Plan

The Lake County RTP forms the planning basis for future state highway and local road improvement projects in Lake County. Prepared by the Lake County/City APC, the RTP uses projections of future (20-year) conditions to anticipate transportation needs.

The current RTP was adopted in October 2010. Like the *State Route 20 Corridor Study*, the RTP identifies SR 29 within the project area as part of the larger SR 20 Principal Arterial Corridor providing an east-west connection between I-5 and US 101. The 2010 RTP identifies the Lake 29 Improvement project as the "top priority" project.

RTP policies and objectives related to the Principal Arterial System include (Dow and Associates 2010):

> Objective 1: Improve mobility on the state highway system throughout Lake County
>
> Policy 1.1: Support as a high priority completion of the environmental document for the Lake 29 (Diener Dr. – S.R. 175) Expressway Project.
>
> Policy 1.2: Support periodic update of the environmental document for the Lake 29 (Diener Dr. – S.R. 175) Expressway Project to ensure its long term viability in aiding project implementation into the future.
>
> Policy 1.7: Implement projects and strategies to encourage trucks and inter-regional traffic to use the Principal Arterial Corridor (includes portions of S.R. 20, 29 and all of 53) for travel through Lake County.
>
> Objective 2: Improve safety conditions on the State highway system serving Lake County
>
> Policy 2.1: Coordinate with Caltrans to identify safety issues, develop solutions and identify funding opportunities.
>
> Policy 2.4: Identify for funding consideration safety projects on all State highways (S.R. 20, S.R. 29, S.R. 53, S.R.175, & S.R. 281) in Lake County.
>
> Objective 3: Facilitate efficient and safe transportation of goods within and through Lake County
>
> Policy 3.2: Encourage improvements to State Routes 20 (where applicable), 53, and 29 that facilitate safe and efficient truck traffic.

The Scotts Valley Band of Pomo Indians owns a parcel of land in the Kit's Corner area.[12] The Tribal Transportation System Element of Lake County's 2010 RTP

[12] The northwest corner of the SR 29/281/Red Hills Road intersection is currently developed with several small businesses including a gas station, a convenience store, a motel, and several small retail spaces (collectively known as Kit's Corner, the name of the convenience store).

discusses the preliminary plans for this parcel, which is located on the southeastern corner of the SR 29/281/Red Hills Road intersection. According to the RTP, the preliminary plans for this parcel include approximately 35 homes, an apartment complex, a retirement facility, a restaurant, a museum/cultural center, a park, and a helipad. This parcel is not currently in trust with the United States Department of the Interior's Bureau of Indian Affairs.

2.1.1.7 2011 Lake County Regional Transportation Bikeway Plan

Lake County adopted a Regional Transportation Bikeway Plan in August 2011. The plan identifies existing and proposed bikeways in the project area, but there are no proposals to add a bikeway on or adjacent to SR 29.

The *Lake County Regional Bikeway Plan* uses the California Street and Highways Code's classification for bikeways based on the needs and the physical conditions of the rights-of-way:

Class I Bikeway – Bike Path. A completely separated right of way for the exclusive use of bicycles and pedestrians with cross flows of motorists minimized. The state standard for minimum paved width of a two-way bike path is 8 feet.

Class II Bikeway – Bike Lane. A restricted right of way for the exclusive use of bicycles with vehicle parking and cross flow by pedestrians and motorists permitted. Bike lanes are normally striped within paved areas of highways and are one-directional with a minimum standard width of 5 feet.

Class III Bikeway – Bike Route. A route for bicyclists designated by signs or other markings and shared with pedestrians and motorists. Bike routes are typically designated to provide linkages to the Bikeway systems where Class I or II Bikeways cannot be provided.

A future Class III Bikeway is proposed for Red Hills Road which transects the proposed project. Existing bikeways in the area include the Class II Konocti Road Bikeway in Kelseyville, a portion of the Class II Old State Highway 53 Bikeway in Central Clearlake, and the Clearlake to Lower Lake Bikeway.

2.1.2 Affected Environment

2.1.2.1 Lake County

The proposed project is located along a largely undeveloped stretch of SR 29 in Lake County. Lake County is located approximately 40 miles east of the Pacific Coast in Northern California. Lake County is east of Mendocino and Sonoma counties, north of Napa and Yolo counties, and due west of Colusa County. Lake County's topography in the project vicinity is dominated by Clear Lake, the largest freshwater lake wholly contained in the state of California. Clear Lake is a recreational destination for residents throughout Northern California.

The county's population is concentrated in the small communities surrounding the lake (see Figure 2.1-1). SR 20 runs along the lake's northern side. Several communities are located along SR 20, including Clearlake Oaks, Glenhaven, Lucerne, Nice, and Upper Lake. SR 29 runs along the south side of Clear Lake, generally out of sight of the lake. Communities located along SR 29 include North Lakeport, Lakeport (one of the two incorporated cities in Lake County, located approximately 10 miles west of the project area), and Kelseyville. The communities of Clearlake Park, Clearlake, and Lower Lake are located on the eastern side of the lake, along SR 53.

2.1.2.2 Existing Land Use Patterns and General Plan Designations in the Project Area

The proposed project would be located in an unincorporated part of Lake County. Therefore, land use, zoning, and development on land in the project area are under the jurisdiction of Lake County. In 2008, Lake County released an updated General Plan. Prior to this, the best available information was found in the General Plan adopted in 1981 and the Draft General Plan Update released in 2006.

Figures 2.1-2 and 2.1-3 present the Lake County General Plan land use designations for lands along the proposed project corridor. Most of the land adjacent to the highway is designated Rural Lands or Rural Residential, indicating its suitability for low-density rural development. Minimum lot size in Rural Residential areas is between 5 and 20 acres. Residential development in the project area consists of individual single-family residences located along SR 29, consistent with the Rural Residential land use designation.

In addition, several areas along the proposed project corridor are designated as Agriculture, which is the General Plan designation used to protect the county's

agricultural resources and to prevent development incompatible with agricultural production. Development in these agricultural areas is limited to one dwelling unit for every 40 acres.

A small area around the intersection of SR 29/281/Red Hills Road is designated Community Commercial, Resort Commercial and Service Commercial. The northwest corner of this intersection, designated for Resort Commercial and Community Commercial use, is currently developed with several small commercial uses, including a gas station, a convenience store, a motel, and several small retail spaces (collectively known as Kit's Corner, the name of the convenience store). Just east of the Resort Commercial land on the south side of SR 29 is the area designated Service Commercial. This area is occupied by a storage facility and the local office of the Society for the Prevention of Cruelty to Animals (SPCA).

2.1.2.3 Parks and Recreation

No parks are immediately adjacent to the proposed project corridor. The two parks in the general area of the project are described below.

Anderson Marsh State Historic Park

Anderson Marsh State Historic Park is located in Lower Lake near Clear Lake. This park features several miles of nature trails and interpretive displays and is adjacent to an Audubon Society wildlife sanctuary. The park is dedicated to the preservation of Clear Lake's marshes and the history of the Southeastern Pomo Native Americans.

Clear Lake State Park

Located north of Kelseyville on the southern shore of Clear Lake, Clear Lake State Park features four campgrounds and nearly 150 campsites. Fishing and swimming are permitted at this park, which also has a pair of hiking trails.

2.1.3 Environmental Consequences

2.1.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no temporary impacts to land use relative to the proposed project.

Alternative D

Alternative D would not result in temporary impacts that would affect land use patterns in the project area.

2.1.3.2 Permanent Impacts

Impacts on Existing and Planned Land Uses

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no permanent impacts to existing or future land uses in the project area relative to the proposed project.

Alternative D

Alternative D would require the acquisition of approximately 329 acres of land, as well as approximately 72 acres of land for the proposed utility corridor. Except for a few areas where Alternative D would affect areas designated Community Commercial, Resort Commercial, or Service Commercial, most of the land that would be converted to highway use is designated for agricultural, rural land, or rural residential uses. The loss of agricultural lands is discussed in Section 2.3. The proposed project would convert approximately 288.3 acres of land designated as Rural Lands and 38.4 acres of land designated as Rural Residential. The amount of land that would be converted from Rural Lands and Rural Residential lands to highway use is negligible compared to the overall acreage in the county zoned for these uses. The proposed project would affect less than 1 percent of the county's Rural Residential lands and less than 0.1 percent of the county's Rural Lands.

Alternative D would affect approximately 26.5 acres of the 117.2 acres of land at the SR 29/281/Red Hills Road intersection zoned for Community Commercial, Resort Commercial, and Service Commercial use. The proposed project would result in modifications to the existing signalized intersection[13] at this location and would also result in access changes for adjacent parcels. The business displacement impacts are discussed in Section 2.4.

There are many areas of Service Commercial, Resort Commercial, and Community Commercial use in the county. The conversion of land from commercial zoning to highway use would not substantially reduce the amount of land within the county that is available for commercial use. The proposed project would convert approximately 0.4% of the total combined quantity of these land use types in Lake County.

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

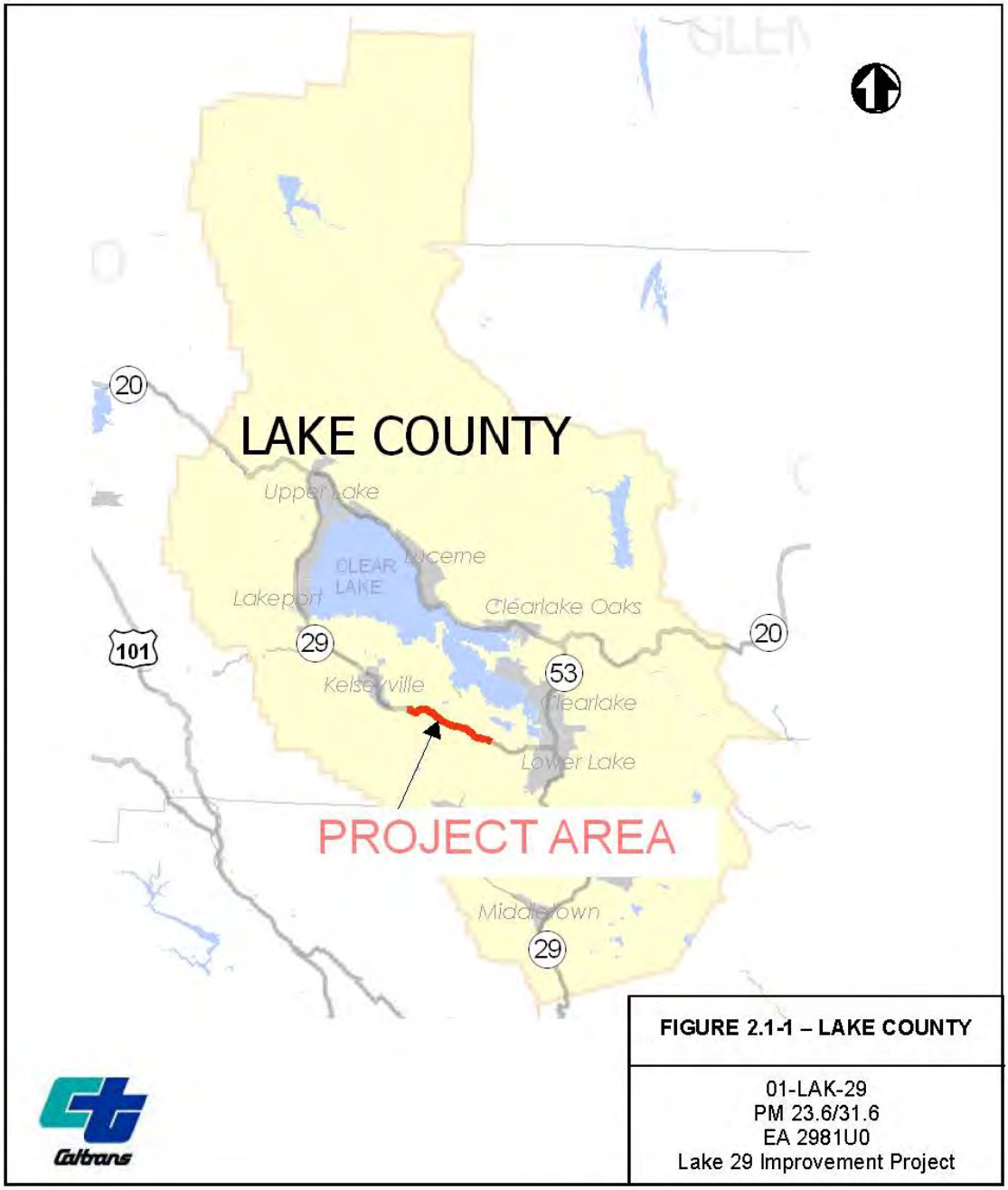


Figure 2.1-1 Lake County

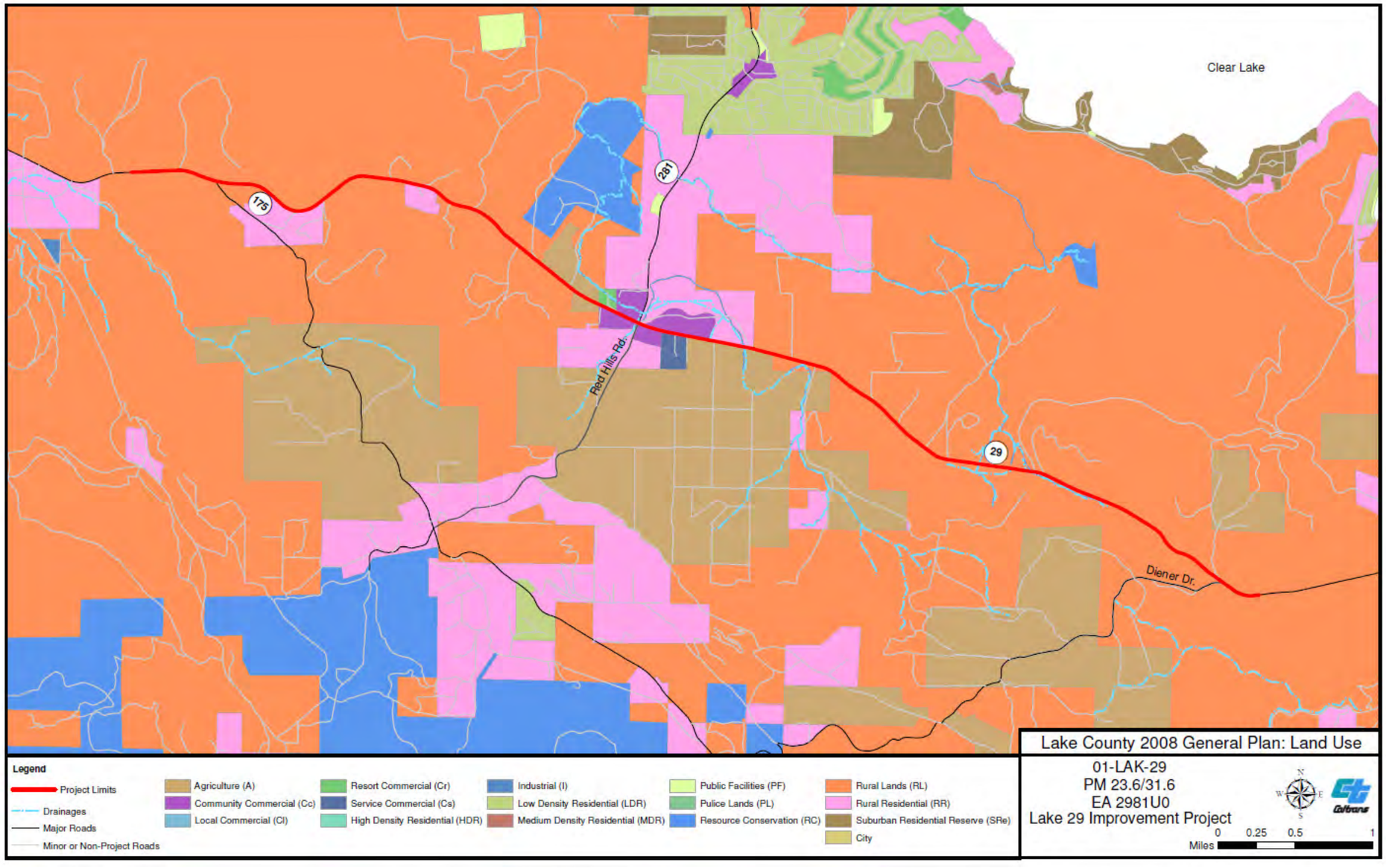


Figure 2.1-2 Lake County General Plan Land Use, Western Project Area

Consistency with Local Plans and Policies

No Build Alternative

The No Build Alternative would not be consistent with local plans and policies, which support improvements to SR 29.

Alternative D

Alternative D is supported by the Lake County General Plan, which endorses a road network that accommodates projected growth in traffic volumes.

Consistent with Open Space, Conservation, and Recreation Goal 1, the proposed project would not encroach into Manning Flat (one of the areas identified in the previous General Plan's critical resource mapping).

The Kelseyville Area Plan supports conversion of SR 29 to a four-lane facility. Alternative D is also consistent with the Lower Lake Area Plan.

Alternative D is consistent with the RTP and the *State Route 20 Corridor Study,* which recommend that SR 29 be converted to a four-lane freeway/expressway in the project area.

Impacts on Parks and Recreation

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no impacts to parks or recreation areas relative to the proposed project.

Alternative D

No public parks or recreation areas would be affected by Alternative D.

2.1.4 Avoidance, Minimization, and/or Mitigation Measures

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

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 2006a) 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.

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 four 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.

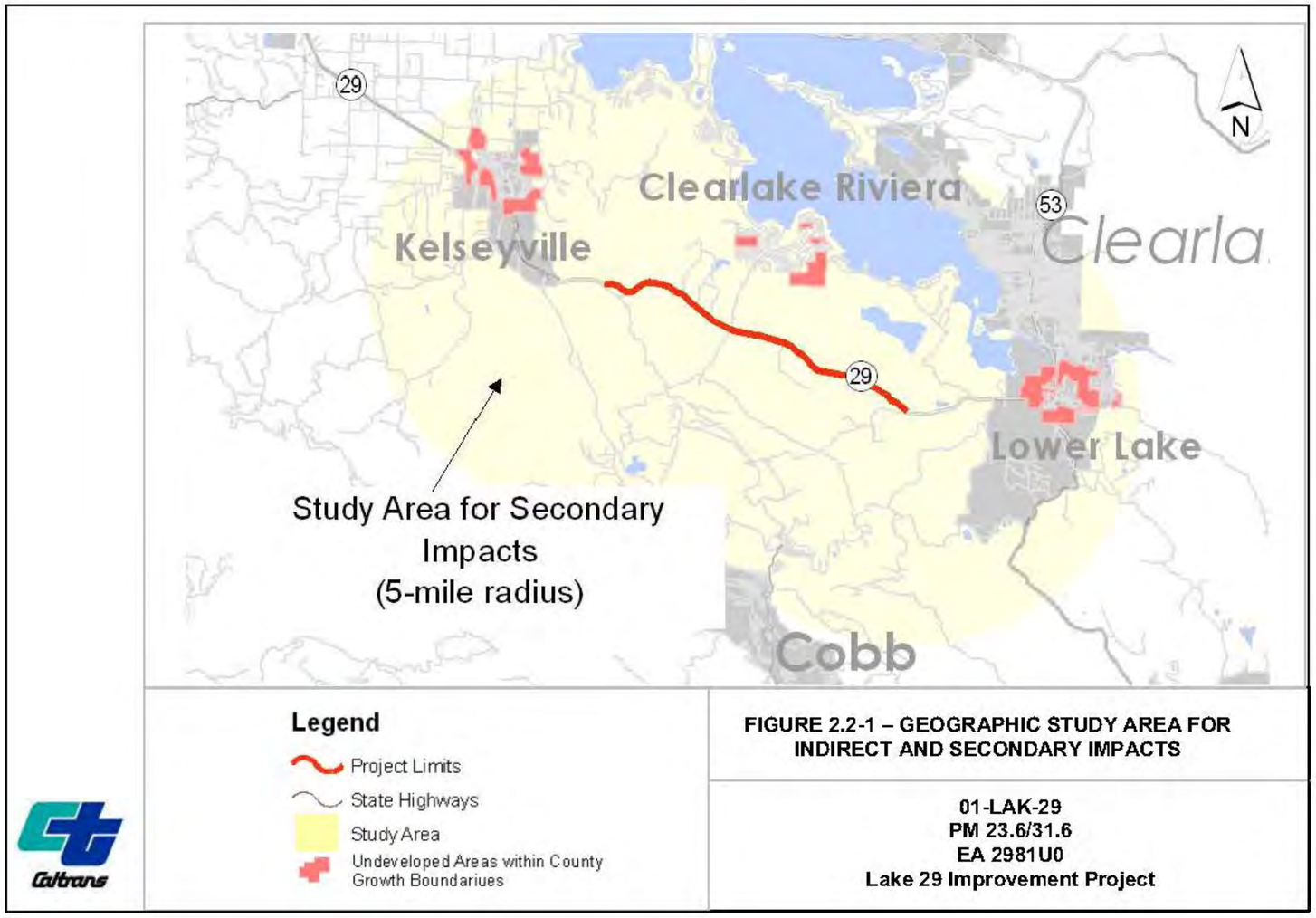


Figure 2.2-1 Geographic Study Area for Indirect and Secondary Impacts

Step 1: Methodology and Level of Effort

As the *Guidance for Preparers of Growth-related, Indirect Impact Analyses* (Caltrans 2006a) 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.

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."

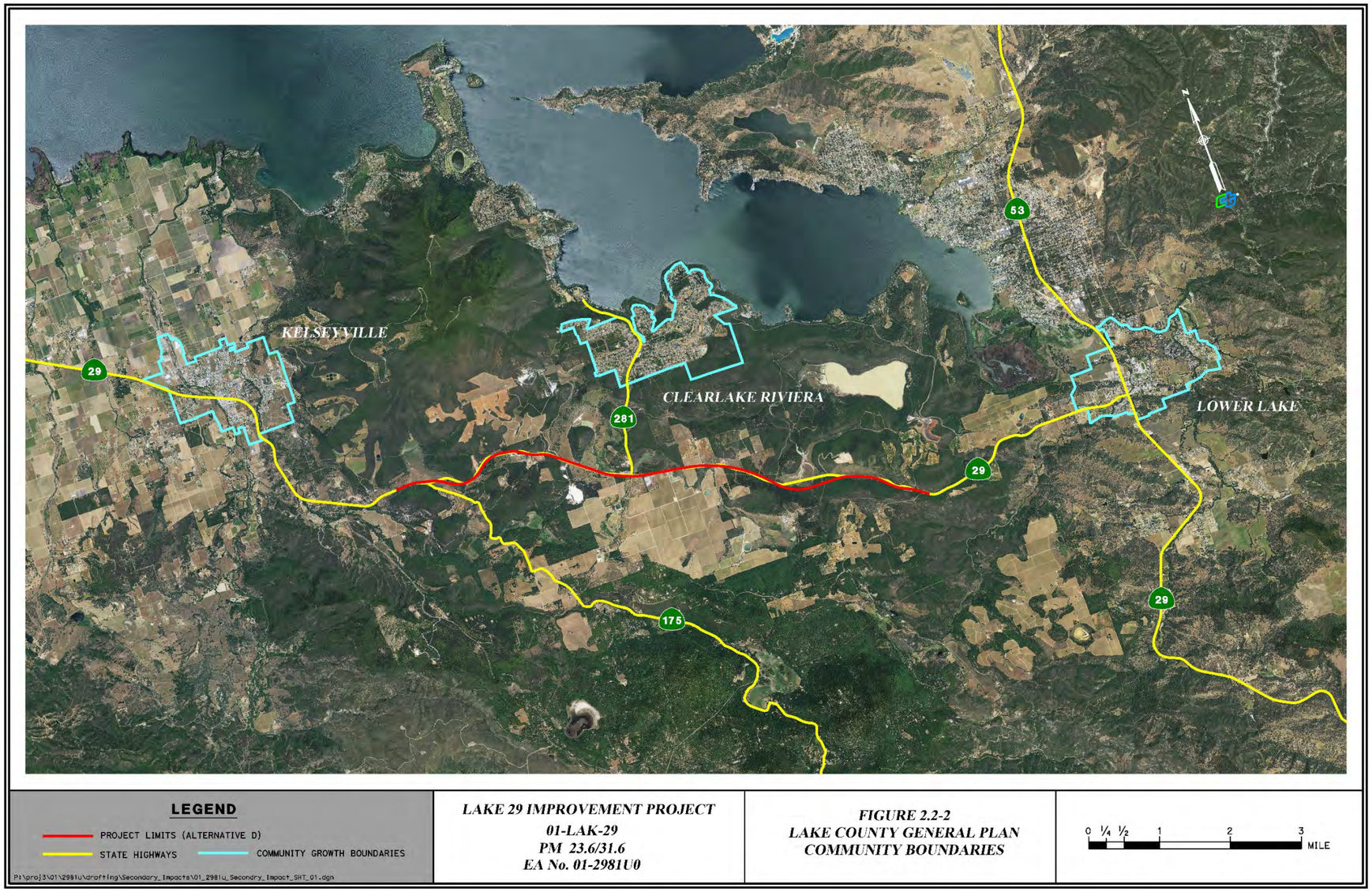


Figure 2.2-2 Lake County General Plan Community Boundaries

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 (IRP 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 ordinances[14] 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

[14] Zoning ordinances were obtained from the Lake County General Plan (2008).

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 industry, the project area has seen an accelerated conversion of lands to vineyards. In

Lake County, the total grape acreage increased by 673 acres from 2014 to 2015 (Lake County 2015). 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.

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:
  - 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.

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.

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.

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.

2.3 Farmlands

2.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (7 United States Code [USC] 4201–4209; and its regulations, 7 CFR Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS)[15] if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance.

CEQA requires the review of projects that would convert Williamson Act contract land to nonagricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

[15] The Natural Resources Conservation Service, formerly the Soil Conservation Service, is a federal agency that assists private land owners in the United States to conserve soil, water, and other natural resources.

2.3.2 Affected Environment

2.3.2.1 Farmlands in the Project Area

According to the California Department of Conservation (CDC 2012), Lake County has 286,000 acres in agricultural uses (34 percent of the county), 240,000 acres of which are grazing land. In 2012, the county had 46,000 acres of "Important Farmland"; that is, farmland mapped in the categories of Prime, Statewide Importance, Unique, and Local Importance. Of this, 11,000 acres were considered Prime Farmland. According to the 2012 Census of Agriculture, Lake County had 838 farms in operation, primarily producing grapes. Between 1997 and 2000, grape production surpassed pear production in value. According to the Lake County Winery Association website, Lake County now has more than 30 wineries (Lake County Winery Association 2016). In September 2004, the southwestern shore of Clear Lake was recognized by the federal Alcohol and Tobacco Tax and Trade Bureau as a distinct wine-growing region. Vineyards in this area have an official American Viticultural Area appellation: Red Hills of Lake County (see 27 CFR Section 9.169).

Much of the project area is undeveloped, vacant land. There is some nonagricultural development in the project area, including rural residences, an auto salvage yard, and a cluster of commercial uses near the SR 29/281/Red Hills Road intersection. Otherwise, the primary economic activity in the project area is agriculture. Agricultural activity in the project area consists primarily of vineyards and grazing areas. There are also pear and walnut orchards in the project area. (Figure 2.3-1)

There are no Williamson Act properties adjacent to SR 29 in the project area.

2.3.2.2 Project Area Farmland Ratings

The NRCS uses the Storie Index to rate the value of soils in a given area. By placing a value (Prime, Unique, Statewide/Local Importance, etc.) on the agricultural potential of soils in an area, NRCS can evaluate the potential impacts of the conversion of land to uses other than farmland.

The Storie Index rates soils accordingly to their ability to sustain intensive agricultural use. This index uses physical characteristics such as permeability, water retention capability, soil depth, soil texture, and surface relief to rate the soil. The rating scale ranges between 0 and 100. A rating of between 80 and 100 usually indicates Prime Farmland.

The Storie Index does not take into account the availability of irrigation water, local climate, and other critical factors, which would affect the type of commercial plant

crops that thrive in a certain locale. Due to its one-dimensional rating method, the Storie Index is not a stand-alone index to rate land value. However, the Storie Index does lend itself to providing a quantitative value to land's productive potential, regardless of the current use of the area.

2.3.3 Environmental Consequences

2.3.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no temporary impacts to agricultural resources or farmland relative to the proposed project.

Alternative D

Farm equipment and agricultural products hauled on SR 29 would encounter traffic controls during construction. However, the duration of traffic controls would be temporary and would not have substantial adverse impacts on agricultural operations in this area.

2.3.3.2 Permanent Impacts

Farmland Conversion

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no permanent impacts to agricultural resources or farmlands relative to the proposed project.

Alternative D

Table 2.3-1 shows the number of acres of designated farmland by type that would be converted to highway use by Alternative D. As this table shows, Alternative D would convert approximately 401acres of designated farmland to highway land use.

Alternative D would convert 23.45 acres of "Important Farmland", which equals a loss of less than one-tenth of a percent of Lake County's important (nongrazing) farmland. The sixth column of Table 2.3-1 shows the rating that NRCS assigned to the farmland in question. On a scale of 0 to 100, NRCS has rated farmland in the area as having a Relative Value of 57, indicating that, while there are Prime soils in the area, most of the project area consists of relatively poor-quality soils.

Table 2.3-1 Farmland Conversion by Alternative D

Alternatives	Land Converted (acres)	Prime and Unique Farmland (acres)	Farmland of Statewide/ Local Importance (acres)	Percent of Farmland* (County)	Relative Value of Farmland (Storie Index)
D	401	23.45	0	0.05%	57

Source: Form NRCS-CPA-106 (Farmland Conversion Impact Rating), updated by NRCS and Caltrans in 2016 for Alternative D
* "Farmland" refers to the "important farmland" categories used by the CDC: Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance. In 2012, there were 46,000 acres of "important farmland" in Lake County.

The Farmland Protection and Policy Act requires that a Farmland Conversion Impact Rating (Form NRCS-CPA-106) be completed to identify the potential for a project to have adverse effects on agricultural lands; Caltrans prepared and updated Form NRCS-CPA-106 in June 2016. According to the act, projects that score above the United States Department of Agriculture (USDA) 160-point threshold are considered to have a substantial adverse impact. According to the Land Evaluation and Site Assessment, Alternative D scores well below the USDA 160-point threshold. Therefore, while agricultural resources in the project area would be affected as a result of the proposed project, the level of impact would not be substantial relative to overall agricultural activity in this area.

Table 2.3-2 summarizes the Farmland Conversion Impact Rating form. The completed Farmland Conversion Impact Rating form is shown in Figure 2.3-2 (updated by NRCS and Caltrans in 2016).

Table 2.3-2 Farmland Site Assessment

Alternatives	Land Converted (acres)	Relative Value of Farmland (Part V)	Total Site Assessment (Part VI)	Total
D	401	57	60	117

Source: Form AD-1006 (Farmland Conversion Impact Rating)

Williamson Act Parcels

No Build Alternative

None of the farmland in the project area has been included in the Williamson Act program. The No Build Alternative would have no impact on Williamson Act parcels.

Alternative D

None of the farmland in the project area has been included in the Williamson Act program. Alternative D would have no impact on Williamson Act parcels.

Indirect Conversion

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no potential for indirect conversion of farmlands relative to the proposed project.

Alternative D

Alternative D would convert an existing two-lane highway to a four-lane, access-controlled expressway. A reduction in the number of access points would lead to changes in the way properties are accessed. This may lead to difficulties for property owners who have traditionally used available at-grade crossings for agricultural operations. This, in turn, could lead to the conversion of a nominal quantity of agricultural land to nonagricultural uses.

2.3.4 Avoidance, Minimization, and/or Mitigation Measures

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

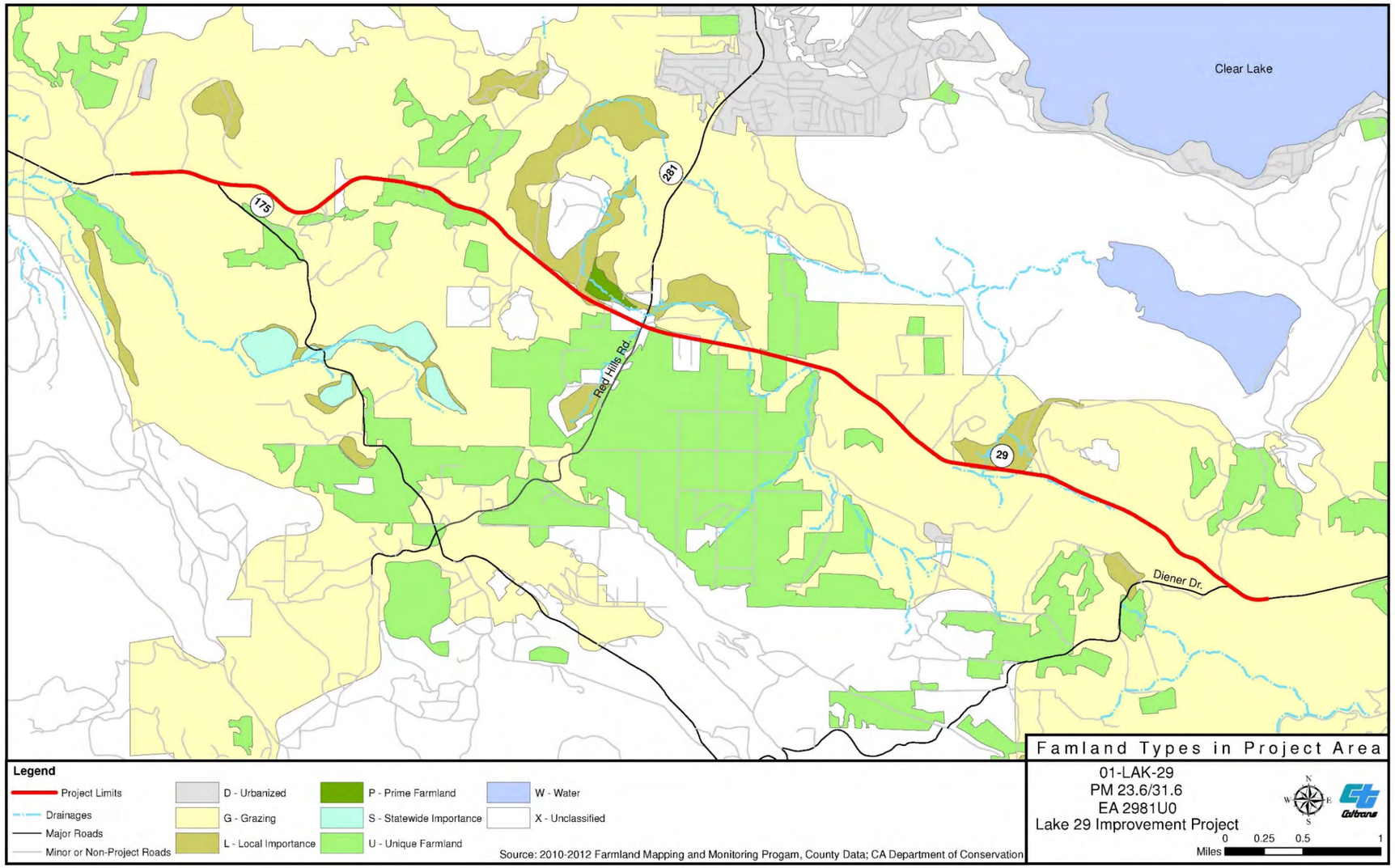


Figure 2.3-1 Farmland Types in the Project Area

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 6/13/16	4. Sheet 1 of 1
1. Name of Project Lake 29 Improvement Project	5. Federal Agency Involved FHWA	
2. Type of Project Roadway/utility corridor	6. County and State Lake County, CA	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 6/13/16	2. Person Completing Form Korinn Woodard
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form): YES ☑ NO ☐		4. Acres Irrigated 13,551 / Average Farm Size 147
5. Major Crop(s) Vineyards, Pasture, Walnuts	6. Farmable Land in Government Jurisdiction Acres: 28,997 %	7. Amount of Farmland As Defined in FPPA Acres: 48,049 % 6
8. Name Of Land Evaluation System Used CA Revised Storie Index	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 6/15/16

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment			
		Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		401			
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0			
C. Total Acres In Corridor		401			
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland		23.45			
B. Total Acres Statewide And Local Important Farmland		0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		.0008			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		57			
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Corridor Being Farmed	20	10			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	5			
7. Availability Of Farm Support Services	5	5			
8. On-Farm Investments	20	10			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	5			
TOTAL CORRIDOR ASSESSMENT POINTS	160	60	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	57	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	60	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	117	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
A	23.45	8/21/16	YES ☐ NO ☑

5. Reason For Selection:

Corridor A takes advantage of the existing highway, and avoids and minimizes impacts to surrounding land uses and sensitive resources.

Signature of Person Completing this Part: [signature] DATE 6/22/16

NOTE: Complete a form for each segment with more than one Alternate Corridor

Figure 2.3-2 Farmland Conversion Impact Rating for Corridor Type Projects

2.4 Community Impacts

2.4.1 Regulatory Setting

2.4.1.1 Community Character and Cohesion

NEPA established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC Section 4331[b][2]). The 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. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community cohesion in assessing the significance of the project's effects.

2.4.1.2 Relocations and Real Property Acquisition

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 CFR Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably and do not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. The Relocation Assistance Program is summarized in Appendix B.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC Section 2000d et seq.) (see Appendix C).

2.4.1.3 Environmental Justice

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address

disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. “Low income” is defined based on the Department of Health and Human Services poverty guidelines. For 2016, this was $24,300 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department’s commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

2.4.2 Affected Environment

The population and demographic data in the following sections are primarily from the 2010 U.S. Census decennial survey and the American Community Survey (ACS) 2010-2014 5-yr. Estimates. Data from these two sources is provided for the project study area, the unincorporated communities of Kelseyville and Lower Lake (Census Designated Places [CDP]), Lake County, and the state of California. The project area for the purposes of community impacts analysis includes the census tract block groups within and/or immediately adjacent to the project limits. These data are provided where available to help identify Lake County’s demographic trends.

2.4.2.1 Population

Lake County

Prior to the 1950s, Lake County’s population increased slowly. In the population and construction boom of the 1950s, Lake County gained 3,400 residents, and population continued to increase steadily until the 1980s. In the 1980s, Lake County’s population nearly doubled with the addition of over 16,000 residents. In the 1990s, the county’s population increased by 40 percent. Between 2000 and 2010 the population increased by approximately 10.9 percent. As of 2010, the county’s total population was approximately 64,665 (Table 2.4-1). Between 2010 and 2014, Lake County lost approximately 456 residents, for a reduction of approximately 1 percent. In contrast, statewide, population growth was approximately 2 percent during this time period (US Census 2010, ACS 2010-2014 5-yr Estimate).

Table 2.4-1 Population

		Project Area	Lake County	Lower Lake	Kelseyville	California
Population	2010	7,815	64,665	1,294	3,353	37,252,956
	2014	8,106	64,209	1,620	3,516	38,066,920

Source: 2010 U.S. Census; ACS 2010-2014 5-yr. Estimate

Based on the California Department of Finance, state and county population projections, Lake County is projected to have 83,532 residents in 2035 and 86,635 residents in 2040 (California Department of Finance 2016) .

Project Area Population

The project area falls within four Census Block Groups, which include a large geographic area and a population larger than either that of Kelseyville or Lower Lake. The combined population of these Census Block Groups was 7,815 in 2010, which is approximately 12 percent of Lake County's population (Table 2.4-2). The immediate area surrounding SR 29 within the project limits, however, is sparsely populated. Most of the residents in the area live north of SR 29 near Clear Lake.

Table 2.4-2 Project Area Census Tract Block Groups

Census Block	Abbreviation	Population 2010	Population 2014	Percent Change
Census Tract 9, Block Group 1	Tract 9 BG1	2,447	2,231	-5%
Census Tract 9, Block Group 3	Tract 9 BG3	2,729	3,092	13%
Census Tract 11, Block Group 2	Tract 11 BG2	1,806	2,073	15%
Census Tract 12, Block Group 3	Tract 12 BG3	833	620	-26%
Project Areas Total		**7,815**	**8,106**	**4%**

Source: 2010 U.S. Census, ACS 2014

The proposed project would be located on a portion of SR 29 on the south side of Clear Lake between two small, unincorporated communities: Kelseyville and Lower Lake. In the year 2010, the U.S. Census reported the populations of these communities as 3,353 and 1,294, respectively. Kelseyville's population increased by 2.3 percent (from 2,861 to nearly 2,928 residents) from 1990 to 2000 and 14.5 percent (from 2,928 to 3,353 residents) from 2000 to 2010. According to the Kelseyville Area Plan, growth in Kelseyville is expected to be "limited by physical factors such as

topography, prime agricultural soils, and commuting distance to urban areas" (Lake County 1995, 2–5). The growth rate from 1995 to present has been less than predicted in the Kelseyville Area Plan (1995). This community was expected to reach a 2010 population of 4,477. The population in Lower Lake decreased 26.3 percent from 2000 to 2010 (from 1,755 to 1,294 residents) and, based on ACS, estimates has seen an increase of approximately 25 percent from 2010 to 2014.

Project Area Demographic Characteristics

The project's direct impacts (such as residential and business displacement, construction noise, and permanent changes in access) would affect residents of the SR 29 area in the project area. This includes the residents of the four Census Block Groups listed in Table 2.4-2 and shown in Figure 2.4-1.

Age

At the time of the 2010 Census, the median age in Lake County was 44.1, compared to 35.2 in California as a whole. Compared to California, Lake County has a three percent lower proportion of residents under 18 years of age and a 10 percent lower proportion of residents 18-49 years of age. However, Lake County has a 14 percent higher proportion of residents who are 50 years of age or older.

The distribution of ages in the project area and the two communities on either side of the project area are similar to that of Lake County as a whole.

Table 2.4-3 Summary of Age Demographics (2010)

Age Groups	California		Lake County		Kelseyville		Lower Lake		Project Area Census Block Groups	
Under 18	9,295,040	25%	13,672	21%	883	26%	259	20%	1,556	20%
18-24	3,962,951	11%	4,965	8%	298	9%	96	8%	486	6%
25-34	5,317,877	14%	6,603	10%	382	12%	130	10%	845	11%
35-49	7,872,529	21%	11,820	18%	631	19%	236	18%	1,407	18%
50-64	6,559,045	18%	16,155	25%	682	20%	337	26%	2,211	28%
65 & over	4,246,514	11%	11,440	18%	477	14%	236	18%	1,305	17%

Source: 2010 U.S. Census

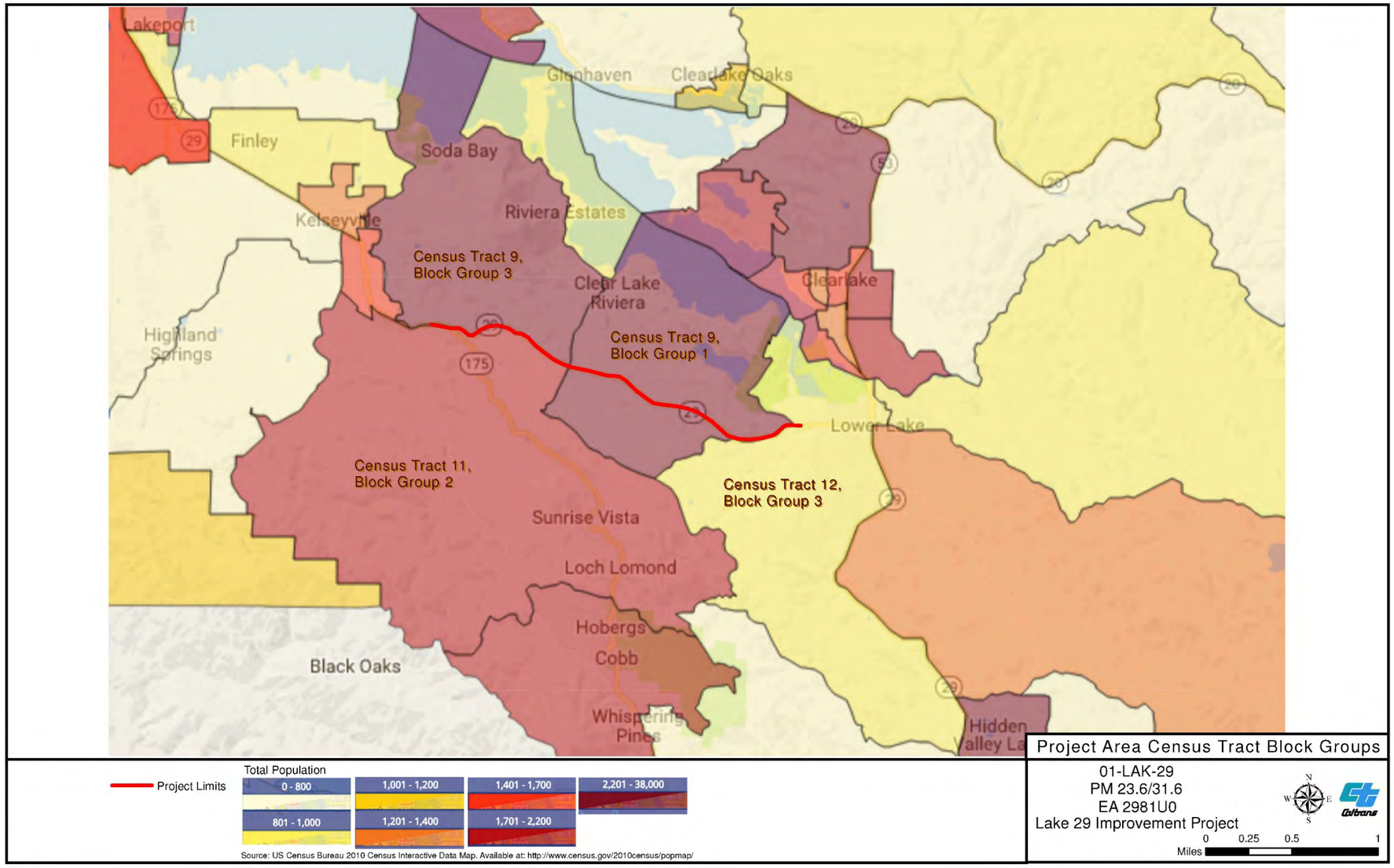


Figure 2.4-1 Project Area Census Block Groups

Households

According to the 2010 Census, the average household size countywide was 2.4 people, compared to 2.9 statewide. Kelseyville's average household size was 2.7, Lower Lake's average household size was 2.3, and the project area's average household size was 2.4.

The U.S. Census defines family households as related individuals residing in a housing unit. In 2010, 69 percent of all households in California were family households; in Lake County 61percent were family households; in Kelseyville 67 percent were family households; in Lower Lake 58 percent were family households; and in the project area 62 percent of all households were family households. There were 3,214 households in the project area in 2010, or approximately 12.5 percent of the 26,548 households in the county.

The U.S. Census defines a "householder" as the member of a household who lives at a housing unit and owns, is buying, or rents the housing unit. The proportion of householders 65 or older is eight percent higher in Lake County than statewide. In Kelseyville, Lower Lake, and the project area the proportion of householders 65 and older was nearly the same as the county.

Table 2.4-4 Household Demographics

Household Types	California		Lake Co		Kelseyville CDP		Lower Lake CDP		Project Area	
Family Households	8,642,473	69%	16,255	61%	822	67%	322	58%	2,002	62%
Nonfamily Households	3,935,025	31%	10,293	39%	402	33%	230	42%	1,212	38%
Total Households	12,577,498	100%	26,548	100%	1,224	100%	552	100%	3,214	100%
Average Household size	2.9		2.4		2.7		2.3		2.4	
Householders by Age										
Householder 15-24	507,925	4%	917	35%	38	3%	13	2%	77	2%
Householder 25-34	1,974,309	16%	2,722	10%	138	11%	53	10%	320	10%
Householder 35-44	2,504,185	20%	3,556	13%	202	17%	59	11%	403	13%
Householder 45-54	2,2774,117	22%	5,520	21%	243	20%	119	22%	683	21%
Householder 55-64	2,251,013	18%	6,296	24%	268	22%	145	26%	874	27%
Householder 65 & Older	2,565,949	20%	7,537	28%	335	27%	163	30%	857	27%
Total	12,577,498	100%	26,548	100%	1,224	100%	552	100%	3,214	100%

Source: U.S. 2010 Census

Race and Ethnicity

The racial composition of the county, Kelseyville, Lower Lake, and the project area is less diverse than that of the state as a whole. At the time of the 2010 census California was 58 percent white, Lake County 81 percent, Kelseyville 68 percent, Lower Lake 80 percent, and the project area 86 percent white. No major shift in the county's racial composition occurred between the 2010 Census and the 2014 ACS estimate. The

largest categories of nonwhite residents were “Some Other Race”, American Indian/Alaska Native, and members of “Two or More Races.”

Table 2.4-5 Racial Composition

Category	California		Lake County		Kelseyville		Lower Lake		Project Area	
	2010	%	2010	%	2010	%	2010	%	2010	%
One Race	35,438,572	95%	61,601	95%	3,208	96%	1,208	93%	7,501	96%
White	21,453,934	58%	52,033	80%	2,213	66%	1,031	80%	6,724	86%
Black or African American	2,299,072	6%	1,232	2%	22	1%	20	2%	101	1%
AIAN	362,801	1%	2,049	3%	51	2%	18	1%	157	2%
Asian	4,861,007	13%	724	1%	32	1%	13	1%	78	1%
NHPI	144,386	0.4%	108	0.2%	2	0%	1	0.1%	14	0%
Some Other Race	6,317,372	17%	5,455	8%	888	26%	125	10%	427	5%
Two or More Races	1,815,384	5%	3,064	5%	145	4%	86	7%	314	4%
TOTAL:	37,353,956	100%	64,665	100%	3,353	100%	1,294	100%	7,815	100%

Source: 2010 U.S. Census
Note: NHPI = Native Hawaiian and Other Pacific Islander. AIAN = American Indian or Alaska Native.

Hispanic or Latino Population

During collection of US Census data, persons of Hispanic origin are identified by a question that requests self-identification of the person's origin or descent. Respondents are asked to select their origin (and the origin of other household members) from a listing of ethnic origins. Persons of Hispanic origin, in particular, are those who indicated that their origin was Mexican, Puerto Rican, Cuban, Central or South American, or some other Hispanic origin. Like other ethnicities, people identifying themselves as Hispanic may be members of many different racial groups.

Table 2.4-6 shows the proportions of residents in the project area, Kelseyville, Lower Lake, and California as a whole identifying themselves as of Hispanic or Latino origin in 2010.

Table 2.4-6 Hispanic or Latino Origin

	Project Area		Lake County		Lower Lake		Kelseyville		California	
Hispanic or Latino (any race)	992	13%	11,088	17%	219	17%	1,337	40%	14,013,719	38%
Not Hispanic or Latino	6,823	87%	53,577	83%	1,075	83%	2,016	60%	23,340,237	62%

Source: 2010 U.S. Census

Income

Incomes are lower in Lake County and its communities than in California as a whole, but income levels increased at similar rates in Lake County (34 percent) and the rest of the state (33 percent) between 1990 and 2000. The 2010 Census did not provide median and per capita income data. According to the 2014 ACS, median household income in Lake County increased by 22 percent between 2000 and 2014. Statewide, median household income increased 29 percent in this time period. Median household income increased 54 percent in Kelseyville and 27 percent in Lower Lake in this period (Table 2.4-7).

Table 2.4-7 Project Area Income

	2000	2014	Percent Change (2000-2014)
Median Household Income			
Project Area	$44,714	$45,413	2%
Lower Lake	$24,974	$31,781	27%
Kelseyville	$24,363	$37,606	54%
Lake County	$29,267	$35,997	22%
California	$47,493	$61,489	29%
Per Capita Income			
Project Area	$21,688	$24,197	12%
Lower Lake	$13,516	$17,614	30%
Kelseyville	$15,651	$17,378	11%
Lake County	$16,825	$21,310	27%
California	$22,711	$29,906	32%

Source: 2010 U.S. Census; 2014 ACS

Median household income in the project area was lower than in California as a whole but substantially higher than in Lake County, Lower Lake, or Kelseyville. Median household income in 2014 ranged from nearly $33,000 in Tract 12, Block Group 3 to

nearly $53,500 in Tract 11, Block Group 2 (Table 2.4-8). Per capita income in the project area was also higher than in surrounding areas or the county.

Table 2.4-8 Project Area Income

		Tract 9 BG1	Tract 9 BG3	Tract 11 BG2	Tract 12 BG3	Project Area Average
Median Household Income		$43,000	$52,383	$53,288	$32,981	$45,413
% Households	Self-Employment Income	26%	8%	28%	6%	18%
	Retirement Income	19%	22%	30%	20%	23%
	Public Assistance Income	7%	0%	1%	3%	2%
	Social Security Income	25%	41%	49%%	65%%	41%
Per Capita Income		$21,272	$29,322	$29,060	$17,135	24,197

Source: 2014 ACS

Poverty

This analysis utilizes the poverty data collected in the 2010 US Census in order to analyze poverty rates in the project area. Following the Office of Management and Budget's (OMB) Statistical Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is "poor" (see Table 4.9).

Poverty levels for families and individuals are higher in Lake County than in the state as a whole. As suggested by the income indicators, the residents of the project corridor have lower levels of poverty than residents in Lake County or in the adjacent communities of Kelseyville and Lower Lake (see Table 2.4-10).

The statewide poverty level for individuals in 2010 was 15.9 percent. In Lake County, it was 25.0 percent. Lower Lake's poverty rate was below the state rate at 12.4 percent. Kelseyville's poverty rate was similar to the state rate at 15.3 percent.

Within the project area, the poverty rate for individuals varied between a high of 12.5 percent in Tract 11 Block Group 2 and a low of 5.2 percent in Tract 9 Block Group 3. Overall, the poverty rate for individuals in the project area was 10.4 percent.

Table 2.4-9 Poverty Thresholds in 2010 by Family Size (Dollars)

Size of Family Unit	Related Children Under 18								
One person:	None	One	Two	Three	Four	Five	Six	Seven	Eight or More
Under 65 years	11,137								
65 years and over	10,458								
Two people:									
Householder under 65 years	14,602	15,030							
Householder 65 years and over	13,194	14,973							
Three people	17,057	17,552	17,564						
Four people	22,315	22,491	22,859	22,190					
Five people	27,123	27,158	27,675	26,675	25,625				
Six people	31,197	31,320	30,675	30,058	29,137	28,591			
Seven people	35,896	36,120	35,347	34,809	33,805	32,635	31,352		
Eight people	40,146	40,501	39,772	39,133	38,227	37,076	35,879	35,575	
Nine people or more	45,224	48,293	48,527	47,882	46451	45,227	44,120	43,845	42,156

Source: 2010 US Census

Table 2.4-10 Poverty Rates in the Project Area and Surrounding Areas

Category	Project Area	Lake County	Lower Lake	Kelseyville	CA
Individuals	10.4%	25.0%	12.4%	15.3%	15.9%
18 yrs. and over	10.3%	15.7%	12.5%	13.8%	12.3%
65 yrs. and over	4.9%	7.3%	5.4%	11.1%	8.1%
Families	5.1%	16.4	9.9%	12.8%	10.6%
Families w/ Children under 18	7.8%	21.6%	13.6%	21.1%	15.3%

Source: 2010 US Census

Housing

Lake County's housing stock expanded by 3,048 units between 2000 and 2014, a 9.4 percent increase. California saw a 13 percent increase in this time period. Kelseyville's housing stock expanded by 227 units for a 19 percent increase, Lower

Lake's housing stock reduced by 160 units for an 18 percent decrease, and the project area's housing stock expanded by 854 units for a 24 percent increase. Since the 2000 Census, housing values have increased dramatically statewide. Housing values have increased in Lake County from a median value of $122,600 to $167,900, a 37 percent increase. However, the percent increase in the County median values of occupied homes is much lower than statewide values which went from $211,500 to $371,400 for a 76 percent increase. Kelseyville and Lower Lake median home values increased 28 percent and 10 percent respectively. Data was not available for project area housing values in 2000, but the median value of occupied homes in 2014 was estimated at $189,000.

In 2014, there were an estimated 4,469 housing units in the project area's census tract block groups, approximately 13 percent of the county's housing supply. The single-family detached unit is the largest category of housing units in the project area, the County and statewide. In 2000, 80 percent of the housing units in the project area were single-family detached units, compared with 62 percent of the units countywide and 56 percent of all housing units statewide. In 2014 those percentages had reduced to 44 percent in the project area while countywide had increased to 66 percent and statewide the number of single-family detached residences had increased to 58 percent. The second-largest source of housing in the project area is in mobile homes, which in 2000 made up 16 percent of the housing stock in the project area and in 2014 made up only eight percent. Mobile homes are much more common in Lake County than in general in California. In 2000, 30 percent of the county's housing is in mobile homes, compared to 4 percent statewide, while in 2014, county wide percentages of mobile homes had reduced to 24 percent compared to two percent statewide (Table 2.4-11).

Table 2.4-11 Housing Vacancy Levels and Housing Types by Area

	Project Area		Lake County		Lower Lake		Kelseyville		CA	
Category	***Number***	***%***	***Number***	***%***	***Number***	***%***	***Number***	***%***	***Number***	***%***
Total Housing Units	4,469	100	35,576	100	733	100	1,402	100	13,781,929	100
Vacant	1,079	24	8,805	25	48	7	182	13	1,164,649	8
Vacant: Seasonal, Recreational, or Occasional Use	628	14	4,968	14	48	7	0	0	359,537	3
Owner-Occupied	2,435	54	16,795	47	487	66	808	58	6,908,925	50
Renter-Occupied	958	21	9,976	28	198	27	412	29	5,708,355	41
Single-Family Residence (Detached)	2,022	45	23,648	66	291	40	739	53	8,017,091	58
Single-Family Residence (Attached)	22	0.5	558	2	53	7	14	1	960,230	78
Duplex	0	0	645	2	0	0	44	3	349,481	3
Multiple-Family Residence	0	0	2,130	6	0	0	166	12	3,920,734	28
Mobile Home	377	8	8,509	24	298	53	425	30	218,547	2
Median Rent	$1,402		$921		$1058		$919		$1,243	
Median Value of Occupied Homes	$189,000		$167,900		$128,400		$156,800		$371,400	

Source: Information presented in this table was obtained from the 2014 ACS except the "Owner Occupied" category which was obtained from the 2010 U.S. Census

Note: For housing costs by Block Group in the project area, see Table 2.4-12.

The project area's vacancy rate in 2000 was 27 percent—high relative to California's rate of 6 percent, but normal in the context of Lake County's rate of 26 percent. In 2014 the project area's vacancy rate had decreased to 24 percent, still much higher than the statewide rate of 8 percent, but normal in the context of Lake County's 2014 rate of 25 percent. This vacancy level reflects the area's popularity as a vacation destination. In 2000 twenty-three percent of vacant housing units in the project area and 17 percent in the county were vacation homes and are not occupied for the full year. By 2014 these numbers had decreased; the percent of vacancy for vacation homes dropped to 14 percent in both the project area and the County. Vacancy rates were lower in 2000 and 2014 in both Lower Lake and Kelseyville than in the project area or the county. Vacation homes accounted for two percent of Kelseyville's and eight percent of Lower Lake's housing stock in 2000 and zero percent and seven percent respectively in 2014, indicating that these communities are not as popular as other parts of the county as vacation destinations.

In the project area 18 percent of housing units were renter-occupied in 2000, much lower than the 41 percent statewide, 22 percent in Lake County, and 33 percent in Kelseyville; but, nearly the same as Lower Lake rates. In 2014 renter occupancy increased in the project area to 21 percent but was still much lower than the 41 percent statewide, 28 percent in Lake County, 29 percent in Kelseyville and 27 percent in Lower Lake (Table 2.4-11).

Table 2.4-12 2014 Project Area Housing Costs

Category		Lake County	Project Area	Project Area by Block Group			
				Tract 9, BG 1	Tract 9, BG 3	Tract 11, BG 2	Tract 12, BG 3
Median Housing Costs	All Owner-occupied Housing Units	$167,900	$189,000	$159,300	$181,000	$260,600	$155,100
	Owner-Occupied Mobile Homes	$72,100	$356,200	n/a	$33,900	$240,100	$82,200
	Gross Rent	$921	$1,042	$1,233	$1,282	$830	$825
Median Rent as Percentage of Household Income		31%	28%	34%	29%	19%	30%

Source: 2014 ACS

Median housing costs in the project area in 2014 were on average $21,000.00 more than in the rest of Lake County. Tract 11, Block Group 2, had the highest median value for owner-occupied homes in the project area: $260,600. Tract 12, Block Group 3, located east of SR 29, had the lowest median home value in the project area: $155,100.

Median gross rent in Lake County in 2014 was $921. Median rent throughout the project area was above this level, reaching a high of $1,282 in Tract 9, Block Group 3. According to the United States Department of Housing and Urban Development, when monthly housing costs are at or below one-third of monthly income, housing is affordably priced. In the project area, rents were generally above this level in 2014.

2.4.2.1 Community Cohesion

Community cohesion is the degree to which residents have a “sense of belonging” to their neighborhood; a level of commitment of the residents to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesion also refers to the degree of interaction among the individuals, groups, and institutions that make up a community. The project area is sparsely populated and is more likely to be perceived as an area

belonging in some sense to each of the three nearest communities: Kelseyville, Lower Lake, and Clear Lake Riviera. There are no clusters of residences in the project area.

2.4.2.2 Community Attitudes

Informal personal interviews conducted during fieldwork and project planning, and comments received during the public circulation of the Draft EIR/EA and the Revised Partial Draft EIR/EA, indicated that many of the residents of the proposed project area believe that the project is needed because of recent past growth and predicted future growth. Several people in the area stated that improvements were particularly needed for the intersection of SR 29/281/Red Hills Road, which is perceived as having a relatively high number of accidents.

There is a perception that high housing costs in communities south and west of the project area—in Sonoma and Napa counties—are forcing people who work in these counties to move to Lake County. The resulting growth is seen as creating congestion and dangerous conditions on SR 29.

2.4.2.3 Employment

According to the California Employment Development Department, 26,910 people were employed in Lake County in 2015. While Clearlake is the larger of the two cities in Lake County, with a population of nearly 15,000, more of the large employers in the county are located in Lakeport, on the western side of Clear Lake. Major employers in Lake County include three casinos, schools, health services, a few larger grocery, retail and hospitality businesses, and two fruit & vegetables growers/shippers (CEDD 2016).

The ACS has grouped like occupations in order to analyze workforces. There are five occupation clusters: 1) management, business, science, and arts occupations, 2) service occupations, 3) sales and office occupations, 4) natural resources, construction and maintenance occupations, and 5) production, transportation, and material moving occupations. The biggest source of employment in Lake County and in the project area is in the ‘management, business, science, and arts occupations’ cluster. In 2014, 27 percent of the county and 31 percent of the project area workforce was employed in one of the sub-categories of this occupation cluster. Overall, the workforce is balanced in the county between the management, business, science, and arts occupations (27 percent), the service occupations (26 percent), and the sales occupations (24 percent). The project area is balanced across two occupation clusters: ‘management, business, science, and arts occupations’ (31 percent) and ‘sales and

office occupations' (31 percent). The 'projection occupations' cluster was the lowest workforce category. Both the County and project area workforce consisted of 8 percent of the total workforce.

Project Area Businesses

Figure 2.4-2 shows the locations of businesses in the project area.

Kit's Corner

Kit's Corner is located at the northwest corner of the SR 29/281/Red Hills Road intersection. Kit's Corner was established in 1976 as a truck stop, gas station, and convenience facility to serve truck traffic on SR 29. Kit's Corner provides an array of services to both residents and through traffic. A single large structure on this corner houses several small shops including a convenience store/gas station, a barber shop, a dog grooming shop, a gift shop, and a hair salon. Creekside Lodge, a moderately priced 14-room motel, is also located on this corner. The convenience store and hotel employ approximately 16 people in total. The five smaller shops each employ between one and three people each. A small used vehicle sales lot also exists on the property.

Other Businesses in Project Area

East of Kit's Corner along SR 29 are several small businesses, including the Clearlake SPCA office, and Eagle's Nest Storage. Farther east along SR 29 and adjacent to Manning Flat is the DNA rock quarry. The S-Bar-S Quarry is located on the south side of SR 29 west of Kit's Corner. Bayshore Marine, located west of the S-Bar-S Quarry on the south side of SR 29, offers new boat sales and service, as well as consumer propane and wood fuel supplies. Kelseyville Auto Salvage and Towing is located on a 17-acre parcel north of SR 29 near the project's western limit.

Vineyards

Since the late 1990s, agriculture in Lake County has become increasingly oriented toward wine grape production. In 2010, wine grapes were the most valuable agricultural commodity in Lake County, worth $35.7 million. In 2015, the county's wine grape crop was worth $63.4 million. The second most valuable crop in the county in 2015 was pears which grossed $261 million (Lake County 2015).

In the project area, vineyards and other grape-growing interests own approximately 2,405 acres, though not all of this land is currently producing grapes. An additional 394.1 acres has been approved for vineyard conversion. Large portions of the farmland adjacent to SR 29 are planted with vineyards. Six small vineyards as well as

one large operator, Beckstoffer Vineyards, are currently located within the project limits. The main entrance to the Beckstoffer Farm Yard Center is located on the south side of SR 29, roughly adjacent to the Clearlake SPCA facility.

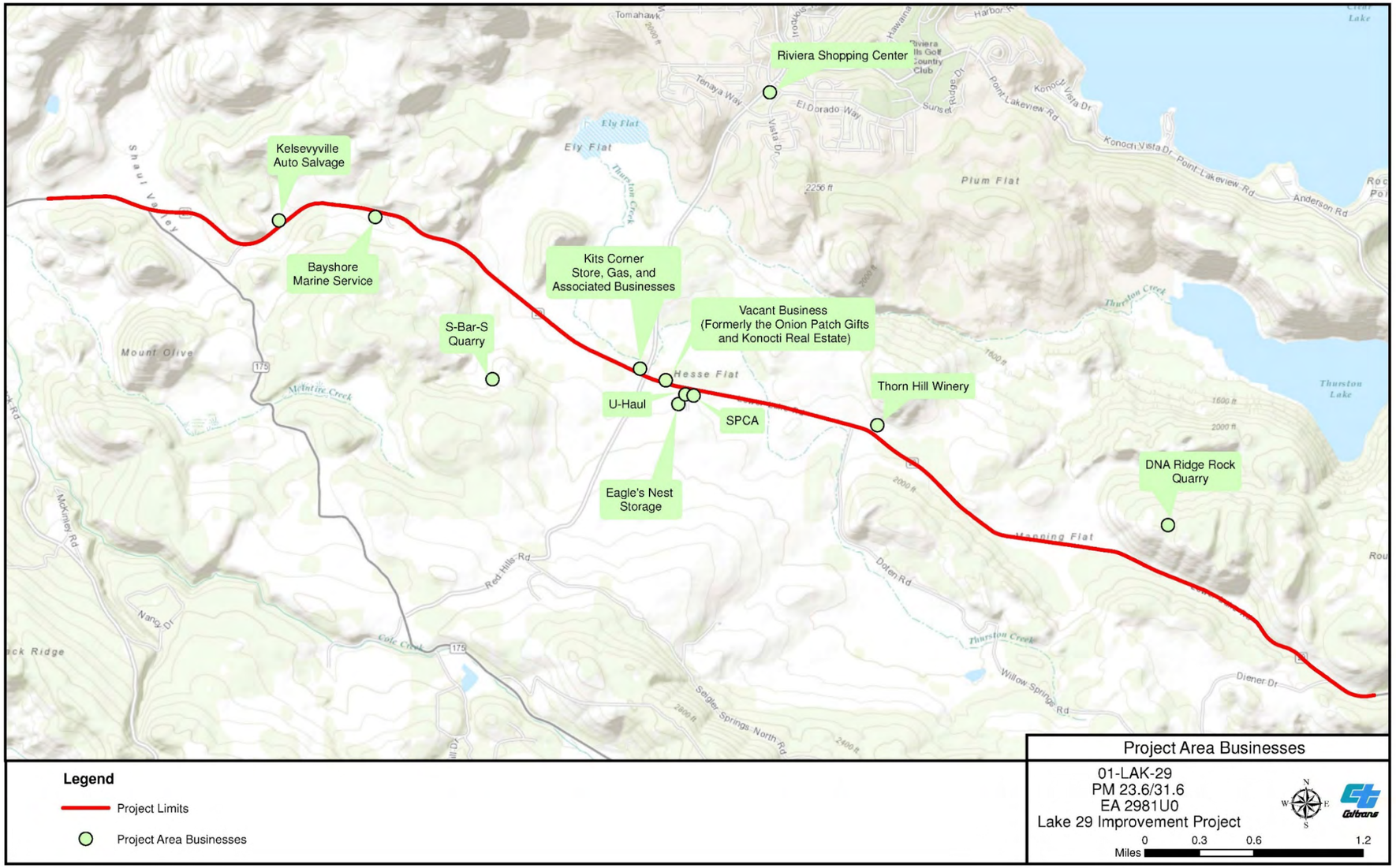


Figure 2.4-2 Project Area Businesses

2.4.2.4 Scotts Valley Band of Pomo Indians

The 36-acre property on the southeast corner of the SR 29/281/Red Hills Road intersection is owned by the Scotts Valley Band of Pomo Indians.

Several federal statutes give the United States Secretary of the Interior the authority to take lands owned by Native Americans into trust (Congressional Research Service Report for Congress, no date). According to information from the National Congress of American Indians, lands in trust fall under the authority of the tribal government and are generally not subject to state laws (National Congress of American Indians. no date).

The Scotts Valley Band of Pomo Indians has not filed to place this 36-acre parcel in trust with the United States Department of the Interior's Bureau of Indian Affairs.

As mentioned in the 2010 Lake County RTP, the tribe has discussed a development that would include approximately 35 homes, an apartment complex, a retirement facility, a restaurant, a museum/cultural center, a park, and a helipad.

The property is zoned for Community Commercial use. The property currently contains two residences.

2.4.3 Environmental Consequences

2.4.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no temporary impacts to the project area community relative to the proposed project.

Alternative D

During construction, traffic would be controlled, resulting in minor delays. While some detour routes would be available, construction would likely inconvenience residents of the project area and the adjacent communities of Kelseyville and Lower Lake. However, this impact would be temporary.

Construction activities would result in delays for vehicles bound for resorts in this area. Construction would likely occur during summer months when recreational traffic through this area is high. However, the impact to traffic passing through the project corridor during a vacation in this area would be minor, not likely resulting in a delay of more than 15 minutes (one-way).

To ensure that businesses in the project area would be minimally affected by construction activity on SR 29, Caltrans would prepare a Traffic Management Plan to accommodate business access during construction. Caltrans would also avoid obscuring business signs during project construction.

Permanent Impacts

Impact on Community Cohesion

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no impacts to the project area community cohesion relative to the proposed project.

Alternative D

Alternative D would not substantially alter the way members of the communities in the project area interact with one another. Currently, SR 29 is a sufficiently large and busy road to qualify as a dividing line through this area. The project area is rural, and no meeting places such as parks, restaurants, schools, churches, bars, or theaters are adjacent to this portion of SR 29. As a result, residents of the area have few opportunities to meet informally within the project area. Alternative D would not have adverse impacts on community cohesion.

Residential Displacement Impacts

Hardship Applications

Hardship applications have been filed by and approved (state-funded only) for two homeowners in this area. A hardship application is a request on a property owner's part that makes a case for the early acquisition of a home or other property based on the hardship that would be caused by a situation where unusual personal circumstances of an owner are aggravated by a proposed transportation facility and cannot be solved by the owner without acquisition by the State. Justifiable reasons for hardship acquisitions include: medical, financial, change of work locations, non-decent, safe and sanitary housing or monetary loss. In these situations, the grantors would not be able to sell their houses because of the impact on them by the project. To be considered, all proposed build alternatives would require the acquisition of these properties.

These two residential displacements are included in the counts of residential displacements given below.

The Community Impact Assessment and the *Relocation Impact Memorandum* (Caltrans 2016e), prepared for the proposed project, were used to estimate the number

of residential displacements that would be required under Alternative D. As standard practice, Caltrans conducted an evaluation of resources that would be available to ensure the timely relocation of displaced residents. This evaluation is based on the availability of comparable replacement units in the replacement area, which is defined to include Lakeport, Kelseyville, Lower Lake, and Clearlake, all within 15 miles of the displacement area.

It was determined that the State's relocation program is adequate to successfully relocate all displacees given enough time to do so; that relocation would be affordable to residential displacees given the use of replacement housing payments; and that relocation areas are comparable to the project area in terms of amenities, public utilities, and access to public services, transportation, and shopping.

The RIM and the Community Impact Assessment provide the best available estimate of the number of residences that would be displaced under the build alternative, based on the alternatives' current design. Until the project is approved and the design is finalized, data on relocations and displacements should be considered preliminary.

No Build Alternative

The No Build Alternative would not result in the displacement of any residents of the project area relative to the proposed project.

Alternative D

The proposed project was designed to minimize impacts to residences to extent feasible, however, Alternative D would require five residential displacements. Of the residential units affected by Alternative D, two are occupied, and three are vacant or abandoned. Additionally, Alternative D would affect numerous outbuildings, such as barns and sheds.

Relocation assistance payments and counseling would be provided to persons and businesses in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees would be entitled to moving expenses. All benefits and services would be provided equitably to all residential and business relocatees without regard to race, color, religion, age, national origins, or disability, as specified under Title VI of the Civil Rights Act of 1964 (Appendix C).

Business Displacement Impacts

No Build Alternative

The No Build Alternative would not require any businesses in the project area to be relocated relative to the proposed project.

Alternative D

Alternative D would require three business displacements including the abandoned building that once housed the Konocti Real Estate office and the Onion Patch Gift Shop, the Trader's Lot business at Kit's Corner, and a vineyard formally known as Nordby's Vineyards. A hardship application was filed by and approved (state-funded only) for the vineyard and the owner has been fully compensated. The Trader's Lot business would likely be relocated elsewhere on the property. Additionally, Alternative D would require acquisition of right of way from numerous businesses which would likely result in the relocation of personal property elsewhere on their parcels. Until the project is approved and the design is finalized, data on relocations and displacements should be considered preliminary.

Relocation Options

Relocation assistance would be provided to all displaced businesses. Relocation may adversely affect any business, since it means leaving a location in which the business has established its clientele.

Of the displaced businesses, only a few are likely to be highly dependent on their visibility from the roadway. While any business may benefit from a highly visible location, some businesses currently located along SR 29 cater primarily to local customers rather than through traffic. Businesses that cater to residents would likely fare as well economically if they were located on less heavily traveled roads. Replacement properties for these businesses in the Kelseyville/Lower Lake/Clear Lake Riviera area are plentiful.

The abandoned building that contained the Konocti Real Estate, and the Onion Patch Gift Shop benefits from accessibility from the roadway and high visibility to through traffic. Replacement properties for this businesses may be difficult to locate, particularly given the limited access resulting from the conversion to an expressway.

Employment Impacts

No Build Alternative

The No Build Alternative would not affect employment relative to the proposed project.

Alternative D

The effects of business displacement on local employment levels would be moderated by the fact that replacement properties for the displaced businesses are likely to be plentiful in the area. On average, workers in Lake County have 30-minute commutes, and very few workers (less than 4 percent countywide) walk or use public transit to get to work. As it is likely that the businesses displaced by the proposed project would be able to relocate in Lake County, access to workplaces is not expected to be a concern.

Environmental Justice

No Build Alternative

The No Build Alternative would not result in disproportionately high and adverse impacts on members of any minority or low-income communities in the project area relative to the proposed project.

Alternative D

Alternative D would not have disproportionately high and adverse effects on any minority or low-income populations, as discussed in Executive Order 12898 regarding environmental justice.

The only minority population identified in the project area is the Scott's Valley Band of Pomo Indians, which owns a 36 acre parcel on the southeastern corner of the SR 29/281/Red Hills Road intersection. There are two residences on this parcel suitable for housing. The parcel is not held in trust with the Bureau of Indian Affairs. The tribe is considering residential, commercial, and resort-type development on this parcel, but no plans have been finalized. Alternative D would require the acquisition of approximately three acres of this parcel. The portion of this parcel to be acquired does not contain the two residences. The tribe would receive fair market value for any property acquired. It is anticipated that although Alternative D would require acquisition of a portion of this parcel, the safety and congestion improvements as a result of the proposed project would be beneficial to any potential development plans.

No other populations of low-income, minority, or elderly residents have been identified in this area. Based on the above discussion and analysis, Alternative D would not cause disproportionately high and adverse effects on any minority or low-income populations per E.O. 12898 regarding environmental justice.

2.4.4 Avoidance, Minimization, and/or Mitigation Measures

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

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

2.5.2.1 Temporary and Construction 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.

2.5.2.2 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 except for relocations which have been studied where a Final Negative Declaration or EIR determines that a project would result in "no significant unavoidable impacts." 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 8 electric transmission poles and 75 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 communication~~s~~ 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 Final 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.

2.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.6.1 Affected Environment

SR 29 is a principal roadway that connects traffic to the primary regional roads of Lake County, namely SR 175, which carries traffic to US 101 to the west; SR 281 (Soda Bay Road), which serves the south shore of Clear Lake for recreational, commercial, and residential users; SR 53 to the south, which connects to SR 20; and

SR 20, which serves the north shore of Clear Lake. 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. Lake County residents and recreational visitors use SR 29 primarily for local trips within the county and for trips to and from the Napa Valley, Santa Rosa, and the Bay Area.

The SR 29/281/Red Hills Road intersection serves as an access route to recreational, commercial, and residential areas. This intersection was signalized in 2007.

In addition to the Clear Lake–bound travelers, other sources of recreational traffic include resorts, camping facilities, cabins/cottages, and year-round residential housing. This mix of generators and attractors create a significant amount of traffic in and out of this area.

No bicycle or pedestrian facilities exist on the current roadway, and SR 29 is not a designated bike route. Existing bikeways in the area include the Class II Konocti Road Bikeway in Kelseyville, a portion of the Class II Old State Highway 53 Bikeway in Central Clearlake, and the Clearlake to Lower Lake Bikeway. A Class III Bikeway is proposed for Red Hills Road, which transects the proposed project.

2.6.1.1 Safety

The Caltrans Office of Traffic Safety performed a collision analysis in the project area between April 1, 2007, and March 31, 2012 (Caltrans 2016d). During this period, there were 137 collisions, 68 of which resulted in injuries and seven of which were fatal. The collision rate for the mainline section of SR 29 is 1.08 collisions per million vehicle miles (MVM) traveled versus the state average collision rate of 1.10 per MVM. An analysis conducted for the portion of SR 29 between PM 27.9 and PM 31.6, however, revealed that this segment has an actual collision rate of 1.45 collisions for every MVM traveled, which is 1.4 times the state average collision rate for similar roadway facilities. The fatal collision rate for this northern segment is 0.085 collisions per MVM, 3.5 times greater than the statewide average rate of 0.023 collisions per MVM.

2.6.1.2 Traffic Classification

Traffic within the project area was classified using the Caltrans 2012 Annual Average Daily Truck Traffic Book. Automobiles represent 93.5 percent of the total traffic. The remaining 6.5 percent represent buses, recreational vehicles, and trucks. The percentage of truck traffic along this corridor is important due to the rolling and

winding terrain of the region. Regional transportation goals specify that an effort will be made to divert truck traffic from SR 20 to SR 29 and SR 53 in the future.

2.6.1.3 Traffic Projections

Traffic counts were collected by the Caltrans Office of Travel Forecasting and Modeling in 2001, 2007, and 2014. The counts were taken over several days, including a long weekend, and include mainline volumes, peak hour volumes, turn movements, 24-hour traffic classification, and recreational activities. Growth rates were used to forecast traffic volumes for the years 2021 and 2041 (Table 2.6-1).The growth rates presented below are based on Caltrans data and were developed from the California Air Resources Board traffic growth projections and historical traffic growth data.

Table 2.6-1 Yearly Growth Rate

Route	Percent
SR 29	2.3%
SR 175	2.0%
SR 281	2.5%
Red Hill Rd	1.5%

A traffic analysis simulation model was developed using Synchro plus SimTraffic software version 8. Future volumes were developed from the SimTraffic model runs. Performance measures were developed for the corridor segments and intersections from SimTraffic reports. Performance measures include congested speeds, seconds of delay per vehicle, idling time, and vehicle miles traveled. A level of service (LOS) analysis was done for existing conditions, future No-Build, and Alternative D for the corridor segments and intersections using HCS 2010 (Highway Capacity Software).

Generally, as volume in traffic lanes increases, their LOS degrades. This is measured on a graduated scale of LOS A to F, in which A is unrestricted free-flow travel and F is gridlocked, impeded movement. Other factors that can affect capacity and LOS include number of lanes, lane width, shoulder widths, vertical and horizontal alignments, design speed, vehicle type, and control conditions (stop signs, yield signs, and signals).

The proposed project's traffic analysis was conducted for existing and future conditions. SR 29 operates at LOS D and E under existing conditions. If no capacity-increasing improvements are made, there would be increased delay in the corridor. The current average speed during the AM and PM peak hour is approximately 50

mph. In 2041 a LOS E is projected for SR 29 during the AM and PM peak hours, with an average speed of approximately 50 mph under No-Build conditions.

Table 2.6-2 summarizes the expected change in average speeds, volume, seconds per vehicle of delay[16], and LOS along SR 29 through the year 2041.

Table 2.6-2 Level of Service Analysis for SR 29

Existing 2013												
Post Mile	23.8-27.89				27.89-31.05				31.05-31.6			
Description	Diener to SR281				SR281 to SR175				SR175 to Proj End			
	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]
AM Peak Hour Eastbound	318	53	19.1	D	245	51	39.5	E	245	54	2.0	D
AM Peak Hour Westbound	346	51	55.3		552	51	22.9		592	52	3.2	
PM Peak Hour Eastbound	403	52	22.0	D	522	49	34.9	E	567	51	3.8	D
PM Peak Hour Westbound	415	51	43.7		409	52	21.7		476	52	2.7	
2021												
Post Mile	23.8-27.89				27.89-31.05				31.05-31.6			
Description	Diener to SR281				SR281 to SR175				SR175 to Proj End			
	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]
AM Peak Hour Eastbound	374	53	20.6	D	287	51	41.1	E	292	54	2.3	D
AM Peak Hour Westbound	414	51	58.1		661	51	25.9		706	51	5.6	
PM Peak Hour Eastbound	481	52	23.4	E	621	49	39.7	E	682	50	4.5	D
PM Peak Hour Westbound	491	50	49.5		477	51	24.6		551	52	3.1	
2041												
Post Mile	23.8-27.89				27.89-31.05				31.05-31.6			
Description	Diener to SR281				SR281 to SR175				SR175 to Proj End			
	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]
AM Peak Hour Eastbound	528	52	23.0	E	394	50	45.3	E	394	53	2.7	E
AM Peak Hour Westbound	564	50	67.1		906	49	34.1		965	50	5.0	
PM Peak Hour Eastbound	638	52	23.9	E	839	47	53.7	E	857	49	5.4	E
PM Peak Hour Westbound	671	50	57.6		667	50	29.4		770	51	3.7	

[1]Speeds and delay from Synchro plus SimTraffic v8
[2] LOS - Level of Service A through F from 2010 Highway Capacity Software
August 11, 2015

[16] Units in seconds per vehicle (sec/veh) directional delay (EB & WB) for the average vehicle in the corridor for the segment specified.

2.6.1.4 Intersections

SR 29/281/Red Hills Road

The intersection of SR 29 and SR 281 currently operates at LOS C for motorists traveling northbound[17] and southbound on SR 29, and this is expected to drop to LOS D for southbound travelers and maintain a LOS C for northbound travelers by 2041 under the No Build Alternative.

The combination of a two-lane highway and a large amount of southbound SR 29 left turns to eastbound SR 281 during peak hour traffic will result in substantial delays at this intersection by year 2041 under the No-Build Alternative.

SR 175/SR 29

The intersection at SR 175 at SR 29 is unsignalized. Although signalization is not proposed at this intersection, widening to a four-lane expressway at this location would address the "directional split" encountered at this location with traffic volumes increasing in the southbound direction caused by traffic turning onto southbound SR 29 from SR 175.

2.6.2 Environmental Consequences

2.6.2.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, there would be no temporary impacts to traffic or transportation relative to the proposed project.

Alternative D

Construction to widen SR 29 to four lanes (two lanes in each direction) would result in some temporary disruptions of traffic flow, where temporary lane shifts or closures are required. A construction staging plan would be developed to maintain traffic flow. A Traffic Management Plan would also be developed to provide appropriate signing and striping along the roadway segments. Access to side roads and existing driveways would be maintained at all times.

[17] Although SR 29 is considered a northbound/southbound highway, the roadway trends east/west in the project corridor. For purposes of this discussion, however, the ultimate travel directions of north and south are used.

2.6.2.2 Permanent Impacts

No Build Alternative

Under the No Build Alternative, the LOS along SR 29 and at the SR 29/281/Red Hills Road and SR 175/SR 29 intersections would continue to decline as described above. In addition, no safety upgrades and improvements would be made to SR 29 or the intersections at SR 281/Red Hills Road or SR 175. Table 2.6-2 summarizes the expected changes in average speed, volume, seconds per vehicle of delay and LOS for SR 29 for the No Build Alternative.

Alternative D

Upgrading SR 29 from a two-lane rural principal arterial to a four-lane expressway under Alternative D would assist in the long-range plan to divert traffic from communities along the north shore, where traffic noise and the safety of pedestrians and non-motorized traffic have been ongoing concerns. Ultimately, it is envisioned that through traffic (including truck traffic) between US 101 and I-5 would be diverted to SR 29, leaving SR 20 and the “Main Street” communities that it serves to become more pedestrian friendly.

The proposed widening from two to four lanes and reclassification as an expressway with access control would improve the LOS, seconds per vehicle delay, traffic queuing, and traffic delays over both existing conditions and the projected conditions under the No Build Alternative. SR 29 operates at LOS D and E under existing conditions. If no capacity-increasing improvements are made, there would be increased delay in the corridor. Under Alternative D, the LOS would improve to A in 2021 and 2041. The current average speed for both AM and PM peak hour traffic is approximately 50 mph. Under Alternative D, the average speed would reach approximately 60 mph for both AM and PM peak hour traffic. Table 2.6-3 summarizes the expected changes in average speed, volume, seconds per vehicle of delay, and LOS for SR 29 for Alternative D.

Table 2.6-3 Level of Service Analysis for SR 29 Under Proposed 2021 and 2041 Conditions

Build 2021												
Post Mile	23.8-27.89				27.89-31.05				31.05-31.6			
Description	Diener to SR281				SR281 to SR175				SR175 to Proj End			
	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]
AM Peak Hour Eastbound	371	64	11.4	A	283	62	22.7	A	285	65	1.1	A
AM Peak Hour Westbound	408	61	45.7	A	663	62	13.5	A	711	61	2.5	A
PM Peak Hour Eastbound	470	63	12.9	A	611	61	16.6	A	663	63	1.9	A
PM Peak Hour Westbound	488	61	33.1	A	479	63	12.9	A	555	62	2.0	A
Build 2041												
Post Mile	23.8-27.89				27.89-31.05				31.05-31.6			
Description	Diener to SR281				SR281 to SR175				SR175 to Proj End			
	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]	Vol	Speed[1] (mph)	Delay[1] (sec/veh)	LOS[2]
AM Peak Hour Eastbound	511	63	13.2	A	389	62	22.7	A	392	59	1.5	A
AM Peak Hour Westbound	559	61	50.8	A	908	62	15.8	A	964	59	4.0	A
PM Peak Hour Eastbound	647	62	16.8	A	842	60	18.5	A	926	62	2.5	A
PM Peak Hour Westbound	673	60	41.3	A	656	61	15.9	A	761	60	3.1	A

[1]Speeds and delay from Synchro plus SimTraffic v8
[2]LOS – Level of Service A through F from 2010 Highway Capacity Software
July 30, 2015

Safety

As mentioned previously, 1.08 collisions occurred for every MVM traveled on SR 29 between April 1, 2007 and March 31, 2012, which is typical for a rural two-lane highway. North of the SR 29/281/Red Hills Road intersection (PM 27.4 to 31.6), however, 1.45 collisions occurred for every MVM traveled, which is 1.4 times the state average collision rate for similar roadway facilities. Alternative D would reduce the collision rate on SR 29 by converting the current two-lane highway to a four-lane expressway. The statewide average for four-lane expressways is 0.023 collisions for every MVM traveled.

In addition, the project would improve safety on SR 29 by providing a modern four-lane facility that meets current design standards. Improvements to the horizontal and vertical alignment, addition of lanes that would create passing opportunities, removal of fixed objects, widening of shoulders, and addition of a 46-foot median would provide safety benefits to motorists in terms of increased sight distance, enhanced

recovery areas, separation of traffic, and minimized exposure to fixed objects. The addition of wider shoulders to the roadway would also be expected to increase safety for both bicyclists and pedestrians.

Intersections

SR 29/281/Red Hills Road

The primary entry point for the Soda Bay area is from SR 281/Red Hills Road at the intersection of SR 29. The SR29/281/Red Hills Road intersection was signalized in 2007, and the proposed project includes addition of travel lanes and turn lanes.

An LOS analysis for Alternative D was conducted for the intersection of SR 29/281/Red Hills Road. A turning movement count conducted in 2014 and projected to the year 2021 and 2041was used to evaluate the operation of the intersection. Table 2.6-4 summarizes the expected LOS at the SR 29/281/Red Hills Road intersection with implementation of the proposed project.

Table 2.6-4 Level of Service Analysis for the SR 29/281/Red Hills Road Intersection

Alternative	Delay[1] per Vehicle (sec) / LOS[2]							
	EB		WB		NB		SB	
	sec	LOS	sec	LOS	sec	LOS	sec	LOS
2013 AM NoBuild	24.6	C	24.8	C	5.1	A	6.6	A
2013 PM NoBuild	25.8	C	24.1	C	12.8	B	10.4	B
2021 AM NoBuild	24.8	C	25.4	C	6.1	A	8.5	A
2021 PM NoBuild	31.2	C	28.9	C	16.1	B	13.5	B
2041 AM NoBuild	26.7	C	29.5	C	11.7	B	13.9	B
2041 PM NoBuild	42.8	D	34.0	C	29.0	C	22.2	C
2021 AM Build	15.0	B	21.4	B	7.3	A	7.9	A
2021 PM Build	15.6	B	19.8	B	15.6	A	11.0	B
2041 AM Build	15.0	B	24.0	C	10.4	B	11.4	B
2041 PM Build	18.2	B	24.6	C	22.9	C	15.8	B

[1]Delay from Synchro plus SimTraffic v8
[2]LOS – Level of Service A through F from 2010 HCM Exhibits 18-4 and 19-1

SR 175/SR 29

Alternative D would address the “directional split” encountered at this location with traffic volumes increasing on SR 29 in the southbound direction caused by traffic turning onto southbound SR 29 from SR 175. The intersection would also be realigned in order to meet current design standards.

2.6.3 Avoidance, Minimization, and/or Mitigation Measures

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

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, an animal shelter 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).

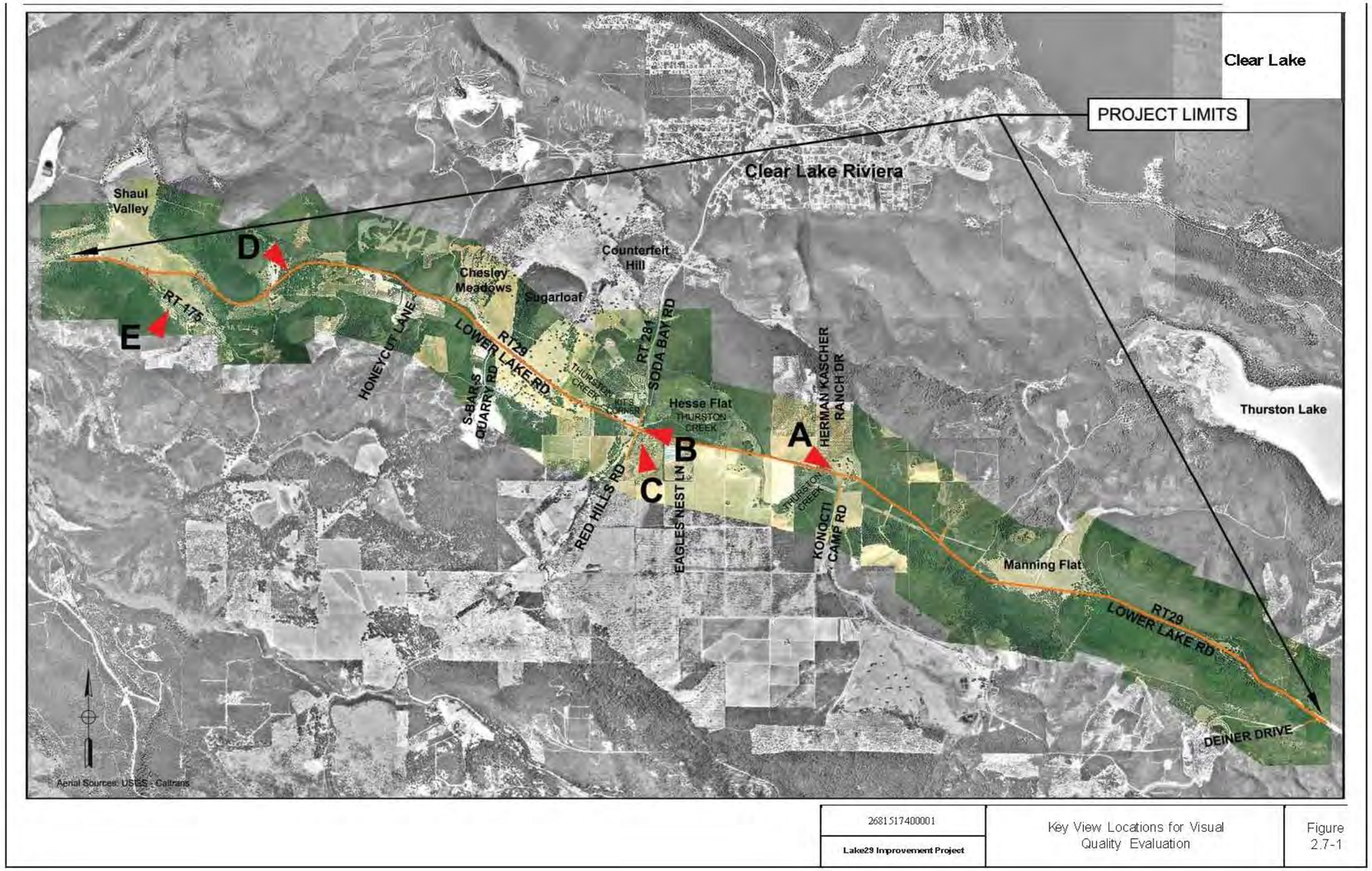


Figure 2.7-1 Key View Locations for Visual Quality Evaluation

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.

Key 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.

Key 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.

Key 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.

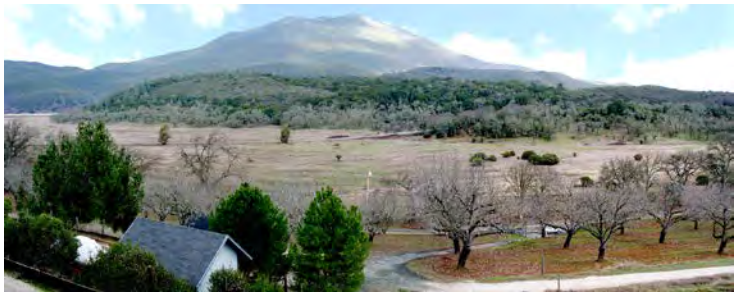
Intactness: Low

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.



Key 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

2.7.3.1 Temporary and Construction 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.

2.7.3.2 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

	Existing			Alternative D		
Figure	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 corridor 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 K 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
1st Supplemental HPSR, ASR, HRER, & Archaeological Evaluation Report (AER)	August 2006
2nd Supplemental HPSR, ASR, & AER	January 2008
Finding of Effect (FOE) with a finding of *Adverse Effect*	January 2008
3rd Supplemental HPSR, ASR, AER, and Built Environment Memo	March 2015
Final FOE with a finding of *No Adverse Effect*	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 are 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 1881).

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*, 1881; 63–64). At this time, Clear Lake Township was part of Mendocino County, later becoming part of Napa County in 1855 (*History of Napa and Lake Counties, California*, 1881;, 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 and Construction 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 L).

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 L). 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 L). 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 K 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.

Physical Environment

2.9 Hydrology and Floodplains

2.9.1 Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR Part 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as the area subject to flooding by the flood or tide having a 1 percent chance of being exceeded in any given year. An encroachment is defined as an action within the limits of the base floodplain.

2.9.2 Affected Environment

2.9.2.1 Drainage

Within the project limits, SR 29 crosses several unnamed streams and crosses the main Thurston Creek channel at PM 27.23. During high flow events, Thurston Creek overflows its existing banks upstream (south) of SR 29 and floods into a flat area west of the main creek channel. The combined flow crosses under SR 29 through the main channel culvert at PM 27.23 as well as a double box culvert at PM 27.33. After passing under SR 29, Thurston Creek waters expand into the Hesse Flat area before passing under SR 281 through the main channel culvert at PM 16.93. Flows for Thurston Creek are shown in Table 2.9-1.

Table 2.9-1 Summary of Discharges for Thurston Creek

Flooding Location	Drainage Area (square miles)	Flows During 100-Year Flood (cubic feet per second)
At Lower Lake Road (SR 29)	4.9	1,630
At SR 281 (Soda Bay Road)	5.2	2,750
5,600 feet downstream of SR 281 (Northern Soda Bay Drive)	11.6	3,390

Source: FEMA 1988; FEMA 1998; FEMA 2005

Caltrans maintenance records indicate drainage systems located at PM 27.23 and 27.33 and other nearby culvert crossings have experienced flooding in the past due to debris and sedimentation accumulation (Caltrans 2015g). Improvements have been made over the years to the culvert systems at these two locations, however recent design calculations indicate that the current structures are insufficient to pass the 100 year flood runoff without overtopping the traveled ways of SR 29 and SR 281. These issues of culvert degraded performance and highway overtopping will be addressed and fixed in the design of the project The specific issues at each crossing are covered in more detail in the Preliminary Drainage Report for the project.

2.9.2.2 Floodplains

Within the project limits, the Thurston Creek floodplain lays within a Federal Emergency Management Agency (FEMA) Zone AE regulatory floodway which states, “Special Flood Hazard Areas inundated by the 100-year flood where base flood elevations are determined”. The project crosses this FEMA regulatory floodway at the location where Thurston Creek crosses SR 281, approximately 330 feet north of

SR 29 (Figure 2.9-1). East of SR 281, the Zone AE floodway widens and intersects a portion of the SR 29 embankment at PM 27.23 where Thurston Creek crosses SR 29.

2.9.3 Environmental Consequences

The proposed project would modify the roadside drainage and raise the roadway grade, where needed, along SR 29 to accommodate the widened highway facility and the 100-year flood. Where SR 281 crosses Thurston Creek, the capacity of the existing culverts would be increased. Along SR 29, additional culverts would be added, and existing culverts would be repaired or upgraded as necessary to add flow capacity across the highway and decrease the flood elevation at the highway.

2.9.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not change the current highway and would have no impacts on hydrology or floodplains in the project area relative to the proposed project.

Alternative D

Temporary channel obstructions would occur during construction, but all work in the channels such as the SR 29 Thurston Creek crossing would typically occur during the dry season (June 15 to October 15).

2.9.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not improve the roadway and would not result in any permanent impacts on hydrology or floodplains relative to the proposed project.

Alternative D

Project-Related Flood Risk

With Alternative D, proposed improvements to SR 29 over Thurston Creek are within the FEMA-defined 100-year floodplain, as shown on Figure 2.9-1. However, the risks associated with the implementation of this alternative are minimal. Flooding from Thurston Creek has been analyzed by FEMA for the stream reach downstream of SR 29. Hydraulic modeling conducted by FEMA for the Lake County Flood Insurance Study, using the United States Army Corps of Engineers' (USACE's) HEC-RAS computer model, included the culvert crossings of SR 29 and a short reach upstream to properly model the highway culvert crossing. The existing 100-year flood elevation

is above the elevation of the existing road. However, the proposed project would modify the roadside drainage and raise the roadway grade, where needed, along SR 29 to accommodate the widened highway facility and the 100-year flood. Where SR 281 crosses Thurston Creek, the capacity of the existing culverts would be increased. Alternative D is not expected to notably increase the floodplain elevation and, therefore, would not pose a flood risk.

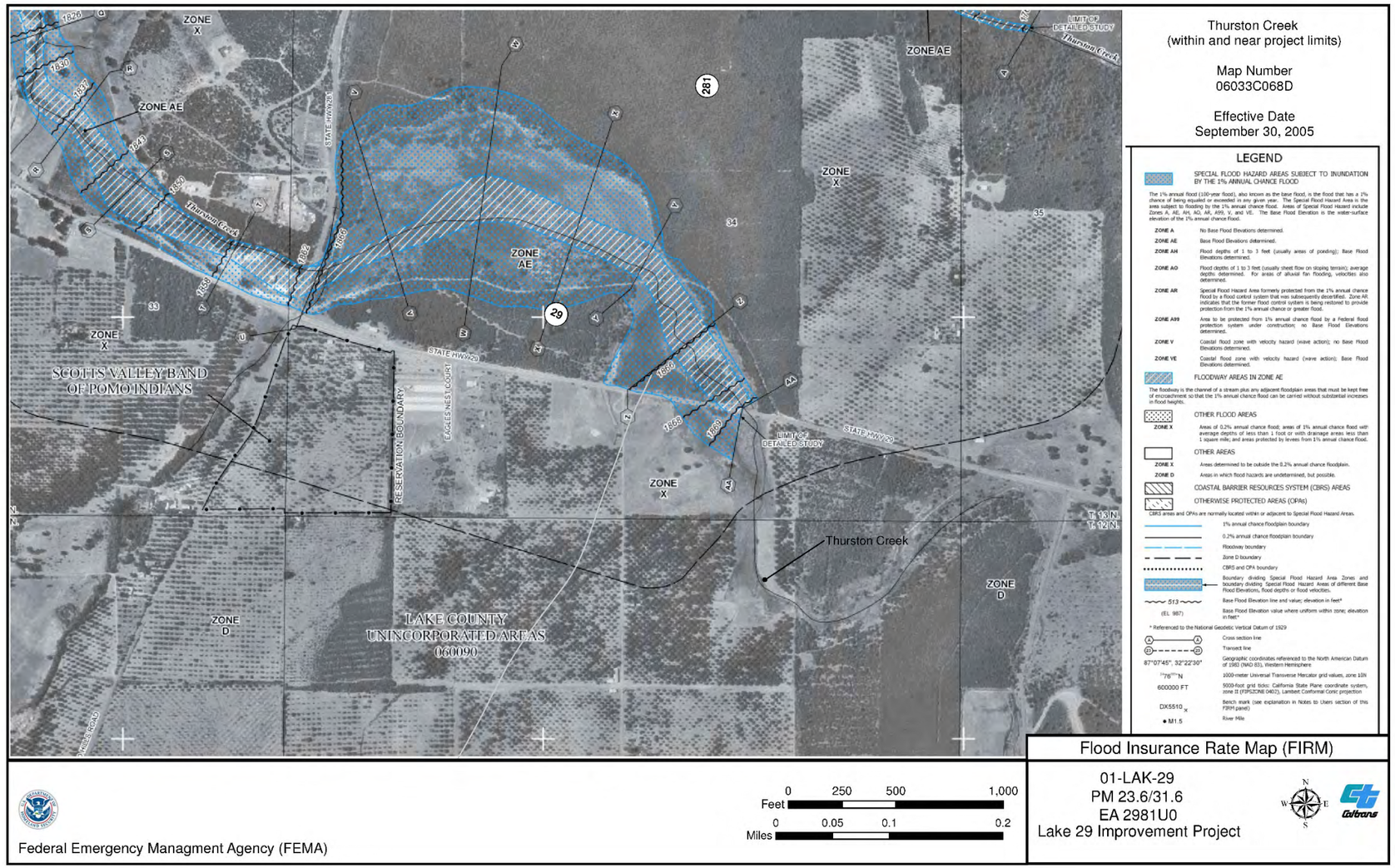


Figure 2.9-1 FEMA Flood Insurance Rate Map for Thurston Creek

Floodplain Encroachment

As defined by FHWA, a longitudinal floodplain encroachment is an action within the limits of the base floodplain that is longitudinal or parallel to the direction of flow.

As defined by FHWA, a significant[18] floodplain encroachment is a highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction or flood-related impacts: (1) a significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route; (2) a significant risk; or (3) a significant adverse impact on the natural and beneficial floodplain values. The proposed project would not be considered a significant floodplain encroachment. The improvements that are a part of this project would not significantly increase the existing depth or limits of flooding.

Incompatible Floodplain Development

The proposed project would not support any incompatible floodplain development. Alternative D proposes to widen SR 29 to a four-lane divided expressway with access control. This project is not intended to encourage additional development in Lake County, and the addition of excess capacity to SR 29 is not likely to dramatically alter development patterns in this area, primarily because there is no indication that a lack of capacity is currently constraining development.

Impacts on Natural and Beneficial Floodplain Values

Natural and beneficial floodplain values in the project area include but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

The impacts of Alternative D on the natural and beneficial floodplain values are expected to be minimal. The uses of the existing floodplain lands include vineyards and fallow, undeveloped land in the project area west of SR 281/Red Hills Road. The only physical impact to the floodplain would be the new footprint of the highway widening, which would include additional culverts. The movement of fish that may exist in Thurston Creek would not be impeded by the existing or proposed crossing of SR 281. At the SR 29 crossing, a drop of less than approximately 2 feet exists at the downstream end of the culvert. The proposed project would improve conditions as a

[18] The use of "significant" in this section is consistent with the *Federal-Aid Highway Program Manual* (FHWA 1979) definition for floodplain encroachment and is not used with regard to NEPA or CEQA.

large multi barreled, natural substrate bottom box culvert would be constructed at grade at this location.

2.9.4 Avoidance, Minimization, and/or Mitigation Measures

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

2.10 Water Quality and Storm Water Runoff

2.10.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[19] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm

[19] A point source is any discrete conveyance such as a pipe or a man-made ditch.

water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

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 the 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 United States Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 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 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. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[20] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even

[20] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant." 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.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality

functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);

2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan

(SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act (CWA), any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board (RWQCB), dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.10.2 Affected Environment

2.10.2.1 Climate, Topography, and Soils

The project area experiences a warm temperate (mesothermal) climate characterized by dry summers with little or no precipitation from June to September. The terrain surrounding the project area is mostly rolling to mountainous and interspersed with small valleys and basins. The majority of the project lies within the Thurston Lake watershed, a closed drainage basin created by a lava flow that dammed the creek, creating Thurston Lake. The approximate elevation of SR 29 is 1,900 feet, and Thurston Lake, to the northeast, lies at 1,400 feet.

The project area consists of uplifted and dissected hills of volcanic origin. Typically the soils within the entire project vicinity are moderately deep to very deep and well drained. Textures range from cobbly loam to very stony loam on the eastern half of the project and from very gravelly loam to extremely gravelly sandy loam on the western half.

2.10.2.2 Surface Water

The Environmental Study Limits (ESL) of the proposed project lies primarily within three closed watersheds separated by low ridges. A very small portion of the ESL is located within a fourth open watershed at the west end of the project limits (See Figure 2.16-1). The primary watershed in the project area is the Thurston Lake watershed. About 84 percent of the ESL is within this watershed. 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. Thurston Creek and its tributaries are the primary surface waters within the ESL.

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 drainage that flows north and eventually dissipates throughout the floor of the valley.

The third, unnamed, watershed (approximately 4% of the ESL) lies between the Thurston Lake and Shaul Valley watersheds. All water flows in and adjacent to an auto wrecking yard found at the low point of the watershed.

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.

Surface water in the general vicinity of the project area also includes Clear Lake, the largest natural freshwater lake entirely within the borders of California, which lies approximately 1.5 miles north of Thurston Lake. Thurston Lake and Clear Lake are separated by a volcanic ridge and are not connected by surface waters.

Quality of Existing Surface Waters

No surface water quality data exist for Thurston Creek, Thurston Lake, or other water bodies within the Thurston Lake watershed. Agencies that have jurisdiction over water resources in the project area include the East Lake Resource Conservation District, the Central Valley RWQCB, the Lake County Water Resources Division, the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the California Department of Water Resources (DWR) Northern District. The RWQCB has not designated any beneficial uses in the Basin Plan (RWQCB 1998) for Thurston Lake.

Existing Road Maintenance

Caltrans applies traction sand to SR 29 intermittently throughout the year for ice/frost control. The amount of sand applied ranges between 100 and 300 pounds per lane mile. The application of sand is often concentrated in certain areas on the road to reduce driving hazards. After the sand is applied, it is allowed to disperse onto the roadside and a portion is collected by pickup brooms and/or ditch cleaning operations.

2.10.2.3 Groundwater Resources

No groundwater data is available for the immediate project area. Most of the groundwater underlying the Thurston Lake watershed is not included in any of the groundwater basins mapped by DWR. However, approximately 0.5 mile of the western end (PM 31.1 to 31.6) of the project area is included in the Kelseyville Groundwater Basin, a 30-square-mile basin drained by Adobe Creek (SWRCB 2003). Private wells are located within and around the project area, including a small community along SR 281 (Soda Bay Road) to the north. However, no public supply of water from wells is provided within or in the immediate vicinity of the project area.

Wellhead Protection

Wellhead protection is a preventive program designed to protect public water supply wells. Because the proposed project is in an area that does not have a public water supply from groundwater wells, planning for wellhead protection is not necessary.

Groundwater Quality

Groundwater throughout the majority of the project area, excluding the small portion of the project that overlies the Kelseyville Basin, has not been monitored by a public agency primarily because no monitoring wells lie within a groundwater basin designated by DWR. Groundwater in the Kelseyville Basin is used for intensive irrigation, domestic, and industrial purposes.

2.10.3 Environmental Consequences

2.10.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not change the current highway and would have no temporary or construction impacts on water quality or storm water runoff relative to the proposed project.

Alternative D

Surface Water

During construction, there is the potential for increased erosion, and storm water runoff carrying sediments could drain into Thurston Creek or other drainages. Soil erosion could, especially during heavy rainfall, increase suspended solids, dissolved solids, and organic pollutants in nearby creeks.

As Caltrans standard practice, temporary erosion control measures would be applied to all exposed areas during construction. Temporary erosion control measures may include the trapping of sediments within the construction area through the placement of barriers, such as silt fencing, fiber rolls, and/or the construction of temporary detention basins. Temporary erosion control BMPs are described in the Caltrans Project Planning and Design Guide (Caltrans 2016f). Because the proposed project would involve soil disturbance of more than 1 acre, Caltrans would adhere to the conditions of the NPDES permit for construction activities (Order No. 2009-0009-DWQ as amended, NPDES No. CAS000002). To address potential temporary water quality impacts resulting from construction activities associated with this project, Caltrans would require the project contractor to prepare and adhere to a SWPPP. To avoid contaminating waterways or groundwater, additional water quality, erosion, and hazardous waste provisions may also be required in the construction contract and/or in Caltrans Standard Specifications and Standard Special Provisions. The SWPPP would address potential project specific construction-phase water quality impacts and would include the following elements: Project Description; Minimum Construction Control Measures; Erosion and Sediment Control; Non-Storm Water Management; Post-Construction Storm Water Management; Waste Management and Disposal; Maintenance, Inspection, and Repair; Storm Water Monitoring; Annual Reporting to RWQCB; and Training.

Accidental spills of petroleum hydrocarbons such as fuels and lubricating oils, concrete wastewater, other potentially toxic materials, and possibly sanitary wastes are also a concern during construction activities. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled. The proposed project would include the implementation of BMPs regarding the proper handling and storage of materials and the prevention, control, and cleanup of accidental spills. These BMPs would be included in the contractor prepared SWPPP and may include temporary containment facilities, spill prevention and control plans,

material handling, waste management, and maintenance and inspection of facilities and equipment.

Groundwater

No construction-related groundwater impacts are expected because the project does not involve substantial excavations that would affect groundwater resources.

2.10.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not change the current highway and would have no permanent impacts on water quality or storm water runoff relative to the proposed project.

Alternative D

Permanent impacts could potentially result from the following two sources: sediment carried by storm water from project-related erosion and vehicle-related toxic pollutants carried in storm water runoff.

Surface Water

Storm water runoff volumes from the project area would increase with the implementation of the project due to the increase in impervious surfaces. However, this additional runoff is not anticipated to exceed the capacity of the proposed drainage systems. The FHWA has found that street and highway storm water runoff can, in some instances, adversely affect receiving water quality. The nature of these impacts would depend on the uses and flow rate or volume of the receiving water, rainfall characteristics, and street or highway characteristics. In general, heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions are the primary toxic pollutants associated with transportation corridors.

Sanding of the road during winter months may adversely affect water quality in the project area due to increased sediment loads in storm water runoff. Under the build alternative, the amount of sand currently spread may double due to the increased amount of paved area.

Permanent control measures to reduce pollutants in storm water runoff from the roadway would be implemented, as required, to reduce suspended particulate loads (and thus pollutants associated with the particulates) entering drainages. These measures would be incorporated into the final engineering design or landscape design

of the project. Post construction BMPs are permanent erosion and sediment control measures (i.e. Design Pollution Prevention BMPs) or Treatment BMPs. Permanent erosion and sediment control measures may include preservation of existing vegetation, slope rounding, dikes, berms, ditches, rock energy dissipaters, and/or the application of seed, straw, compost, stabilizing emulsion and mulch, or a combinations thereof. Treatment BMPs may include bio-filtration strips and/or swales, infiltration basins, detention basins, and/or traction sand traps.

Groundwater

At this time, the project is not anticipated to involve substantial excavations that could affect groundwater resources, although some surface excavation would occur during construction. Near the eastern end of the project area, several hills would require steep cuts. It is unknown if groundwater would be encountered during excavation of these cuts. If groundwater is encountered during any excavations, the Caltrans Office of Environmental Engineering would be contacted regarding the handling and disposal of this water. If this water would be discharged into any jurisdictional waters, appropriate dewatering procedures would be required to reduce or eliminate any potential discharge of pollutants to the maximum extent feasible. A project-specific Waste Discharge Permit may be required from the RWQCB if substantial dewatering would take place. In the event that this project would affect groundwater, the groundwater would be tested for potential contamination, and a Special Provision would be prepared, if applicable, to ensure the proper handling and disposal of the groundwater.

Groundwater resources in the area do not represent a sole source aquifer, so no impacts are expected to occur to water quality in groundwater wells.

2.10.4 Avoidance, Minimization, and/or Mitigation Measures

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

2.11 Geology/Soils/Seismic/Topography

2.11.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects

"outstanding examples of major geological features." Geologic and topographic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Caltrans Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. Structures are designed using the Caltrans' Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.11.2 Affected Environment

2.11.2.1 Regional Setting

The project area is located within the eastern margins of the North Coast Ranges geomorphic province. This province characterizes the crustal deformation resulting from the contact between the North American and Pacific tectonic plates. The Pacific plate is moving northwest relative to the North American plate across a boundary oriented in a north-northwest direction that is approximately 60 miles wide. As a result, topography is expressed as northwest striking ridges and valleys. Shearing along the plate boundary has resulted in a wide zone of faulting. A significant number of the active faults in Northern California are located within the province. The average relative motion across this plate boundary amounts to 1.4 to 1.5 inches per year, with the majority of this motion occurring during large earthquakes (WGCEP 2003). Seismically, this region is one of the most active in the world, highlighted by the number of large, damaging earthquakes that have occurred during historical time.

2.11.2.2 Site Geology

The project site is located within the Clear Lake volcanic field, south of Clear Lake, in Lake County. Types of rock found in the project area include dacite, andesite, obsidian, basalt, tuff and other pyroclastic rock, and rhyolite (Wagner and Bortugno 1982). Alluvium (weathered and eroded bedrock material deposited by flowing water) is found primarily in low-lying areas such as Manning Flat and Shaul Valley.

The nearby terrain is mountainous, with elevations ranging from approximately 2,000 to 2,300 feet.

The project area traverses about 10 different soil types, ranging from clayey loam to gravelly sandy loam (SCS 1983). The permeability values of these soils range from low to very high.

Borings collected at Seigler Creek Bridge (PM 20.37), outside of the project ESL to the east, indicate that the near-surface material at that location consists of medium-dense to dense sand, silt, and gravel underlain by weathered sandstone and shale. Similar samples collected at Kelsey Creek Bridge (PM 34.97), outside of the project ESL to the west, indicate that the near-surface material consists of medium dense to dense sand, silt, and gravel with cobbles underlain by medium-stiff to stiff clayey silt. Within the wetland areas, the majority of the underlying soils are expected to consist of silts and sands with some clay.

2.11.2.3 Geologic Hazards

Surface Fault Rupture

Surface fault rupture is defined as a slip on a fault plane that offsets or disturbs the earth's surface. Offset on a fault at the ground surface can create a discrete step or fault scarp if fault slip occurs on a single fault plane or within a narrow fault zone. If fault slip occurs over a broader area, then the result may be a zone of fracturing and ground cracking.

The State of California delineates zones around active faults under the Alquist-Priolo Earthquake Fault Zone Act (Hart 1994) to mitigate for the effects of surface faulting. The state defines an active fault as a fault showing evidence for rupture during the Holocene (the last 11,000 years). The proposed project area is in a region of numerous faults that are zoned as active faults by the State of California, with many faults trending toward and two faults crossing the project corridor (CDMG 2000). Therefore, the potential for surface rupture due to fault movement in the project area is considered to be likely during the lifetime of the project.

Earthquake Shaking

Strong earthquake ground shaking is likely the most important seismic hazard that can be expected in this area. Based on the Caltrans California Seismic Hazard Map, the main fault in the project area is the Konocti Bay fault. Based on the reference

map, the peak bedrock acceleration at the project area is estimated to be 0.6g (acceleration equivalent to 60 percent of the force of gravity).

Liquefaction and Lateral Spreading

Liquefaction is a loss of soil strength and stiffness that can occur during an earthquake. Liquefaction typically occurs in loose, cohesionless, saturated, granular soils below the groundwater table and can cause rapid settlement of the soils. Based on published geological mapping of soil types and reported field observations and groundwater observations, potential for liquefaction may exist along portions of the project corridor.

Subsidence

Land surface subsidence can result from both natural and human-made phenomena, including earthquake-induced liquefaction, soil consolidation, and groundwater extraction (e.g., lowering the groundwater table). Within wetland areas, the majority of the underlying soils are expected to consist of soft or loose silts and sands with some clay, which may be subject to subsidence. Measures to minimize subsidence may be needed in these areas and would be determined by subsurface investigation.

Expansive Soils

Soils that expand and shrink due to wetting and drying are considered to be expansive soils. The seasonal expansion and shrinking of these soils can result in ground movements that can damage roadways and structures that are not appropriately designed. Soils with high shrink-swell potential were only found at Manning Flat, in the eastern section of the project area (SCS 1983).

Landslides

A landslide is the downward movement of soils and rock under gravity and includes rockfalls, and debris flows. Landslides require source materials, a slope, and a triggering mechanism. Source materials include fractured and weathered bedrock and unconsolidated materials. Triggering mechanisms include earthquake shaking, heavy rainfall, and erosion.

Earth flows are slow moving landslides that can pose serious hazards to property in the hillside terrain of the Coast Ranges. Earth flows deform and tilt the ground surface when they move and are caused by such changes as increased water content, earthquake shaking, addition of load, or removal of downslope support. The result

can be destruction of foundations, offset of roads, and breaking of underground pipes within and along the margins of the landslide, as well as overriding of property and structures downslope. Since they tend to move slowly, they rarely threaten life directly.

The hilly nature of the project vicinity indicates that landsliding may be possible. Landsliding could also potentially occur along project cut slopes if they are not properly designed.

Shallow Groundwater

According to several borings collected in the area (Caltrans 2006c), the true groundwater table is deeper than 20 feet, but in some areas there is a perched water table[21] as shallow as 10 feet below the ground surface.

2.11.3 Environmental Consequences

2.11.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, no temporary or construction impacts would occur relative to the proposed project.

Alternative D

During construction, increased erosion of exposed soils could occur. In addition, the proposed construction may temporarily result in changes to the surface soil moisture content, which could result in temporary shrink or swell behavior of the soil. Soil and slope stability measures would prevent or reduce erosion. Erosion of soils during construction would be minimized using temporary hydroseeding to provide a vegetation cover with straw bales, plastic sheeting slope cover, and temporary drainage measures to prevent excessive slope runoff.

2.11.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, no geologic impacts would occur relative to the proposed project.

[21] A perched water table is an aquifer that occurs above the main water table due to the presence of an impermeable layer of rock, soil or ash above the main aquifer but below the surface.

Alternative D

Fault Rupture

The construction of the proposed project is not expected to affect the surface fault rupture hazard for the project area. If any structures are planned at locations where Alquist-Priolo zoned faults cross the alignment, as standard practice, trenches would be excavated to allow for subsurface evaluation of faulting. Where evidence of recent faulting is identified, structures design modification may be required that can withstand anticipated offset and ground shaking.

Earthquake Shaking

The construction of the proposed project is not expected to affect regional ground shaking. Roadways would be designed and constructed to the seismic design requirements for ground shaking specified in the Uniform Building Code for Seismic Zone 3. To satisfy the provisions of the California Building Code, the proposed facilities would be designed to withstand ground motions equating to approximately a 500-year return period (10 percent probability of exceedance in 50 years).

Liquefaction and Lateral Spreading

The construction of the proposed project is not expected to cause any liquefaction or lateral spreading. Site-specific exploratory borings and laboratory testing during final design of any bridge structures would be conducted to delineate any potentially liquefiable materials. Potentially liquefiable materials would either be removed or engineered to reduce their liquefaction potential, or the engineering design would incorporate deep foundations that extend beyond soils with the potential for liquefaction.

Subsidence

The introduction of loads either during the construction phase or directly from the reconstruction of the road could cause minimal consolidation of the surface soils. Potential surface deformation resulting from subsidence would be minimized by periodic repair to the road surface, curbs, and other engineered facilities. Annual inspection would be carried out to assess ongoing subsidence damage to the roadway.

Expansive Soils

Soils with high shrink-swell potential may be found within the area of Manning Flat, in the eastern portion of the project area. Construction of the roadway on expansive soils could damage the roadway due to the expansion and shrinking action that can

result in differential ground movements. Site-specific borings and testing would include identification of soils with high shrink-swell potential that could damage the roadway over time. Expansive soils are typically overexcavated and replaced with nonexpansive fill or treated with appropriate soil amendments to reduce the potential for shrinking and swelling.

Landsliding

Construction of the proposed project could potentially initiate landsliding if not implemented properly. Cut slopes constructed for this project may be subject to minor landsliding or slumping if cut too steeply. The soils in the vicinity of project cut slopes would be analyzed based on laboratory strength data from soil borings collected during final design. The data would facilitate appropriate slope design. Appropriate slope strengthening and stabilizing design measures would be developed if deemed necessary.

The geological hazard standard practices discussed above would be included in the design and construction of the proposed project. These recommendations are based on the preliminary studies conducted to identify the geologic conditions and impacts of the proposed project. A geologic and geotechnical investigation of the alignment of the Alternative D and laboratory testing of the earth materials would be conducted during the final design phase.

2.11.4 Avoidance, Minimization, and/or Mitigation Measures

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

2.12 Hazardous Waste/Materials

2.12.1 Regulatory Setting

Hazardous materials, including hazardous substances, and wastes are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The

purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for "cradle to grave" regulation of hazardous wastes from their generation to their final disposal. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the laws listed above, Executive Order 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean-up of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is generated, or disturbed during project construction.

2.12.2 Affected Environment

The Caltrans Hazardous Waste Office completed an Initial Site Assessment (ISA) in 1999. This was followed by a Supplemental ISA in August 2002, a second Supplemental ISA in March 2003, and a final Supplemental ISA in April 2006. Additionally, in 2007 a Preliminary Site Investigation (PSI) was conducted for aerially deposited lead (ADL) and naturally occurring asbestos (NOA). In 2016, the Caltrans Hazardous Waste Office confirmed that the findings in the above referenced documentation remain valid. These assessments involved field inspections to identify existing land uses for potential hazardous waste sites or materials. A search of regulatory databases containing information on known hazardous waste sites was also conducted for this project. The database search area consisted of a 1-mile radius around the study area. In addition, a search of regulatory agency files, published government documents, current aerial photographs, Sanborn Fire Insurance Maps, and other sources provided additional information on known hazardous waste sites in or near the project area and past land uses that might indicate the presence of hazardous materials.

The records search of regulatory agency databases identified no recorded active hazardous materials sites within the project area.

2.12.2.1 Potential Hazardous Materials Sites

Historical land uses adjacent to SR 29 have included a variety of agricultural, residential, and commercial uses. Though no sites with active hazardous materials issues were listed in the records search, several commercial or light industrial sites in the project area could potentially contain hazardous materials and/or underground storage tanks due to the nature of the uses occurring on these sites. This might include properties such as the PG&E substation and the gasoline station at Kit’s Corner (both near the SR 29/281/Red Hills Road intersection), as well as Amber Knolls Orchard, Kelseyville Auto Salvage and Towing, and quarries located in the project area. Near the western end of the project is the Benson Ridge Facility, which is a closed hazardous waste management facility that is regulated by the Department of Toxic Substances Control and RWQCB. During closure, wastes stored at this facility were placed in specially designed Waste Consolidation Areas and capped with a cover system to prevent water infiltration.

2.12.2.2 Building Demolition

Hazardous materials could also potentially be encountered during building demolition. Buildings constructed more than 20 years ago may contain asbestos containing materials and/or lead-based paint. The demolition of any structures as a part of the proposed project could result in the release of airborne asbestos, if asbestos is present in the structure.

2.12.2.3 Naturally Occurring Asbestos and Aerially Deposited Lead

Naturally occurring asbestos (NOA) and aerially deposited lead may be encountered during excavation of soils during construction.

Naturally occurring asbestos is found sporadically throughout Lake County soils. Geologic maps created by the California Division of Mines and Geology indicate serpentine soil north of Clear Lake and in southern Lake County and possibly within the project limits. The observed geology of the project area is not indicative of a geologic environment where NOA is likely to occur. Trace amounts of NOA were reported during the PSI, however, it is assumed that the occurrence of NOA in the project area is due to wind-blown debris, eroded debris, brake lining dust from vehicles or deposited soil due to construction and maintenance operations. The trace amounts of NOA fond within the project area are not above regulatory thresholds and do not require specific engineering controls to minimize aerial dispersion.

ADL from vehicle exhaust was found to be present in shallow soils near roadways in the project area. However, the reported lead levels do not require the implementation of special handling or disposal procedures. Based on the reported lead levels, excavated soils may be reused onsite or disposed of as non-hazardous soils.

If high levels of asbestos or lead are found, soils near the roadways could be classified as a hazardous waste once excavated, and special soil management and disposal and/or construction worker health and safety measures may be required during project construction.

2.12.3 Environmental Consequences

2.12.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative, would not result in grading or excavation of soils or the removal of buildings within the project limits, thus there would be no potential to encounter hazardous materials relative to the proposed project.

Alternative D

Unknown and/or unrecorded hazardous waste may exist and would need to be investigated prior to project construction. In addition, aerially deposited lead or naturally occurring asbestos may be encountered during earth moving operations, and lead paint or asbestos may be encountered during demolition of buildings.

The hazardous materials expected to be used during project construction include gasoline, diesel fuel, oil, and lubricants for operation of construction equipment. These materials are typically used, handled, and stored by contractors on all roadway construction projects. Contractors are required to handle hazardous materials in accordance with applicable laws, including health and safety requirements. No acutely hazardous materials would be used or stored on-site during construction.

The following Caltrans standard practices would be implemented as part of the proposed project:

- Caltrans would complete an asbestos-containing material survey and lead-based paint survey prior to structures demolition activities. Caltrans would obtain a National Emission Standards for Hazardous Air Pollutants (NESHAP) permit, which is required for structures demolition, from the Lake County Air Quality Management District. Asbestos inspections for the NESHAP permit would be conducted by California Occupational Safety and Health Administration (Cal/OSHA)–certified inspectors. Regulated asbestos-containing materials would be identified during the survey and noted on the NESHAP permit.
- A Lead Compliance Plan would be required which addresses handling, storage and disposal of lead.
- All suspected abandoned underground storage tank sites would require a ground-penetrating radar search, or by other means, prior to construction to determine the presence or absence of underground tanks.

- Prior to construction, a more detailed site investigation would be performed within the existing and proposed right of way, including drilling of test holes and collection and laboratory analysis of soil and/or water samples. Results of the testing would help to determine if there is a need to manage excavated or graded soils potentially contaminated with lead from vehicle exhaust, naturally occurring asbestos, or other organic or inorganic chemicals that might be present due to commercial or light industrial land uses. Completion of these studies prior to construction would be necessary to ensure that worker health is protected and that construction activities are conducted in compliance with existing hazardous materials laws and regulations. Prior to commencing the study, Caltrans would prepare a Health and Safety Plan that addresses the potential effects of the various chemical compounds that could be encountered at each property. The Health and Safety Plan would include evaluations of the suspected chemical hazards, including symptoms of exposure and emergency treatment, appropriate use of personal protection equipment, and air monitoring.

Potential hazardous material impacts relating to storm water runoff and groundwater are discussed in greater detail in Section 2.10.3.

2.12.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not result in any permanent impacts related to hazardous waste/materials relative to the proposed project.

Alternative D

Potential impacts would only occur during soil-disturbing activities in the construction phase. No permanent impacts are expected as a result of the proposed project.

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

- Should any underground storage tanks be discovered, proper removal, cleanup, and disposal would take place prior to or during construction activities.
- If NOA and/or ADL are found at hazardous levels, remediation activities in accordance with all applicable local, state, and federal regulations would be implemented.
- All regulated asbestos-containing materials would be abated by licensed asbestos contractors prior to demolition.

2.13 Air Quality

2.13.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$) lead, and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plan (SIP) for attainting the NAAQS. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming level—and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM10 and PM2.5), and in some areas (although not in California), sulfur dioxide (SO2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP), and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and the FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM10 or PM2.5). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and the U.S. EPA officially designates the area nonattainment. Areas that were previously

designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA, and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a "hot-spot" analysis. In general, projects must not cause the "hot-spot" related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Table 2.13-1 lists federal and state air quality standards.

Table 2.13-1 State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State[i] Standard	Federal[ii] Standard	Principal Health and Atmospheric Effects	Typical Sources	State Project Area Attainment Status	Federal Project Area Attainment Status
Ozone (O_3)	1 hour	0.09 ppm[iii]	--- [iv]	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	Attainment	Attainment-Unclassified
	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)				
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local	Attainment	Attainment-Unclassified
	8 hours	9.0 ppm [1]	9 ppm				
	8 hours (Lake Tahoe)	6 ppm	---				

					and neighborhood scale.		
Respirable Particulate Matter (PM_{10})[v]	24 hours	50 µg/m^3 [vi]	150 µg/m^3 (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Attainment	Attainment-Unclassified
	Annual	20 µg/m^3	--- [5]				
Fine Particulate Matter ($PM_{2.5}$)[5]	24 hours	---	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic & other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	Attainment	Attainment-Unclassified
	Annual	12 µg/m^3	12.0 µg/m^3				
	24 hours (conformity process[vii])	---	65 µg/m^3				
	Secondary Standard (annual; also for conformity process[5])	---	15 µg/m^3 (98th percentile over 3 years)				
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm[viii]	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Attainment	Attainment
	Annual	0.030 ppm	0.053 ppm				
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm[ix] (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	N/A	N/A
	3 hours	---	0.5 ppm[x]				
	24 hours	0.04 ppm	0.14 ppm (for certain areas)				
	Annual	---	0.030 ppm (for certain areas)				
Lead (Pb)[xi]	Monthly	1.5 µg/m^3	---	Disturbs gastrointestinal	Lead-based industrial	Attainment	Attainment

	Calendar Quarter	---	1.5 μg/m^3 (for certain areas)	system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.		
	Rolling 3-month average	---	0.15 μg/m^3 [xii][xiii]				
Sulfate	24 hours	25 μg/m^3	---v	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Attainment	N/A
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Attainment	N/A
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.	Attainment	N/A
Vinyl Chloride[11]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	Attainment	N/A

Adapted from Sonoma-Marin Narrows Draft EIR and California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Greenhouse Gases and Climate Change: Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

[1] State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise.

[2] Federal standards are "not to exceed more than once a year" or as described above.

[3] ppm = parts per million

[4] Prior to 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still be in use in

some areas where 8-hour ozone emission budgets have not been developed, such as the S.F. Bay Area.

[5] Annual PM_{10} NAAQS revoked October 2006; was 50 µg/m^3. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 µg/m^3. Annual $PM_{2.5}$ NAAQS tightened from 15 µg/m^3 to 12 µg/m^3 December 2012 and secondary annual standard set at 15 µg/m^3.

[6] µg/m^3 = micrograms per cubic meter

[7] The 65 µg/m^3 $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 µg/m^3 NAAQS was promulgated in 2006. The 15 µg/m^3 annual $PM_{2.5}$ standard was not revoked when the 12 µg/m^3 standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with a emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

[8] Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause re-designation to nonattainment in some areas after 2016.

[9] EPA finalized a 1-hour SO_2 standard of 75 ppb (parts per billion [thousand million]) in June 2010. Nonattainment areas have not yet been designated as of 9/2012.

[10] Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

[11] The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

[12] Lead NAAQS are not considered in Transportation Conformity analysis.

2.13.2 Affected Environment

2.13.2.1 Climate, Meteorology, and Topography

The proposed project is located in the Lake County Air Basin, in the northern portion of California's Coast Ranges. The climate of the region is characterized by hot, dry summers and cool, wet winters. The region is often much cooler than the nearby Central Valley, with a climate similar to that of the North Coast region in inland areas.

Due to the sheltering effect of the surrounding mountains, winds in the region are generally light. Throughout the year and especially during the summer, winds are generally from the northwest. Low average wind speeds typically result in minimal atmospheric mixing and pollutant dispersion during the months of August and September. During the fall, periods of light winds combine with clear skies and well-developed temperature inversions. During the winter, winds are most variable, leading to favorable ventilation conditions. Similarly, during the spring, chilly temperatures result in atmospheric instability that gives rise to vertical mixing of the air.

2.13.2.2 Existing Air Quality in Lake County Air Basin

The Lake County Air Basin is currently classified by USEPA and CARB as being in attainment for all regulated criteria pollutants, meaning that the air pollutant concentrations in the air basin achieve the national and state ambient air quality standards (See Table 2.13-1). The Lake County Air Basin is the only air basin in the state that is in attainment of all standards. Due to this attainment status, conformity to the federal Clean Air Act does not need to be demonstrated for transportation projects in the air basin, and the Lake County Air Quality Management District is not required to prepare or implement a plan to achieve emissions reductions to comply with the California Clean Air Act.

2.13.3 Environmental Consequences

2.13.3.1 Temporary and Construction Impacts

No Build Alternative

Under the No Build Alternative, no construction activities would occur. Therefore, no temporary construction impacts related to air quality would be expected relative to the proposed project.

Alternative D

Construction Impacts

The proposed project could result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. The creation of fugitive dust, specifically particulate matter, would be the primary air quality impact related to construction. Fugitive dust is typically generated during excavation, grading, and hauling activities. Exhaust emissions from diesel-fueled construction equipment can contribute to nitrous oxide and particulate matter emissions during the construction period.

The air quality emissions related to construction activities would vary from day to day depending on the level of construction activity, the specific construction activities, and the prevailing weather. Both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature.

To address temporary construction-related air quality impacts, as Caltrans' standard practice, Best Management Practices would be implemented, as applicable. The project contractor would be required to comply with Caltrans Standard Specifications,

which include Section 14-9.02, "Air Pollution Control." Section 14-9.02 requires the contractor to comply with all existing rules, regulations, ordinances, and statutes of the Lake County Air Quality Management District pertaining to each construction activity.

Naturally Occurring Asbestos

Naturally occurring asbestos is found sporadically throughout Lake County soils. Geologic maps created by the California Division of Mines and Geology indicate that serpentine soil is present north of Clear Lake and in southern Lake County and possibly within the project limits. There also exists the possibility of wind-blown debris, eroded debris, or deposited soil due to maintenance operations within the areas of project excavations. An investigation for NOA would be completed for the proposed project. If present, or if discovered during construction, standard remediation activities in accordance with all applicable local, state, and federal regulations would be implemented.

2.13.3.2 Permanent Impacts

As described above, the Lake County Air Basin is in attainment of the national and state ambient air quality standards for all criteria pollutants. The Federal Clean Air Act requires that transportation plans, programs, and projects approved by a Transportation Planning Organization (TPO) conform to the State Implementation Plan (SIP). The TPO for Lake County is the Lake County/City Area Planning Council (LC/CAPC). Demonstrating a project's conformity with the SIP involves inclusion of the project in the RTP AND RTIP by LC/CAPC. Demonstrating a project's conformity with the SIP also involves determining that the project would not result in a violation of the CO air quality standard. The proposed project has been included in both the RTP AND RTIP by LC/CAPC. In addition the project would not result in a violation of the CO air quality standard, as described in the Air Quality Analysis Report (Caltrans 2014), and described below. Therefore, the project is considered to be in conformance with the SIP.

An analysis was conducted to determine whether the proposed project would result in localized high concentrations of CO. High concentrations of CO due to on-road vehicles are typically a localized occurrence associated with high traffic volumes and heavily congested roadway facilities.

Changes in localized CO concentrations were estimated using CALINE4, a dispersion model for predicting air pollutant concentrations near roadways. Methods for this analysis are reported in detail in the Air Quality Study prepared for this project. Vehicle CO emission rates were generated from CARB's emission factor model EMFAC2001-PL (Version 1.1). The modeling methods used included worst-case assumptions for meteorological conditions, which provided for analysis results that would have conservative conclusions. The changes in localized CO concentrations were modeled at 11 receptor locations (R1 through R11; see Figure 2.13-1), which were placed at the front or side yards of residences and the parking areas of private business buildings along the project area. These receptor locations were determined to demonstrate an adequate sampling of air quality receptors that would be potentially affected by the project. The CALINE4 modeling analysis used peak hour traffic data for year 2013, 2021, and 2041 conditions[22].

Summary results of the CALINE4 model for Alternative D are shown in Table 2.13-2.

In addition to the criteria air pollutants for which NAAQS exist, USEPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

[22] EMFAC2001-PL (Version 1.1) does not estimate emission rates for years beyond 2035, therefore, emission rates for 2035 were used in the analysis of 2041 conditions. Since the fleet average emission rate decreases over time, use of 2035 emission rates conservatively over-estimates 2041 concentrations.

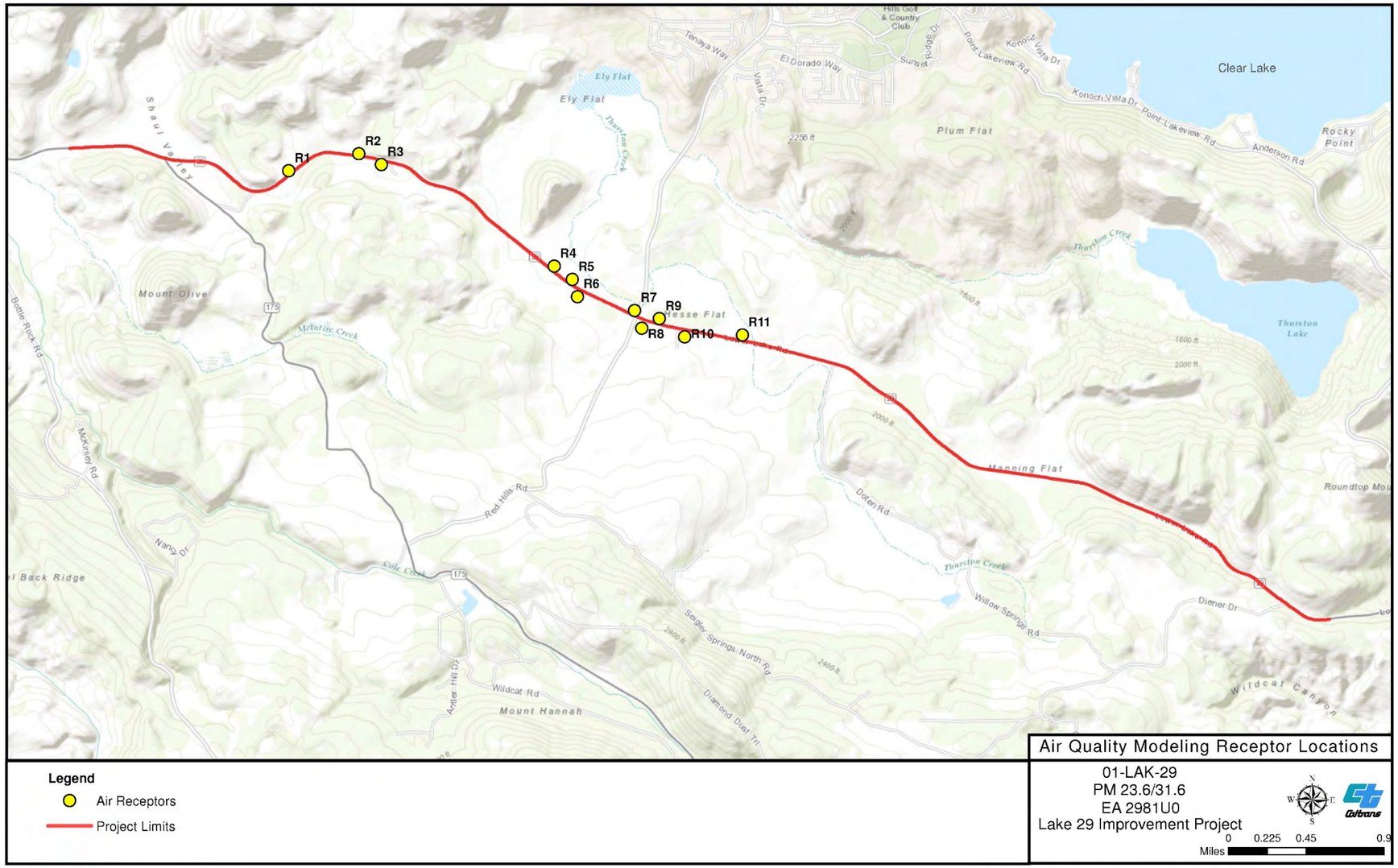


Figure 2.13-1 Air Quality Modeling Receptor Locations

Table 2.13-2 Existing and Projected Carbon Monoxide Concentrations in the Project Area

Receptor Number	No Build						Alternative D					
	2013 "Existing" Conditions		2021 "No Build" Conditions		2041 "No Build" Conditions		2013 "Existing" Conditions		2021 "Express Way" Conditions		2041 "Express Way" Conditions	
	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average
R 1	5.6	3.9	5.4	3.8	5.3	3.7	5.6	3.9	5.4	3.8	5.3	3.7
R 2	5.6	3.9	5.4	3.8	5.3	3.7	5.6	3.9	5.5	3.9	5.4	3.8
R 3	5.8	4.1	5.5	3.9	5.4	3.8	5.8	4.1	5.5	3.9	5.4	3.8
R 4	5.7	4.0	5.5	3.9	5.4	3.8	5.7	4.0	5.4	3.8	5.3	3.7
R 5	6.1	4.3	5.7	4.0	5.5	3.9	6.1	4.3	5.4	3.8	5.3	3.7
R 6	5.6	3.9	5.4	3.8	5.3	3.7	5.6	3.9	5.4	3.8	5.4	3.8
R 7	5.5	3.9	5.3	3.7	5.3	3.7	5.5	3.9	5.3	3.7	5.3	3.7
R 8	5.7	4.0	5.4	3.8	5.4	3.8	5.7	4.0	5.5	3.9	5.4	3.8
R 9	5.9	4.1	5.5	3.9	5.4	3.8	5.9	4.1	5.3	3.7	5.3	3.7
R 10	5.6	3.9	5.4	3.8	5.3	3.7	5.6	3.9	5.5	3.9	5.4	3.8
R 11	5.7	4.0	5.4	3.8	5.4	3.8	5.7	4.0	5.5	3.9	5.4	3.8

Note: All values are in parts per million (ppm)
State 1-hour standard for carbon monoxide is 20 ppm
State 8-hour standard for carbon monoxide is 9 ppm
For exact locations of receptors, see Figure 2.13-1

Source: CALINE4 microscale air quality dispersion model

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics (MSATs), the list is subject to change and may be adjusted in consideration of future EPA rules. The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis using EPA's MOVES2010b model, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

This EIR/EA includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with Alternative D in this EIR/EA. Due to these limitations, see Appendix E for a discussion regarding incomplete or unavailable information in accordance with CEQ regulations (40 CFR Section 1502.22[b]).

No Build Alternative

Carbon Monoxide Operational Impacts

As shown in Table 2.13-2, under the No Build Alternative, localized CO concentrations are predicted to be below the national and state ambient air quality standards of 9 parts per million. Predicted concentrations above 9 parts per million would be considered an adverse impact. The No Build Alternative would not have an adverse impact in terms of causing an exceedance of an air quality standard.

Mobile Source Air Toxics

Under the No Build Alternative, emissions would likely be lower than current levels as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 83 percent between 2010 and 2050.[23] Local conditions may differ from these national projections in terms of fleet mix and turnover, Vehicle Miles of Travel (VMT) growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Alternative D

Carbon Monoxide Operational Impacts

As shown in Table 2.13-2, under Alternative D, localized CO concentrations are predicted to be below the national and state ambient air quality standards of 9 parts per million. Predicted concentrations above 9 parts per million would be considered an adverse impact. Alternative D would not have an adverse impact in terms of causing an exceedance of an air quality standard.

Mobile Source Air Toxics

The VMT estimated for Alternative D is expected to be nearly the same as that for the No Build Alternative, because the proposed project is not expected to attract a substantial amount of rerouted trips from elsewhere in the transportation network. It is ultimately envisioned that through traffic (including truck traffic) between US 101 and I-5 will use the SR 20 Principal Arterial Corridor around the south shore of Clear Lake; however, no other projects are currently programmed. Although this project is expected to increase the efficiency of the roadway and may therefore result in a small amount of rerouted trips, substantial increases in rerouted trips would not be expected to occur until long-range planning goals, including completion to minimum four-lane expressway facility standards, for the Principal Arterial Corridor have been achieved.

An analysis was conducted using CT-EMFAC, V5.0: A Computer Model to Estimate Transportation Project Emissions. The results of the analysis are detailed in the Table 2.13-3. Under Alternative D, emissions are projected to be lower than present levels as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 83 percent between 2010 and 2050. Local conditions may differ from

[23] Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007)

these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. Further, the forecasted increase in travel speeds that would result from implementation of Alternative D would reduce emissions of the volatile organic compound–based mobile source air toxics (benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene) for nondiesel motor vehicles. The effect of speed changes on diesel particulate matter is unknown.

Table 2.13-3 MSAT Total Emissions (US Tons Per Day)

Pollutant	2013 Existing	2021 NO BUILD	2021 BUILD	% Change	2041 NO BUILD	2041 BUILD	% Change
ROG	0.0035035	0.0021169	0.0021202	0.16%	0.0017346	0.0017230	-0.67%
TOG	0.0037748	0.0022828	0.0022841	0.06%	0.0018961	0.0018762	-1.06%
CO	0.0315240	0.0158476	0.0158369	-0.07%	0.0124319	0.0122832	-1.21%
NOx	0.0073707	0.0037567	0.0037651	0.22%	0.0023429	0.0023158	-1.17%
CO_2	3.5880750	4.2420709	4.2532975	0.26%	5.9325415	5.8050418	-2.15%
CO_2 (Pavley I + LCFS)	3.3478026	3.1196177	3.1266828	0.23%	4.0202864	3.9340582	-2.19%
PM10	0.0005162	0.0005462	0.0005463	0.02%	0.0007460	0.0007447	-0.18%
PM2.5	0.0002503	0.0002387	0.0002389	0.09%	0.0003221	0.0003209	-0.38%
Benzene	0.0000637	0.0000336	0.0000340	0.97%	0.0000293	0.0000291	-0.76%
Acrolein	0.0000022	0.0000010	0.0000010	0.00%	0.0000009	0.0000009	0.00%
Acetaldehyde	0.0000155	0.0000074	0.0000073	-1.52%	0.0000078	0.0000073	-7.58%
Formaldehyde	0.0000457	0.0000216	0.0000215	-0.51%	0.0000217	0.0000207	-4.79%
Butadiene	0.0000096	0.0000042	0.0000043	2.56%	0.0000040	0.0000039	-2.86%
Naphthalene	0.0000031	0.0000022	0.0000021	-5.26%	0.0000024	0.0000023	-4.76%
POM	0.0000006	0.0000003	0.0000003	0.00%	0.0000003	0.0000003	0.00%
Diesel PM	0.0000631	0.0000235	0.0000240	2.29%	0.0000258	0.0000261	1.27%
DEOG	0.0001055	0.0000597	0.0000573	-4.23%	0.0000647	0.0000580	-11.60%

Source: CT-EMFAC, V5.0

The additional travel lanes proposed as part of the proposed project would have the effect of moving some traffic closer to nearby homes and businesses; therefore, under Alternative D there may be localized areas where ambient concentrations of MSATs could be higher than under the No Build Alternative. However, as discussed in Appendix E, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models. In sum, when a highway is widened and, as a result,

moves closer to receptors, the localized level of MSAT emissions for Alternative D could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs would be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, will cause regionwide MSAT levels to be significantly lower than today.

2.13.4 Avoidance, Minimization, and/or Mitigation Measures

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

2.14 Noise

2.14.1 Regulatory Setting

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

2.14.1.1 California Environmental Quality Act

CEQA requires a strictly no-build versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA 23 CFR Part 772 noise analysis; see Chapter 3 for additional information on noise analysis under CEQA.

2.14.1.2 National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR Part 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a

noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table 2.14-1 lists the noise abatement criteria for use in the NEPA 23 CFR Part 772 analysis.

Table 2.14-1 Federal Noise Abatement Criteria

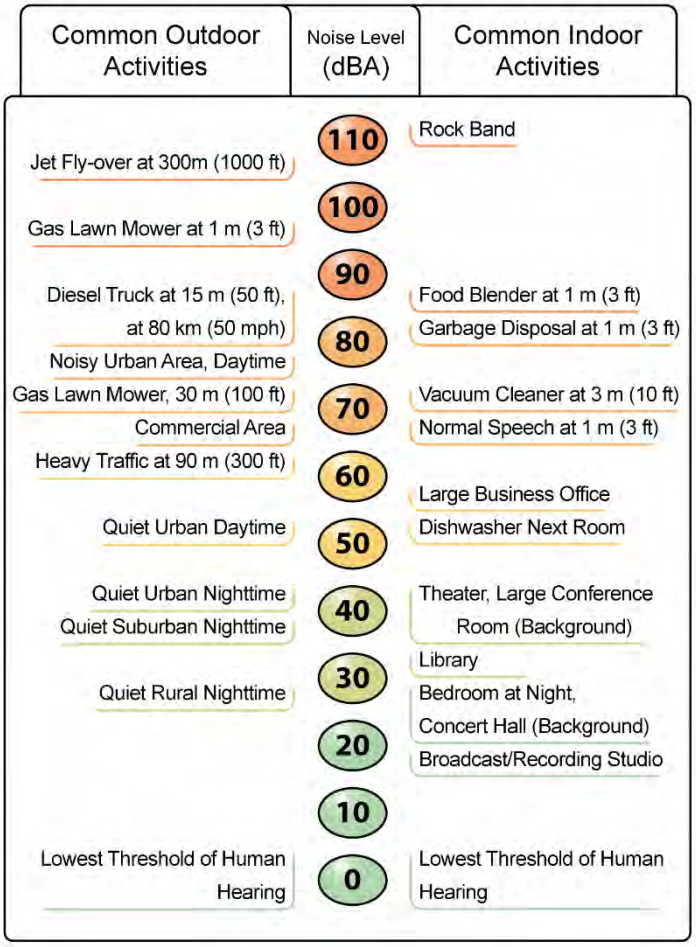
Activity Category	NAC, Hourly A-Weighted Noise Level, Leq(h)[24]	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

[1] Includes undeveloped lands permitted for this activity category.

[24] The L_{eq} (h) is defined as the noisiest hour expressed as the energy-average of the A-weighted noise level occurring during a one-hour period.

Figure 2.14-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

Figure 2.14-1 Noise Levels of Common Activities



In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications.

The *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible[25]. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

2.14.2 Affected Environment

The proposed project lies along a largely undeveloped stretch of SR 29 in Lake County. Most of the land in the project area has been classified Agriculture, Rural Lands, or Rural Residential by Lake County. Residential development within the project limits consists of individual single-family residences distributed along SR 29, consistent with the Rural Residential land use. There are no concentrations of residences adjacent to SR 29 in the project area.

The SR 29/281/Red Hills Road intersection has several small commercial uses and is the turnoff to the community of Clear Lake Riviera. Kit's Corner, a complex with a gas station, a convenience store, a motel, and several small retail spaces, is on the intersection's northwest corner.

Residences and, to a lesser degree, the commercial developments would be most susceptible to noise-related impacts.

2.14.2.1 Noise Study

To characterize existing noise levels within the project limits, long- and short-term field noise measurements were conducted at sensitive land uses that could be affected by existing and project-related noise levels. Complete details of the noise monitoring and measurement program are included in the Noise Impact Study (Illingworth and

[25] The *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, changed the criteria for determining when an abatement measure is reasonable and feasible from a 5dBA reduction in the future noise level to a 7dBA reduction in future noise level.

Rodkin 2003) prepared for this project, as well as an Addendum to Noise Impact Study (Illingworth and Rodkin 2007) and Revalidation-Noise Study Report (Caltrans 2014a).

Residential noise receptor[26] locations that would be exposed to potential traffic noise impacts were identified along the project route and are shown in Figure 2.14-2. Scattered rural residences are the typical receptors identified along the proposed project alignment.

Noise measurements were conducted within the project limits on September 13–17, 2002 and May 10-11, 2014. The noise measurement program consisted of a combination of long-term measurements (about four days in duration) and short-term measurements (10 minutes in duration). In all, four long-term noise measurements and 14 short-term noise measurements were conducted during the noise measurement survey. Long-term noise measurements were conducted at four locations throughout the study area, documenting noise levels in 10-minute and hourly intervals. These measurements documented the trend in hourly noise levels throughout a weekend and weekday periods and the peak traffic noise hour. Short-term noise measurements were conducted simultaneously with traffic counts at seven locations throughout the study area in 10-minute intervals. Short-term measurements are used to develop calibration factors for a noise model based on actual traffic volumes and vehicle speeds during the collection of the noise samples. Noise measurement locations are used as noise modeling receivers for prediction of future traffic noise levels.

Potential noise impacts for the No Build Alternative and Alternative D peak-hour traffic noise levels were predicted using Sound32 and TNM2.5, the Caltrans version of FHWA's Traffic Noise Prediction Models (FHWA-RD-77-108). Predicted noise levels associated with the project that approach or exceed the NAC for that activity category are considered a noise impact. For example, a predicted noise level of 66 dBA per hour or higher at an active exterior area of a residence would be considered a noise impact. In addition, noise level increases of 12 dBA or greater are considered substantial and would be considered an adverse noise impact.

[26] Receptor locations are described by different NAC activity categories (see Table 2.14-3). For this project, receptors are considered Category B, which represents residential uses.

2.14.2.2 Existing Noise Conditions

Existing noise levels[27] for the project area are shown in Table 2.14-2. Figure 2.14-3 shows the trends in hourly noise levels measured at the long-term measurement locations. Estimated peak-hour noise levels were based on daytime measurement data, peak-hour traffic data, and trends in hourly noise levels measured at representative long-term noise measurement locations. Note that long-term noise measurement locations were not representative of receptor locations. They were located at sites where uninterrupted traffic noise measurements could be made. These data were then applied to results from short-term noise measurements to estimate the highest noise hour based on noise measurement data.

The short-term noise measurements taken at locations S-1, S-2, S-3, S-5, and S-6 were representative of the only occupied residential or lodging uses (Category B uses) where permission could be obtained. The other measurements taken at Locations S-4 and S-7 were near unoccupied residential dwellings. Measurements were also taken at a fixed distance of 100 feet from the centerline of SR 29 near each of the seven short-term measurement locations for traffic noise modeling.

Noise measurements indicated that worst-hour noise levels at representative residential receptor locations ranged from 57 to 64 dBA L_{eq}(h). Figure 2.14-1 lists the noise levels of common activities to enable readers to compare them with the actual and predicted highway noise levels discussed in this section.

[27] For the purposes of the noise analysis, 2003 noise levels are used when discussing existing noise levels.

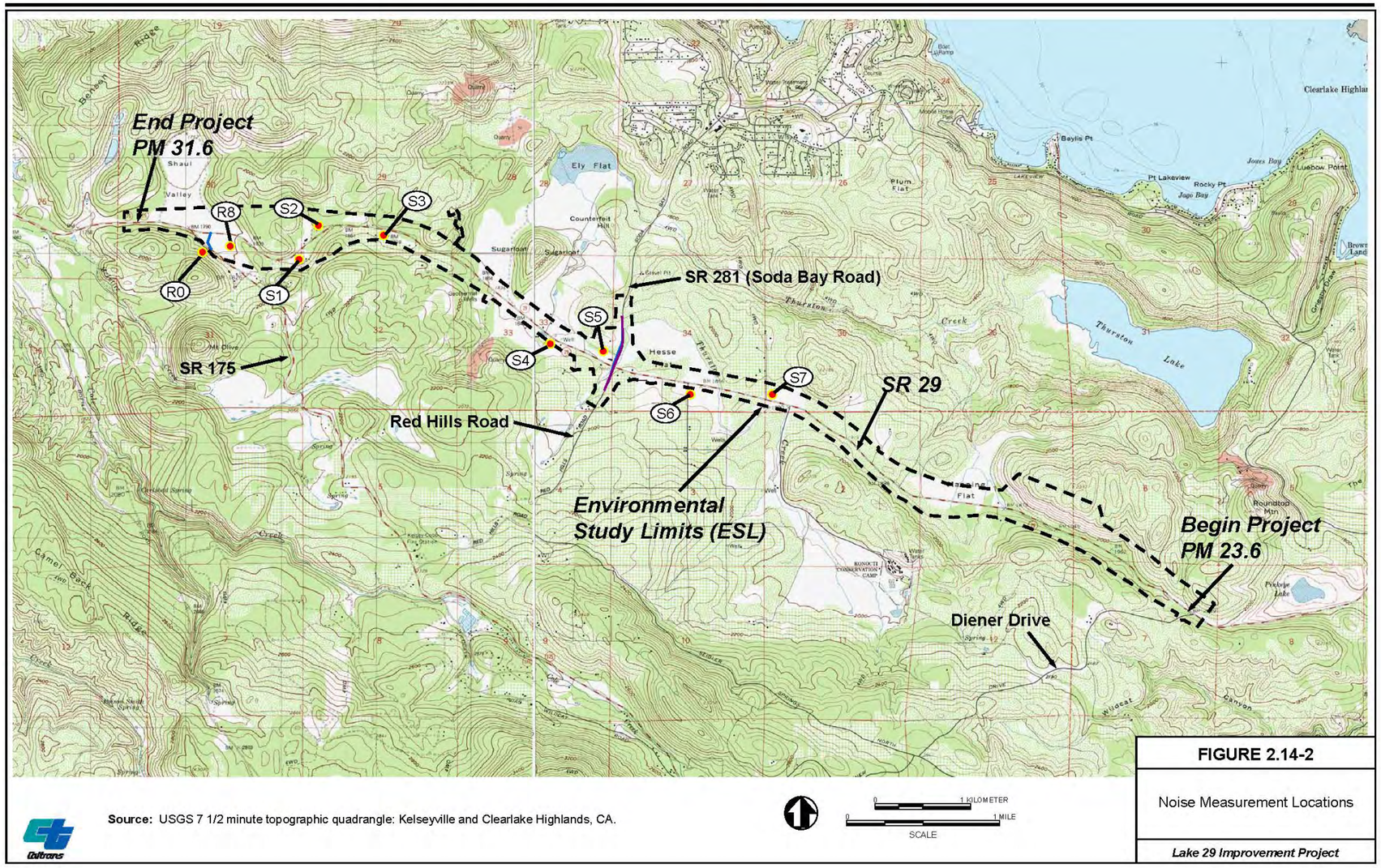
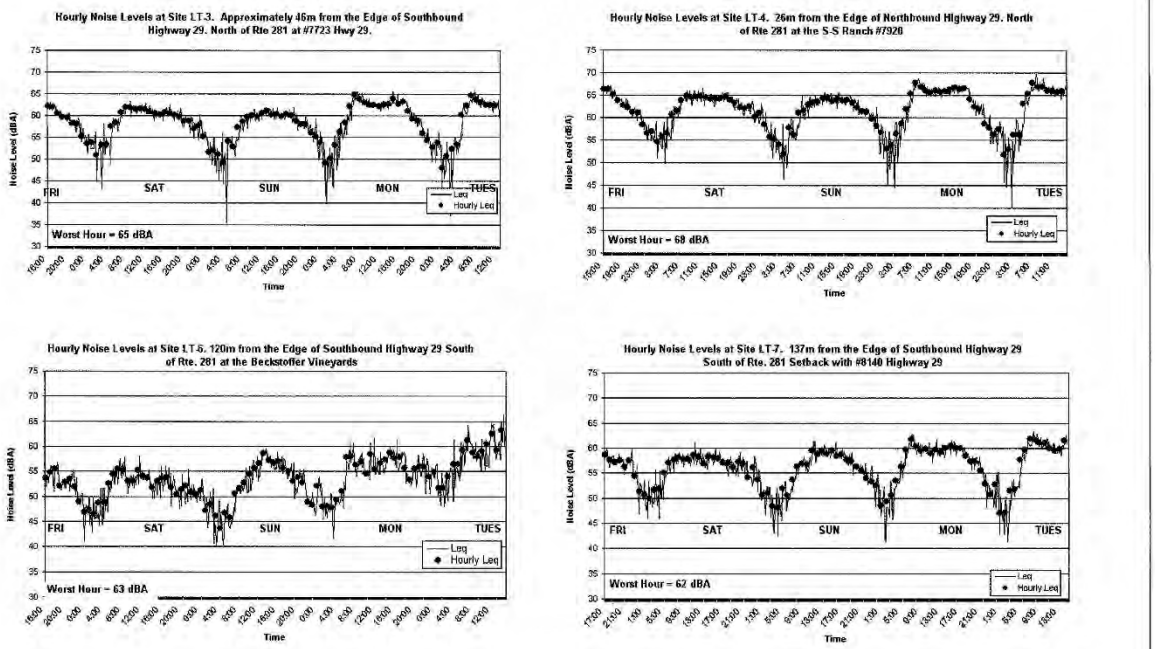


Figure 2.14-2 Noise Measurement Locations



26815174.00601	Hourly Noise Levels Measured Along SR 29, September 13–17, 2003	Figure 2.14-3
Lake 29 Improvement Project		

Figure 2.14-3 Hourly Noise Levels Measured Along SR 29, September 13–17, 2003

Table 2.14-2 Existing Noise Levels Along SR 29

Receptor ID	Description	Type of Development	Number of Units Represented	Activity Category and NAC (dBA)	Existing Worst Hour Noise Level (dBA)	Noise Level Measured or Modeled
M-0	Residence south of SR 175, approximately 920 feet from SR 29.	Residential	1	B / 67	54	Modeled
S-1	Near residence at 7661 SR 29. Approx. 259 feet from southbound lane.	Residential	1	B / 67	59	Measured
S-2	Residence at 7672 SR 29. Approx. 135 feet from northbound lane.	Residential	1	B / 67	64	Measured
S-3	Equivalent to residential setback. Measurement made at Bayshore Marine Service yard. Approx. 256 feet from northbound lane.	Similar to Residential	2	B / 67	58	Measured
S-4	Abandoned house on property owned by S-S Winery Ranch. Approx. 197 feet from southbound lane.	Unoccupied Residence	-	-	57	Measured
S-5	Front of Creekside Lodge at Kit's Corner. Approx. 213 feet from northbound lane.	Motel	1	B / 67	61	Measured
S-6	Beckstoffer Vineyards (unoccupied). Approx. 194 feet from southbound lane.	Unoccupied	-	-	59	Measured
M-6	Representative of receptor near Beckstoffer Vineyards. Approx. 328 feet from southbound lane.	Residence	1	B / 67	58	Modeled
S-7	Abandoned residence Approx. 98 feet from northbound lane.	Unoccupied Residence	-	-	63	Measured
M-8	Residence under construction southeast of SR 29/SR 175 intersection. Approx. 295 feet from southbound lane.	Residence	1	B / 67	58	Modeled

2.14.3 Environmental Consequences

Table 2.14-3 lists the results of noise modeling for existing levels (2003), future noise levels without the project (No-Build Alternative; 2041), and future noise levels under Alternative D (2041).

Table 2.14-3 Predicted 2041 Project-Related Noise Impacts

Receptor No.	Description	Existing Noise Level, $L_{eq}(h)$ (dBA)	Predicted Noise Levels (dBA)		Activity Category and NAC (dBA)	Impact Type* (S, A/E, CR or None)
			No-Build	Alternative D		
M-0	Residence south of SR 175, approximately 920 feet from SR 29.	54 (modeled)	56	58	B / 67	None – below 66 dBA $L_{eq}(h)$
S-1	Near residence at 7661 SR 29. Approx. 259 feet from southbound lane.	59	61	64	B / 67	None – below 66 dBA $L_{eq}(h)$
S-2	Residence at 7672 SR 29. Approx. 135 feet from northbound lane.	64	66	63	B / 67	None – below 66 dBA $L_{eq}(h)$
S-3	Equivalent to residential setback. Approx. 256 feet from northbound lane.	58	62	63	B / 67	None – below 66 dBA $L_{eq}(h)$
S-4	Abandoned house on property owned by S-S Winery Ranch. Approx. 197 feet from southbound lane.	57	60	64	--	None – inactive land use
S-5	Front of Creekside Lodge at Kit's Corner. Approx. 213 feet from northbound lane.	61	63	63	B / 67	None – below 66 dBA $L_{eq}(h)$
S-6	Beckstoffer Vineyards (unoccupied). Approx. 194 feet from southbound lane.	61	64	64	--	None – inactive land use
M-6	Representative of receptor near Beckstoffer Vineyards. Approx. 328 feet from southbound lane.	58 (modeled)	60	61	B / 67	None – below 66 dBA $L_{eq}(h)$
S-7	Abandoned residence. Approx. 98 feet from northbound lane.	63	65	68	--	None – inactive land use
M-8**	Residence under construction southeast of SR 29/SR 175 intersection. Approx. 295 feet from southbound lane.	58 (modeled)	61	--	B / 67	None – below 66 dBA $L_{eq}(h)$ and would be removed under Alternative D

* S = substantial noise level increase, A/E = approaches or exceeds the NAC, CR = classroom

** Not modeled for Alternative D because residence is located within the proposed roadway for this alternative and would be removed.

2.14.3.1 Temporary and Construction Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, no temporary or construction related noise impacts would occur relative to the proposed project.

Alternative D

Construction activities associated with the proposed project would include roadway widening, new highway alignment construction, and the construction of intersections and frontage roads. Highway construction activities do not typically remain in one location for long periods. Noise-sensitive receptors in a given location would not be exposed to construction noise for extended periods. Table 2.14-4 summarizes typical noise levels generated by construction equipment at a distance of 50 feet. Noise generated by construction equipment diminishes at a rate of 6 decibels per doubling of distance. The project contractor would be required to conform to the Caltrans Standard Specification 14-8.02 "Noise Control" which requires contractors to not exceed 86 dBA Lmax at 50 feet from the job site from 9 p.m. to 6 a.m.

Table 2.14-4 Construction Equipment Noise

Type of Construction Equipment	Maximum Level (dBA) at 50 Feet
Scrapers	89
Bulldozers	85
Heavy trucks	88
Backhoe	80
Pneumatic tools	85
Concrete Pump	82
Impact Pile Driver	95 to 105

Source: NCHRP 1999

2.14.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not modify SR 29; therefore, no noise impacts would occur relative to the proposed project. Traffic noise modeling indicates that noise levels under the No Build Alternative would increase by about 2 to 4 dBA due to future increases in traffic at receptors along the existing highway alignment. Under the No Build Alternative, projected noise levels in 2041would approach the NAC at receptor site S-2 (a residence); however, the No Build Alternative would not trigger the need to consider noise abatement.

Alternative D

Project-related noise level changes at occupied receptors would range from about -3 to +3 dBA. The noise level increases would not be considered substantial, since they are less than 12 dBA. At occupied residences (Category B receptors), future noise levels

with the project are predicted to range from 58 to 64 dBA for Alternative D (Table 2.14-3). As shown in Table 2.14-3, noise levels would not approach or exceed the NAC level of 67 dBA L_{eq}(h) at residential uses that would benefit from a lowered noise level. Noise levels for Alternative D would exceed the NAC at Receptor Site S-7, but a noise impact would not result because it was determined through field visits that the subject property is unoccupied and does not have any outdoor areas of frequent human use that would benefit from a lowered noise level. Traffic noise impacts are not predicted to occur at any Category B land uses under Alternative D, and thus noise abatement was not considered.

Preliminary Noise Abatement and Reasonable Cost Analysis

Since noise impacts from this project are not predicted, noise abatement is not considered. The Category B activity areas adjacent to SR 29 are predicted to experience noise levels of 64 dBA L_{eq}(h) or less.

Severe Noise Impacts

Severe traffic noise impacts are considered when after-project noise levels are 75 dBA L_{eq}(h) or greater. No severe noise impacts are predicted with this project.

2.14.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

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 1.4-2). 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 et al. 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%

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

Natural Communities/Land Use	Area (Acres)	% of Total Area of ESL
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 Lake 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 Lake 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 watersheds[28] 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.

2.15.2 Environmental Consequences

2.15.2.1 No Build Alternative

The No-Build Alternative would not modify SR 29; therefore, no impacts to natural communities would occur 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

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

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 Provence) 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 heritage oak woodlands at a 1:1 ratio for a total of 32.2 acres. The preservation of oak woodlands would take place 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. 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. Caltrans would also implement the creation of heritage oak woodlands at a 0.5:1 ratio. Creation of oak woodlands would take place at an off-site location. For oak woodland creation, the preference would be to collaborate with a land managing agency or nonprofit organization to fund a planting project. If no such partnership can be established, Caltrans would secure land through acquisition or a conservation easement and plant to create habitat similar to that removed by the proposed project. The density and species of oak trees would vary based on what the site conditions would support. To ensure success, a planting plan would be developed to guide the planting, and short-term maintenance and monitoring effort. As with the preservation, 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.

  The goal is not to preserve or create an exact replica of the affected habitat concerning species frequency and density, but to preserve and create a self-sustaining habitat that would provide ecological functions similar to what was lost as a result of the proposed project. Preservation and creation of heritage oak woodlands would take place within the 8 digit hydrological unit code (HUC) of the project, with priority given to any suitable properties within the “project’s watersheds.” If an oak woodland mitigation bank or suitable in-lieu program becomes available, Caltrans would also consider these options. As previously stated the project would likely be constructed in phases (segments) as funding becomes available. Oak woodland preservation and creation would take place

commensurate with the segment in construction and the corresponding heritage oak woodland impacts.

- 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 and regenerate post construction.
- 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 (See Section 2.10 for additional 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 waters" quantities of the 2007 Draft EIR/EA and this Final 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 F).

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 Lake 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 Lake 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 Lake 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**

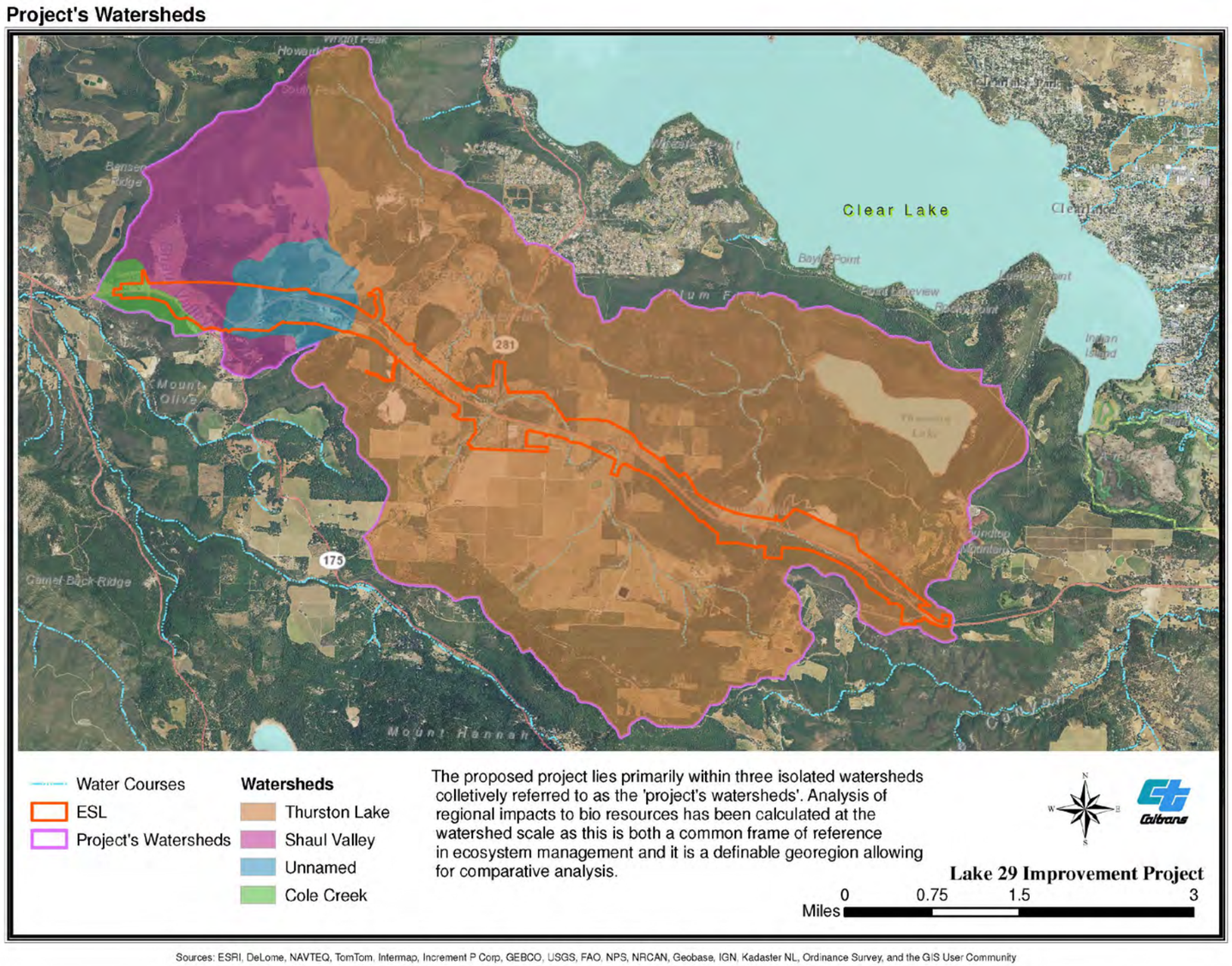


Figure 2.16-1 Project Watersheds

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 less[29] 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

[29] 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 around.

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 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 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 including an additional buffer needed to maneuver equipment and construct the proposed transportation facility. 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 including an additional buffer needed to maneuver equipment and construct the proposed transportation facility. 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/storm water 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/storm water 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.
- Mitigation for the permanent loss of wetlands (excluding vernal pools) of the U.S. and the State (under USACE or RWQCB 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 because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. Mitigation credits would be purchased at a 1:1 ratio to ensure there is no net loss to wetlands. If bank credits are not available, Caltrans would contribute funds to the USACE- and RWQCB-approved in-lieu fee program.
- Mitigation for permanent impacts to vernal pool habitat would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program at a 2:1 ratio. The in-lieu fee program would be used to compensate for impacts to

vernal pools because there are no known mitigation banks in the project area that offer vernal pool mitigation credits.

- Mitigation for permanent impacts to "other waters" would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program. The in-lieu fee program would be used to compensate for impacts to "other waters" because there are no known mitigation banks in the project area that offer "other waters" mitigation credits.

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.

2.16.5 Wetlands Only Practicable Alternative Finding

Executive Order 11990, "Protection of Wetlands," established a national policy which directs federal agencies "to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative."

Since the inception of the Lake 29 Improvement project 11 alternatives have been considered and studied including a No Build Alternative. Alternatives were evaluated based on their ability to meet the project purpose and need while avoiding and minimizing to the maximum extent possible impacts to environmental resources, including wetlands. As a result of this evaluation nine alternatives have been removed from consideration as they do not meet the project purpose and need and/or they would result in considerable environmental impacts, including impacts to wetlands. The current alternatives under consideration are Alternative A, the No Build Alternative, and Alternative D which would widen SR 29 to a four-lane divided expressway with access control. See Section 1.4 for further discussion regarding the evaluation of past and present project alternatives.

As discussed above, approximately one acre of wetlands under the jurisdiction of the USACE are located within the ESL and consist of seasonal wetland and vernal pool habitat. Alternative D, which has been identified as the preferred alternative, would result in approximately 0.06 acres of temporary impacts and approximately 0.03 acres

of permanent impacts to seasonal wetlands under jurisdiction of the USACE (Table 2.16-3). Because the proposed project involves widening of the existing roadway, opportunities to avoid the jurisdictional wetlands that run adjacent to or are traversed by the existing roadway are limited.

Alternative D has been designed to minimize impacts to wetlands and other environmental resources within the project corridor. Measures would be implemented for both permanent and temporary (construction phase) project-related impacts to ensure no net loss of wetlands. During project construction, all wetlands 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 off. All wetland areas temporarily disturbed by construction would be fully restored following the completion of construction activities. Permanent project-related impacts to jurisdictional wetlands would be compensated either by the purchase of mitigation credits at a wetland mitigation bank approved by the USACE or the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program.

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

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 (CNDDB) 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 G.

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
Eriastrum brandegeeae	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
Horkelia bolanderi	Bolander's horkelia	CNPS 1B	Meadows and edges of vernally 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 were identified within the ESL.
Arctostaphylos manzanita ssp. *elegans*	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
Viburnum ellipticum	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.
Micropus amphibolous	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.
Limnanthes floccose 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
Leptosiphon acicularis	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.
Calochortus unifloris	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.
Toxicoscordion fontanum	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.
Piperia Michaelii	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.
Calyptridium quadripetalum	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.
Antirrhinum virga	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 identity 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.

Brandegee'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 (40,018 sq. ft.). Alternative D would result in the permanent removal of four of these populations and partial removal of an additional population for a combined total loss of 0.12 acres (6,427 sq. ft.). This represents a 13% 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.

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 during previous project surveys. 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. These maps and databases are then used to identify areas where construction and maintenance forces will implement precautionary measures to avoid impacts to resources of concern, including the restriction of herbicide use. Herbicides would not be used as a part of the proposed project nor will they be used during future construction or routine maintenance activities in areas which contain sensitive biological resources.

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 CNDDB, CDFW Lists of Animal 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 G. 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						
Antrozous pallidus	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.
Corynorhinus townsendii townsendii	Townsend's big-eared bat (TBEB)	*	Cavity rooster. Roosts in lava tubes, caves, buildings, mines, etc. TBEB are found in areas with a mosaic of woodland, grassland, and/or shrubland habitat	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.
Lasiurus blossevillii	Western red bat (WRB)	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						
Contopus cooperi	Olive-sided flycatcher	SSC, BCC	Found in open montane and boreal conifer forests; nest in mixed conifer	Yes	Yes	Species detected within the ESL in 2003 surveys

Scientific Name	Common Name	Protection Status[1]	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
			forests where tall trees overlook canyons, meadows, lakes or other open terrain.			only. Suitable nesting habitat present in the ESL, but no nests were observed.
Dendroica petechial bresteri	Yellow warbler	SSC, BCC	Nests in riparian habitats. 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 the ESL In 2003 surveys only. Suitable nesting habitat present within the ESL, but no nests were observed.
Elanus leucurus	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.
Progne subis	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						

Scientific Name	Common Name	Protection Status[1]	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Actinemys marmorata	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.

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

*At the time of preparation and public circulation of the Lake 29 Improvement Project Revised Partial Draft EIR/EA, the Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) was listed as a State Candidate Threatened (SCT) species under the California Endangered Species Act (CESA). However, on August 25, 2016, the California Department of Fish and Wildlife, made a finding pursuant to Fish and Game Code Section 2075.5, that the petitioned action to add the Townsend's big-eared bat to the list of threatened or endangered species under the CESA (Fish & G. Code, § 2050 et seq.) is not warranted. (See also Cal. Code Regs., tit. 14, § 670.1, subd. (i)(1).)

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 Lake 29 Improvement Project Draft EIR/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 impacts 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 for Townsend's big-eared bat (TBEB), Pallid bat, and Western red bat (WRB). Additionally, Alternative D would impact 96.6 acres of TBEB forage-only habitat, 169.4 acres of Pallid bat forage-only habitat, and 152.8 acres of WRB forage-only habitat. Approximately 3.1% of suitable habitat for these three special-status bat species 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	Special Status Bat Species	Habitat Use	Total Acres within Project's Watersheds	Impact (Acres)	% Impacted
Oak Woodlands	TBEB, Pallid bat, WRB	Roost/Forage	1,737.0	133.0	7.7%
Chaparral	TBEB, Pallid bat, WRB	Forage	4,852.7	96.6	2.1%
Pine Forest	TBEB, Pallid bat, WRB	Roost/Forage	2,373.7	16.3	0.7%
Riparian	Pallid bat	Forage	82.3	2.3	2.8%
	WRB	Roost/Forage			
Non-native grasslands	Pallid bat, WRB	Forage	746.1	56.2	7.5%
Wetlands	Pallid	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, some of which may provide potential roosting habitat for TBEB and Pallid bats. 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. Within the ESL, 33 man-made structures exist with moderate to high potential for use by TBEB and Pallid bats. Of these man-made structures with moderate to high potential for use by TBEB and Pallid bats, five would be removed as a result of the proposed project. One structure within the ESL was identified as suitable for TBEB maternal roosting and was found to contain a TBEB maternal colony during both the 2003 and 2015 survey efforts. The proposed project would not result in the loss or alteration of this maternal roosting site. In addition to the man-made structures, five abandoned underground mines (US Geological Survey 2016) and a large quantity (approximately 685) of fractured volcanic rock outcroppings that have the potential to provide suitable TBEB and Pallid bat roosting habitat are located within one mile of the project footprint. Of the approximate 685 fractured volcanic rock outcroppings nearly half (327) are greater than 500 sq. ft. in size and thus would likely provide high quality habitat. Thus, the removal of man-made structures as a result of the proposed project is considered inconsequential in terms of available TBEB and Pallid bat roosting habitat.

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 considered negligible.

The proposed project would construct a drainage basin approximately 300 ft. to the southeast of the above mentioned TBEB maternal roosting site located at Manning Flat. Once in operation, the drainage basin would not produce noise levels of concern. The proposed four-lane expressway would be constructed approximately 640 ft. to the south of this roosting site, approximately 540 ft. further away than the existing highway. The Manning Flat maternal roosting site would experience reduced noise levels as a result of the proposed project.

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.

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.

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 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 not detect NWPT, this measure is to ensure that turtles that that may have been missed during the surveys 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 U.S. Fish and Wildlife Service (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 lists, provided by the USFWS and NOAA, of federally threatened and endangered species potentially occurring within the project area. The complete USFWS list and NOAA List are included in Appendix H. 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						
Rana aurora draytonii	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						
Strix occidentalis caurina	Northern spotted owl (NSO)	FT, ST	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.*
Agelaius tricolor	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
Coccyzus americanus occidentalis	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						
Oncorhynchus kisutch	Central California Coast Coho Evolutionary Significant Unit (ESU), Critical Habitat (CH) & Essential Fish Habitat (EFU)	FE	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.
Oncorhynchus mykiss	Steelhead – Northern California Distinct Population Segment (DPS)/Central California Coast DPS	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.
Oncorhynchus tshawytscha	Central Coast Chinook Salmon ESU & EFU	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.

Scientific Name	Common Name	Status[1]	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Lavinia exlicauda chi	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.
Hypomesus transpacificus	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 edgewaters.	No	No	Project is out of species range.
Invertebrates						

Scientific Name	Common Name	Status[1]	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Branchinecta conservatio	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						
Martes pacifica	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						
Lasthenia burkei	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.
Navarretia leucocephala ssp. *pauciflora*	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.

Scientific Name	Common Name	Status[1]	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Parvisedum leiocarpum	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.
Eryngium constancei	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.
Navarretia leucocephala ssp. plieantha	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.
Orcuttia tenuis	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 Beatle (VELB) (*Desmocerus californicus dimorphus)* 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.

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. Several populations were observed in the vernal pools at Manning Flat. 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 USWFS 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 M). 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
- Central California Coast Coho ESU, CH, & EFH
- Steelhead - Northern California DPS/Central California Coast DPS
- Central Coast Chinook Salmon ESU & EFH
- 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, 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.

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 approximately 200 ft. to 465 ft. to the south of the vernal pools 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 200 ft. to 465 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 have the potential to 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-flowerred 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 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 construction activities would be allowed within tributaries to Thurston Lake, including Thurston Creek, from December 31 through June 1 to avoid impacts to CLH in the unlikely event they are present within the project area of disturbance.

Burke's Goldfields, Few-Flowered Navarretia, 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 storm water 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 incorporated into the proposed highway storm water drainage system 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 Project[30]

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

[30] 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.

2.21.3 Cumulative Impact Analysis

The following resources have been identified for consideration in the cumulative impact analysis because these resources would either be significantly impacted by the proposed project, or they are currently in poor or declining health or at risk:

- Farmlands
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Visual/Aesthetics
- Cultural Resources
- Water Quality and Storm Water Runoff
- Air Quality
- Biological Resources
    - Natural Communities
    - Wetlands and Other Waters
    - Special-Status Plant 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 Farmland Impacts

The RSA for impacts related to farmland is defined as Lake County. Lake County was determined to be the RSA for farmland because, while farmland is designated by the California Department of Conservation on a state level, farmland decisions with regard to use, zoning, and rezoning are made primarily at the County level.

The proposed project would convert approximately 401 acres of land designated as farmland by the California Department of Conservation to highway land use; this

conversion includes the existing roadway[31], as well as area on either side of the proposed roadway, new access points, and the area that includes the utility corridor. Of the 401 acres of farmland that would be converted, 23.45 acres consist of "Important Farmland", which equals a loss of less than one-tenth of a percent of Lake County's important (non-grazing) farmland. However, based on completion of the Farmland Conversion Impact Rating with the NRCS, while there are Prime soils in the area, most of the project area consists of relatively poor-quality soils. Therefore, while agricultural resources in the project area would be affected as a result of the proposed project, the level of impact would not be substantial relative to overall agricultural activity in the area.

The roadway projects included in Table 2.21-1 are linear and would not impact large areas of farmland. The vineyard projects are in keeping with agricultural nature of area and would not impact the designation of areas as agricultural. Housing development projects are located within existing urban areas, and would be subject to the same process, analysis, and requirements related to land use and County policies as the proposed project. Any impacts, cumulative or otherwise, potentially resulting from projects included in this cumulative impacts analysis would be addressed on an individual, project-by-project basis. The proposed project would not have a considerable contribution to any potential cumulatively considerable impacts to farmland in Lake County.

2.21.3.3 Cumulative Traffic and Transportation/Pedestrian and Bicycle Facilities Impacts

The RSA for impacts related to traffic, transportation, pedestrian, and bicycle facilities is also defined as Lake County. Lake County was determined to be the RSA for traffic, transportation, pedestrian, and bicycle facilities because traffic types, use, projections, and analyses are typically made at a county level for this area/region.

The proposed project would improve the LOS in the project area, as well as reduce collision rates on SR 29 and improve overall safety by providing a modern, 4-lane facility that meets current design standards. The proposed project would improve conditions regarding traffic, transportation, pedestrian, and bicycle facilities in Lake County.

[31] The California Department of Conservation maps agricultural land based on the extent of USDA-NRCS soil surveys, and does not take into account the built environment. Land designated as farmland by the California Department of Conservation that is underneath the existing roadway has been included in total farmland acreages for the purposes of this analysis.

The projects included in Table 2.21-1 have the potential to result in changes in traffic, transportation, pedestrian, and bicycle facilities in Lake County. The roadway projects would result in a beneficial impact to traffic, transportation, pedestrian, and bicycle facilities, by improving safety and reducing congestion. Other projects included in this cumulative impacts analysis, including housing development projects and vineyard development projects, would be subject to the same process, analysis, and requirements related to land use and county policies as the proposed project (e.g. Policy T-1.1: Provision of Adequate Road Network and Policy T-4.1: Consider Non-Motorized Transportation Modes in Planning and Development), and any impacts, cumulative or otherwise, potentially resulting from other projects would be addressed on an individual, project-by-project basis. The proposed project would not contribute to any potential cumulatively considerable impacts to traffic, transportation, pedestrian, and bicycle facilities in Lake County.

2.21.3.4 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.

2.21.3.5 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) or the California Register of Historical Resources (CRHR); 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.

2.21.3.6 Cumulative Water Quality and Storm Water Runoff Impacts

The RSA for analyzing cumulative water quality and storm water runoff 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 water quality and storm water runoff 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 water quality and storm water runoff are the five vineyard projects. Storm water runoff volumes from the project area are expected to increase with the implementation of the project due to the increase in impervious surfaces. This increase in storm water runoff volumes could potentially contribute to an increase in sediment carried by storm water from project-related erosion, as well as an increase in vehicle-related toxic pollutants carried in storm water runoff. However, this additional runoff is not anticipated to exceed the capacity of the proposed drainage systems, and permanent control measures to reduce pollutants in storm water runoff from the roadway would be implemented, as required, to reduce suspended particulate loads (and thus pollutants associated with the particulates) entering drainages. The vineyard projects included in the cumulative impact analysis are not

anticipated to substantially add to existing amounts of impervious surface; however it is anticipated that an increase in agricultural practices may contribute to impacts to water quality due to an increase in the use of fertilizers, chemicals, etc. It is anticipated that vineyard projects, and other development projects, would be required to implement permanent control measures to reduce pollutants in storm water runoff.

Water quality and storm water runoff impacts related to the proposed project would be minimized with the implementation of the standard practices outlined in Section 2.10. It is assumed that the vineyard projects included in the cumulative impact analysis would also implement appropriate measures, in accordance with Lake County development requirements and guidelines (e.g. Policy WR-2.1: Protect Surface & Ground Water Quality, Policy WR-2.4: Best Management Practices, Policy WR-2.5: Storm Water Runoff). With the implementation of standard practices, the proposed project would not have a considerable contribution to any potential cumulatively considerable impacts to water quality and storm water runoff.

2.21.3.7 Cumulative Air Quality Impacts

The RSA for impacts related to air quality is defined as the Lake County Air Basin. The Lake County Air Basin was determined to be the RSA for air quality because the Air Basin is a federally and state recognized geographical area in which air quality-related measurements, projections, and analyses are made.

The proposed project would improve the LOS in the project area, as well as reduce traffic congestion. Therefore, in comparison to existing conditions and projected conditions under the No Build Alternative, the project would improve air quality in the Lake County Air Basin.

The projects included in Table 2.21-1 have the potential to result in changes to air quality in the Lake County Air Basin. The roadway projects would result in a beneficial impact to air quality by improving LOS, reducing congestion, and encouraging the use of alternative methods of transportation. Other projects included in this cumulative impacts analysis, including housing development projects and vineyard development projects, would be subject to the same process, analysis, and requirements related to land use and county policies as the proposed project (e.g. Policy HS-3.1: Monitoring of Point and Area Sources, Policy HS-3.3: Transportation and Air Quality, Policy HS-3.7: Development Requirements, Policy HS-3.9: Air Quality Analysis), and any impacts, cumulative or otherwise, potentially resulting from other projects would be addressed on an individual, project-by-project

basis. The proposed project would not have a considerable contribution to any potential cumulatively considerable impacts to air quality in the Lake County Air Basin.

2.21.3.8 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 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 Wooly 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 (*Calyptridium 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 three special-status bat species, the pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), 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 the 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 various threatened and endangered species. Cumulative impacts to threatened and endangered species as a result of the proposed project and other projects within the RSA 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.

<u>California red-legged frog</u>

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 exlicauda 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.

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 "<u>significant effect on the environment</u>" 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 <u>mandatory findings of significance</u>, 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 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 N for the CEQA Checklist.

3.2.1 No Effects

Refer to the discussion at the beginning of Chapter 2.

3.2.2 Less-Than-Significant Effects of the Proposed Project

Land Use

The proposed project would not result in significant impacts to land use in Lake County. The project would convert approximately 401 acres of land to highway use with the majority of this land designated for agricultural, rural land, and rural residential uses. Land converted to highway use would also include a small area located near the SR 29/281/Red Hills Road intersection designated for commercial uses. Although the proposed project would result in this land conversion, the amount of land converted is negligible compared to the overall acreage in the county zoned for these uses. See Section 2.1 for further discussion regarding land use impacts.

Alternative D is consistent with local land use plans and policies. The proposed project is included in the Lake County Regional Transportation Plan and is consistent with the Lake County General Plan and the Lower Lake, Kelseyville, and Rivieras area plans.

Additionally, the proposed project would not impact parks or recreation areas. See Section 2.1 for further discussion of project-related land use impacts.

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.

Farmlands

The proposed project would not have a significant impact on farmlands. The project would convert approximately 401 acres of land designated as farmland by the California Department of Conservation to highway land use; this conversion includes the existing roadway[32], as well as area on either side of the proposed roadway, new access points, and the area that includes the utility corridor. Of the 401 acres of farmland that would be converted, 23.45 acres consist of "Important Farmland", which equals a loss of less than one-tenth of a percent of Lake County's important (non-grazing) farmland. Based on completion of the Farmland Conversion Impact Rating with the National Resource Conservation Service (NRCS), while there are Prime soils in the area, most of the project area consists of relatively poor-quality soils. Therefore, while agricultural resources in the project area would be affected as a result of the proposed

[32] The California Department of Conservation maps agricultural land based on the extent of USDA-NRCS soil surveys, and does not take into account the built environment. Land designated as farmland by the California Department of Conservation that is underneath the existing roadway has been included in total farmland acreages for the purposes of this analysis.

project, the level of impact would not be significant relative to overall agricultural activity in the area.

Although the proposed project does have the potential to result in the indirect conversion of farmland, the amount of land that would be indirectly converted is considered nominal in comparison to quantity of farmland present within the project area and Lake County.

The project area does not contain Williamson Act contract farmland, therefore, the proposed project would not impact such land.

Community Impacts

The proposed project would not significantly alter the way community members interact with one another. The project area is rural, and no meeting places such as parks, restaurants, schools, churches, bars, or theaters are adjacent to this portion of SR 29. As a result, residents of the area have few opportunities to meet informally within the project area. Alternative D would not result in significant impacts on community cohesion.

The proposed project would not displace a substantial amount of businesses or residences. As Caltrans standard practice, affected businesses and residents would receive relocation assistance. On average, workers in Lake County have 30-minute commutes, and very few workers (less than 4 percent countywide) walk or use public transit to get to work. As it is likely that the businesses displaced by the proposed project would be able to relocate in Lake County, the project would not significantly impact local employment levels as a result of the project-related business displacements.

The proposed project would not have disproportionately high or adverse effects on any minority or low-income populations, as discussed in Executive Order 12898 regarding environmental justice.

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.

Traffic and Transportation/Pedestrian and Bicycle Facilities

The proposed project would not result in significant impacts on traffic, transportation, pedestrian, or bicycle facilities. During construction the project would result in some temporary disruptions of traffic flow where temporary lane shifts or closures are required. However, as standard practice both a construction staging plan and a Traffic Management Plan would be developed to maintain traffic flow and to provide appropriate signing and striping along the roadway segments during construction. Access to side roads and existing driveways would be maintained at all times.

The project would reduce traffic queuing and traffic delays over both the existing conditions and the projected conditions under the No Build Alternative. The project would also reduce collision rates on SR 29 and improve overall safety by providing a modern, 4-lane facility that meets current design standards. No dedicated bicycle or pedestrian facilities exist on the current roadway, and SR 29 is not a designated bike route. However, the project is expected to improve overall safety for bicyclists; providing widened shoulders that bicyclists can use, thus reducing modal conflicts. See Section 2.6 for further discussion on Traffic and Transportation/Pedestrian and Bicycle 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.

Hydrology and Floodplains

Although the project proposes improvements of SR 29 within the FEMA-defined 100-year floodplain, the proposed project would not be considered a significant floodplain encroachment. The improvements that are included in the project would not significantly increase the existing depth or limits of flooding.

Additionally, the proposed project would not support any incompatible floodplain development and would not have significant impacts on natural and beneficial floodplain values.

Water Quality and Storm Water Runoff

The proposed project would not significantly impact water quality. As Caltrans standard practice, temporary erosion control measures would be applied to all exposed soils during construction. Because the proposed project would involve soil disturbance of more than 1 acre, Caltrans would adhere to the conditions of the NPDES permit for construction activities (Order No. 2009-0009-DWQ as amended, NPDES No. CAS000002). To address potential temporary water quality impacts resulting from construction activities associated with this project, Caltrans would require the project contractor to prepare and adhere to a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would address potential project specific construction-phase water quality impacts and would include the following elements: Project Description; Minimum Construction Control Measures; Erosion and Sediment Control; Non-Storm Water Management; Post-Construction Storm Water Management; Waste Management and Disposal; Maintenance, Inspection, and Repair; Storm Water Monitoring; Annual Reporting to RWQCB; and Training. The proposed project would also include the implementation of Best Management Practices (BMPs) regarding the proper handling and storage of materials and the prevention, control, and cleanup of accidental spills.

Storm water runoff would increase with implementation of the proposed project due to the increase in impervious surface. However, this additional storm water runoff is not expected to exceed the capacity of the proposed drainage systems. As Caltrans standard practice, permanent control measures would be implemented to reduce

pollutants in storm water runoff from the proposed roadway. These measures would be incorporated into the final engineering design or landscape design of the project. Post construction BMPs are permanent erosion and sediment control measures (i.e. Design Pollution Prevention BMPs) or Treatment BMPs. Permanent erosion and sediment control measures may include preservation of existing vegetation, slope rounding, dikes, berms, ditches, rock energy dissipaters, and/or the application of seed, straw, compost, stabilizing emulsion and mulch, or a combinations thereof. Treatment BMPs may include bio-filtration strips and/or swales, infiltration basins, detention basins, and/or traction sand traps.

The proposed project is not anticipated to involve substantial excavations that could affect groundwater resources, although some surface excavation would occur during construction. If groundwater is encountered during any excavations, the Caltrans Office of Environmental Engineering would be contacted regarding the handling and disposal of this water. If this water would be discharged into any jurisdictional waters, appropriate dewatering procedures would be required to reduce or eliminate any potential discharge of pollutants to the maximum extent feasible. A project-specific Waste Discharge Permit may be required from the RWQCB if substantial dewatering would take place. In the event that this project would affect groundwater, the groundwater would be tested for potential contamination, and a Special Provision would be prepared, if applicable, to ensure the proper handling and disposal of the groundwater.

Groundwater resources in the area do not represent a sole source aquifer, so no impacts are expected to occur to water quality in groundwater wells.

Geology/Soils/Seismic/Topography

The proposed project would not result in significant impacts related to geology, soils, seismic conditions, or topographical features. The project is not expected to affect the surface fault rupture hazard for the project area, affect regional ground shaking, or cause liquefaction or lateral spreading. Cut slopes constructed as part of the proposed project may be subject to minor landsliding or slumping, however, appropriate slope strengthening and stabilizing design measures would be developed if necessary.

Hazardous Waste/Materials

The proposed project would not result in significant impacts related to hazardous waste. Implementation of Caltrans' standard practices would ensure that potential

impacts during soil-disturbing activities in the construction phase would not result in significant hazardous waste impacts. No permanent impacts are expected as a result of the proposed project.

Air Quality

The proposed project would not result in significant air quality impacts. During construction, the project could result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. However, the project contractor would be required to comply with Caltrans Standard Specifications, which include Section 14-9.02, “Air Pollution Control.” Section 14-9.02 requires the contractor to comply with all existing rules, regulations, ordinances, and statutes of the Lake County Air Quality Management District pertaining to each construction activity.

The Lake County Air Basin is in attainment of the national and state ambient air quality standards for all criteria pollutants. Once in operation, the proposed four-lane expressway would not exceed any national or state air quality standards including CO concentrations.

Additionally, the forecasted increase in travel speeds and reduction in traffic congestion that would result from implementation of Alternative D would reduce emissions of the volatile organic compound–based mobile source air toxics (benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene) for nondiesel motor vehicles. Therefore, in comparison to existing conditions and projected conditions under the No Build Alternative, the project would improve air quality in the Lake County Air Basin.

Noise

The CEQA noise analysis is independent of the NEPA/23 Code of Federal Regulations [CFR] Part 772 analysis discussed in Section 2.14, which focuses on noise abatement criteria. Under CEQA, the assessment entails evaluation of the setting of the noise impact and how large or perceptible any noise increase would be in the given area. When determining whether a noise impact is significant under CEQA, comparison is made between the No Build Alternative noise level and the build alternative noise level.

Table 2.14-3 shows the predicted noise level under the No Build Alternative (Alternative A) and noise levels with Alternatives D. Project-related noise level changes at occupied residences would range from about -3 to +3 A-weighted decibels (dBA). A 3 dBA increase between the no build noise levels and the noise levels of Alternative D would be barely perceptible to the human ear. Therefore, under CEQA, no significant noise impact would occur as a result of the proposed project.

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 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 any observations of this species 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 N)

The following resources have been identified for consideration in the cumulative impact analysis:

- Farmlands
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Visual/Aesthetics
- Cultural Resources
- Water Quality and Storm Water Runoff
- Air Quality
- 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 farmlands, traffic and transportation/pedestrian and bicycle facilities, cultural resources, water quality and storm water runoff, air quality, 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 (Burke's Goldfields, Few-Flowered Navarretia, and Lake County Stonecrop)

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-flowerred 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 N)

A.) The proposed project 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 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:

- Farmlands
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Visual/Aesthetics
- Cultural Resources
- Water Quality and Storm Water Runoff
- Air Quality
- 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", and special-status animals (bats).

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. 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 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 habitat, the combination of these projects with the proposed project would be expected to result in cumulatively considerable impacts to VRI habitat.

Considering the beneficial attributes of VRI habitat and the quantity that would be removed by the proposed project (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. 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)

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.

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 corridor 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 (excluding vernal pools) of the U.S. and the State (under USACE or RWQCB 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 because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. To compensate for impacts to wetlands, excluding vernal pools, 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 funds to the USACE- and RWQCB-approved in-lieu fee program.

- Mitigation for impacts to vernal pool habitat would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program at a 2:1 ratio. The in-lieu fee program would be used to compensate for impacts to vernal pools because there are no known mitigation banks in the project area that offer vernal pool mitigation credits.
- Mitigation for impacts to "other waters" would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program at a 2:1 ratio. The in-lieu fee program would be used to compensate for impacts to "other waters" because there are no known mitigation banks in the project area that offer "other waters" mitigation credits.

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

A flow spreader system would be incorporated into the proposed highway storm water drainage system 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.

3.4 Other Regulatory Considerations

3.4.1 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources including passenger cars, light-duty trucks, other trucks, buses, and motorcycles, make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to minimize or "mitigate" the impacts of climate change. “Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[33]

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity), 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective all four strategies should be pursued cooperatively.[34]

3.4.1.1 Regulatory Setting

This section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California has been innovative and pro-active in addressing GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

[33] http://climatechange.transportation.org/ghg_mitigation/
[34] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

Executive Order S-3-05 (EO) (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006 Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 greenhouse gas reduction goals.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor including ARB, the Energy Commission, and Public Utilities Commission to support the rapid commercialization of zero emission vehicles. It directs these entities to achieve various benchmarks related to zero emission vehicles.

Executive Order B-30-15 (April 2015), establishes an interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders that all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every three years, and to ensure that its provisions are fully implemented.

Senate Bill 32 (SB32) Chapter 249, 2016, this legislation codifies the greenhouse gas reduction targets to achieve a mid-range goal of 40 percent below 1990 levels by 2030 established in EO B-30-15.

Federal

Although climate change and GHG reduction are a concern at the federal level; to date no national standards have been established for nationwide mobile source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Council on Environmental Quality (CEQ) released final guidance (Aug1, 2016) for Federal agencies on how to consider the impacts of their actions on global climate

change in their National Environmental Policy Act (NEPA) reviews. This final guidance provides a framework for agencies to consider both the effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the effects of climate change on a proposed action. The final guidance applies to all types of proposed Federal agency actions that are subject to NEPA analysis and guides agencies on how to address the greenhouse gas emissions from Federal actions and the effects of climate change on their proposed actions within the existing NEPA regulatory framework.

FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process, from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life. The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency.

The Energy Policy Act of 1992 (102nd Congress H.R.776.ENR, abbreviated as EPACT92) was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. The Act consists of twenty-seven titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993.The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020

Energy Policy Act of 2005(109th Congress H.R.6 (2005-2006) Sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Action of 1975 and Corporate Average Fuel Standards, The Energy Policy and Conservation Act of 1975 (42 USC Section 6201 [1975]) establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance 74 *Federal Register* 52117 (October 8, 2009). The Executive Order set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. Instituted policy of the United States that Federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13653, *Preparing the United States for the Impacts of Climate Change (78 Federal Register 66817,November 6, 2013)* Builds on a previously released (and since revoked) EO I3514 Federal Leadership in Environmental Energy, and Economics Performance to establish direction for federal agencies on how to improve on climate preparedness and resilience strategies.

President Obama's Climate Action Plan June 2013, President Obama announced a comprehensive plan for action to cut carbon pollution, prepare the Nation for the impacts of climate change, and lead international efforts to address climate change as a global challenge. The Plan builds on the work of the 13 USGCRP member agencies, the USGCRP National Climate Assessment program, and the Interagency Climate Change Adaptation Task Force.

Executive Order 13693, *Planning for Federal Sustainability (80 Federal Register 15869, March 2015).* Reaffirms the policy of the United States that Federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. Sets sustainability goals for all agencies to promote energy conservation, efficiency,

and management while by reducing energy consumption and GHG emissions. Builds on the adaptation and resiliency goals in EO 13693 to ensure agency operations and facilities prepare for impacts of climate change. Revokes EO 13514.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[35] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards set a requirement to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and the California Air Resources Board (CARB) will decide on CAFE and GHG emissions standard stringency for model years 2022-2025. Standards for model years 2022 through 2025 have not been formally adopted by NHTSA.

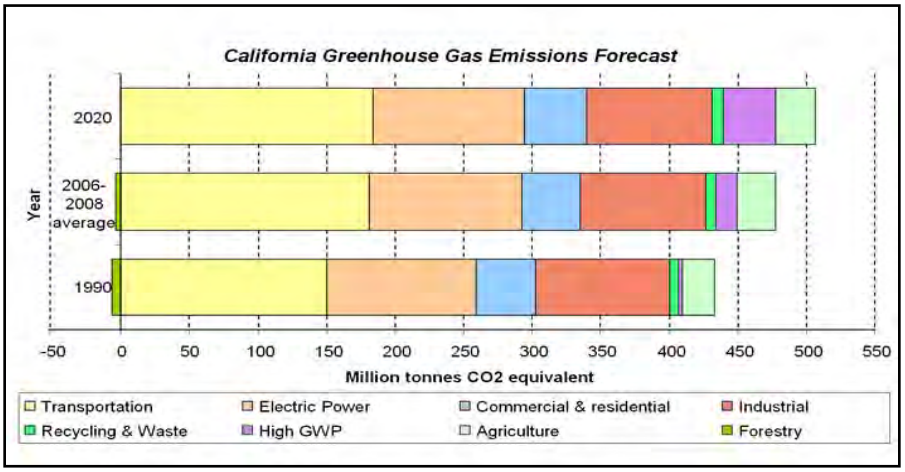
NHTSA and EPA issued a Final Rule for "Phase 2" for medium and heavy duty vehicles to improve fuel efficiency and cut carbon pollution. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO2 emissions by up to 1.1 billion metric tons over the lifetimes of model years 2018-2029 vehicles.

[35] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

3.4.1.2 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.[36] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 3.4.1-1 California Greenhouse Gas Forecast

[36] This approach is supported by the AEP: Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

The Department and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[37]

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO2) from mobile sources such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 3.4.1-2 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO2, may be reduced.

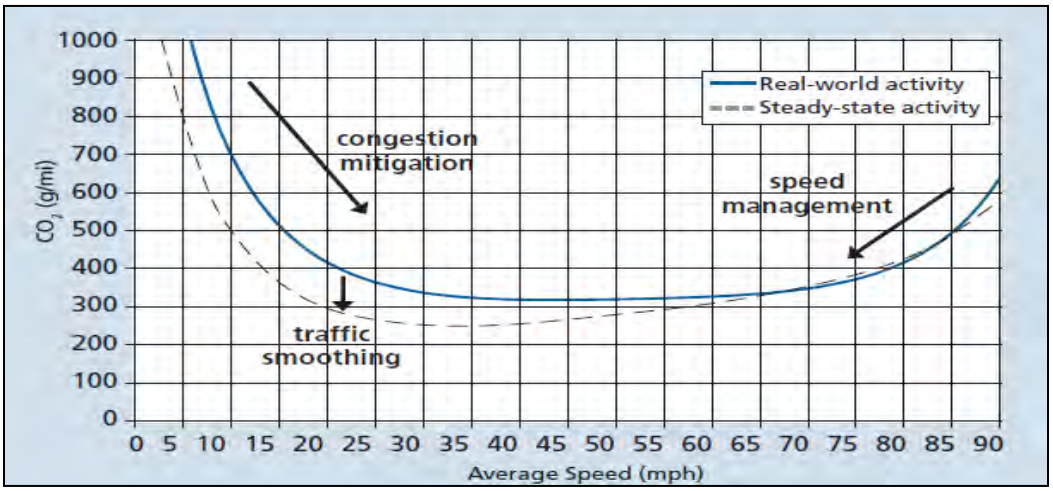


Figure 3.4.1-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO2 Emission[38]

The Lake 29 Improvement Project has been designed to reduce congestion and vehicle time delays by upgrading SR 29, within the project limits, from a two-lane

[37] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

[38] Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

conventional highway with at grade intersections to a four-lane divided expressway with access control. This increase in capacity would dramatically improve the level of service and volume-to-capacity ratio, and significantly decrease traffic queuing and delays over both the existing conditions and the projected conditions under the No Build Alternative. Upgrading SR 29 to a four-lane expressway would also allow for the diversion of through traffic, including truck, from the "Main Street" communities along the north shore of Clear Lake, where traffic noise, congestion, and public safety are ongoing concerns. The proposed Lake 29 Improvement Project is identified in the *2010 Lake County Regional Transportation Plan* as a "top priority" in improving mobility on the State highways system throughout Lake County.

CT-EMFAC V5.0, a California-specific, project-level analysis computer modeling tool designed to model criteria pollutants, developed in joint effort by the California Department of Transportation and the Department of Civil and Environmental Engineering, University of California, Davis, was used to calculate the CO2 emissions from the proposed project for the purpose of comparing the build and no build alternatives.

Results of estimated daily CO2 emissions for the project and surrounding area are listed in the following table.

Table 3.4.1-1 Lake 29 Improvement Project CO2 Total Emissions
(US Tons per Day)

Pollutant	2013 Existing	2021 No Build	2021 Build (Alternative D)	2041 No Build	2041 Build (Alternative D)
CO_2	3.5880750	4.2420709	4.2532975	5.9325415	5.8050418

This analysis shows that for the year 2021, CO2 emissions for Alternative D are 0.26% higher than the No Build alternative. However, by 2041, CO2 emissions for Alternative D are 2.15% lower than the No Build alternative. Therefore, it is anticipated that the proposed Build alternative would contribute to a 2.15% reduction in GHG emission by 2041 within the project limits when compared to the 2041 no-build alternative.

3.4.1.3 Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing,

emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications, and by implementing traffic management practices during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

3.4.1.4 CEQA Conclusion

As discussed above, both the future with project and future no-build show increases in CO2 emissions over the existing levels, however, the future 2041 build CO2 emissions are lower than the future 2041 no build emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO2 emissions increase means for climate change. Therefore, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

3.4.1.5 Greenhouse Gas Reduction Strategies

Figure 3.4.1-3 Mobility Pyramid

The Department continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 3.4.1-3: The Mobility Pyramid.

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. The Department works closely with local jurisdictions on planning activities but does not have local land use planning authority.

The Department assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB.

The Department is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 3.4.1-2 summarizes the Departmental and statewide efforts that the Department is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 3.4.1-2 Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[39] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

[39] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. The Department would implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
2. Landscaping reduces surface warming, and through photosynthesis, decreases CO2. The project includes landscaping/planting on cut/fill slopes and other areas cleared by construction activities. This landscaping/planting will help offset any potential CO2 emissions increase.
3. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost $60 to $70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects CO2 emissions.[40]
4. According to Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) and State Air Resources Board (ARB) rules, ordinances, and regulations for air quality restrictions, including those related to construction equipment idling times.

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned.

[40] Knoxville Business Journal, "LED Lights Pay for Themselves," May 19, 2008 at http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/.

There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011 , outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state, and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009) , which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy

document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[41] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

[41]Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

All projects that have filed a Notice of Preparation (NOP) as of the date of the EO S-13-08, and/or are programmed for construction funding through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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.

4.1 Responsible Agencies Under CEQA

A Responsible Agency is any public agency that has discretionary approval power over the proposed project. The responsible agencies include:

- California Transportation Commission (CTC)
- California State Office of Historic Preservation
- Central Valley Regional Water Quality Control Board (CVRWQCB)
- California Department of Fish and Wildlife (CDFW)

4.2 Trustee Agencies under CEQA

The California Department of Fish and Wildlife (CFDW) is also considered a Trustee Agency (California Environmental Quality Act [CEQA] Guidelines Section 15386) because it has jurisdiction by law over natural resources that could be affected by the proposed project that are held in trust for the people of the State of California. The CDFW has participated since the 2003 Notice of Preparation.

4.3 Cooperating Agencies

The following federal agencies are considered Cooperating Agencies (§ 1508.5, 40 CFR) because they have jurisdiction by law or special expertise with respect to potential project-related environmental impacts:

- U.S. Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Service (USFWS)

4.4 Notice of Preparation

A Notice of Preparation (NOP) to prepare an Environmental Impact Report (EIR) was sent to the State Clearinghouse on February 2, 2003. A NOP meeting was held March 6, 2003, at the Caltrans Venture Oaks office located in Sacramento. The purpose of this meeting was to solicit participation from responsible and trustee agencies to determine the scope of the EIR for the proposed project. Caltrans and CDFW were the only agencies in attendance. The following agencies responded in writing to the NOP. Their letters are included in Appendix J.

Comments were received from the Lake County Air Quality Management District, the United States Bureau of Land Management, USFWS, and the California Department of Toxic Substances Control, and are summarized in Table 4-1.

Table 4-1 Comments Received on the Notice of Preparation

Agency	Date	Issues/Concerns
Lake County Air Quality Management District	February 10, 2003	Possible impacts to air quality, especially particulate emissions.
United States Bureau of Land Management	March 3, 2003	Provided notification that no permits will be required as there are no Bureau of Land Management–administered lands within the project area.
United States Fish and Wildlife Service	March 12, 2003	Provided list of sensitive species that may occur in or near the project site and general guidelines for identifying and mitigating project impacts.
California Department of Toxic Substances Control	March 18, 2003	Provided list of known hazardous substances release sites near the project area.

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. Comments received during the public open house have been considered during project development. 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 Environmental Impact Report/Environmental Assessment (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 property 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 six comments were received by mail from a local resident and 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 project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016. A notice advertising the availability of the Revised Partial Draft EIR/EA and notice of a public hearing was published in the Lake County Record Bee on May 24, 2016. Letters discussing the availability of the Revised Partial Draft EIR/EA and notice of the public hearing 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 Revised Partial 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 Revised Partial 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.

The public hearing was held at the Lower Lake High School gymnasium on June 8, 2016. The meeting was conducted in an open-house format, where attendees were able to visit display stations, discuss the proposed project and the Revised Partial Draft EIR/EA with Caltrans' project staff, and enter formal comments into the 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 20 people attended the meeting, consisting mainly of property owners within the project limits.

During the public hearing a total of six people entered formal statements with the court reporter and three people filled out comment cards. An additional six comments were received by mail, and three received by email in response to the circulation of the Revised Partial Draft EIR/EA.

The following comments were received in response to the 2007 public hearing and public circulation of the Draft EIR/EA and the 2016 public hearing and public circulation of the Revised Partial Draft EIR/EA. A response from Caltrans follows each comment.

CALTRANS LAKE 29 EXPRESSWAY

OPEN HOUSE/PUBLIC HEARING

STATEMENTS OF

MARK WELCH
LEIF SODERLING
TERRI PERSONS
ROBERT HONEYCUTT
SHEILA LAURENCE
JOHN SNYDER
CHRIS LARSEN

TAKEN AT KONOCTI RESORT, KELSEYVILLE, CALIFORNIA
ON WEDNESDAY, AUGUST 8, 2007
REPORTED BY LINDA MYERS, C.S.R. 4966

ADAIR, POTSWALD & HENNESSEY
CERTIFIED COURT REPORTERS
212 WEST PERKINS STREET, UKIAH, CALIFORNIA 95482
(707) 462-8420

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MS. LARSEN	13

ADAIR, POTSWALD & HENNESSEY 1-800-747-DEPO

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6:52 P.M.

MR. WELCH: MY NAME IS MARK WELCH, AND I AM A LANDOWNER ALONG THE HIGHWAY 29 CORRIDOR, AND I OWN PROPERTY ADJACENT TO HIGHWAY 29 AT CONSERVATION CAMP ROAD. I OWN BOTH THE EAST AND WEST SECTIONS OF THE SOUTH SIDE OF THE HIGHWAY 29 INTERCHANGE AT CONSERVATION CAMP ROAD.

I HAVE LOOKED AT THE ALTERNATIVES BEING CONSIDERED FOR THE WIDENING OF THE HIGHWAY, AND I STRONGLY DISAGREE WITH THE INCLUSION OF A CHANGE IN THE PHYSICAL LOCATION OF THE CONSERVATION CAMP ROAD, IN EFFECT MOVING IT FROM WHERE IT CURRENTLY EXISTS FARTHER TO THE EAST ON HIGHWAY 29.

I WANT TO GO ON RECORD STATING THAT I DO NOT HAVE A PROBLEM WITH THE WIDENING OF THE HIGHWAY ITSELF. I RECOGNIZE THAT THE INCREASED POPULATION OF LAKE COUNTY IS GOING TO REQUIRE THAT HIGHWAY 29 BE WIDENED, AND I DON'T CONSIDER THAT TO BE ANYTHING OTHER THAN AN APPROPRIATE PROJECT OVER TIME.

THE BIGGEST PROBLEM I HAVE IS ASSOCIATED WITH THE PROCESS BY WHICH THE DIFFERENT OPTIONS ARE CONSIDERED, REVIEWED AND APPROVED. I DO NOT FEEL LIKE I'VE BEEN FULLY APPRISED OF THE PROCESS AS IT'S BEEN HAPPENING, AND I THINK CERTAIN ALTERNATIVES HAVE BEEN PUT INTO PLACE WITHOUT A REASONABLE NOTIFICATION TO THE

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LANDOWNERS THAT ARE MOST AFFECTED.

MY LARGEST AND MOST SIGNIFICANT PROBLEM IS WITH THE RELOCATION OF CONSERVATION CAMP ROAD. CONSERVATION CAMP ROAD AS IT EXISTS TODAY IS A PAVED ROAD. IT'S IN A LOCATION WHICH HAS BEEN THERE FOR QUITE A LONG TIME AND IS, TO MY KNOWLEDGE, EVERY BIT AS GOOD IN TERMS OF VIEWING LOOKING TO BOTH THE EAST AND WEST FROM HIGHWAY 29. SO I DO NOT SEE ANY REASON WHY THAT ROAD WOULD NEED TO BE CHANGED FROM A SAFETY STANDPOINT.

SECONDLY, THE ROAD AS DESIGNED IMPACTS THE 28 ACRES ON THE EAST SIDE OF CONSERVATION CAMP ROAD, WHICH ARE MY MOST HIGHLY PRIZED ACRES FOR VINEYARD DEVELOPMENT. THEY HAVE THE BEST VIEW SCAPE AND ARE THE BEST LAND THAT I OWN, AND PUTTING A ROAD THROUGH THERE WOULD DIMINISH THE VALUE SUBSTANTIALLY, NOT ONLY IN TERMS OF THE AMOUNT OF LAND THAT'S BEING TAKEN, BUT IN TERMS OF THE QUALITY OF THE VINEYARD EXPERIENCE, FOR BOTH FARMING AND ENJOYMENT, AFTER THAT WOULD HAPPEN.

THIRDLY, THE NEIGHBOR TO MY EAST IS GIVEN ACCESS, INGRESS AND EGRESS ACCESS, ACROSS MY VINEYARD FROM THE EAST, WHICH HE DOESN'T CURRENTLY HAVE. THAT WOULD BE AN ADDITIONAL TRAFFIC IMPEDIMENT FOR ME AND OTHER LESSENING OF THE VALUE OF MY PROPERTY AND A NEW POINT OF CONGESTION FOR A PROPERTY THAT ALREADY IS BEING SELECTED AND PICKED OUT TO BEAR TOO MUCH OF THE BRUNT OF

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1 THIS DEVELOPMENT.
2 SINCE I PURCHASED THIS PROPERTY, IT'S A
3 92-ACRE PROPERTY, THERE HAVE BEEN A NUMBER OF
4 LIMITATIONS TO ITS DEVELOPMENT. THERE'S AN
5 ARCHEOLOGICAL SITE WHICH I'VE BEEN UNABLE TO DEVELOP,
6 WHICH SITS ADJACENT TO HIGHWAY 29 ON THAT EASTERN
7 PARCEL, AND THEN THURSTON CREEK MEANDERS THROUGH THE
8 PROPERTY, AND BOTH THE CREEK AND THE SURROUNDING FLORA
9 HAVE BEEN REQUIRED TO BE SETBACKS BOTH BY FISH AND GAME
10 AND BY FISH AND GAME SETBACK REGULATIONS, COUNTY
11 REGULATIONS, AND THERE HAVE ALSO BEEN SOME SPECIES THAT
12 HAVE BEEN IDENTIFIED THAT HAD TO BE PROTECTED, ONE BEING
13 KONOCTI MANZANITA.
14 SO TO FOLLOW UP WITH THAT, THAT'S ALLOWED ME
15 60 ACRES TO BE ABLE TO DEVELOP AFTER THOSE REQUIREMENTS
16 WERE MET.
17 AND FISH AND GAME PREVENTED ME FROM PUTTING A
18 BRIDGE INTO MY PROPERTY FOR ALMOST TWO YEARS AFTER
19 PURCHASE BECAUSE OF FISH AND GAME CONSIDERATIONS THAT
20 HAD TO BE MADE, BIOLOGICAL STUDIES, ET CETERA, WHICH I
21 FELT WERE VERY UNFAIR AT THE TIME, AND IT PUSHED MY
22 PROJECT BACK A COUPLE OF YEARS FROM WHAT IT WAS INTENDED
23 TO BE.
24 SO AS THEY CONSIDER THIS ROAD WIDENING, I'VE
25 BEEN IMPACTED AT THE OUTSET WITH THE PURCHASE OF THE

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LAND AND WITH THE LIMITATIONS AND SETBACKS THAT WERE PUT IN PLACE AT THAT TIME. NOW IT APPEARS AS IF ENDANGERED SPECIES ON THE OTHER SIDE OF THE ROAD ARE SO IMPORTANT, AND MY ENDANGERED SPECIES THAT WERE ON MY PROPERTY ARE NO LONGER AS IMPORTANT AND CAN BE USED AS PART OF THE ROAD WIDENING, BUT YET I COULD NOT USE THEM TO DO ANY DEVELOPMENT ON MY OWN AT THE TIME OF PURCHASE. THAT SEEMS TO ME TO BE LESS THAN ETHICAL IN TERMS OF DETERMINING WHAT IS IMPORTANT AND WHAT ISN'T IMPORTANT BY THE PARTIES INVOLVED.

NATURALLY, MY BIGGEST CONCERN, SHOULD THIS ALTERNATIVE BE APPROVED AGAINST MY WILL, I'M CONCERNED ABOUT COMPENSATION FOR THE PROPERTY THAT'S TAKEN BECAUSE NOT ONLY IS IT THE PHYSICAL ACRES THAT WOULD BE IMPACTED, BUT THE ENJOYMENT AND THE USE AND VALUE OF THE PROPERTY THAT REMAINS.

NOTHING HAS BEEN OFFERED TO DATE THAT WOULD INDICATE THAT BETWEEN THE COUNTY AND THE STATE THERE'S GOING TO BE ANY ATTEMPT TO MAKE ME WHOLE, IN TERMS OF THE REMOVAL OF THIS LAND, FOR MY ENJOYMENT AND USE AND MAKE IT USEFUL IN SOME OTHER FASHION.

IN ADDITION, THIS IS A FAMILY FARM, AND THE PROPOSED PROJECT IMPACTS THE INTEGRITY OF THE FAMILY FARM, AND PREVIOUS DEVELOPMENT IN THE AREA OF LARGE CORPORATE FARMS HAVE NOT BEEN AFFECTED, AS WELL AS

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STORAGE AND OTHER DEVELOPMENTS, WHICH HAVE BEEN ALLOWED TO BE PUT IN PLACE WITHOUT ANY SUCH KINDS OF RESTRICTIONS.

I BELIEVE THAT THE STATE SHOULD LOOK CLOSELY AND CONSIDER VERY CAREFULLY THE OPTION THAT DOESN'T SEEM TO BE CONSIDERED ANYWHERE AT THIS POINT, WHICH IS TO MAINTAIN CONSERVATION CAMP ROAD WHERE IT CURRENTLY IS AND DO THE NECESSARY EXPANSION OF HIGHWAY 29 WITH THAT COMPONENT IN PLACE.

I WOULD EXPECT TO BE INCLUDED FROM HERE ON IN ANY AND ALL CONVERSATIONS THAT SHOULD OCCUR RELATIVE TO THE ULTIMATE USE AND DISPOSITION OF MY PROPERTY.

(STATEMENT CONCLUDED AT 6:43 P.M.).

-- -- --

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CALTRANS LAKE 29 PUBLIC HEARING 8/8/2007

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7:06 P.M.

MR. SODERLING: MY NAME IS LEIF SODERLING. I HAVE INFORMED MR. ED CRAMER AND MR. MIKE YANCHEFF THAT THE WETLANDS MAP AS DEPICTED ON THEIR PLANS IS INACCURATE, THAT THERE IS MORE CURRENT INFORMATION AVAILABLE THAT THEY SHOULD HAVE HAD ACCESS TO.

(STATEMENT CONCLUDED AT 7:07 P.M.).

-- -- --

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7:09 P.M.

MS. PERSONS. I THINK THERE SHOULD DEFINITELY BE AN INTERCHANGE AT KIT'S CORNER, AND I ALSO THINK THERE SHOULD BE A PARK-AND-RIDE LOT THERE, AND I KNOW THERE IS ALREADY A BUS STOP THERE, SO THE PARK-AND-RIDE LOT AND THE BUS STOP COULD BE AT THE SAME LOCATION, IF PEOPLE WANT TO RIDE THE BUS OR THEY CAN CARPOOL. THOSE ARE MY TWO COMMENTS.

(STATEMENT CONCLUDED AT 7:10 P.M.)

-- -- --

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7:12 P.M.

MR. HONEYCUTT: I HAVE A LOT AND VINEYARD ON THE SOUTH SIDE OF HIGHWAY 29, AND I HAVE A WALNUT ORCHARD ON THE NORTH SIDE OF 29, AND THE WALNUT ORCHARD IS IN SECTION 29 AT THE TOPOGRAPHIC MAP AND THE OTHERS ARE IN SECTION 32.

RIGHT NOW WHAT I DO, I WORK BOTH PROPERTIES, AND RIGHT NOW I DRIVE A TRACTOR FROM ONE SIDE OF THE HIGHWAY TO THE OTHER. I ASKED THAT THEY ACCOMMODATE SOME WAY THAT I COULD GET FROM ONE SIDE OF THE HIGHWAY TO THE OTHER WITH A TRACTOR SO THAT I DIDN'T HAVE TO GO DOWN, OF COURSE, THE FREEWAY OR PUT IT ON A TRAILER, AND I'VE NOTICED IN LOOKING AT ALL THE EXHIBITS THAT THERE IS NO WAY FOR ME TO DO THAT, AND APPARENTLY THEY COULDN'T DO IT OR THEY DIDN'T WANT TO DO IT.

SO I WOULD STILL LIKE TO REQUEST THAT I BE ABLE TO SOMEHOW GET ON A FRONTAGE ROAD ON ONE SIDE, GO ACROSS THE HIGHWAY ONTO ANOTHER FRONTAGE ROAD.

MS. LAURENCE: WHAT IT IS IS A REQUEST FOR A BACK ROAD THAT WOULD COME DOWN FROM THE BACK SIDE OF THE VINEYARD TOWARDS THE S-BAR-S ROCK QUARRY THAT WOULD HAVE LEEWAY, WITH LOTS --

MR. HONEYCUTT: RIGHT-OF-WAY.

MS. LAURENCE: -- RIGHT-OF-WAY TO A ROAD GOING ON THE SIDE THAT WOULD CROSS OVER FROM BECKSTOFFER

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CROSSING, WHICH IS THE SOUTH SIDE, AND NORTH SIDE, WHICH IS A WIDE CROSSING, WHICH WOULD GIVE US, WITH PERMISSION WITH BECKSTOFFER, USE OF THE ROAD TO CROSS SAFELY WITH OUR TRACTOR, AND THAT WOULD INVOLVE PERMISSION THROUGH ALL OWNERS.

THERE ARE TWO OTHER OWNERS IN BETWEEN THE BACK SIDE OF THE PROPERTY THAT NEEDS PERMISSION. WE HAVE TALKED TO DAVE AND WE HAVE TALKED TO ED ABOUT THIS, SO THEY KNOW WHAT WE'RE TALKING ABOUT WHEN IT COMES TO SAFETY AND TRACTOR CROSSING. AND WHATEVER ELSE, IT WOULD BE A NICE FIRE ROAD FROM EACH SIDE.

MR. HONEYCUTT: YES. I THINK THERE COULD BE ADVANTAGES TO DOING THAT FOR FIRE PROTECTION AND SO FORTH.

MS. LAURENCE: RIGHT.

(STATEMENT CONCLUDED AT 7:16 P.M.)

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7:31 P.M.

MR. SNYDER: WHERE HIGHWAY 175 AND 29 CONNECT, ACCORDING TO PLAN "D," AND I WAS TOLD THAT WAS THE MOST LIKELY, I WANT TO MAKE SURE THAT THE CUL-DE-SAC THAT IS GOING TO BE ON THE NORTH SIDE OF THE NEW HIGHWAY EXTENDS FAR ENOUGH SOUTH THAT IT GIVES GOOD ACCESS NOT JUST TO MY PROPERTY, BUT TO WHERE THE TERRAIN IS ACCOMMODATED, BECAUSE IT STARTS OFF STEEP AND THEN GETS LESS STEEP, WHERE IT'S EASIER TO DRIVE ON.

AND THEN ON OLD LOWER LAKE ROAD, INSTEAD OF HAVING THAT OPEN TO THROUGH TRAFFIC, WE WOULD LIKE THAT WITH A CUL-DE-SAC SO THAT THROUGH TRAFFIC CAN'T GET THROUGH FROM EITHER SIDE.

(STATEMENT CONCLUDED AT 7:32 P.M.).

-- -- --

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7:46 P.M.

MS. LARSEN: WE JUST HAVE CONCERNS ABOUT -- HE LOOKED ON THE D.E.I.R. TODAY, LOOKED IT UP ON THE INTERNET, AND WASN'T HAPPY WITH ANY OF THE DESIGNS, SO HE WANTED ME TO COME DOWN AND TAKE A LOOK AT THE DIFFERENT ONES AND HOW THEY'RE GOING TO AFFECT US WITH OUR BUSINESSES THAT WE HAVE AND THE PROPERTIES, WE HAVE FOUR PIECES OF PROPERTY THIS IS GOING TO AFFECT, AND THEN JUST THE ACCESSES, INGRESS AND EGRESS.

SO I JUST WANTED TO STATE THAT, BUT WE WILL BE PUTTING THAT DOWN IN OUR COMMENTS AND SENDING THEM OFF TO BE INCLUDED BECAUSE HE COULD NOT BE HERE. HE'S OUT OF STATE.

(STATEMENT CONCLUDED AT 7:48.)

-- -- --

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I, THE UNDERSIGNED, A CERTIFIED SHORTHAND REPORTER OF THE STATE OF CALIFORNIA, DO HEREBY CERTIFY:

THAT THE FOREGOING PROCEEDINGS WERE TAKEN BEFORE ME AT THE TIME AND PLACE HEREIN SET FORTH; THAT ANY WITNESSES IN THE FOREGOING PROCEEDINGS, PRIOR TO TESTIFYING, WERE PLACED UNDER OATH; THAT A VERBATIM RECORD OF THE PROCEEDINGS WAS MADE BY ME USING MACHINE SHORTHAND WHICH WAS THEREAFTER TRANSCRIBED BY ME; FURTHER, THAT THE FOREGOING IS AN ACCURATE TRANSCRIPTION THEREOF.

I FURTHER CERTIFY THAT I AM NEITHER FINANCIALLY INTERESTED IN THE ACTION NOR A RELATIVE OR EMPLOYEE OF ANY ATTORNEY OF ANY OF THE PARTIES.

IN WITNESS WHEREOF, I HAVE THIS DATE SUBSCRIBED MY NAME.

DATED: AUGUST 28, 2007

LINDA MYERS
CSR NO. 4966

ADAIR, POTSWALD & HENNESSEY 1-800-747-DEPO

Response to Comments from Mark Welch:

Since writing these comments in 2007 Mr. Welch has sold all the properties which he has commented on. Subsequently, comments regarding compensation for his property acquisitions will not be addressed.

At the time of the public meeting, wherein Mr. Welch made his comments, the proposed design of Alternative D had the Konocti Camp Road intersection skewed across his property as he described. This location had been chosen due to a requirement to maintain a minimum ½ mile separation between intersections, as well as to avoid impacts to vernal pools located to the north of SR 29 in this area. After 2007, the design of the Konocti Camp Road intersection was revised for two reasons; 1) in response to Mr. Welch's comments, and 2) the deletion of the north bound portion of the intersection in order to avoid impacts to the hydrology of the vernal pools. The proposed Konocti Camp Road intersection has been returned to its current location. A design exception was taken to reduce the intersection spacing in order to comply with Mr. Welch's desires.

Mr. Welch also commented on a proposed frontage/access road that would cross his property and provide access to a neighbor's property to the east. The proposed project would remove the neighbor's current direct connection to SR 29 and, therefore, a frontage/access road would be required. The neighbor's property would need to be connected to either the Konocti Camp Road intersection at postmile (PM) 26.71 or a planned intersection at PM 26.08. Given that the Konocti Camp Road intersection was closer to his neighbors infrastructure on the western side of his parcel, that this property owner expressed his preference to connect to Konocti Camp Road, and that putting the road across Mr. Welch's property would result in less impacts to environmental resources, the project placed the road across the front of Mr. Welch's property. In consideration of the anticipated impacts to Mr. Welch's parcel, the majority of the public road portion of the access road has been designed to run adjacent to SR 29 prior to heading south to the neighbor's parcel. The vast majority of the new road going south would be located on the neighbor's property. Placing the frontage road where it is currently proposed would provide access to all properties in discussion, reduce project costs, and result in less environmental impacts.

Response to Comment from Leif Soderling:

As discussed in Section 2.16, Caltrans has conducted numerous field visits over an extended period of time in order to delineate wetlands located within the project's Environmental Study Limits (ESL). Wetland delineation reports have been submitted to the U.S. Army Corps, of Engineers (USACE) for verification of Caltrans' estimate of waters of the U.S. The USACE provided concurrence with the wetlands delineation and jurisdictional determination on May 29, 2014 (See Appendix F). This verification is valid for five years, expiring May of 2019.

Response to Comments from Terri Persons:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Terri Persons
Lake County/City Area Planning Commission
Dow & Associates
367 N. State Street, Ste. 206
Ukiah, CA 95482

Dear Ms. Persons,

Thank you for providing comments (attached) in 2007 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

Your comment submitted via court reporter during the public hearing recommended the inclusion of an interchange at the State Route (SR) 29/281/Red Hills Road intersection and a carpool facility at Kit's Corner. In 2007 the SR 29/281/Red Hills Road intersection was signalized in order to reduce traffic congestion and improve safety. Signalization of this intersection eliminated the need for an interchange option. Although the Lake 29 Improvement Project no longer proposes to construct an interchange at this location, Alternative D would provide additional lanes and improve turning movements at this intersection.

A park and ride facility at Kit's corner is not included as part of the proposed project as it would require additional right of way acquisition and consequently result in additional impacts to property owners.

In response to your comments submitted in 2007 on behalf of the Lake County APC and Dow & Associates (attached), in accordance with state law, the proposed frontage roads would be transferred to the County's ownership. To reduce the County's long term maintenance costs, further review was done to the frontage road system since the time of this comment. This has resulted in more road length being given to private ownership, as well as a reduction in the total quantity of frontage roads to be built. In

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Terri Persons
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addition, meetings have been held with the County to develop a structural section for the roads which would minimize long term wear, resulting in a longer period before the roads would need maintenance.

The proposed median width of 46 feet, which includes a 36 foot grassy median and five foot paved inside shoulders, was chosen to provide adequate room for acceleration/deceleration lanes, maintenance activities, and to improve safety. Alternative D, as designed, would allow large trucks, including gravel trucks, to safely enter and exit the proposed expressway.

With regard to encroachment permits, this issue was addressed by reinforcing existing permitting activities both at the County and at Caltrans to ensure that individual/companies wishing to build within the project limits were fully informed as to the future plans for the expressway facility, and how these plans would affect their properties.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Response to Comment from Robert Honeycutt and Sheila Laurence:

Since submitting this comment in 2007, Mr. Robert Honeycutt has sold his property on the north side of SR 29 and, therefore, providing tractor access across SR 29 is no longer being considered.

Response to Comment from John Snyder:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

John Snyder
10562 Salmina Road
Kelseyville, CA 95451

Dear Mr. Snyder,

Thank you for providing comments (via court reporter, attached) in 2007 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

Your requests have been considered during the preliminary design process. We have extended the frontage road and cul-de-sac on the north side of the highway to give better access to your property where the terrain is more accommodating, but over the past decade additional studies have been completed, which could involve revisions. As the project proceeds to the next phase of design, we will be working closely with you to finalize the plans.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
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Response to Comment from Chris Larson:

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EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Chris Larson
P.O. Box 737
Kelseyville, CA 95451

Dear Mr. and Mrs. Larson,

Thank you for providing comments related to Caltrans' proposed Lake 29 Improvement Project. Following circulation of the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016, through July 7, 2016.

At the time of your comments submitted in 2007 via court reporter (attached), the proposed project included Alternatives C1, C2, C3, and D and the four interchange options. Your concerns varied according to which of the alternatives would be selected, as some of the alternatives and interchange options would have resulted in partial or complete take of your businesses at Kit's Corner. As discussed throughout this document, Alternatives C1, C2, and C3 and the two interchange options are no longer being considered viable alternatives. Therefore, this response will focus solely on your concerns with Alternative D.

Your primary concern with Alternative D is the changes in access proposed for the Kit's Corner business complex and the potential impacts these changes may produce. Kit's Corner, serves local residents, residents and out of area travelers in transit along SR 29, and regional purposes such as the bus stop adjacent to the main complex. Today Kit's Corner has direct access to SR 29 and SR 281 via wide driveways, with a facility layout designed to accommodate through traffic, including truck traffic, to the gas station utilizing these access points. Alternative D would close both of these direct access points and provide for access via a new frontage road coming off SR 281, entering the property from the north. This frontage road would be designed to accommodate STAA trucks via widened asphalt concrete areas (aka "knuckles") placed at inside and outside corners of the alignment's horizontal curves as needed to allow for off tracking of these large vehicles (STAA Trucks). Internal circulation patterns are still to be improved upon in final design.

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Chris Larson
November 10, 2016
Page 2

Due to the fact that Kit's Corner is the only facility offering various commercial services for quite a distance around, it is assumed likely that local residents would still utilize the facilities, given the large out of distance travel needed to obtain comparable services. Travelers utilizing the regional services such as the bus stop would also likely not be substantially impacted, as these functions would remain. Local travelers in transit along SR 29 would became familiar with the proposed changes and would adapt to the access changes. Signage would be incorporated in effort to direct out of the area travelers who may not be as familiar with the area. This effort will be incorporated into the final design.

Caltrans evaluated two alternate access designs for the SR 281 connection in lieu of building the proposed frontage road. Both of these alternatives goals were to keep the current driveway open in its current location. The first alternative was to simply keep the existing driveway open as is with the new design. However, the proposed Alternative D improvements to the SR 20/SR 281 intersection results in two lanes of left turn traffic from the SR 29 south (east) to SR 281 north connection. These two northbound SR 281 lanes in turn run adjacent to three lanes of southbound SR 281 traffic. This would require traffic going northbound on SR 281 to cross 3 to 4 lanes of traffic close to an active intersection. This active intersection would be releasing and storing up platoons of cars on its various legs as a function of the signal phases being executed and the traffic flows on the roads going into it. Review of this alternative was conducted by Caltrans headquarters geometric design reviewers who rejected this alternate design. The second alternative would have added a center two way left turn lane in this area. However it too had operational concerns due to its proximity to the signalized intersection. It also had greater environmental impacts than the proposed design as the alignment of SR 281 would have had to move further to the east into the wetland area found east of SR 281 at this location. A modification to the second alternative would have been to push the alignment west towards Kit's corner, thus avoiding the additional environmental impacts. However this still had operational issues as well as the potential to lead to a buy out of the entire Kit's Corner facility due to impacts to the facilities septic system. An alignment shift to the west would also result in the project impacting the PG&E Konocti substation immediately to the north of Kit's Corner.

Relative to the SR 29 connection to Kit's Corner, this was closed due to the mandate to have access control along all of SR 29. Although an expressway facility can technically have direct connections to the facility from adjacent parcels, the proposed wide center median and higher design speed would make the design of left turns across the traveled lanes into or out of any proposed direct connections less safe than that of the proposed intersection arrangement which allowed for acceleration and deceleration lanes.

One alternate option to developing a different SR 29 connection in keeping with the overall design of the facility was created and evaluated. This alternative was to modify the frontage road serving the next intersection to the north (west) at PM 28.64 to serve Kit's Corner. This option proposed extending the frontage road south (east) to connect with the Kit's Corner parking lot. This would have provided a frontage connection to Kit's corner from an intersection directly on SR 29. This alternative design had two issues which caused it to be dropped. The first was operational and safety concerns with having a parallel path to SR 29 which could serve as a bypass to the operation of the signalized intersection. The

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Chris Larson
November 10, 2016
Page 3

second was the alternative's increased impacts on environmental resources in the area between Kit's Corner and the S-Bar-S cattle ranch.

Following this period of design alternative evaluation, it was resolved to move forward with the Alternative D design as proposed. Caltrans is committed to minimizing impacts to your property and will continue to engage in communication with you as the project moves forward.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
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STATE OF CALIFORNIA
COMMENT CARD

DEPARTMENT OF TRANSPORTATION

NAME (please print) Ed Calkins

ADDRESS (home) 9010 Soda Bay Rd CITY Kelseyville STATE CA ZIP CODE 95451

AUTHORIZED REPRESENTATIVE (name of organization or agency) ADDRESS (business)
Chairman Clear Lake Advisory Subcommittee
(Reporting to Lake County Board of Sup.)

COMMENTS
Considering safety and increased truck traffic as flow is influenced from Hwy 20 side of lake via Hwy 29, a diamond overpass must be part of whatever alternative (C or D versions) is chosen.

Completing and signing this document is voluntary. The Department of Transportation may use this information for statistical purposes, to notify you of any future hearings, or to assist in providing you with further information. This document is a public record and may be subject to inspection and copying by other members of the public.

For more comments use reverse side

Response to Comment from Ed Calkins:

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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Ed Calkins
9010 Soda Bay Road
Kelseyville, CA 95451

Dear Mr. Calkins,

Thank you for providing comments (attached) in 2007 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

In 2007 the State Route (SR) 29/281/Red Hills Road intersection was signalized in order to reduce traffic congestion and improve safety. Signalization of this intersection eliminated the need for an interchange option. Although the Lake 29 Improvement Project no longer proposes to construct an interchange at this location, Alternative D would provide additional lanes for motorists, including truck traffic, traveling on SR 29 and provide improvements to turning movements at this intersection.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the project or the environmental process, please feel free to contact me at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Janice Norton
4583 Hawaina Way
Kelseyville, CA 95451
Phone: (707) 277-8351 Fax: (707) 277-8425

August 13, 2007

Mr. Jeremy Ketchum
Senior Environmental Planner
2389 Gateway Oaks Drive
Suite 100
Sacramento, CA 95833

Dear Mr. Ketchum,

Our family wants you to know how much we are against widening State Route 29 in Lake County. **Please do not widen SR-29 between Lower Lake and Kelseyville.**

We have far too many empty homes for sale now, and if this road is widened even more homes will be built here and we will become Santa Rosa Jr. We currently have a water problem around Clear Lake and more homes will cause a major crisis.

Every day there are dead animals on this stretch of highway because of the current traffic and if the road is widened we will probably have no deer left and certainly no small wildlife. Our wonderful wildlife will simply all become road-kill.

When our family moved here we had the cleanest air in the nation. Now we are number three. With the wider road and more cars we will probably drop off the chart because up here smog controls on autos are not required and air pollution is on the increase.

With an expressway (which is really a freeway!) comes dozens and dozens of billboards and advertising to ruin the beauty of our country roads. Highway 29 will soon look like the bay area.

I don't know why people want to come to a beautiful country site and turn it into a concrete jungle, but please to not do this to those of us who live here and love it as it is.

Sincerely,

The Norton Family

Response to Comment from Janice Norton:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
FAX (530) 225-3019
TTY 711
www.dot.ca.gov/dist2

*Serious Drought.
Serious drought.
Help save water!*

November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Janice Norton
4583 Hawaina Way
Kelseyville, CA 95451

Dear Ms. Norton,

Thank you for providing comments related to Caltrans' proposed Lake 29 Improvement Project. Following circulation of the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

In response to your comments submitted in 2007 (attached), the proposed project has limited potential to influence growth outside of the designated community growth boundaries of Lower Lake, Kelseyville, and Clear Lake Riviera. The project would not remove key constraints to growth that would notably alter existing and projected growth rates, or the location, and/or type of growth. These constraints include difficult topography and the lack of infrastructure outside of the designated growth areas, extended travel times to employment centers, and limited accessibility to surrounding areas. The proposed project does have the potential to 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. However, growth within these areas is consistent with forecasted growth and Lake County's goals and policies.

Alternative D includes the construction of two 12 ft. by 12 ft. wildlife under-crossings that would be installed to improve wildlife movement in the area and to reduce potential incidents involving wildlife and vehicles. 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.

Potential project-related air quality impacts have been thoroughly studied and it has been determined that the proposed project would not result in the exceedance of any national or state ambient air quality

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Janice Norton
November 10, 2016
Page 2

standards including carbon monoxide (CO). Under Alternative D, emissions are projected to be lower than present levels as a result of the USEPA's national control programs that are projected to reduce mobile source air toxics (MSATs). Further, the forecasted increase in travel speeds that would result from implementation of Alternative D would reduce emissions of the volatile organic compound–based mobile source air toxics (benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene) for non-diesel motor vehicles. Please see Section 2.13 for further discussion on air quality.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific Questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

August 28, 2007

Jeremy Ketchum
Department of Transportation, District 3
2389 Gateway Oaks Drive, 1st Floor
Sacramento, CA 95833

Subject: Lake 29 Improvement Project
SCH#: 2003022011

Dear Jeremy Ketchum:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on August 27, 2007, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2003022011**
Project Title	Lake 29 Improvement Project
Lead Agency	Caltrans #3
Type	**EIR** Draft EIR
Description	The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to widen an eight-mile segment of State Route 29 (post mile 23.6 to 31.6) in Lake County (between the communities of Lower Lake and Kelseyville) to a four-lane expressway with access control. Four expressway alternatives and the no-build alternative under consideration.

Lead Agency Contact

Name	Jeremy Ketchum		
Agency	Department of Transportation, District 3		
Phone	(916) 274-0621	***Fax***	
email			
Address	2389 Gateway Oaks Drive, 1st Floor		
City	Sacramento	***State*** CA	***Zip*** 95833

Project Location

County	Lake		
City			
Region			
Cross Streets	SR-29, SR-281, Red Hills Road		
Parcel No.			
Township	***Range***	***Section***	***Base***

Proximity to:

Highways	SR-175, SR-281
Airports	
Railways	
Waterways	Thurston Creek
Schools	
Land Use	Rural Land, Rural Residential, Agricultural Land, Resort Commercial, Local Commercial
Project Issues	Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Cumulative Effects; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Wildlife
Reviewing Agencies	Air Resources Board, Transportation Projects; California Highway Patrol; Department of Conservation; Department of Water Resources; Department of Fish and Game, Region 2; Department of Forestry and Fire Protection; Office of Historic Preservation; Native American Heritage Commission; Department of Parks and Recreation; Reclamation Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Resources Agency; State Lands Commission; Department of Toxic Substances Control

Date Received 07/10/2007 ***Start of Review*** 07/10/2007 ***End of Review*** 08/27/2007

Note: Blanks in data fields result from insufficient information provided by lead agency.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

August 29, 2007

Jeremy Ketchum
Department of Transportation, District 3
2389 Gateway Oaks Drive, 1st Floor
Sacramento, CA 95833

Subject: Lake 29 Improvement Project
SCH#: 2003022011

Dear Jeremy Ketchum:

The enclosed comment (s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on August 27, 2007. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2003022011) when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

STATE OF CALIFORNIA—THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Sonoma-Lake-Napa Unit
1199 Big Tree Road
St. Helena, CA 94574-9711
Email: frank.kemper@fire.ca.gov
(707) 967-1408

August 27, 2007

Department of Transportation, District 3
Attn: Jeremy Ketchum
2389 Gateway Oaks Drive, 1st Floor
Sacramento, CA 95833

RECEIVED
AUG 29 2007
STATE CLEARING HOUSE

clear
8/27/07
late
e

RE: Highway 29 Widening Project
SCH# 2003022011

Thank you for the opportunity to comment.

2.5.2.1 Fire Protection - Temporary and Construction Impact should consider the increased fire hazard during the construction phase of the project. Industry operations such as cutting, grinding, welding, edge grinding and small engine operation are the number one cause of wildfire fires.

- Public Resources Code (PRC) 4427 requires during any time of the year when burning permits are required in an area designated as State Responsibility Area (SRA), no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tar pots, or grinding devices from which a spark, fire, or flame may originate, which is located on or near any forest-covered land, brush-covered land, or grass-covered land, without doing both of the following:

  a. First clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet.
  b. Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

SCH# 2003022011 - CalFire Page 1 of 2

CONSERVATION IS WISE-KEEP CALIFORNIA GREEN AND GOLDEN

PLEASE REMEMBER TO CONSERVE ENERGY. FOR TIPS AND INFORMATION, VISIT "FLEX YOUR POWER" AT WWW.CA.GOV.

A construction plan should be developed that includes fire weather guidelines based on wind and relative humidities to modify (curtail or suspense) industrial operations. Refer to Caltrans Division of Maintenance, Fire Prevention Guidelines for recommendations that were developed in cooperation with The California Department of Forestry And Fire Protection (CalFire).

Sincerely,

Ernie Loveless
Unit Chief

By: Frank Kemper
Assistant Chief
Pre-Fire Division

Encl.

SCH# 2003022011 - CalFire

Page 2 of 2

Response to Comments from the State Clearinghouse and Planning Unit:

The letters acknowledge that Caltrans has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA.

Response to Comments from the California Department of Forestry and Fire Protection:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
FAX (530) 225-3019
TTY 711
www.dot.ca.gov/dist2

*Serious Drought.
Serious drought.
Help save water!*

November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Department of Forestry and Fire Protection
Sonoma-Lake-Napa Unit
1199 Big Tree Road
St. Helena, CA 94574

Thank you for providing comments (attached) in 2007 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

The project would include all applicable Standard Specifications, statutes, and protocols regarding fire prevention, emergency vehicle response, and worksite safety. This would include, but is not limited to, adherence to the California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 4, Article 36 "Fire Protection and Prevention (Section 1920-1938). Section 1920 states that "The employer shall be responsible for the development of a fire protection program to be followed throughout all phases of the construction work; and he shall provide for the firefighting equipment as specified in this Article. As fire hazards occur, there shall be no delay in providing the necessary fire protection and/or prevention equipment."

Caltrans' Standard Specifications would apply which direct the contractor and all subcontractors to conform to all applicable safety and health regulations established by the State of California and the Federal government. Standard Specification 7-1.02K(6)(a) states that the contractor shall "Comply with applicable occupational safety and health standards, rules, regulations, and orders. The Occupational Safety and Health Standards Board is the only agency authorized in the State to adopt and enforce occupational safety and health standards (Labor Code § 142 et seq.)."

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

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Department of Forestry and Fire Protection
November 10, 2016
Page 2

If you have any questions about the project or the environmental process, please feel free to contact me at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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US Fish & Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
(916) 414-6600
FAX (916) 414-6712

Department of Fish and Game
Sacramento Valley-Central
Sierra Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
FAX (916) 358-2912

AUG 27 2007

U.S Fish and Wildlife Service File # 1-1-07-TA-1386

Mr. Jeremy Ketchum
Branch Chief, Office of Environmental Management
California Department of Transportation
District 3
2389 Gateway Oaks Drive
Sacramento, California 95833

Subject: Comments on the Draft Environmental Impact Report/Environmental Assessment for the Lake 29 Improvement Project in Lake County, California

Dear Mr. Ketchum:

The Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service (Service) have reviewed the Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) for the Lake 29 Improvement Project (the project) in Lake County, California. The DEIR/EA addresses the proposed widening of approximately 8 miles of State Highway 29 (SH 29) between the communities of Kelseyville and Lower Lake. The California Department of Transportation (CalTrans) proposes to widen the existing two lane highway to a four-lane expressway with a median.

As trustee for the State's fish and wildlife resources, the DFG has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of such species. In that capacity, the DFG administers the California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and other provisions of the California Fish and Game Code that affords protection to the State's fish and wildlife trust resources. The DFG also considers issues as related to the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712) (MBTA). The Service is providing comments in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA), and the MBTA. In this letter, DFG and the Service are collectively referred to as the Agencies.

The Agencies are concerned about the potential for the project to affect three federally and state listed species: Burke's goldfields (*Lasthenia burkei*), Lake County stonecrop (*Sedella leiocarpa*), few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*). The DFG is concerned about the potential for the project to affect two species which qualify as rare under section 15380(d) of the CEQA guidelines, including Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*), and oval-leaved viburnum (*Viburnum ellipticum*). The Service is concerned about the potential for

the project to affect two federally-listed only species: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) and California red-legged frog (*Rana aurora draytonii*).

The Agencies are concerned that the level of detail provided in the DEIR/EA is insufficient to determine the full extent of impacts of the project on biological resources. The Service and DFG have not been provided with or requested to review the results of species surveys or habitat assessments, and do not have enough information to provide a conclusive determination as to how the project might affect trust resources. Specifically, the Agencies request additional information on the following issues.

The Service has previously requested rare plant survey reports for all surveys which have been completed to date in the project's study area. The Service also requested that surveys not be confined to within 250 feet of the proposed alignment, but include all areas that could be directly or indirectly affected by the project. These reports should detail, among other things, how many and when surveys were completed, the qualifications of the surveyors (resume and/or curriculum vitae), local environmental conditions of the survey sites, if a reference population was observed to determine if the species were identifiable in the field at the time of the surveys, and the condition of the habitat surveyed. See the enclosed Service's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (dated September 23, 1996) and *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain* (modified from the September 23, 1996 document) for a comprehensive set of guidelines for rare plant surveys. The Service and DFG will use these reports to determine if the rare plant surveys were adequate to identify rare plant habitat and, if requested by CalTrans, to determine which areas are not suitable as habitat.

The few-flowered navarretia and Lake County stonecrop are addressed in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Recovery Plan) (Service 2005). Portions of this project are located within and adjacent to the Boggs Lake-Clear Lake Core Area. The Recovery Plan describes core areas which are based on the known distribution of vernal pool species and habitats and include representative sites across a given species range, or support high species diversity. Core areas should be the initial focus of conservation efforts and where project impacts should be avoided if possible. Analysis for each project should describe what measures from the Recovery Plan are being implemented, or if alternative strategies to conserve the species are being proposed. The Recovery Plan identifies several factors which should be taken into consideration when identifying areas for conservation of vernal pools species. These include: size, quality, connectivity with other preserved habitat, ease or feasibility of protection, ability to maintain and/or implement effective management, and cost of protection and long-term management. Special attention should be directed to the Recovery Plan and the core areas when evaluating where projects are planned and where compensation is proposed.

The DEIR/EA states that Alternative D (the CalTrans preferred alternative) has been designed to avoid all direct and indirect effects to the listed plant species. However, a rationale for this determination is not provided. The Agencies are concerned that the loss or disruption of hydrological connectivity and function, habitat fragmentation, direct modification or destruction

of vernal pools, loss of upland habitat, and seed bank losses could negatively impact the species known to occur in the vicinity of the project. These factors are all cited as foreseeable impacts that degrade the value and function of vernal pools, and could result in take of federally and state listed species. Protection of upland habitats (including watersheds) is essential for the hydrological function of the pools and to provide habitat for pollinators for vernal pool plant species. A CESA Permit must be obtained by the DFG if the project has the potential to result in take of species of plants listed under CESA, either during construction, or over the life of the project. Impacts of the authorized take must be minimized and fully mitigated, and must not jeopardize the continued existence of the species. Issuance of a CESA permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program.

The DEIR/EA also states that if additional populations are discovered, revisions to Alternative D will be considered or compensation will be proposed to offset the effects of the project. The Agencies believe that this document should not be finalized until the impacts to biological resources are more adequately analyzed and disclosed. At that time, the Service requests that the Federal Highway Administration and CalTrans consider how or if their proposed compensation measures will be consistent to the recovery of these species, and provide a justification for their rationale for our consideration with the initiation of consultation pursuant to section 7(a)(2) of the ESA.

Section 2.19.4 outlines "Avoidance, Minimization and Mitigation Measures" for the federally and state listed species. The Service is concerned that potential impacts to the California red-legged frog (a federally-listed species only) were not fully considered in the DEIR/EA. CalTrans has not provided the results of focused species surveys or habitat assessments to the Service. We recommend CalTrans include these results with their submittal of the Biological Assessment. We request that these results be provided in the format outlined in the Service's August 2005 *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (enclosed).

The Agencies are concerned the level of detail in Section 2.2 on Growth is insufficient to determine the extent to which the project will induce growth in the area, particularly as it relates to vineyards/wineries and residential housing. The widening of this road will facilitate more traffic to travel quicker through the area, which may make it more attractive for development. Residential construction and land clearing to facilitate vineyards could cumulatively result in an appreciable reduction in habitat for rare species, particularly the plant species, as there are so few populations known to exist. For the Lake County stonecrop and few-flowered navarretia, fewer than 10 occurrences are known to occur in the wild (California Natural Diversity Database 2007). Loss of just one of these populations could negatively affect the survivability and ultimate recovery of these species'.

The DEIR/EA should be amended to include additional information on the concerns addressed in this letter. Thank you for the opportunity to review this project. If we can be of further assistance, at DFG please contact Mr. Todd Gardner at (209) 745-1968, or Mr. Jeff Drongesen,

Mr. Jeremy Ketchum 4

Sr. Environmental Scientist, at (916) 358-2919; and at the Service please contact Jana Milliken, Acting Sacramento Valley Branch Chief, at (916) 414-6561 or Ken Sanchez, Assistant Field Supervisor, at (916) 414-6622.

Kent Smith
Acting Regional Manager
California Department of Fish and Game

for Ken Sanchez
Assistant Field Supervisor
U. S. Fish and Wildlife Service

Literature Cited:

U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxvi + 606 pages.

California Natural Diversity Database. 2007. Natural Heritage Division, California Department of Fish and Game. Sacramento, California.

Enclosures

cc: Mr. Kent Smith
Mr. Jeff Drongesen
Mr. Todd Gardner
Department of Fish and Game
Sacramento Valley-Central Sierra Region
1701 Nimbus Road, Suite A
Rancho Cordova, California 95670

Mr. Gene Cooley
Mr. Liam Davis
Department of Fish and Game
P.O. Box 47
Yountville, California 94599

Mr. Ken Sanchez
Ms. Jana Milliken
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605

Sacramento, California 95825-1846

Ms. Laura Whitney
Mr. Peck Ha
U.S. Army Corps of Engineers
Regulatory Branch
1325 J Street, Room 1480
Sacramento, California 95814-2922

Ms. Nancy Levin
Mr. Mike Monroe
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, CED-2
San Francisco, CA 94105-3901

Mr. Gary Sweeten
Federal Highway Administration
U.S. Department of Transportation
650 Capitol Mall Room 4-100
Sacramento, California 95814

Mr. Ronald Yoder
County of Lake
Community Development Department
Courthouse, 255 North Forbes Street
Lakeport, California 95453

Comments from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW):

Following circulation of the Draft EIR/EA and in response to the joint comments received from the USFWS and the CDFW, Caltrans conducted additional environmental studies. These studies and the subsequent coordination/consultation with the USFWS and CDFW is discussed in detail in the Biological Environment section of this EIR/EA which includes Section 2.15 through Section 2.20.

As previously discussed, the additional studies resulted in significant new information, and Caltrans 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. The Revised Partial Draft EIR/EA was circulated from May 24 through July 7, 2016. Section 4.5 of this EIR/EA provides additional information on the circulation of the Revised Partial Draft EIR/EA.

Coordination with the USFWS and the CDFW continues to date.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

August 22, 2007

Mr. Jeremy Ketchum
Office of Environmental Management
California Department of Transportation – District 3
2389 Gateway Oaks Drive
Sacramento, California 95833

Subject: Draft Environmental Assessment/Environmental Impact Report (EA/EIR) for the Lake 29 Improvement Project, Lake County, California

Dear Mr. Ketchum:

The Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

EPA has participated in this project as outlined in the *2006 National Environmental Policy Act/Clean Water Act (CWA) Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU)*. We are supportive of the efforts made by the project development team to minimize impacts to threatened and endangered species through the alternatives development process.

EPA encourages Caltrans to identify additional opportunities to minimize impacts to species, as well as to wetlands, waters, and other resources as the project development process continues. In addition, we recommend coordinating the construction schedules of all transportation projects in the vicinity and mitigating for community and cultural and historic resource impacts that may result from the proposed project.

We appreciate the opportunity to review this Draft EA/EIR and look forward to continued coordination on this project. The next step in the NEPA/404 MOU process will include identification of the least environmentally damaging practicable alternative and review of the Final EA/EIR. When the final environmental document is released for

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public review, please send two copies to the address above (mail code: CED-2). If you have any questions, please contact Carolyn Mulvihill of my staff at 415-947-3554 or mulvihill.carolyn@epa.gov.

Sincerely,

Connell Dunning

FOR Nova Blazej, Manager
Environmental Review Office

Enclosures:
EPA's Detailed Comments

cc: Lahn Phan, Federal Highway Administration
Jana Milliken, U.S. Fish and Wildlife Service
Bill Guthrie, U.S. Army Corps of Engineers
Maria Rea, National Marine Fisheries Service

2

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE LAKE 29 IMPROVEMENT PROJECT, AUGUST 22, 2007

Context Sensitive Design

EPA commends Caltrans and the project development team for its previous efforts to minimize impacts to threatened and endangered species. We encourage the project development team to continue to look for opportunities to minimize impacts to resources and the community during the project planning and design process. The Lake County General Plan's policy on roadway improvement states that "roadway improvements should be constructed in a manner which minimizes roadway width and thus, reduces domination of the view by road surface; and conforms to the natural contours of the land and minimizes extensive grading and removal of roadside vegetation." This policy is consistent with the process of context sensitive design (CSD), which the Federal Highway Administration (FHWA) and Caltrans support, and which seeks to preserve and enhance the character of the community surrounding a project. One opportunity for CSD could be through decreasing the width of the median where acceleration/deceleration lanes are not needed.

Utilizing CSD could also minimize some of the visual impacts discussed in the document. Visual impacts such as those illustrated in Figure 2.7-5 appear to be more significant than described in the document. Efforts should be made to mitigate these impacts through planting of native trees and other vegetation.

Recommendations:

- Continue to seek opportunities to minimize project impacts through context sensitive design. Specifically, in the Final EA/EIR, quantify additional impacts to environmental resources that could be avoided through further minimizing roadway width throughout the project length.
- If additional reductions to roadway width are not feasible, state the specific reasons for the needed width and implement measures to reduce visual impact, (plant native trees, native plants, etc.).

Access

The Traffic and Transportation Chapter mentions access to side roads and existing driveways during the construction period, but does not specify what permanent impacts there will be to residences and businesses along the route due to the access control design of the new expressway. These impacts should be specified, including the number and location of access points that will be closed, and how much additional out-of-direction travel will result for residents, employees, and patrons of businesses adjacent to the route.

Recommendation:

- Include a discussion of permanent impacts to access to homes and businesses along the route. Identify specific mitigation measures for community access.

1

Coordination of Caltrans Projects

The document states that two additional Caltrans projects are currently planned at the SR 29/281/Red Hills Road intersection. One, which was approved in 2006 and is expected to be constructed in 2007, would add a left-turn land and a traffic signal. This signal would then need to be replaced or removed with construction of the proposed project depending on the intersection option chosen. The other project is still in the environmental and project approval phase and would widen the intersection and add a traffic signal. These two projects and the subject project should be coordinated and implementation should be timed to minimize unnecessary construction and other project-related efforts.

Recommendation:

- Coordinate work on the SR 29/281/Red Hills Road intersection so that unnecessary construction is minimized and project elements are not installed then removed. Include a quantification of benefits achieved by coordinating work on multiple projects (reduction in air pollution due to a reduced number of days of construction, reduction in amount of construction materials required due to single construction schedule, etc.)

Historic and Cultural Resources

The document states that the State Historic Preservation Officer (SHPO) had not provided a response to the Supplemental Historic Property Survey Report (SHPSR) that FHWA submitted in September 2006 and that therefore, FHWA assumed that the SHPO has no objections to the eligibility determinations presented in the SHPSR. The Draft EA/EIR does not provide verification that SHPO approved the information in the survey report. The Final EA/EIR should therefore clarify the status of the SHPO consultation and verify the survey report conclusions, or update the analysis of impacts to cultural and historic resources and identify mitigation to offset additional impacts identified.

Recommendation:

- Caltrans should verify that the SHPO concurs with the findings in the SHPSR Include a letter of concurrence in the Final EA/FEIR documentation.
- Should SHPO not concur with the findings in the SHPSR, include updated assessment of impacts to cultural and historic resources.
- If warranted, complete Memorandum of Agreement with affected tribes and include a copy in the Final EA/EIR. Identify what mitigation methods are available for each affected site that is potentially eligible for listing in the National Register of Historic Places.

2

Response to Comments from the U.S. Environmental Protection Agency (EPA):

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
FAX (530) 225-3019
TTY 711
www.dot.ca.gov/dist2

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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Thank you for providing comments (attached) on both the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) and the Revised Partial Draft EIR/EA for the proposed Lake 29 Improvement Project.

The comments recently provided by the USEPA confirm that the previous comments on the Draft EIR/EA have been addressed through additional analysis and documentation provided in the Revised Partial Draft EIR/EA.

Caltrans appreciates the comments received from the USEPA and their participation during the project planning phase.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/. If you have any questions about the project or the environmental process, please contact me at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Scotts Valley Band
of Pomo Indians

August 22, 2007

Department of Transportation
District 3
Office of Environmental Management
2389 Gateway Oaks Drive
Sacramento, CA 95833

To: Jeremy Ketchum – Branch Chief
Office of Environmental Management, S1

The Scotts Valley Band of Pomo Indians is in receipt of your Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) for the Lake 29 Improvement Project. This project affects the land owned by the Scotts Valley Tribe and also the archaeological or cultural resource sites of other Tribes.

As far as we are able to determine, the project area has no known archaeological or cultural sites of significance for the Scotts Valley Band of Pomo Indians. But the Scotts Valley Band of Pomo Indians moved around Lake County, and may have established seasonal camps or villages anywhere between the coast and inland areas.

We recognize that all of Lake County is culturally and archaeologically sensitive, and many such sites exist which may be undiscovered at this time. We are requesting that you notify a Tribe (Big Valley, Scotts Valley or Elem) immediately if any sites or articles of historical or archaeological nature are discovered during this project, pursuant to the National Historic Preservation Act, and that you employ a monitor at all times during any ground disturbance.

There is the possibility that Native Americans currently utilize parts of the project area for the gathering of plant or animal materials for food, basketry, herbal, or ceremonial use. The use of pesticides in such areas could jeopardize the health of anyone entering, or using materials gathered from, areas with access for gathering. We request prior notification of pesticide use at these areas so we can inform our Tribal members to avoid such areas and unnecessary exposure.

301 Industrial Ave. - Lakeport, CA 95453
(707) 263-4220 • Fax: (707) 263-4345

We would also like to be able to provide future generations of Native Americans access to artifacts and other cultural resources of the Tribe. We would ask that landowners consider donating cultural resources discovered during the project to the appropriate tribe when projects occur in their ancestral territories.

We appreciate you keeping us informed of all aspects of this project and looking forward to resolving the land use issues in a manner mutually beneficial to both CalTrans and the Tribe of Scotts Valley.

Sincerely,

Joel (Jody) Larson
Scotts Valley Band of Pomo Indians
EPA Director

Copy to: EPA/Region 9 – Carolyn Mulvihill

Response to Comments from the Scotts Valley Band of Pomo Indians:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
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FAX (530) 225-3019
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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Scotts Valley Band of Pomo Indians
Irenia Quitiquit, EPA Director
1005 Parallel Drive
Lakeport, CA 95453

Dear Ms. Quitiquit,

This letter concerns our on-going consultation with the Scotts Valley Band of Pomo Indians regarding the Lake 29 Improvement Project. Caltrans circulated a Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed project in 2007 and the tribe provided comments in a letter dated August 22, 2007 (attached). Following circulation of the Draft EIR/EA, Caltrans decided to not make findings pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) in consideration of the public and agency comments received and a subsequent value analysis process that occurred. Caltrans instead, decided to refine the project design and conduct additional environmental studies.

The design changes and additional studies resulted in significant new information. Caltrans, therefore, revised and recirculated portions of the Draft EIR/EA to allow an opportunity for the public to comment pursuant to CEQA Guidelines 15088.5 (a) and (c) and 40 CFR 1502.9 (c) under NEPA. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016. The Scotts Valley Band of Pomo Indians did not provide comments on the Revised Partial Draft EIR/EA. Pursuant to CEQA guidelines §15088, Caltrans must provide a response to comments received on the draft environmental document(s).

The August 22, 2007 comment letter requests that the tribe be notified if any archaeological sites are discovered during the project and if any pesticides are used in areas where tribal members might gather plant or animal materials. Additionally, the letter requests that a tribal monitor be present during ground disturbing construction activities and that landowners consider donating artifacts, discovered during the project, to the appropriate tribe.

Most of these comments and concerns have been addressed through on-going consultation with the tribe. For example, Jaime Matteoli (Caltrans Project Manager) and project staff met with the tribal council on July 13, 2016, to discuss the project and address their concerns. The meeting included a discussion of potential impacts to archaeological sites. Additionally, Caltrans submitted a copy of a draft Post-Review Discovery and Monitoring Plan to the tribe on October 12, 2016, that describes the proposed treatment of any archaeological materials that may be encountered during project construction.

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Scotts Valley Band of Pomo Indians
November 10, 2016
Page 2

Regarding notification prior to the chemical treatment of vegetation, Caltrans conducts chemical treatment of vegetation on State Route 29 within Lake County and the project area. Herbicide is typically applied once a year within a four foot wide strip adjacent to the edge of pavement and around safety devices (e.g. metal beam guard rail) in order to reduce wildfire potential. The Caltrans' Maintenance Department manages the *Caltrans' Spray Hotline* which provides advance notice of when and where chemical treatment will occur. The local number is (707) 441-5834 and the toll free number is 1 (800) 999-1053.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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"personst"
<personst@pacific.net>
08/26/2007 11:41 AM

To jeremy.ketchum@dot.ca.gov
cc daveybatesl@dow-associates.com;dowp@dow-associates.com;gerrys@co.lake.ca.us;;
bcc
Subject Lake 29 Expressway comments

History: This message has been forwarded.

Hello Jeremy,

As I mentioned during our phone coversation last Thursday, I am sending comments on the Lake 29 Expressway project in Lake County. These issues were raised during the Lake County/City APC meeting Thursday morning. The issues are:

(1) The project will create frontage roads that will become county roads, with the responsibility for maintenance falling on the county. The county is concerned about the cost and responsibility for maintaining these new roads. Also, during the discussion the question was raised if some roads that serve only one or two parcels could be driveways rather than roads.

(2) There are businesses along the route, including the S Bar S Ranch and Epidendio Construction that have large trucks, including gravel trucks, entering and exiting the roadway. The project needs to be designed to allow these trucks to safely enter and exit the roadway. It's not clear if the width of the median is adequate for the trucks.

(3) Encroachment permits along the project route - is there a way to limit encroachment permits on properties that are within the scope of the project? Concern was expressed over recent development along the route that will increase the cost of obtaining right of way.

Thank you,

Terri Persons
Lake APC
Dow & Associates
(707) 263-7799

Response to Comments from Terri Persons:

See the Caltrans' letter to Terri Persons above which provides a response to the comments submitted to the court reporter and by email.

JAMES C. GHIELMETTI, Chair
JOHN CHALKER, Vice Chair
BOB ALVARADO
MARIAN BERGESON
JAMES EARP
CARL GUARDINO
R. K. LINDSEY
JOSEPH TAVAGLIONE
LARRY ZARIAN

SENATOR ALAN LOWENTHAL, Ex Officio
ASSEMBLYMAN PEDRO NAVA, Ex Officio

JOHN F. BARNA JR., Executive Director

STATE OF CALIFORNIA

ARNOLD SCHWARZENEGGER
GOVERNOR

CALIFORNIA TRANSPORTATION COMMISSION

1120 N STREET, MS-52
P. O. BOX 942873
SACRAMENTO, 94273-0001
FAX (916) 653-2134
(916) 654-4245
http://www.catc.ca.gov

January 18, 2008

Mr. Jeremy Ketchum
Office of Environmental Management
Department of Transportation
2389 Gateway Oaks Drive
First Floor
Sacramento, CA 95833

RE: Comment on Draft Environmental Impact Report on Route 29 Roadway Improvements in Kelseyville in Lake County

Dear Mr. Ketchum:

The California Transportation Commission, as a responsible agency, reviewed the Draft Environmental Impact Report for the Route 101. The Commission notes that the project is not fully funded. The Commission notes the proposed project's total estimated cost is $198.6 million. Construction would begin in FY 2009-10.

Additional funding is need to fully fund the project. The Commission requests that:

- Caltrans and its partners identify and secure the funding sources needed to complete the alternative selected.

If you have questions, please call me at 916-653-2090.

Sincerely,

Robert Chung
Deputy Director
California Transportation Commission

HomRte101DEIRcomment.doc

Response to Comment from the California Transportation Commission (CTC):

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

California Transportation Commission
1120 N Street, MS-52
Sacramento, CA 95814

Thank you for providing comments (attached) in 2008 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

In December 2013 a Project Study Report (PSR) (Expenditure Authorization [EA] 01-29811) was prepared to address an elevated number of fatal and injury traffic accidents along a three mile long stretch of State Route (SR) 29 beginning at postmile (PM) 28.5 and ending at PM 31.6. This stretch of SR 29 is located within the eight mile project limits currently being developed by this State Transportation Improvement Program (STIP) project (EA 01-2981U). At that time, the construction funding in the STIP was insufficient to construct the entire eight mile long project from PM 23.6 to PM31.6. The State Highway Operation and Protection Plan (SHOPP) then programmed the PSR funding under EA 01-29811 to be combined with the STIP funding for the construction of Segment 2C (PM 28.5/31.6). The STIP then programmed additional money under EA 29821 for the construction of Segment 2C. The funding currently programmed in the 2016 SHOPP and the 2016 STIP is for the construction of Segment 2C (PM 28.5/31.6), which is only a portion of the eight mile long project. Funding in the 2016 SHOPP is provided in the 20.XX.201.010 Highway Safety Improvement Program and funding in the 2016 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 Transportation Equity Act-21 and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). As funding becomes available, the additional segments (Segment 2A & 2B) would be programmed and constructed.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

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California Transportation Commission
November 10, 2016
Page 2

If you have any questions about the project or the environmental process, please feel free to contact me at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Pacific Gas and Electric Company

DAVID L. THOMAS, AICP
SENIOR PLANNER
LAND & ENVIRONMENTAL MANAGEMENT

(415) 973-5885
DLTG@PGE.COM

245 MARKET STREET, ROOM 1054D
SAN FRANCISCO, CA 94109

MAILING ADDRESS:
MAIL CODE N10A
PO BOX 770000
SAN FRANCISCO, CA 94177

April 20, 2010

Mr. Jeremy Ketchum
Chief, North Region Environmental Management
California Department of Transportation, District 3
2389 Gateway Oaks Drive
Sacramento, California 95833

Re: Caltrans Lake 29 Improvement Project, Draft EIR - PG&E Comments

Dear Mr. Ketchum:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for the California Department of Transportation (Caltrans) Lake 29 Improvement Project.

PG&E owns and operates gas and electric transmission (greater than 50 kV) and distribution (less than 50 kV) facilities located within and adjacent to the proposed project. Some of these facilities are in conflict with this project and will need to be relocated. Our review indicates that PG&E may need to relocate approximately 106 electric distribution poles and approximately 24 electric transmission poles. Information provided in the DEIR did not specifically indicate the direct impacts on PG&E's electric facilities, nor did it make the determination that there will be no significant unavoidable impacts caused by the proposed relocations.

The DEIR states "*Pursuant to Public Utilities Commission 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 kilovolts.*"

PG&E has an obligation to provide the public with a reliable and safe energy supply. In order to do so and insure the safe operation and maintenance of utility facilities, the California Public Utilities Commission (CPUC) mandates that PG&E comply with guidelines outlined in General Orders 95, 112-E and 131-D.

The CPUC regulates the construction of electric transmission facilities per General Order 131-D. For the relocation of electrical transmission facilities rated 50 kV and above and a relocation of greater than 2,000 feet the CPUC may require the processing of a Permit to Construct (PTC), which includes California Environmental Quality Act (CEQA) review of potential environmental impact of the project. However, the Commission has specified that a PTC is <u>not</u> required for:

> *"Power lines or substations to be relocated or constructed which have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document (EIR or Negative Declaration) finds no significant unavoidable environmental impacts caused by the proposed line or substation."*

Thus, including a detailed review of the relocation of PG&E's facilities in the Caltrans project's DEIR would obviate the need for a second, lengthy CEQA process and allow PG&E's construction to proceed under a notice – saving a year or more of permitting time.

The CPUC has set a high bar when allowing this exemption to a PTC, requiring that the activities associated with the relocation be specifically described, and potential impacts addressed in the CEQA

document. Since the DEIR does not presently include specific descriptions of our activities, the CPUC would likely require a PTC and conduct its own CEQA review of our relocation activities. This review process could significantly delay our schedule for completing the relocation.

We feel the minimum that the CPUC will need to affirm our use of the PTC exemption for this project is for Caltrans to include specific relocation activity and location information in its CEQA document. To facilitate this inclusion we have provided the following electric line relocation activity descriptions:

Electric Facilities:

PG&E will survey and stake the new pole locations, frame and set the wood poles and then string conductor (wire) on the new line. The existing pole line will need to be de-energized at the beginning and end of the relocation so that the segment of the new pole line may be connected to the existing pole line. If the relocated alignment 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 be required rather than the direct buried TSP. Replacement poles will be the same height or in some cases taller than the existing poles. The old poles will also be removed by cutting them off at ground level and hauling them off site for disposal. A construction work area approximately 80 feet in diameter at each new pole location and each pole to be removed is required to conduct the above described work. Equipment used will be line truck and bucket trucks and approximately 8 to 12 workers. A pole setting excavator will be necessary if PG&E does work in the winter months.

PG&E will require a vegetation clearing easement of 30 feet wide for an electric distribution line and 60 feet for an electric transmission line. In addition PG&E will need vehicle access to each pole location for construction and maintenance activities.

The relocation of PG&E lines should be discussed regarding any potential biological, cultural, and or aesthetic impacts. We will supply as much detail about the new facilities and locations as possible in order to support that effort.

While the CPUC has repeatedly recognized that the issue of electric and magnetic fields (EMF) is not a valid issue under CEQA, we will provide general background information if you would like to include it in the Final Environmental Impact Report (FEIR). It is PG&E's policy to share information and educate people about the issue of EMF. PG&E is mandated by the CPUC to include "no-cost" and "low-cost" EMF mitigation in its projects in accordance with the CPUC-approved EMF Design Guidelines for Electrical Facilities.

Please continue to consult PG&E during the development of the project to ensure that the capacity, operational and maintenance requirements for PG&E's gas and electric facilities are taken into consideration prior to approval of the FEIR.

Please feel free to contact me at (415) 973-5885 if you have any questions. We would also like to request that Jason Reiger and Ken Lewis of the CPUC be copied on future correspondence regarding this project and placed on the list to review the FEIR. Their address is provided below.

Sincerely,

David Thomas
Senior Land Planner, Land Planning and Routing
Land and Environmental Management
Pacific Gas & Electric Company

c: California Public Utilities Commission
Jason Reiger
Transmission and Environmental Permitting Section
505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102

California Public Utilities Commission
Ken Lewis
Transmission and Environmental Permitting Section
505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102

Jo Lynn Lambert, Attorney, PG&E
Rebecca Doidge, Land Planning and Routing Supervisor, PG&E
David Kelly, Land Agent, PG&E

Response to Comments from the Pacific Gas and Electric Company:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Pacific Gas and Electric Company
David Thomas, Senior Planner
Mail Code N10A
P.O. Box 770000
San Francisco, CA 94177

Dear Mr. Thomas,

Thank you for providing comments (attached) in 2010 on the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. Following circulation of the Draft EIR/EA in 2007, 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 the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and instead, decided to make refinements in the design of the proposed project and conduct additional environmental studies. The design changes and additional studies resulted in significant new information and Caltrans 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. The Revised Partial Draft EIR/EA was circulated for public review and comment from May 24, 2016 through July 7, 2016.

PG&E also provided comments (attached) on the Revised Partial Draft EIR/EA. In response to your comments, revisions to Section 2.5 (Utilities, Emergency Services, and Community Services) have been incorporated into the EIR/EA as requested.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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1

LAKE 29 IMPROVEMENT PROJECT

OPEN FORUM PUBLIC HEARING

LOWER LAKE HIGH SCHOOL GYMNASIUM

9430 LAKE STREET, LOWER LAKE, CALIFORNIA 95457

JUNE 8, 2016 - 6:00 P.M. - 8:00 P.M.

PUBLIC COMMENTS REPORTED BY

KATHY K. ROTHSTEIN, C.S.R. 3919.

PROJECT MANAGER:
JAIME MATTEOLI, P.E.,
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 1, PROJECT MANAGEMENT
1656 UNION STREET
EUREKA, CALIFORNIA 95501
(707) 441-2097

ADAIR, POTSWALD & HENNESSEY
CERTIFIED SHORTHAND REPORTERS
212 WEST PERKINS STREET, UKIAH, CALIFORNIA 95482
(707) 462-8420 -OR- (800) 747-3376

2

I N D E X

SPEAKER	PAGE
MARC LINSCOTT AND MELLONIE BRYANT . . . . . Bayshore Marine Service 7723 Highway 29, Kelseyville, CA 95451	3
PAUL SMITH AND CONSUELA SMITH. . . . . Smith Ranch 7150 AND 7100 Smith Ranch Road Kelseyville, CA 95451	5
DENNIS DILL AND CHRISTINE DILL . . . . . Vineyard Owners 8099 Highway 29, Kelseyville, CA	9

- - -

3

VERBAL COMMENTS TO COURT REPORTER:

MR. LINSCOTT: M-a-r-c, last name Linscott. L-i-n-s-c-o-t-t.

MS. BRYANT: The addres is 7723, Highway 29. That's in Kelseyville. And that's also known as Bayshore Marine Service, our business.

MR. LINSCOTT: Are you looking for comments?

MS. BRYANT: Yes.

MR. LINSCOTT: We have -- we're concerned about how close the new freeway's going to come to our front door. It will impact our parking and our entryway for customers coming in, and also the eventuality of selling the place.

And we know that they're looking at every option possible, it's just that, you know, those of us right there in that section, it's a -- it's a tough section to fix, because of all the accidents that we've seen happen. And we've seen like five different plans, and they keep changing. So we're not really sure where they're going to end up.

So we're just basically concerned about how close the freeway and the fence is going to come to our front door. Because it's -- you know, it's within, you know, 20 feet. Who's going to come in? And the noise of the cars going by, and just -- you know, who wants to

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be next to a freeway? And there's going to be a fence, not a barrier.

So it's just going to be interesting to see the final project, and what they decide on, and why. Because we're not able to make a plan at this point, and certainly nobody's going to buy it, knowing what's going to happen, you know, without a guarantee.

What do you think?

MS. BRYANT: You finish and then I'll talk.

MR. LINSCOTT: That's what I can think of.

And you can mention the driveway. They've proposed two different driveways, and they're not -- it doesn't seem like they're completely sure which one they're going to use. And the location of the driveway might be -- I can't tell until I see the finished plan -- might be real close to the freeway, you know? And how close do you feel comfortable being to a four-lane freeway? You just -- the drawings only give you suggestions.

Your turn.

MS. BRYANT: Hi, my name's Mellonie Bryant, M-e-l-l-o-n-i-e, B-r-y-a-n-t. I'm also at 7723 Highway 29 in Kelseyville, California.

My concerns are the entranceway into the property that they propose. I would like them to keep

5

the old oak tree.

And my concern is, with our placement of the building, our front door does not look like it's going to be accessible to or to be seen by incoming customers.

So, if they use this proposed plan, I would like them to rearrange our building so our customers can see our front door. That's how I can think it would work is to reset our building.

And are we going to get more blacktop parking places?

And that would be it for right now.

Anything else?

MR. LINSCOTT: No.

MS. BRYANT: We just had to give our comments.

MR. LINSCOTT: The plan will change every time we come to a meeting, so we don't know.

- - -

MS. SMITH: We're Paul and Consuela Smith, and we're at 7150 and 7100 Smith Ranch Road. We have two parcels there.

We have two concerns. One is the entrance into our property. Where the right-of-way line is right now is basically right over our hot well. So -- and we have four storage tanks to the -- well, on one side of the hot well, and those are impacted as well. So we are

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concerned about that, because that is our water for the parcels.

MR. SMITH: Well, it's the water when our domestic well goes --

MS. SMITH: Yeah, but -- and that's based on rainfall for the winter, so that's always our backup water. And it -- so that's one concern.

MR. SMITH: That's our biggest concern.

MS. SMITH: And then the other one is --

MR. SMITH: The wetlands.

MS. SMITH: You know, getting information on what they're going to do with the water from the wetlands that -- they call it Smith Lake. Everybody in Lake County calls it Smith Lake, because it's right in front of our -- Well, what was the feed store. So anyway, that's -- I don't know how many acres they said it was.

MR. SMITH: It's one acre of wetlands.

But we're not opposed to keeping it on the property, because there's --

MS. SMITH: Right.

MR. SMITH: Do you have our map in front of you?

MS. SMITH: No, she doesn't. She's just taking notes.

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MR. SMITH: Okay. Because we have -- if they go with the current plan now, it's going to come up by the boat shop, come in the back entrance wise, and it will parallel our fence and then swing back down to our main house. Which, they will take most of that usable area for that five acres for the vineyard. And I'm -- I would suggest if they want to put that water there, they can put it right, basically, in that area. I've already suggested to the Plan --

MS. SMITH: Yeah, I think we talked -- well, the hydraulic team came out many years ago, and one option was they talked to us about a pond. So that's what they wanted to know, like, if we're open to that, where we would want it. So we are open to that. So, you know, we would -- we would want it on the -- on the eight-acre piece, right?

MR. SMITH: Pretty close, yeah.

Well, it wouldn't make a difference if we don't --

MS. SMITH: Yeah. Yeah.

MR. SMITH: The other is going to become essentially useless.

Yeah, I'd say the eight acres.

MS. SMITH: Well, and I think the last concern we would have is, you know, because we're getting

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older -- he's getting way older --

MR. SMITH: I represent that. (Laughter.)

MS. SMITH: -- is being able to sell the property. And with everything that they're taking and how it's being pretty much cut up, I don't know if we'd be able to sell it. So we would end up with a piece of property that, you know, we'd be dead and, who knows?

Okay. So those, I think, are all the concerns that we have.

MR. SMITH: I think those are the concerns. I don't have any other except the -- how they're going to channel the -- the watershed. Because there's one on our side to the -- it would be --

MS. SMITH: Oh, and the ravine, yeah.

MR. SMITH: Yeah, the ravine. We have --

MS. SMITH: Well, no, they know the water comes down there. They've done their studies already, so they're okay with --

MR. SMITH: Okay, they know where that comes down. Okay.

MS. SMITH: Yeah, they know about it, yeah. So -- okay?

MR. SMITH: That's it. Otherwise, we're -- we're happy, I guess.

MS. SMITH: Well, we're happy that it's finally

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getting, you know, going, I guess. Because we've been waiting for, I don't know, 15 years. Who knows how many years?

MR. SMITH: Well, we tried to sell -- three years ago we tried to sell, and at that time it was prohibitive because everything was up in the air about the plan. Everyone knew about it, the real estate people knew about it, and of course they were talking to people.

MS. SMITH: Uh-huh. Yeah.

MR. SMITH: So I don't think we had any -- we didn't have any substantial interest, and that's why we've managed to hold on to it.

- - -

MR. DILL: Dennis Dill.

MS. DILL: And Christine Dill.

MR. DILL: We have a vineyard property that spans --

MS. DILL: Do you want to give her the address? That makes it clearer.

MR. DILL: Okay. That's what I was going to do. It spans Konocti Conservation Camp Road. The address of the property, of one of the parcels, at least, is 2099 Highway 29. (Sic)

That's 8099. Is that what I said?

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MS. DILL: You said twenty.

MR. DILL: I said twenty. It's 8099.

So, the -- the first concern is that there is a -- according to that plan, there is an access road being built for the neighbor to the east of us, and it would be cutting through what is currently our property and coming -- probably affecting vineyard that is planted now. Our concern is the siting of that roadway. Because I'm assuming that, of course, Caltrans will buy that property, but I want to make sure that the roadway gets moved more to the north so it doesn't impinge on the vineyard and its operation.

And then, they are talking about ending their responsibility at the neighbor's property line --

MS. DILL: No, they're going to put in the dirt road, they're just not going to pave it.

MR. DILL: Oh, okay. Okay. So -- and then they're running a dirt road along the property line.

MS. DILL: Our property line. Between the two properties.

MR. DILL: Well, ours and his.

MS. DILL: And then it's going to cut into his property. The rest of his access road will be dirt, but part of it runs along our vineyard, so the dirt road --

MR. DILL: So I'm concerned about dust from

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dirt getting on the vines, and that causes problems with mites. They get kicked up with the dirt. So my concern is the health of my vineyard with that plan. So —

MS. DILL: And him driving the dirt road every day, you know?

MR. DILL: Yeah. So we would like to see, I don't know, maybe gravel, but we'd like to see that section paved, or -- or if they just —

MS. DILL: Go straight into his property.

MR. DILL: -- go straight further down into his property and then go up is what I would like to see.

MS. DILL: And what was the other thing? Those are the two things.

And then the third thing was that we have -- during picking, they bring semi trucks up Conservation Camp Road, and we're concerned that the access and egress roads back onto the highway be long enough for them to pick up speed to get going, and long enough for them to stop before they turn so they'll have enough time.

I think that's all.

MR. DILL: All right.

(FORUM CLOSED AT 8:00 P.M.)

- - -

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C E R T I F I C A T E

COUNTY OF MENDOCINO)
) SS
STATE OF CALIFORNIA)

I HEREBY CERTIFY THAT THE WITHIN AND FOREGOING PROCEEDINGS WERE TAKEN DOWN, AS STATED IN THE CAPTION, AND THE FOREGOING 11 PAGES REPRESENT A TRUE AND CORRECT TRANSCRIPT OF THE PROCEEDINGS HAD THEREON;

AND I FURTHER CERTIFY THAT I AM NOT OF KIN OR COUNSEL TO ANY OF THE PARTIES TO SAID CAUSE NOR AM I IN THE REGULAR EMPLOY OF ANY COUNSEL OR PARTY THERETO, NOR AM I IN ANY WAY INTERESTED IN THE OUTCOME OF SAID CAUSE.

DATED: June 10, 2016

KATHY K. ROTHSTEIN, C.S.R. 3919

Response to Comments from Marc Linscott and Mellonie Bryant:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
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TTY 711
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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Marc Linscott and Mellonie Bryant
7723 Highway 29
Kelseyville, CA 95451

Dear Mr. Linscott and Ms. Bryant

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) proposed Lake 29 Improvement Project.

The proposed expressway would be located closer to the business referenced in your comments and would require the acquisition of a portion of the subject parcel. However, the project would not necessitate relocation of the existing building. Fencing would be placed between the expressway and your property. The circulation patterns on your property would be reconfigured with the relocation of the driveway. If additional impacts to your property are identified during the final design of the project, the Caltrans Right of Way and Design departments would work with you and all other property owners that would be impacted to try to find the most equitable solution.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Response to Comments from Paul Smith and Consuela Smith:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Paul and Consuela Smith
7150 Smith Ranch Road
Kelseyville, CA 95451

Dear Mr. and Mrs. Smith,

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project.

As currently designed, the proposed project would re-establish a low ponding area on your property and perpetuate the existing ravine on the southeast side of the property. The current driveway design would not necessitate the need to relocate the existing hot well, but it is anticipated that the existing water tanks would need to be relocated. If additional impacts to your property are identified during the final design of the project, the Caltrans Right of Way and Design departments would work with you and all other property owners that would be impacted to try to find the most equitable solution.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Response to Comments from Dennis Dill and Christine Dill:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Dennis and Christine Dill
8099 Highway 29
Kelseyville, CA 95451

Dear Mr. and Mrs. Dill,

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. The proposed frontage road discussed in your comments would run across the front of your property in order to provide access to your neighbor's parcel. As the design of this frontage road and the mainline has been refined, evaluation of cut/fill lines, drainage requirements, and right of way set back requirements show that it is possible to realign the road slightly more to the north, while still keeping the existing intersection at Konocti Conservation Camp Road (Doten Road). This realignment will be done in the design phase to address your concern and will reduce the overall amount of impacts to your property.

You also had concerns regarding the frontage road being unpaved and the potential impacts of dust and insects on your vineyard. Caltrans has decided to pave this frontage road in order to address this concern. In addition, Caltrans will also make a minor alignment shift to the portion of the frontage road that would run south alongside your eastern property line such that all of the frontage road prism, including any necessary drainage, would be off of your parcel. This will minimize loss of vineyard as well as reducing dust impact to the vineyard.

Your third concern pertains to potential operational issues regarding sufficient acceleration and deceleration lane length on the SR 29 mainline to handle the large number of loaded semi-trucks which use Konocti Conservation Camp Road during the grape harvest season. This is similar to concerns raised in verbal discussions in 2006 with the California Department of Forestry and Fire Protection (CDF) and the California Department of Corrections (CDC) regarding the ability of the proposed expressways to handle large, heavy, and slow traffic using the Konocti Camp Road intersection to go into and out of the Konocti CDF/CDC Conservation Camp. Caltrans has reviewed the initial proposed acceleration and deceleration lane design with our Headquarters Office of Geometric Design Standards geometric reviewers and made the requested changes. Consequently, Caltrans' position is that the planned acceleration and deceleration lane lengths are proper for the proposed expressway facility. Should facility design parameters change in the future, the acceleration and deceleration lane lengths will be adjusted as required.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

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Dennis and Christine Dill
November 10, 2016
Page 2

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions related to the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

California Department of Transportation (Caltrans)
OPEN FORUM PUBLIC HEARING - June 8, 2016
Project: Lake 29 Improvement Project

NAME: Stephen Hawks

ADDRESS: (home) 1414 Cedar St CITY Calistoga STATE CA ZIP 94515

Representing: (Name of organization or agency) Property Address - 8630 S Hwy 29 Lower Lake

I would like to make the following comments: (Comments must be postmarked by July 7, 2016)
I know that Project 2A is a long way off in the future but I would like to talk with someone on the extent of the easement & right away that will be needed for the new roadway. I have some development that I have plans for in some of these areas. Also there are some rare endangered plants in these areas.

NOTICE:
Information provided on this comment card is considered to be public information, and will be released upon request under the terms of the California Public Records Act.

California Department of Transportation (Caltrans)
OPEN FORUM PUBLIC HEARING - June 8, 2016
Project: Lake 29 Improvement Project

NAME: Dennis + Christine Dill

ADDRESS: (home) 6625 Doolan Canyon Dr CITY Ukiah STATE Ca ZIP 95482

Representing: (Name of organization or agency)

I would like to make the following comments: (Comments must be postmarked by July 7, 2016) (Written)
(1) Property @ 8099 Hwy 29 @ Konocti Cons Cmp Rd. not question about access rd. through to neighbors property. Looks like that Rd. will impinge on our vineyard. Wondering if configuration could be changed to minimally affect vines. (notes)
(2) To reduce dust damage to our vineyard the access extension onto neighbors property should be paved - not dirt - at least along side our vineyard

NOTICE:
Information provided on this comment card is considered to be public information, and will be released upon request under the terms of the California Public Records Act.

Response to Comment from Stephen Hawks

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Stephen Hawks
1414 Cedar Street
Calistoga, CA 94515

Dear Mr. Hawks,

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment for the proposed Lake 29 Improvement Project.

In response to your comments, the Caltrans Design department will prepare a property owner information package similar to those sent out to other property owners on the project over the years. This mapping will show the proposed project and its potential impacts on your property at this time. Additionally, Caltrans welcomes any information on the location of sensitive environmental resources.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Response to Comment from Dennis and Christine Dill

See the Caltrans' letter to Dennis and Christine Dill above which provides a response to the comments submitted to the court reporter and by comment card.

From: Keith Brandt
Sent: Wednesday, June 01, 2016 12:57 PM
To: janie.matteoli@dot.ca.gov
Cc: Quiney, Chris D@DOT
Subject: Hwy 29 widening project?
Importance: High

Good Day Jamie –
We received notices about the widening of Hwy 29 and the upcoming meeting (June 8) at Lower lake for public comments.
Our owner- Clay Shannon)has asked me to reach out and inquire about what it would take(if possible?) to include-
Coming south on Hwy 29 -a center turn lane at Siegler Canyon Rd. for entrance into our vineyard (and a possible future winery).
Also, a center turn lane – approx. ¼ mile north of Hwy 29 and Red Hills Rd. (entrance into our Urgency vineyard)
While legal to do so- left turns into properties from Highway 29 can be difficult- and if being followed by an inattentive driver- DANGEROUS.
(We had an employee rear ended on Hwy 29 while entering the Urgency site.)
Any direction and comments are very welcome.
Thanks for your consideration and guidance.
Best regards-

Keith Brandt

Response to Comment from Keith Brandt:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Shannon Ranches
PO Box 2037
Clearlake Oaks, CA 95423

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project.

The Siegler Canyon Rd. location mentioned in your comments is not located within the project limits and, therefore, would not be improved as part of the project. Your request for a turning lane at this location will, however, be forwarded to the Caltrans District 1 Office of Traffic Safety for their evaluation and consideration.

The project would improve safety for vehicles entering into Mr. Shannon's Urgency Vineyard. Alternative D would establish access control along the proposed alignment by removing the existing 64 direct connections to SR 29 within the project limits, including the direct connection to the Urgency Vineyard. A series of frontage roads that would provide access to the residences, businesses, and parcels currently being served would be constructed. The frontage road that would serve Mr. Shannon's properties would originate via a new intersection on Red Hills Road. This intersection would have left turn lanes for northbound traffic, which when combined with the much lower Average Daily Traffic (ADT) on Red Hills Road would provide an inherently safer entrance into Mr. Shannon's properties.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Gmail

Letter of May 23rd, 2016

Todd Falconer Fri, May 27, 2016 at 8:08 AM
To: jamie.matteoli@dot.ca.gov
Cc: chris.quinney@dot.ca.gov

Gentlemen:

Yesterday's mail included your letter which I have read, along with another letter the day before linking to a Caltrans project website with report documents and maps which apparently were approved for release May 16, 2016.

Please contact me immediately to discuss/explain the ramifications to me, my wife and any and all present and future owners/users of our private property, compromising many hundreds of acres, which I anticipate this CalTrans proposal to terminate a four lane access controlled freeway apparently a matter of hundreds of feet east of my driveway encroachment at State Highway 29, Kelseyville will impact.

I am concerned that this "necking down" of high speed (65 mph?) four lane freeway to two lane highway right where we come and go from our property will adversely affect access and safety.

I don't need to be provided with generalized project wide copies of DEIR/EA which cover the entire project and which I doubt I could comprehend anyway, nor do I wish to sit through public meetings on June 8th regarding same.

I need to know in writing your estimation of the effect this activity will have on the environment owned and controlled by Todd and Jill Falconer; the ability to safely, effectively access our property on and off of Highway 29 at our existing encroachment on the from the south side of the highway, on the straightaway in Shaul Valley.

Thank you for your attention.

Sincerely,

Todd Falconer

Mail Delivery Subsystem <mailer-daemon@googlemail.com> Fri, May 27, 2016 at 8:08 AM
To: falconertodd@gmail.com

Delivery to the following recipient failed permanently:

jamie.matteoli@dot.ca.gov

Technical details of permanent failure:
Google tried to deliver your message, but it was rejected by the server for the recipient domain dot.ca.gov by dot-ca-gov.mail.protection.outlook.com. [207.46.163.138].

The error that the other server returned was:
550 5.4.1 [jamie.matteoli@dot.ca.gov]: Recipient address rejected: Access denied

Response to Comment from Todd Falconer:

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Todd Falconer
1590 North Main Street
Lakeport, CA 95453

Dear Mr. Falconer,

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment for proposed Lake 29 Improvement Project.

With the proposed project, SR 29 would begin widening to four lanes approximately 450 ft. east of your driveway and would take another 1600 ft. to transition to a 4-lane expressway. The posted speed limit, roadway lanes and shoulder widths in the vicinity of your driveway would remain unchanged with the proposed project. It is proposed to eliminate the existing passing opportunity in the vicinity of the driveway with the Lake 29 Improvement Project. Additionally, signage would be installed for both directions of travel to alert drivers of the changing number of lanes and conditions, and drivers in the 4-lane section of highway would be alerted of the reduced speed limit in the approaching 2-lane section of highway. With the proposed signage and striping it is anticipated traffic operations would improve in the vicinity of your driveway.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

July 8, 2016

Chris Quiney
Department of Transportation, District 3
1650 Riverside Dr, MS-30
Redding, CA 95457

Subject: Lake 29 Improvement Project
SCH#: 2003022011

Dear Chris Quiney:

The State Clearinghouse submitted the above named Other Document to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on July 7, 2016, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2003022011
Project Title Lake 29 Improvement Project
Lead Agency Caltrans #3

Type Oth Other Document
Description Note: Oth-Partial Revised Draft EA

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to widen an eight-mile segment of State Route 29 (post mile 23.6 to 31.6) in Lake County (between the communities of Lower Lake and Kelseyville) to a four-lane expressway with access control.

Lead Agency Contact

Name Chris Quiney
Agency Department of Transportation, District 3
Phone 530-225-3174 *Fax*
email
Address 1650 Riverside Dr, MS-30
City Redding *State* CA *Zip* 95457

Project Location

County Lake
City
Region
Lat / Long
Cross Streets SR-29, SR-281, Red Hills Road
Parcel No.
Township *Range* *Section* *Base*

Proximity to:

Highways SR-175, SR-281
Airports
Railways
Waterways Thurston Creek
Schools
Land Use Rural Land, Rural Residential, Agricultural Land, Resort Commercial, Local Commercial

Project Issues Aesthetic/Visual; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Population/Housing Balance; Public Services; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 2; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 1; Caltrans, Division of Transportation Planning; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission

Date Received 05/23/2016 *Start of Review* 05/24/2016 *End of Review* 07/07/2016

Note: Blanks in data fields result from insufficient information provided by lead agency.

Water Boards

Central Valley Regional Water Quality Control Board

17 June 2016

Governor's Office of Planning & Research

JUN 20 2016

STATE CLEARINGHOUSE

Chris Quiney
California Department of Transportation
1650 Riverside Drive, MS-30
Redding, CA 96001

CERTIFIED MAIL
91 7199 9991 7035 8363 8652

COMMENTS TO REQUEST FOR REVIEW FOR THE PARTIAL REVISED DRAFT ENVIRONMENTAL ASSESSMENT, LAKE 29 IMPROVEMENT PROJECT, SCH# 2003022011, LAKE COUNTY

Pursuant to the State Clearinghouse's 24 May 2016 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Partial Draft Environment Assessment* for the Lake 29 Improvement Project, located in Lake County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

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the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II Permitting Requirements

Construction Storm Water General Permit
Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]
The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Caltrans Phase I MS4 Permit, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml.

Industrial Storm Water General Permit
Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State
If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit
If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture
If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/for_growers/apply_coalition_group/index.shtml or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water*

(Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Response to Comments from the State Clearinghouse and Planning Unit:

The letters acknowledge that Caltrans has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA.

Response to Comments from the Central Valley Regional Water Quality Control Board (CVRWQCB):

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Central Valley Regional Water Quality Control Board
Stephanie Tadlock, Environmental Scientist
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

Dear Ms. Tadlock,

Thank you for providing comments (attached) on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the Lake 29 Improvement Project.

In response to your comments:

Construction Storm Water General Permit
Because the proposed project would involve soil disturbance of more than 1 acre, Caltrans would obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Caltrans would require the project contractor to prepare and comply with a Storm Water Pollution Prevention Plan (SWPPP).

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits
The Department's MS4 permit (Order No. 2012-0011-DWQ) (Caltrans NPDES Permit) covers all Department rights-of-way, properties, facilities, and activities in the state. To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Clean Water Act Section 404 Permit
The proposed project would result in the placement of fill material into waters under the jurisdiction of the USACE, therefore, Caltrans would obtain a Clean Water Act Section 404 Nationwide permit.

Clean Water Act Section 401 Permit – Water Quality Certification
Because the proposed project would require a Section 404 Nationwide Permit, Caltrans would obtain a Section 401 Water Quality Certification from the CVRWQCB.

Waste Discharge Requirements – Discharges to Waters of the State
Due to funding constraints it is anticipated that the project would be constructed in three separate phases (Segments). The USACE determined that the first segment to be constructed involves

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Central Valley Regional Water Quality Control Board
November 10, 2016
Page 2

jurisdictional waters requiring a Section 404 permit and a 401 Water Quality Certification. The remaining two project segments contain "non-federal" waters of the State only. Caltrans would apply for Waste Discharge Requirements (WDRs) from the CVRWQCB for these two segments.

Dewatering Permit and Low or Limited Threat General NPDES Permit
If groundwater is encountered during excavations and the water would be discharged to land and/or into waters of the State, Caltrans would seek coverage under the State Water Board General Water Quality Order (Order No. 2003-0003) or the CVRWQCB WDR (Order No. R5-2013-0145) by filing a Notice of Intent with the CVRWQCB prior to discharge.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

Please feel free to contact me with any questions or concerns at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

August 12, 2016

Chris Quiney
California Department of Transportation
1657 Riverside Drive, MS-30
Redding, CA 96001

Subject: REVISED PARTIAL DRAFT ENVIRONMENTAL IMPACT REPORT
ENVIRONMENTAL ASSESSMENT FOR LAKE 29 IMPROVEMENT PROJECT,
SCH # 2003022011

Dear Mr. Quiney:

The California Department of Fish and Wildlife (Department) has reviewed the revised partial draft Environmental Impact Report/Environmental Assessment (DEIR/EA) from the California Department of Transportation (Caltrans) regarding the Lake 29 Improvement Project (Project).

As a trustee for California's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). The Department may also act as a responsible agency (Cal. Code Regs., § 21069) for a project where it has discretionary approval power under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.) and the Lake and Streambed Alteration (LSA) Program (Fish & G. Code, § 1600 et seq.). The Department also administers the Native Plant Protection Act, Natural Community Conservation Program, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

The Department offers the following comments and recommendations for this Project in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA).

PROJECT DESCRIPTION AND ALTERNATIVE ANALYSIS

Caltrans proposes 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

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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.

ENVIRONMENTAL SETTING, IMPACT ANALYSIS, AND MITIGATION MEASURES

Oak Woodland

On page 2-64, Section 2.15.3, the DEIR/EA proposes to mitigate impacts to oak woodland with the preservation of existing oak woodland at a 1:1 ratio. Preservation at 1:1 ratio will result in a net loss of Oak Woodland. More appropriate mitigation would include a combination of preservation and creation to offset the Project impacts. When preservation is combined with additional planting it can create a landscape of mature oak woodland with associated early succession habitat which has the potential to provide high ecological value. Similarly, other Caltrans projects have proposed to mitigate similar impacts with 1 acre of preservation and ½ acre of creation to offset each acre of oak impacts to the Project.

The DEIR/EA should also consider how the Project may cumulatively contribute to the substantial adverse change to natural communities caused by the recent fires that occurred within Lake County. The cumulative impact analysis should include the impacts of this regionally significant event over all the natural communities including oak woodland within Lake County. If determined that the Project may have a significant cumulative impact, additional mitigation measures should be proposed to offset impact to the natural communities present within the Project footprint.

Wildlife Crossing

The proposed Project includes the construction of two wildlife crossings. The Department respectfully requests that Caltrans coordinate the design and the locations of the crossings with Department wildlife program staff.

Wetlands and Other Waters

The DEIR/EA should include a figure of the Project footprint depicting the impacts to any Department jurisdictional features under the LSA Program, as well as any vernal pool communities. Please note that 1.5 to 1 mitigation ratio to compensate for impacts to vernal pools is not sufficient and impacts to the vernal pools will require a higher mitigation ratio due to the rarity and sensitivity of the vernal pools and sensitive vernal pool plants present within the Project study area. The Department is not aware of any Department approved mitigation banks whose service areas cover the Project site.

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Clear Lake Hitch (*Lavinia exilicauda chi*)

On April 28, 2015, Department fisheries biologist, Ben Ewing, met with Caltrans biologists to assess potential fish barriers that could impede the passing of Clear Lake Hitch (CLH). The reach that was assessed for the proposed Project footprint is within the Thurston Lake watershed. At the meeting it was determined that if CLH were present at Thurston Lake, it would have the potential to reach the Project footprint when certain weather conditions are met. On July 29, 2015, Department and Caltrans staff conducted an electrofishing survey at Thurston Lake to ascertain the presence of CLH within Thurston Lake. As described in the DEIR/EA, CLH was observed during the surveys.

Despite our expert opinion and the information obtained from the survey and site visit, on page 2-107 of the DEIR/EA, it was determined that CLH has no potential to be present within the Project site. The DEIR/EA should include the following avoidance measure: All work within streams/ tributaries to Thurston or Clear Lakes shall occur after the streams dry out in the summer (around June 1) and no later than December 31. The implementation of this construction window is essential since in most cases CLH spawn in streams/ tributaries to the lakes where they are present. Any work within the stream such as culverts or other structures shall be designed to allow CLH passage.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

The DEIR/EA identifies a maternal colony within 300 feet of the proposed Project on page 2-107, Section 2.19.2. Based on additional communications with Caltrans the colony is approximately 648 feet away from the new road. The DEIR/EA should clarify this discrepancy. The DEIR/EA should analyze the potential impacts to the colony due to the regular operations of a four lane highway versus the existing two lane configuration. If determined that the Project could result in significant impacts to the colony or other roosting sites due to noise, additional avoidance, minimization, and/or mitigation measures such as noise barriers, alternative roosting sites, etc. should be implemented as part of this Project.

Townsend's Big-eared Bat (COTO) is a relatively sedentary species and the loss or alteration of a maternal roosting site could impact the colonies, reducing their reproductive success. In addition to this, the removal of potential hibernacula surrounding the maternal colony could also impact individuals by lowering their energy reserves for hibernating and may result in a significant impact. The Natural Environment Study (NES) provided to the Department in July 2016 is not clear about the number of structures available to COTO. Table 4-26 of the NES identifies three structures that are occupied by COTO two of which will be removed by the proposed Project. On page 2-112, the DEIR/EA identifies 5 structures with moderate to high potential for use by COTO that will be removed by the Project. To establish a correct baseline and determine if there are significant impacts the DEIR/EA should identify the number of structures that could be used by COTO present in the study area and the number that

will be impacted by the Project. Based on the only information available from surveys, the proposed Project will have a significant impact to COTO hibernacula since the Project will remove two out of the three locations where COTO was observed.

In addition to this, on page 148, the NES describes how the new highway could fragment the habitat for slow low flying bats by increasing the distance they need to fly without cover and with disturbance from moving vehicles. The DEIR/EA should include this information and analyze the potential impacts to available roosting habitat depending on the location of the structures in respect to the maternal colony and the new road. Depending on their location the Department recommends that Caltrans replace the structures at a 1:1 ratio if they are on the same side of the road as the maternal colony and 2:1 if they are on the other side. Structures should be located at each side of the road. If alternative roosting sites are created they should be located within the Project's immediate vicinity and be protected in perpetuity. The DEIR/EA should describe monitoring efforts and protocols to evaluate the effectiveness of this mitigation, and remediation in case these sites are not used by COTO.

Rare Plants and Northern Volcanic Ash Flow Vernal Pools

Surveys Efforts

The Department is concerned that the DEIR/EA does not accurately disclose Caltrans' survey efforts to identify the listed and sensitive plant species present within the Project footprint. This is especially important for vernal pool plants since their populations are more variable depending on the rain timing and intensity. The DEIR/EA should include information about the type and timing of surveys that were conducted and the limitations that may influence the survey results. If surveys did not cover the complete Project footprint and were conducted outside the appropriate blooming seasons, the surveys may not be adequate to establish the correct baseline for the DEIR/EA. The NES and the biological assessment (BA) provided to the Department on March 2014, do not provide this information. A map with the plant locations and the direct Project footprint should also be included in the DEIR/EA to properly disclose the potential Project impacts to the rare and listed plant species.

Since the entire project footprint was not surveyed and the most recent set of plant surveys were conducted in 2011, the DEIR/EA should include additional preconstruction surveys to ascertain that no additional plant populations will be impacted by the Project. All plant surveys should occur at the appropriate time of the year within the direct Project footprint and designated buffer areas to ensure that no new undisclosed impacts occur as a part of the Project. The DEIR/EA should include additional mitigation measures in the event that some of the rare and/or listed plants are detected within the Project footprint and immediate vicinity.

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Listed and Rare Plants

Lake County stonecrop (*Sedella leiocarpa*) (LCS) is one of the most endangered plants in California with four or less relatively small extant populations. Per the 2011 Special-status Plant Survey Report, two populations of LCS were detected within the study area at Manning Flat and the vernal pool north of the SR 29 and Doten Road intersection.

Also present within the vernal pool areas of the study area are Burke's goldfield (*Lasthenia burkei*) (state and federally endangered) and few-flowered navarretia (*Navarretia leucocephala ssp. pauciflora*) (federally endangered, state threatened). There are very few populations of Burke's goldfield in Lake County, and these populations are genetically distinct from the populations in Sonoma County. The two populations of Burke's goldfield within the Project's footprint are the most significant natural populations of the species in the County, and are therefore of special significance. The two populations of few-flowered navarretia within the Project's impacted area appear to represent the core of the known distribution of the species, and are thus critical for protecting the taxon from extinction. Page 167 of the BA establishes that the role of oligolectic andrenid bees on Burke's goldfields pollination can be significant. Yet the BA determined that no significant impacts will occur because bees typically are located closer to the vernal pools, even though page 108 of the BA states that no specific surveys were conducted. This determination is not supported with survey data and could be problematic in areas were the new alignment encroaches toward the vernal pools (ex. Doten Road Flat). The DEIR/EA does not include any impact analysis about the potential impacts to oligolectic andrenid bees that could be present within the Project footprint and the indirect impacts to Burke's goldfields. The cumulative impact analysis of the project impacts to Burke's goldfield should also include the potential impacts caused by the disturbance of the oligolectic andrenid bees.

Brandegee's eriastrum (*Eriastrum brandegeeae*) is a highly restricted rare plant species, with the most reliable and perhaps only true occurrence at and near the type locality near Borax Lake, which is highly threatened by human activities. The plants located within the Project area (Hesse Flat) are the shortest distance from the type locality of any other reports of Brandegee's eriastrum. These plants are very important to document and conserve because they may represent one of the only populations of an incredibly rare, restricted, and at-risk species. Although it is not disclosed in the DEIR/EA, based on the 2011 botanical surveys and additional maps, it appears that the new road will be substantially closer to the area where Brandegee's eriastrum is present. The DEIR/EA should include additional impact analysis for this plant species and its habitat.

The DEIR/EA does not analyze potential road edge effects caused by the highway. These road edge effects are well documented and can cause impacts to ecosystems due to direct habitat loss; facilitated invasion of weeds, pests, and pathogens. Road construction may limit long-term site productivity of roadsides by exposing low nutrient subsoils, reducing soil water holding capacity, and compacting surface materials. Road

construction also makes slopes more vulnerable to landslides and erosion, which in turn remove additional terrestrial wildlife habitat, degrade aquatic habitats and spread invasive species from roadsides into adjacent native communities. These edge effects are extremely important since the proposed Project will increase the highway footprint and encroach on the location where the vernal pools and rare plants are present. It is important to note that the existing vernal pools and associated plants are already subject to encroachment related stress and adding additional impacts could extirpate them from this area. Another road edge effect that is not included in the DEIR/EA is the increase of fire risk due to the roads.

To protect the rare and listed plants present within the project vicinity the Department recommends that the use of herbicides is not allowed in the vicinity of any of the vernal pools present in this area during construction activities and routine maintenance activities.

The Department disagrees with the DEIR/EA's assertion on page 2-85 that Bolander's Horkelia (*Horkelia bolanderi*) "will grow outward away from the earthen embankment, resulting in only temporary impacts". Most of the plants present in the Project footprint are very sensitive and have very specific soil requirements. Disturbing the soils in conjunction with the other potential impacts disclosed in this letter has the increased potential to negatively impact the populations in the long term. The proposed Project should implement restoration and monitoring measures to ensure the recovery of the rare plants.

Northern Volcanic Ash Flow Vernal Pools

The DEIR/EA identifies a potential significant impact to vernal pools, LCS and the other listed plant species due to the alteration of the local hydrology. The DEIR/EA states: "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." However, the DEIR/EA does not provide any evidence on how these features would be implemented, their capacities or potential for failure. The DEIR/EA provides no analysis to indicate that design features will be sufficient to eliminate potentially significant impacts to northern volcanic ash flow vernal pools and the highly sensitive plant species that are supported by these habitats.

In July 2016, the Department received from Caltrans the "Level Spreaders Creating Sheetflow at Manning Flat (PM 25.2-25.7), Lake County-Route 29, PM 23.6-31.6, Highway Improvement Project, 01-2981U," (Caltrans 2015). The purpose of this document is to evaluate the feasibility and applicability of using Level Spreaders to ensure that Manning Flat continues to receive sheetflow to support existing sensitive species. The report was submitted to the Department's Senior Engineering Geologist

and it was determined that the report does not have sufficient information to independently evaluate it. In addition to this, there is no hydrological analysis for the other locations where the rare and listed plants are present. Interpretation of aerial photographs indicates that hydrologic conditions of these locations are strongly influenced by the existing roadway. The new alignment will introduce a much larger impervious surface that will change the existing conditions. The Department requests that Caltrans coordinates the preparation of a hydrology report with the Department to ensure that the report contains sufficient information to ascertain project impacts.

On page 2-117, Section 2.19.4, the DEIR/EA states that flow spreaders will be designed to handle a 100-year rain event. The DEIR/EA should disclose the potential impacts resulting from a larger event and how it may impact the long term viability of Manning Flat and the listed and rare plants present within the vernal pool. If local hydrology is modified by the Project, it should be treated as a significant impact to LCS, and Brandegee's eriastrum since altering the patterns could cause the collapse of their population, and thus eliminating a significant number of their populations.

The DEIR/EA does not include any information about the existing water quality conditions in Manning Flat or any other vernal pool present within the Project footprint. It is unknown if there are any issues with water quality that could interact with the vernal pools and a new wider highway. The DEIR/EA should analyze the existing conditions and compare them with the potential pollutants that could enter the vernal pool from the new road. This is important to ensure that pollutants will not have negative effects on the plants, vernal pools, and other animal species present within the Project footprint. Characterizing the existing hydrology and water quality is especially important at Manning Flat, since the proposed Project includes the construction of a four lane highway with soft shoulders and a median immediately upstream of Manning Flat. On page 2-116, section 2.19.4, the DEIR/EA proposes to construct rock-lined ditches upslope from the proposed highway, but there are no measures to contain any sediments or pollutants originated on the highway that could wash down the slope. The DEIR references the original EIR for water quality analysis. The Department is concerned that this analysis does not cover areas where the alignment was modified from the project as originally proposed.

The Department is concerned that as a result of the Project Manning Flat and its associated plants will not be a self-sustainable habitat and will require constant human intervention to persist. The DEIR/EA should include additional mitigation that will ensure that the vernal pools and the rare and listed species persist over time.

Long Term Monitoring

On page 2-116, section 2.19.4 the DEIR/EA only includes the monitoring of the flow spreaders during raining events occurring the first two winters and then annually after that. Monitoring the flow spreaders alone will not fully identify impacts to the vernal pools and rare and listed plants. Annual plant numbers in general, and more specifically

vernal pool plant populations, can fluctuate wildly from year-to-year, depending on the seed production in previous years, germination of seedlings and environmental conditions (e.g., timing and amount of rainfall) (Fischer and Matthies 1998; Harrison et al. 1999). It could take years to detect significant effects of the Project that could result in local extinction of LCS, Burke's goldfield and result in the long term of take of the other listed plant species. Significant impacts to Brandegee's eriastrum could also occur due to the long term effects of the impacts described in this letter.

The DEIR/EA should include a long term monitoring plan that includes the inspection of the spreaders, water quality, and hydrology of all the vernal pools present within the Project footprint. The long term monitoring should also include a survey of the vernal pool plant populations and Brandegee's eriastrum to ascertain that no impacts to the vernal pools and rare and listed plants have occurred. The Department recommends that the vernal pools and plants are monitored for no less than 10 years. The Department would like to reiterate previous offers to assist Caltrans with the extended monitoring efforts. The long term monitoring plan should also establish funding sources and include adaptive management in the event that it is determined that the vernal pools and the plants present are being impacted due to the construction of the Project.

Conclusion

As explained in this letter, the DEIR/EA fails to analyze potential significant impacts to COTO, vernal pools, and rare and listed plants. In addition to this the DEIR/EA did not implement any of the Department's recommendations to protect CLH.

CEQA guidelines section 15125 subdivision (a) requires that an EIR includes a description of the physical environment (baseline). This baseline shall be used to determine if the Project will have significant impacts to the species and vernal pools. It is important that the DEIR/EA clearly describes the existing vernal pool conditions to establish a correct baseline. In addition to this, the thresholds of significance for impacts to vernal pools, LCS, Brandegee's eriastrum, and Burke's goldfields, should be low since small impacts can result in the extirpation and even the extinction of some of the plants species.

The Department is concerned that construction of the new highway, constricting Manning Flat between the existing highway and the future highway, and the sum of all the potential impacts described in this letter will result in a significant cumulative impact that will diminish the long term viability of the vernal pool and associated plant species. As previously proposed by the Department, purchasing the land, protecting it, and providing sufficient funding to actively manage these vernal pools may be the only mitigation available to ensure the long term viability of the vernal pools, LCS, Brandegee's eriastrum, and the other rare and plants present within the Project area.

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If it is determined that the Project will result in take of any listed species within the Project footprint, the Department recommends that an ITP issued pursuant to CESA is obtained prior to commencing construction activities.

Please note that when acting as a responsible agency, CEQA guidelines Section 15096, subdivision (f) requires the Department to consider the CEQA environmental document prepared by the lead agency prior to reaching a decision on the Project. Addressing the Department's comments and disclosing potential Project impacts on CESA-listed species in any river, lake, or stream, and provide adequate avoidance, minimization, mitigation, monitoring and reporting measures; will assist the Department with the consideration of the DEIR and reduce potential delays when issuing an ITP under CESA and/or an LSA Agreement. Currently, the DEIR/EA does not have sufficient information to establish that no significant impacts will occur to the listed species present within the Project area and its vicinity. As a result, the Department may not be able to use the environmental document when acting as a responsible agency under CEQA.

Thank you for the opportunity to comment on the DEIR/EA for the Project. If you have any questions regarding these comments please contact Juan Lopez Torres at (916) 358-2951 or Juan.Torres@wildlife.ca.gov.

Sincerely

For

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Regional Manager

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Response to Comments from the California Department of Fish and Wildlife (CDFW):

Caltrans prepared the following letter in response to the comments received from the CDFW on the Revised Partial Draft EIR/EA. The letter was sent to the CDFW on September 20, 2016. Additionally, applicable sections of this EIR/EA have been revised to address the CDFW comments. Coordination with the CDFW continues to date.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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September 20, 2016

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01-LAK-29-PM 23.6/31.6
EA: 01-2981U
EFIS: 0100000090
Lake 29 Improvement Project

Dear Ms. Bartlett:

Thank you for reviewing and providing comments on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project. The California Department of Transportation (Caltrans) is committed to working with the California Department of Fish and Wildlife (CDFW) as the proposed project moves forward. In italics are CDFW's comments followed by a Caltrans' response to each comment.

Oak Woodlands

CDFW Comment #1: On page 2-64, Section 2.15.3, the DEIR/EA proposes to mitigate impacts to oak woodland with the preservation of existing oak woodland at a 1:1 ratio. Preservation at 1:1 ratio will result in a net loss of Oak Woodland. More appropriate mitigation would include a combination of preservation and creation to offset the Project impacts. When preservation is combined with additional planting it can create a landscape of mature oak woodland with associated early succession habitat which has the potential to provide high ecological value. Similarly, other Caltrans projects have proposed to mitigate similar impacts with 1 acre of preservation and ½ acre of creation to offset each acre of oak impacts to the Project.

Caltrans would agree to implement the creation of oak woodlands at a 0.5:1 ratio in addition to the preservation of oak woodlands at a 1:1 ratio discussed in the Revised Partial Draft EIR/EA. For clarification, the preservation of oak woodlands included in the Revised Partial Draft EIR/EA is not considered a mitigation measure to offset a CEQA significant impact. Caltrans, as the Lead Agency, determined that the proposed project would not result in a significant impact to oak woodlands individually or cumulatively and therefore no mitigation would be required. The decision to include the additional oak woodland creation is not based on what other Caltrans projects have previously proposed in order to offset impacts, but rather to further our stewardship role and partnership within the region and local community. The creation and preservation of oak

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woodlands would take place in correlation with the project-related impacts of each segment of the proposed project.

CDFW Comment #2: The DEIR/EA should also consider how the Project may cumulatively contribute to the substantial adverse change to natural communities caused by the recent fires that occurred within Lake County. The cumulative impact analysis should include the impacts of this regionally significant event over all the natural communities including oak woodland within Lake County. If determined that the Project may have a significant cumulative impact, additional mitigation measures should be proposed to offset impact to the natural communities present within the Project footprint.

In order to evaluate the level of project-related impacts on natural communities, including oak woodlands, the quantity of natural communities that would be affected as a result of the proposed project has been compared to the total quantity of these natural communities found within the "project's watersheds" (see page 2-69 of the Revised Partial Draft EIR/EA for discussion of the projects watersheds). The project's watersheds were chosen as the resource study area because this area represents a suitable home range for larger wildlife species and serves as the critical range for regional wildlife population stability. The project impact analysis did not include consideration of the recent fires because none of the fires occurred within the project's watersheds and therefore would not alter the impact analysis.

Wildlife Crossings

CDFW Comment #3: The proposed Project includes the construction of two wildlife crossings. The Department respectfully requests that Caltrans coordinate the design and the locations of the crossings with Department wildlife program staff.

Caltrans would welcome CDFW's input regarding wildlife crossing design in the interest of constructing functional crossings, specifically measures that would encourage specific species to utilize the crossings (e.g. end treatments, directional fencing). The locations of the proposed wildlife crossings have been determined based on wildlife needs and construction practicability. Location options are limited by a variety of factors including terrain. The two proposed wildlife crossings take advantage of the need to upgrade existing cross culverts for the proposed highway stormwater drainage system. Instead of constructing cross culverts to accommodate only stormwater, the crossings would be enlarged, to the extent possible given the terrain, to allow wildlife to utilize the conduit beneath the traveled way. The wildlife crossings are not proposed as a measure to reduce a CEQA significant impact and are not considered a CEQA mitigation measure. The wildlife crossings are proposed as an opportunity to improve wildlife movement in the area and also to reduce potential incidents involving wildlife and vehicles, thus improving safety within the project limits.

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Wetlands and Other Waters

CDFW Comment #4: The DEIR/EA should include a figure of the Project footprint depicting the impacts to any Department jurisdictional features under the LSA Program, as well as any vernal pool communities.

The Revised Partial Draft EIR/EA provides information regarding the CDFW jurisdictional areas and potential project-related impacts using tabular format. Caltrans decided for this specific project that the use of tables would provide document reviewers an effective method to analyze potential project-related impacts. Maps of the CDFW jurisdictional areas and project-related impacts will be provided to the CDFW with the submittal of the 1602 permit application for each project segment.

CDFW Comment #5: Please note that 1.5 to 1 mitigation ratio to compensate for impacts to vernal pools is not sufficient and impacts to the vernal pools will require a higher mitigation ratio due to the rarity and sensitivity of the vernal pools and sensitive vernal pool plants present within the Project study area. The Department is not aware of any Department approved mitigation banks whose service areas cover the Project site.

The proposed project would result in permanent direct impacts to approximately 0.04 acre of vernal pool habitat. However, the vernal pool that would be impacted does not contain Lake County stonecrop, Burke's goldfield or few-flowered navarretia. To compensate for impacts to vernal pool habitat, Caltrans proposes to contribute funds to the USACE and RWQCB approved in-lieu fee program at a 2:1 ratio upon submittal of the 404 and 401 permit applications. A specific ratio for proposed vernal pool mitigation was not specified in the Revised Partial Draft EIR/EA and it is therefore unclear why CDFW Comment #5 references a 1.5:1 mitigation ratio.

To compensate for impacts to wetlands and other waters, excluding vernal pools, Caltrans proposes to purchase mitigation credits at a 1:1 ratio at the Seigler Valley Wetland Mitigation Bank, located in Lake County. This mitigation bank is a USACE-approved mitigation bank whose service area includes the project site. Caltrans also received approval from the RWQCB to use the bank for compensation for impacts to waters of the state.

Mitigation for impacts to wetlands and other waters, including vernal pools, would take place in correlation with project-related impacts associated with the three project segments.

Clear Lake Hitch (*Lavinia exilicauda chi*)

CDFW Comment #6: On April 28, 2015, Department fisheries biologist, Ben Ewing, met with Caltrans biologists to assess potential fish barriers that could impede the passing of Clear Lake Hitch (CLH). The reach that was assessed for the proposed Project footprint is within the Thurston Lake watershed. At the meeting it was determined that if CLH were present at Thurston Lake, it would have the potential to reach the Project footprint when

certain weather conditions are met. On July 29, 2015, Department and Caltrans staff conducted an electrofishing survey at Thurston Lake to ascertain the presence of CLH within Thurston Lake. As described in the DEIR/EA, CLH was observed during the surveys.

Despite our expert opinion and the information obtained from the survey and site visit, on page 2-107 of the DEIR/EA, it was determined that CLH has no potential to be present within the Project site. The DEIR/EA should include the following avoidance measure: All work within streams/ tributaries to Thurston or Clear Lakes shall occur after the streams dry out in the summer (around June 1) and no later than December 31. The implementation of this construction window is essential since in most cases CLH spawn in streams/ tributaries to the lakes where they are present. Any work within the stream such as culverts or other structures shall be designed to allow CLH passage.

Caltrans' determination that Clear Lake Hitch (CLH) are not expected to occur within the project's area of disturbance is based on information obtained during the CDFW/Caltrans electro-fish survey and field review in combination with additional information gathered through consultation with the CLH Chi Council, a non-profit organization dedicated to the study, protection, and restoration of CLH (http://lakelive.info/chicouncil/). Victoria Brandon, Chi Council member, noted that the council has collected survey data since 2004 and has never received reports of CLH occurring in Thurston Creek (Victoria Brandon, personal communication, March 24, 2015). Additionally, Caltrans consulted with Richard Krag, vineyard manager for Beckstoffer Vineyards, who has experience assisting with CLH spawning surveys in Clear Lake tributaries and has knowledge of CLH life cycles. Mr. Krag stated that he has no knowledge of CLH spawning within any potion of Thurston Creek west of SR 281 (Richard Krag, personal communication, March 28, 2015).

Caltrans also gathered information regarding Ely Flat hydrogeography which revealed the absence of a defined creek channel through Ely Flat. Ely Flat is a large freshwater marsh/seasonal wetland disrupted by farm ponds, levies, and an unorganized series of culverts and dams. The current condition of Ely Flat would make it difficult, if not impossible, for both adult and/or juvenile CLH to navigate to and from Thurston Lake while spawning. If CLH were able to navigate upstream beyond Ely Flat, they would likely become stranded while returning to Thurston Lake as waters quickly recede during the early summer months.

Thurston Lake is approximately 321 acres in size and has a limited carrying capacity for CLH populations. It was determined that it is likely that the spawning habitat between Thurston Lake and Ely Flat is sufficient for the reproductive needs of the Thurston Lake CLH population. Caltrans conducted numerous surveys of Thurston Creek and associated tributaries which did not result in detections of CLH at any life stage.

Caltrans is agreeable to restricting all work within streams/tributaries to Thurston Lake from June 1 to December 31, in the unlikely event that CLH are present within the project area of disturbance. The proposed project would improve conditions from what the project area is

currently experiencing, as large multi-barreled, natural substrate bottom box culverts would be installed at all Thurston Creek crossings.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

CDFW Comment #7: The DEIR/EA identifies a maternal colony within 300 feet of the proposed Project on page 2-107, Section 2.19.2. Based on additional communications with Caltrans the colony is approximately 648 feet away from the new road. The DEIR/EA should clarify this discrepancy. The DEIR/EA should analyze the potential impacts to the colony due to the regular operations of a four lane highway versus the existing two lane configuration. If determined that the Project could result in significant impacts to the colony or other roosting sites due to noise, additional avoidance, minimization, and/or mitigation measures such as noise barriers, alternative roosting sites, etc. should be implemented as part of this Project.

A Townsend's big-eared bat (COTO) maternal roosting site is located approximately 100 ft. north of the existing SR 29 alignment in Manning Flat. The proposed project would construct a drainage basin approximately 300 ft. to the southeast of this maternal roosting site. Once in operation, the drainage basin would not produce noise levels of concern. The proposed four-lane expressway would be constructed approximately 640 ft. to the south of the Manning Flat maternal roosting site, approximately 540 ft. further away than the existing highway. It was determined that the placement of the four-lane expressway further away from Manning Flat would reduce noise impacts to the Manning Flat maternal roosting site. In order to avoid potential temporary construction-related noise impacts, no construction activities would occur within 500 ft. of the Manning Flat maternal roosting site between April 15 and September 1. Similarly, no construction activities would occur within 500 ft. of a known winter roosting site between October 15 and February 28. The Manning Flat maternal roosting site would experience reduced noise levels as a result of the proposed project and no additional avoidance, minimization, and/or mitigation measures are required.

CDFW Comment #8: Townsend's Big-eared Bat (COTO) is a relatively sedentary species and the loss or alteration of a maternal roosting site could impact the colonies, reducing their reproductive success. In addition to this, the removal of potential hibernacula surrounding the maternal colony could also impact individuals by lowering their energy reserves for hibernating and may result in a significant impact. The Natural Environment Study (NES) provided to the Department in July 2016 is not clear about the number of structures available to COTO. Table 4-26 of the NES identifies three structures that are occupied by COTO two of which will be removed by the proposed Project. On page 2-112, the DEIR/EA identifies 5 structures with moderate to high potential for use by COTO that will be removed by the Project. To establish a correct baseline and determine if there are significant impacts the DEIR/EA should identify the number of structures that could be used by COTO present in the study area and the number that will be impacted by the Project. Based on the only information available from surveys, the proposed Project will have a significant impact

to COTO hibernacula since the Project will remove two out of the three locations where COTO was observed.

As discussed above, one structure within the Environmental Study Limits (ESL) was identified as suitable for maternal roosting and was found to contain a COTO maternal colony during both the 2003 and 2015 survey efforts. The proposed project would not result in the loss or alteration of this maternal roosting site. Within the ESL, 33 man-made structures exist with moderate to high potential for use by COTO. Of these man-made structures, five would be removed as a result of the proposed project. Pre-construction roosting surveys would be conducted prior to the demolition of all man-made structures that provide suitable COTO habitat. These 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 CDFW. Demolition of structures containing maternity roosts would be postponed until offspring have fledged. In addition to the man-made structures, five abandoned underground mines (US Geological Survey 2016) and a large quantity (approximately 685) of fractured volcanic rock outcroppings that have the potential to provide suitable COTO roosting habitat are located within one mile of the project footprint. Of the approximate 685 fractured volcanic rock outcroppings nearly half (327) are greater than 500 sq. ft. in size and thus would likely provide high quality habitat. The removal of man-made structures as a result of the proposed project is considered negligible in terms of available COTO roosting habitat.

CDFW Comment #9: In addition to this, on page 148, the NES describes how the new highway could fragment the habitat for slow low flying bats by increasing the distance they need to fly without cover and with disturbance from moving vehicles. The DEIR/EA should include this information and analyze the potential impacts to available roosting habitat depending on the location of the structures in respect to the maternal colony and the new road. Depending on their location the Department recommends that Caltrans replace the structures at a 1:1 ratio if they are on the same side of the road as the maternal colony and 2:1 if they are on the other side. Structures should be located at each side of the road. If alternative roosting sites are created they should be located within the Project's immediate vicinity and be protected in perpetuity. The DEIR/EA should describe monitoring efforts and protocols to evaluate the effectiveness of this mitigation, and remediation in case these sites are not used by COTO.

The proposed project would not notably fragment day or night roosting habitat 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. Although COTO are known to opportunistically inhabit man-made structures, such as sheds, barns and abandoned dwellings, these structures are short-lived as habitat due to the effects of weather, fire, demolition by landowners, and lack of maintenance. Since 2007 private landowners have removed four vacant houses within the project area with moderate to high potential for COTO use. Abandoned structures are known to be a nuisance and liability for the landowners. For example an abandoned commercial building near Kit's corner (8040 SR 29) was known for

drug/transient use and required police intervention in the winter of 2015. Additionally, the abandoned residence at Manning Flat has been vandalized multiple times and most recently received major interior fire damage during the 2015/2016 winter. It is unknown if this residence will continue to provide suitable COTO maternal roosting habitat.

As discussed above, sufficient natural habitat for COTO exists in various forms throughout the project area. Though COTO can be roost-limited in some areas, this has not been the case for day-roosting or small hibernacula in forested volcanic habitat because volcanic rock outcroppings provide abundant habitat (CDFW 2016, Dobkin et al. 1995). It was determined that the proposed project would not adversely affect COTO with the implementation of the proposed avoidance, minimization, and mitigation measures. For these reasons Caltrans does not propose any type of mitigation to offset the demolition of man-made structures that may be used by COTO.

Rare Plants and Northern Volcanic Ash Flow Vernal Pools

Survey Efforts

CDFW Comment #10: The Department is concerned that the DEIR/EA does not accurately disclose Caltrans' survey efforts to identify the listed and sensitive plant species present within the Project footprint. This is especially important for vernal pool plants since their populations are more variable depending on the rain timing and intensity. The DEIR/EA should include information about the type and timing of surveys that were conducted and the limitations that may influence the survey results. If surveys did not cover the complete Project footprint and were conducted outside the appropriate blooming seasons, the surveys may not be adequate to establish the correct baseline for the DEIR/EA. The NES and the biological assessment (BA) provided to the Department on March 2014, do not provide this information. A map with the plant locations and the direct Project footprint should also be included in the DEIR/EA to properly disclose the potential Project impacts to the rare and listed plant species.

Special-status plant 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). Accordingly, surveys were conducted throughout the entire project footprint, including all areas that had the potential to be directly and/or indirectly affected by the proposed project, except where access was restricted by private landowners. Despite access restrictions, Caltrans was able to survey all vernal pool core areas and all other areas where listed state and/or federal plants have the potential to occur. Also in accordance with the above mentioned protocols, survey efforts involved multiple site visits in order to ensure surveys were conducted throughout the growing season providing surveyors the greatest opportunity to locate and identify state- and/or federally-listed or California Native Plant Society-ranked special-status plant species. Both the

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Natural Environment Study (NES) and the 2011 botanical survey report, prepared for the proposed project and provided to the CDFW, include information regarding type and timing of surveys, survey personnel, surveyor qualifications, and survey limitations.

Similar to the CDFW jurisdictional areas, it was determined that tabular format was the most effective way to disclose potential project-related impacts to special-status plants in the Revised Partial Draft EIR/EA. Maps depicting state- and/or federally-listed special-status plant locations and the project area of direct disturbance were provided to the CDFW on July 26, 2016.

CDFW Comment #11: Since the entire project footprint was not surveyed and the most recent set of plant surveys were conducted in 2011, the DEIR/EA should include additional preconstruction surveys to ascertain that no additional plant populations will be impacted by the Project. All plant surveys should occur at the appropriate time of the year within the direct Project footprint and designated buffer areas to ensure that no new undisclosed impacts occur as a part of the Project. The DEIR/EA should include additional mitigation measures in the event that some of the rare and/or listed plants are detected within the Project footprint and immediate vicinity.

Although the most recent botanical surveys took place in 2011, a sufficient amount of information regarding state- and/or federally-listed special-status plant populations has been gathered and additional surveys in areas previously surveyed is not warranted. Caltrans has conducted numerous surveys over an extended period of time which has allowed for the accurate establishment and evaluation of baseline conditions. As stated in the Revised Partial Draft EIR/EA, Caltrans would conduct pre-construction surveys for special-status plants in areas where access was not granted. These surveys would be conducted in accordance with the above mentioned special-status plant survey protocols. If special-status plant populations are identified during these pre-construction surveys, Caltrans would further evaluate potential project-related impacts. If it is determined that the proposed project would result in additional impacts to special-status plants, Caltrans would implement appropriate avoidance, minimization, and/or mitigation measures.

Listed and Rare Plants

CDFW Comment#12: Lake County stonecrop (Sedella Jeiocarpa) (LCS) is one of the most endangered plants in California with four or less relatively small extant populations. Per the 2011 Special-status Plant Survey Report, two populations of LCS were detected within the study area at Manning Flat and the vernal pool north of the SR 29 and Doten Road intersection.

Also present within the vernal pool areas of the study area are Burke's goldfield (Lasthenia burkei) (state and federally endangered) and few-flowered navarretia (Navarretia /eucocephala ssp. paucif/ora) (federally endangered, state threatened). There are very few populations of Burke's goldfield in Lake County, and these populations are genetically distinct from the populations in Sonoma County. The two populations of Burke's goldfield

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within the Project's footprint are the most significant natural populations of the species in the County, and are therefore of special significance. The two populations of few-flowered navarretia within the Project's impacted area appear to represent the core of the known distribution of the species, and are thus critical for protecting the taxon from extinction. Page 167 of the BA establishes that the role of oligolectic andrenid bees on Burke's goldfields pollination can be significant. Yet the BA determined that no significant impacts will occur because bees typically are located closer to the vernal pools, even though page 108 of the BA states that no specific surveys were conducted. This determination is not supported with survey data and could be problematic in areas were the new alignment encroaches toward the vernal pools (ex. Doten Road Flat). The DEIR/EA does not include any impact analysis about the potential impacts to oligolectic andrenid bees that could be present within the Project footprint and the indirect impacts to Burke's goldfields. The cumulative impact analysis of the project impacts to Burke's goldfield should also include the potential impacts caused by the disturbance of the oligolectic andrenid bees.

Approximately 130.1 acres of oligolectic andrenid bee nesting habitat is found within areas adjacent to the Burke's goldfields populations located within the project area. Of these 130.1 acres, the proposed project would result in permanent alteration of approximately 4.4 acres, most of which is outside the ideal flight distance of 200 ft (Ramp *et al.* 2006, Ramp *et al.* 2008, Thorp 1990). Therefore, the proposed project would potentially impact approximately 3% of suboptimal oligolectic andrenid nesting habitat found adjacent to the Burke's goldfields populations within the project area. Oligolectic andrenid bees are not the sole pollinators of the Burke's goldfields populations found within the project area and are likely not the dominant pollinator (Gilmore *et al.* 2012, Ramp *et al.* 2006, Thorp 1990, Thorp *et al.* 1998, USFWS 2014). The NES and BA provide additional information regarding other Burke's goldfields pollinators which include various insects. It was determined that the minor impacts to potential oligolectic andrenid bee habitat as a result of the proposed project would not affect Burke's goldfields. For these reasons, oligolectic andrenid bees were not discussed in the Revised Partial Draft EIR/EA.

CDFW Comment #13: Brandegee's eriastrum (Eriastrum brandegeeae) is a highly restricted rare plant species, with the most reliable and perhaps only true occurrence at and near the type locality near Borax Lake, which is highly threatened by human activities. The plants located within the Project area (Hesse Flat) are the shortest distance from the type locality of any other reports of Brandegee's eriastrum. These plants are very important to document and conserve because they may represent one of the only populations of an incredibly rare, restricted, and at-risk species. Although it is not disclosed in the DEIR/EA, based on the 2011 botanical surveys and additional maps, it appears that the new road will be substantially closer to the area where Brandegee's eriastrum is present. The DEIR/EA should include additional impact analysis for this plant species and its habitat.

The proposed four-lane expressway would be placed closer to areas where Brandegee's eriastrum is present. However, the proposed project would not result in direct or indirect impacts to this rare plant species. The identified populations of Brandegee's eriastrum are located outside of the project's area of direct disturbance, including utility relocation corridors. Additionally, the

proposed project would not alter the hydrology in the vicinity of the identified Brandegee's eriastrum populations. Special-status plant species, including Brandegee's eriastrum, that are to remain within and/or directly adjacent to the project area of direct disturbance would be designated as Environmentally Sensitive Areas (ESAs) and would be temporarily fenced off with high visibility fencing throughout all construction activities. The proposed project would not result in direct or indirect impacts to Brandegee's eriastrum and no additional impact analysis is warranted.

CDFW Comment #14: The DEIR/EA does not analyze potential road edge effects caused by the highway. These road edge effects are well documented and can cause impacts to ecosystems due to direct habitat loss; facilitated invasion of weeds, pests, and pathogens. Road construction may limit long-term site productivity of roadsides by exposing low nutrient subsoils, reducing soil water holding capacity, and compacting surface materials. Road construction also makes slopes more vulnerable to landslides and erosion, which in turn remove additional terrestrial wildlife habitat, degrade aquatic habitats and spread invasive species from roadsides into adjacent native communities. These edge effects are extremely important since the proposed Project will increase the highway footprint and encroach on the location where the vernal pools and rare plants are present. It is important to note that the existing vernal pools and associated plants are already subject to encroachment related stress and adding additional impacts could extirpate them from this area. Another road edge effect that is not included in the DEIR/EA is the increase of fire risk due to the roads.

Although the Revised Partial Draft EIR/EA does not include a specific section titled "Road Edge Effects", potential impacts related to road edge effects are discussed throughout the document in the respective resource sections.

The proposed project largely follows the existing alignment and therefore would not introduce traffic to areas not previously experiencing the presence of motor vehicles. Additionally, roads often provide fire breaks improving fire suppression efforts. The proposed project would construct a wider roadway creating a larger fire break. The proposed project would also decrease traffic congestion and improve emergency vehicle response times.

CDFW Comment #15: To protect the rare and listed plants present within the project vicinity the Department recommends that the use of herbicides is not allowed in the vicinity of any of the vernal pools present in this area during construction activities and routine maintenance activities.

Known ESAs, including special-status plant populations, located within Caltrans' right-of-way, are added to Caltrans Construction and Maintenance's district maps and databases. These maps and databases are then used to identify areas where construction and maintenance forces will implement precautionary measures to avoid impacts to resources of concern, including the restriction of herbicide use. Herbicides would not be used as a part of the proposed project nor

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will they be used during future construction or routine maintenance activities in areas which contain sensitive biological resources.

CDFW Comment #16: The Department disagrees with the DEIR/EA's assertion on page 2-85 that Bolander's Horkelia (Horkelia bolanden) "will grow outward away from the earthen embankment, resulting in only temporary impacts". Most of the plants present in the Project footprint are very sensitive and have very specific soil requirements. Disturbing the soils in conjunction with the other potential impacts disclosed in this letter has the increased potential to negatively impact the populations in the long term. The proposed Project should implement restoration and monitoring measures to ensure the recovery of the rare plants.

Twenty small populations of Bolander's horkelia were identified within the ESL, covering a combined area of approximately 40,018 sq. ft. (0.9 acre as stated in the Revised Partial Draft EIR/EA). The population in question is approximately 17,650 sq. ft. in size, of which approximately 5,561 sq. ft. would be directly impacted by the proposed project. Based on the topography and proximity to the new alignment, an additional 866[1] sq. ft. could be temporarily impacted due to micro changes in the amount of water flowing to or through the population. However, in response to CDFW's concerns, the 866 sq. ft. of temporary impact will now be considered a permanent impact. Thus, total impacts to Bolander's horkelia as a result of the proposed project would increase from 5,561 sc. ft. (0.1 acres) to 6,427 sq. ft. (0.12 acre). This represents a 13% loss of species and associated habitat within the ESL as opposed to 11%. The proposed project would not threaten genetic diversity or limit geographic extent of Bolander's horkelia. No avoidance, minimization, and/or mitigation measures are required to address this negligible increase in impacts.

Northern Volcanic Ash Flow Vernal Pools

CDFW Comment #17: The DEIR/EA identifies a potential significant impact to vernal pools, LCS and the other listed plant species due to the alteration of the local hydrology. The DEIR/EA states: "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." However, the DEIR/EA does not provide any evidence on how these features would be implemented, their capacities or potential for failure. The DEIR/EA provides no analysis to indicate that design features will be sufficient to eliminate potentially significant impacts to northern volcanic ash flow vernal pools and the highly sensitive plant species that are supported by these habitats.

[1] The Revised Partial Draft EIR/EA erroneously stated that the potential changes in hydrology "could potentially affect the remaining 0.02 acre." The document should have stated that the changes in hydrology "could result in potential temporary affects to 0.02 acre" as an additional 0.3 acre of this population would not be affected directly or indirectly.

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In July 2016, the Department received from Caltrans the "Level Spreaders Creating Sheetflow at Manning Flat (PM 25.2-25.7), Lake County-Route 29, PM 23.6-31.6, Highway Improvement Project, 01-2981U," (Caltrans 2015). The purpose of this document is to evaluate the feasibility and applicability of using Level Spreaders to ensure that Manning Flat continues to receive sheetflow to support existing sensitive species. The report was submitted to the Department's Senior Engineering Geologist and it was determined that the report does not have sufficient information to independently evaluate it. In addition to this, there is no hydrological analysis for the other locations where the rare and listed plants are present. Interpretation of aerial photographs indicates that hydrologic conditions of these locations are strongly influenced by the existing roadway.

With the implementation of the proposed avoidance, minimization, and mitigation measures the proposed project would not alter hydrological connectivity and function within and/or adjacent to the vernal pools which support Lake County stonecrop, Burke's goldfields, and few-flowered navarretia, and therefore, would not result in the take of these listed species. In accordance with Section 7 of the Federal Endangered Species Act (FESA), the US Fish and Wildlife Service has concurred with Caltrans' finding of *may affect, not likely to adversely affect* for these listed species. The Revised Partial Draft EIR/EA includes a discussion of the purpose of the flow spreader and a description of the functional components. The determination that the implementation of the flow spreader system would avoid indirect impacts to the listed plant species is reinforced by the supporting technical documents which are part of the project administrative file and were made available for review during the public review and comment period.

CDFW Comment #18: The new alignment will introduce a much larger impervious surface that will change the existing conditions. The Department requests that Caltrans coordinates the preparation of a hydrology report with the Department to ensure that the report contains sufficient information to ascertain project impacts.

Caltrans professional engineers are responsible for the design of a system that functions properly and meets industry standards. Caltrans Environmental and Engineering staff determined that the analysis in the BA and the flow spreader analysis document provided sufficient information to evaluate potential project-related impacts.

CDFW Comment #19: On page 2-117, Section 2.19.4, the DEIR/EA states that flow spreaders will be designed to handle a 100-year rain event. The DEIR/EA should disclose the potential impacts resulting from a larger event and how it may impact the long term viability of Manning Flat and the listed and rare plants present within the vernal pool. If local hydrology is modified by the Project, it should be treated as a significant impact to LCS, and Brandegee's eriastrum since altering the patterns could cause the collapse of their population, and thus eliminating a significant number of their populations.

The analysis verified that a flow spreader system is feasible at replicating the existing sheet flow conditions by successfully creating uniform-depth, unconcentrated, low velocity, overland flow

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drainage patterns for the 100-year rain event. A flood having a 1 percent chance of being exceeded in any given year, is used as the standard flood by FEMA and has been adopted by many agencies for flood hazard analysis to comply with regulatory requirements. This design flood is reasonable and applicable for analysis of the potential direct and indirect impacts at Manning Flat.

In addition to the flow spreader system, the following existing elements would naturally and effectively manage any additional stormwater runoff created by the proposed four-lane expressway during a larger storm event: 1) the existing volcanic soil that is found upslope of the vernal pools contains minimal fine sediment and is well-draining as evidenced by the presence of vegetation that is not tolerant of saturated soils; 2) the distance between the vernal pools and the proposed roadway alignment ranges from 200 ft. to 465 ft. and the area is densely vegetated which helps absorb precipitation and slow velocity; 3) there is little to no slope below the proposed flow spreader system in the vernal pool areas which helps slow velocity and allows sediment to settle; and 4) an existing man-made ditch of approximately 32" wide by 15" deep by 0.4 mile in length, that is located approximately halfway between the proposed alignment and the vernal pools and runs parallel to the location of the proposed flow spreader system would capture most, if not all, runoff not already absorbed. The ditch conveys collected upslope runoff into an unnamed drainage feature that bisects Manning Flat. If additional water arrived to the vernal pools as a result of a storm greater than a 100-year rain event, the water would likely be filtered by the natural elements described above. Because these vernal pools have a maximum size based on the size of the perched water table and exit point elevations, a large volume of water, without great velocity to carry sediment or induce erosional forces, would not impact the vernal pools.

CDFW Comment #20: The DEIR/EA does not include any information about the existing water quality conditions in Manning Flat or any other vernal pool present within the Project footprint. It is unknown if there are any issues with water quality that could interact with the vernal pools and a new wider highway. The DEIR/EA should analyze the existing conditions and compare them with the potential pollutants that could enter the vernal pool from the new road. This is important to ensure that pollutants will not have negative effects on the plants, vernal pools, and other animal species present within the Project footprint. Characterizing the existing hydrology and water quality is especially important at Manning Flat, since the proposed Project includes the construction of a four lane highway with soft shoulders and a median immediately upstream of Manning Flat.

The Revised Partial Draft EIR/EA did not discuss the existing water quality conditions of the vernal pools present within the proposed project footprint because it was determined that the project would not result in the deposit of pollutants at a higher level than what is currently experienced. The water quality of the vernal pools has been described in supporting documents. Additionally, it is Caltrans' standard practice to incorporate permanent Best Management Practices (BMPs) related the treatment of roadside runoff as appropriate. Incorporation of BMPs is coordinated with the Regional Water Quality Control Board (RWQCB) to prevent water pollution. The proposed project would not result in impacts to water quality that would lead to significant impacts to special-status plant species.

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CDFW Comment #21: The DEIR references the original EIR for water quality analysis. The Department is concerned that this analysis does not cover areas where the alignment was modified from the project as originally proposed.

The alignment has not been modified from what was discussed/evaluated in the 2007 Draft EIR/EA. Alternative D was included in the original water quality analysis.

CDFW Comment #22: On page 2-116, section 2.19.4, the DEIR/EA proposes to construct rock-lined ditches upslope from the proposed highway, but there are no measures to contain any sediments or pollutants originated on the highway that could wash down the slope.

All roadside runoff in this area would be directed to overside drains and drop-inlets that would then convey water to the flow spreader system. After the water passes over the flow spreader weirs, it would enter an area lined with rock (energy dissipaters) to reduce flow velocity and control erosion. The water would then sheet flow onto the existing adjacent vegetated buffer area that is approximately 200 feet to 465 feet from the vernal pools. This area provides sufficient terrain, flow length, and dense vegetation for treatment. The existing microdams in the land features would collect the runoff and increase the residence time and "contact time" of runoff with the vegetation to successfully provide biofiltration of the constituents and infiltration.

CDFW Comment #23: The Department is concerned that as a result of the Project Manning Flat and its associated plants will not be a self-sustainable habitat and will require constant human intervention to persist. The DEIR/EA should include additional mitigation that will ensure that the vernal pools and the rare and listed species persist over time.

As discussed in the Revised Partial Draft EIR/EA, Alternatives C1, C2, and C3 have been eliminated from further analysis as they would all result in the direct modification and/or destruction of the vernal pools and associated plants at Manning Flat. The proposed Alternative D alignment diverges south of the existing highway at Manning Flat avoiding direct impacts to these vernal pools and associated plants. Indirect effects would be avoided with the implementation of the proposed avoidance, minimization, and mitigation measures that would 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. 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.

Long Term Monitoring

CDFW Comment #24: On page 2-116, section 2.19.4 the DEIR/EA only includes the monitoring of the flow spreaders during raining events occurring the first two winters and then annually after that. Monitoring the flow spreaders alone will not fully identify impacts to the vernal pools and rare and listed plants. Annual plant numbers in general, and more

specifically vernal pool plant populations, can fluctuate wildly from year-to-year, depending on the seed production in previous years, germination of seedlings and environmental conditions (e.g., timing and amount of rainfall) (Fischer and Matthies 1998; Harrison et al. 1999). It could take years to detect significant effects of the Project that could result in local extinction of LCS, Burke's goldfield and result in the long term of take of the other listed plant species. Significant impacts to Brandegee's eriastrum could also occur due to the long term effects of the impacts described in this letter.

The DEIR/EA should include a long term monitoring plan that includes the inspection of the spreaders, water quality, and hydrology of all the vernal pools present within the Project footprint. The long term monitoring should also include a survey of the vernal pool plant populations and Brandegee's eriastrum to ascertain that no impacts to the vernal pools and rare and listed plants have occurred. The Department recommends that the vernal pools and plants are monitored for no less than 10 years. The Department would like to reiterate previous offers to assist Caltrans with the extended monitoring efforts. The long term monitoring plan should also establish funding sources and include adaptive management in the event that it is determined that the vernal pools and the plants present are being impacted due to the construction of the Project.

The proposed project would avoid direct effects to Lake County stonecrop, Burke's goldfields, few-flowered navarretia, and associated vernal pools. In addition, indirect effects would be avoided with the implementation of the proposed avoidance, minimization, and mitigation measures, including the flow spreader drainage system. At this preliminary stage, Caltrans proposes to maintain and monitor the drainage system to ensure that it operates as designed. As indicated in the Revised Partial Draft EIR/EA, due to funding constraints it is anticipated that the Lake 29 Improvement Project would be constructed in three distinct phases. The segment which includes the Manning Flat area is currently unfunded for construction and Caltrans does not anticipate that funding will become available for at least a decade. If and when construction funding is programmed, Caltrans would anticipate the need to re-evaluate the habitat and plant populations associated with that segment due to the lapse in time. It is at that juncture, when the segment (project) is programmed for funding, that Caltrans would re-evaluate the segment using the best available scientific information, consult with the appropriate agencies, and make the appropriate determination with respect to CEQA, NEPA, and other applicable laws. Caltrans would then determine if additional avoidance, minimization, and/or mitigation measures would be required with respect to that segment. Caltrans appreciates the CDFW's offer to partner in the monitoring of vernal pools in the vicinity of the highway and looks forward to discussing this issue when the segment in question is programmed for construction.

Conclusion

Caltrans would like to thank the CDFW for your review and comment on the Revised Partial Draft EIR/EA for the Lake 29 Improvement Project. If you have any questions or concerns regarding the responses included in this letter please contact me by telephone at (530) 225-3174 or by email at chris.quiney@dot.ca.gov. You may also contact Emiliano Pro, Project Coordinator, at (530) 225-3515 or emiliano.pro@dot.ca.gov.

Sincerely,

Chris Quiney

Chris Quiney
Branch Chief – R1 Branch
North Region Office of Environmental Management

cc: Caltrans:
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 6, 2016

Chris Quiney
California Department of Transportation, District 2
North Region Office of Environmental Management - R2
1657 Riverside Drive (MS-30)
Redding, CA 96001

Subject: Revised Partial Draft Environmental Assessment/Environmental Impact Report (EA/EIR) for the Lake 29 Improvement Project, Lake County, California

Dear Mr. Quiney:

The Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

We reviewed the previous Draft Environmental Assessment/Environmental Impact Report for this project and provided comments on August 22, 2007. We provided recommendations on context sensitive design, access issues, coordination of transportation projects, and historic and cultural resources. Our previous comments have been addressed through additional analysis and documentation in this revised EA/EIR.

EPA previously participated in this project as outlined in the *2006 National Environmental Policy Act/Clean Water Act (CWA) Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU)*, and provided agreement on the purpose and need, criteria for selection of the range of alternatives, and the range of alternatives checkpoints. We understand that the NEPA/404 integration process is no longer being implemented for this project, due to fewer project impacts to Waters of the U.S. than originally anticipated. We appreciate the past coordination efforts and the efforts made by the project development team to minimize impacts to threatened and endangered species and other resources through the alternatives development process.

We commend Caltrans on efforts to minimize and mitigate impacts to biological resources through habitat mitigation, the use of box culverts, and provision of wildlife undercrossings. We also recognize the robust induced growth analysis that is included in the document. We encourage the project development team to continue to look for opportunities to minimize impacts to resources and the community and to implement context sensitive design as the project planning and design process continues.

We appreciate the opportunity to review the document. When the final environmental document is released for public review, please notify us that it is available. If you have any questions, please contact Carolyn Mulvihill at 415-947-3554 or mulvihill.carolyn@epa.gov.

Sincerely,

for Appleton
for

Connell Dunning, Transportation Team Supervisor
Environmental Review Section

cc: Kellie Berry, U.S. Fish and Wildlife Service
Will Ness, U.S. Army Corps of Engineers

Response to Comments from the U.S. Environmental Protection Agency (USEPA):

See the Caltrans' letter to the USEPA above which provides a response to the comments submitted in 2007 regarding the Draft EIR/EA and the comments submitted in 2016 regarding the Revised Partial Draft EIR/EA.

Pacific Gas and Electric Company

DAVID L. THOMAS, AICP
SENIOR PLANNER
ENVIRONMENTAL MANAGEMENT

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June 24, 2016

California Department of Transportation
Attn: Chris Quiney
Caltrans District 2
1657 Riverdale Drive, MS-30
Redding, CA 96001

SUBJECT: Lake 29 Improvement Project: Revised Partial Draft EIR

Dear Mr. Quiney,

Thank you for the opportunity to review the revised Partial DEIR/EA for the Lake 29 Improvement Project.

Under the "Utility Relocation" Alternative D the document states "*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 voltage in excess of 50 kV.*" The following additional sentence should be added stating "*In addition special permitting is not required for relocations which have been studied where a final Negative Declaration or EIR finds no significant unavoidable environmental impacts.*"

In this section it also states "*PG&E would need to relocate approximately 27 electric transmission poles and 142 electric distribution poles*". Though final design is not yet complete a more accurate count regarding the poles relocations would be approximately 8 electric transmission poles and approximately 75 electric distribution poles.

Sincerely,

David Thomas, Senior Planner
Pacific Gas and Electric Company

Response to Comments from the Pacific Gas and Electric Company (PG&E):

See the Caltrans' letter to PG&E above which provides a response to the comments submitted in 2010 regarding the Draft EIR/EA and the comments submitted in 2016 regarding the Revised Partial Draft EIR/EA.

Redwood Valley Little River Band of Pomo Indians
3250 ROAD I / REDWOOD VALLEY, CALIFORNIA 95470 (707) 485-0361 FAX (707) 485-5726

July 20, 2016

California Department of Transportation
Attn: Chris Quiney
1657 Riverside Dr., MS-30
Redding, CA 96001

RE: Lake 29 Improvement Project

Dear Mr. Quiney,

We have reviewed the information you provided regarding the proposed Lake 29 Improvement Project and find that none of the area included in the plan is within the cultural territory of the Redwood Valley Little River Band of Pomo Indians.

We appreciate your notification. Thank you.

Sincerely,

Debra Ramirez
Tribal Chairperson
Redwood Valley Little River Band of Pomo Indians

CC: File

Response to Comment from the Redwood Valley Little River Band of Pomo Indians

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Redwood Valley Little River Band of Pomo Indians
Debra Ramirez
Tribal Chairperson
325 Road I
Redwood Valley, CA 95470

Dear Ms. Ramirez

Thank you for providing comments on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the Lake 29 Improvement Project.

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/.

If you have any questions about the environmental process, you may contact me at (530) 225-3174. Specific questions regarding the project design can be directed to the Project Manager, Jaime Matteoli, at (707) 441-2097.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch
Enclosure

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Quiney, Chris D@DOT

From: Chuck Williams <chukwil@yahoo.com>
Sent: Thursday, July 07, 2016 3:48 PM
To: Quiney, Chris D@DOT
Subject: 01-LAK-29-PM 23.6/31.6

Chris Quiney,

Regarding the Hwy 29 widening project between Lower Lake and Kelseyville: a better job of finding and protecting the plants of concern should be done.

Sedella leiocarpus , has only 4 populations left.
Lasthenia burkei, appears to be genetically different than other populations.
Navarretia leucocephala ssp. pauciflora grows only locally.
The only other population of Eriastrum bandagea in lake co. is very threatened .
Horkelia bolanderi, Arctostaphlos manzanita ssp.elegans, Limnanthes floccosa ssp.floccosa, Pleurogon davii, these should be expected in the near-road habitats and mitigated for.

Caltrans surveys are rather old and need to re redone.

Cost comparisons should be made between the planned mitigations and purchase and preservation of offsite populations of plants of concern.

Hydrologic studies for and follow-up monitoring of mitigations should be included.

Thank you, Chuck WIliams, Sanhedrin Chapter CNPS , Conservation Chair.

1

Response to Comments from the California Native Plant Society (CNPS):

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 2
1657 RIVERSIDE DRIVE
PHONE (530) 225-3174
FAX (530) 225-3019
TTY 711
www.dot.ca.gov/dist2

*Serious Drought.
Serious drought.
Help save water!*

November 10, 2016

01-LAK-29-PM 23.6/31.6
EA: 2981U
EFIS: 0100000090
Lake 29 Improvement Project

Chuck Williams
Sanhedrin Chapter CNPS
725 Vichy Hills Dr.
Ukiah, CA 95482

Dear Mr. Williams,

Thank you for providing comments on the Revised Partial Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed Lake 29 Improvement Project.

Caltrans has conducted numerous surveys over an extended period of time which has allowed for the accurate establishment and evaluation of baseline conditions. It has been determined that a sufficient amount of information regarding state- and federally-listed special-status plant populations has been gathered and additional survey efforts in areas already surveyed are not warranted.

Caltrans would, however, conduct pre-construction surveys for special-status plants in areas where access was previously restricted by private landowners. These surveys would be conducted in accordance with the California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009) and the U.S. Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). Similarly, a final attempt to locate Oval-leaved viburnum (*Viburnum ellipticum*) would be conducted during the plant's flowering period prior to construction. If additional special-status plant populations are identified during these pre-construction surveys, Caltrans would further evaluate potential project-related impacts in accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). If it is determined that the proposed project would result in additional impacts to special-status plants, Caltrans would implement appropriate avoidance, minimization, and/or mitigation measures as applicable in consultation with applicable regulatory .

The Lake 29 Improvement Project Final EIR/EA is expected to be available in December 2016, and will be located at http://www.dot.ca.gov/dist1/d1projects/lake29/. If you have any questions about the project or the environmental process, you may contact me at (530) 225-3174.

Sincerely,

Chris Quiney, Branch Chief
Office of Environmental Management – R1 Branch

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

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.

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 navarretia, 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.

4.7 Lake 29 Technical Advisory Committee

Early in the planning phases, a Technical Advisory Committee (TAC) was formed, composed of representatives from Caltrans, the California Highway Patrol, and various local agencies. The Lake 29 TAC was composed of the following members:

- Dave Carstensen, Caltrans
- Richard Coel, Lake County Community Development Department
- Philip Dow, Consultant, Dow and Associates
- Bob Galusha, Interim Engineer, City of Clearlake
- Scott Harter, Engineer, City of Lakeport
- Lt. Dane Hayward, California Highway Patrol
- Irwin Kaplan, Community Development Director, City of Clearlake
- Richard Knoll, Lakeport Community Development Department
- Gerry Shaul, Lake County Director of Public Works
- Mark Wall, Transit Manager, Lake County Transit Authority

4.8 FHWA Staff, Caltrans Staff, and External Partners/Stakeholders

FHWA Staff

- Lanh Phan, FHWA
- Gary Sweeten, FHWA

Caltrans Staff

- Eva Begley, Biology
- Larry Brohman, Traffic Study/Transportation
- John Carson, Traffic Operations
- Robert Close, Right of Way
- Chris Collison, Biology
- Ed Cramer, Designer
- Santa Finney, Project Analyst
- Jeff Haney, Project Archaeologist
- Jennifer Heichel, Project Environmental Coordinator
- Jim Hibbert, Landscape Architect
- Mike Holmes, Right of Way Engineering

- Steven Hughes, Design, Branch Chief
- Rex Jackman, Transportation Planning
- Wesley Johnson, Designer
- Jeremy Ketchum, Environmental Senior
- Elisa King, Designer
- Lucy Kostrzewa, Hydraulics Senior
- Valency Langtry, Designer
- Fernando Manzanera, Hydraulics
- Anmarie Medin, Historical Archaeologist
- Cherilyn Meigs, Biology
- Ralph Martinelli, Traffic Safety
- Jaime Matteoli, Project Manager
- Aaron McKeon, Community Impacts Specialist
- Julie Owen, Biology
- Paula Pavlich, Assistant Project Manager
- Emiliano Pro, Project Environmental Coordinator
- Chris Quiney, Environmental Senior
- Kimberly Rudolph, Right of Way
- Erik Schwab, Project Biologist
- Cynthia Smith, Traffic Forecasting and Modeling
- Mark Sobota, Designer
- Gail St. John, Architectural Historian
- Sharon Tang, Air Quality Specialist
- Benjamin Tam, Noise Specialist
- William Walker, Right of Way
- James Williamson, Landscape Architect
- Cheryl Willis, Deputy District Director, Transportation Planning
- Bruce Wilson, Right of Way Senior
- Jennifer Wisniewski, Right of Way Project Coordinator
- Mike Yancheff, Project Manager
- Shanna Zahner, Mitigation Specialist
- Saeid Zandian, Noise Specialist

External Partners/Stakeholders

- Donald Arnold, Scotts Valley Band of Pomo
- Elizabeth Baer, CDFW
- Darin Beltran, Koi Nation of Northern California
- Kelly Berry, USFWS
- Rob Brown, Lake County Board of Supervisors
- Gene Cooley, CDFW
- Lisa-Davey Bates, Lake County/City APC
- Scott Deleon, Lake County Public Works
- Nancy Haley, USACE
- Jeb Haynes, AT&T
- Holly Herod, USFWS
- Anthony Jack, Big Valley Rancheria of Pomo Indians
- Ross L. Kauper, Lake County Air Quality Management District
- Dave Kelly, PG&E
- Elizabeth Lee, CVRWQCB
- Nancy Levin, USEPA
- Todd Mansell, Lake County Public Works
- Mike McAffee, AT&T
- David McCloud, Lower Lake Rancheria Koi Nation
- Tim Miles, California Department of Toxic Substances Control
- Mike Monroe, USEPA
- Gabriel Ray, Scotts Valley Band of Pomo Indians
- Ed Robey, Lake County Board of Supervisors
- Sarah Ryan, Big Valley Rancheria of Pomo Indians
- Jeff Smith, Lake County Board of Supervisors
- David Thomas, PG&E
- Laura Whitney-Tedrick, USACE
- Joann Wright, Scotts Valley Band of Pomo

Chapter 5 List of Preparers

The following Caltrans staff and consultants contributed to the preparation of the 2007 Draft EIR/EA.

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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.. Visual Impacts Analysis review.

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Jeremy Ketchum, Senior Environmental Planner. B.S. Environmental Policy Analysis and Planning, University of California at Davis; MS Transportation Management, San Jose State University. Environmental document oversight.

Aaron McKeon, Associate Environmental Planner. M.S. Regional Planning, Cornell University. Community Impact Analysis.

Anmarie Medin, Associate Environmental Planner - Archaeologist. M.A., Cultural Resources Management, Sonoma State University.. Professionally Qualified Staff: Principal Investigator, Historical Archaeology; Co-Principal

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URS Corporation

Bill Martin, Senior Scientist. B.S., Oceanography, Humboldt State University. Served as EIR/EA project manager.

Mark Mazzola, Environmental Planner. M.S., Community and Regional Planning, University of Texas at Austin. Assisted in coordination/preparation of EIR/EA.

Illingworth and Rodkin

James Reyff, Project Scientist/Project Manager. Conducted noise measurements, traffic noise modeling tasks, and report preparation.

Joe McGloin, Staff Scientist. Traffic noise measurements, data analysis, and preparation of graphics.

Field Staff included Joe McGloin of Illingworth & Rodkin, Inc. along with various field technicians from Denise Duffy & Associates.

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Rebecca L. Silva, Senior Project Scientist. B.S., Soil and Water Science, University of California at Davis.

WRECO

John Wm Mountain, P.E., Principal. Floodplain Report [Prepared by WRECO, submitted by PSOMAS].

PSOMAS

Robert D. Blume, Registered Civil Engineer; Preliminary Drainage Report.

Teresa J. Lopes, Registered Civil Engineer; Draft Storm Water Data Report.

Haygood and Associates

Leah Haygood, Landscape Architect. Ph.D. Visual Impact Assessment [Prepared by Haygood and Associates, submitted by URS Corporation].

Charlene Saito, Production Manager. B.S., Landscape Architecture. Assisted in preparation of Visual Impact Assessment.

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

Aaron McKeon, Associate Environmental Planner. M.S. Regional Planning, Cornell University. Contribution: Community Impact Analysis.

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Jennifer M. White, Landscape Associate. B.S. Landscape Architecture, California State Polytechnic University, Pomona. 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. Contribution: Visual/Aesthetics analysis review.

Jeff Haney, Associate Environmental Planner (Archaeology). M.A. Cultural Resource Management, California State University, Sonoma. Professionally Qualified Staff: Principal Investigator, Prehistoric Archaeology. Contribution: cultural resource compliance documents.

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Shanna Zahner, Associate Environmental Planner (Natural Sciences). B.S. Wildlife Biology, Kansas State University. Contribution: biological analysis and mitigation development.

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Emiliano Pro, Associate Environmental Planner. B.S. Environmental Science (Wilderness Management), California State University, Humboldt. Contribution: environmental document preparation and review.

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Amber Kelley, Environmental Office Chief. Associate in Arts Degree Business and General, Shasta Community College, Redding, California. Contribution: environmental document oversight.

Brett Benson, Right of Way Agent. Contribution: Relocation Impact Memorandum

Cynthia Smith, Transportation Engineer. B.S. Civil Engineering. Contribution: Traffic Analysis

Saeid Zandian-Jazi, Transportation Engineer – Traffic Noise Analyst. B.S. Civil Engineering, California State University, Sacramento. Contribution: Noise Study Report Revalidation

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 Final Environmental Impact Report/Environmental Assessment (EIR/EA). In addition, private land owners who provided comments on the Draft EIR/EA and the Revised Draft EIR/EA will be provided access to an electronic version of this Final EIR/EA.

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Chapter 7 References

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Appendix A NEPA/404 Checkpoint Requests and Responses

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
NORTH REGION ENVIRONMENTAL BRANCH
2389 GATEWAY OAKS DRIVE
SACRAMENTO, CA 95833
PHONE (916) 274-0621
FAX (916) 274-0648

Flex your power!
Be energy efficient!

June 30, 2006

01-Lak-29
Lake 29 Expressway Project
EA 01-2981U
(USACE # 200300156)

Mr. Bill Guthrie
Regulatory Branch
United States Army Corps of Engineers
1325 J Street, Room 1480
Sacramento, CA 95814

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

Ms. Nancy Levin
United States Environmental Protection Agency
75 Hawthorne Street (CED-2)
San Francisco, CA 94105

Dear colleagues:

The purpose of this letter is to request your formal response to the enclosed *Purpose and Need*, *Range of Alternatives*, and *Criteria for the Selection of Project Alternatives* for the Lake 29 Expressway Project in accordance with the April 2006 Memorandum of Understanding (MOU) for the implementation of the NEPA/404 Integration Process. This project is located in Lake County on State Route 29 between the communities of Lower Lake and Kelseyville (PM 23.6 to 31.6/KP 38.3 to 50.9).

The NEPA/404 Integration Process for this project was formally initiated in February of 2003 under the previous MOU. Under the 1994 MOU, integration of the NEPA/404 process was required for all proposed federal aid projects in California that were likely to have impacts greater than 5 acres to special aquatic sites or other waters of the U.S. Under the new MOU, integration is only required for projects that require the preparation of an Environmental Impact Statement (EIS). Although the new MOU does not require integration for projects for which an Environmental Assessment (EA) will be prepared, we value your feedback and have therefore elected to seek your formal response to these "checkpoint proposals" under the new MOU.

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June 30, 2006
Page 2

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

- Alternative A – No Build
- Alternative B – Passing Lanes (this alternative would construct 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). *Please note that this alternative is no longer under consideration.*
- Alternative C1 – 4 Lane Expressway (this alternative would widen to a four-lane expressway on the existing centerline and upgrade the existing non-standard geometric features).
- Alternative C2 – 4 Lane Expressway (this alternative shifts the proposed C1 centerline 30 ft to the north of the existing centerline).
- Alternative C3 – 4 Lane Expressway (this alternative shifts to proposed C1 centerline 30 ft to the south of the existing centerline).

Following the first NEPA/404 meeting in March of 2003, another expressway alternative was designed. Alternative D (or the "Avoidance Alternative") was specifically designed to avoid environmental resources and to reduce project costs by reducing the amount of cut and fill required.

There have been three NEPA/404 coordination meetings since the first meeting in 2003 (June 2005, December 2005, and April 2006). The primary purpose of these meetings has been to obtain formal concurrence on the *Purpose and Need*, *Range of Alternatives*, and *Criteria for the Selection of Project Alternatives*. At our December 14, 2005 meeting, it was informally agreed by the agencies in attendance that the Passing Lane Alternative (Alternative B) could be dropped from further consideration, as it does not meet the Purpose and Need of the project. The environmental document will include a section on alternatives eliminated from further consideration and a thorough discussion of the reasons for their elimination.

Attached you will find the *Purpose and Need*, *Range of Alternatives*, and *Criteria for the Selection of Project Alternatives*. At this time, we are seeking your formal response to these checkpoint proposals pursuant to the April 2006 MOU[1]. In accordance with the MOU, we would appreciate your response to these checkpoint proposals within 30 calendar days or by August 4, 2006.

[1] USACE and USEPA will "Agree /Disagree" on the *Purpose and Need*, *Range of Alternatives*, and *Criteria for the Selection of Project Alternatives*. USFWS will "Comment" on the *Purpose and Need* and "Agree/Disagree" on the *Range of Alternatives* and *Criteria for the Selection of Project Alternatives*.

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June 30, 2006
Page 3

Thank you again for your assistance and participation. We will be contacting you shortly to arrange a date for our next NEPA/404 meeting. If you have any questions or wish to discuss any of the enclosed documents, please feel free to contact me at (916) 274-0621. You may also contact Jennifer Heichel at (916) 274-0566.

Sincerely,

JEREMY KETCHUM
Chief, Office of Environmental Management, S1

c: Michael E. Aceituno, National Marine Fisheries Service
Susan Boring, National Marine Fisheries Service
Gene Cooley, California Department of Fish and Game
Liam Davis, California Department of Fish and Game
Phil Dow, Mendocino Council of Governments
Michael Monroe, United States Environmental Protection Agency
Lanh Phan, Federal Highway Administration
Kenneth Sanchez, United States Fish and Wildlife Service
Gary Sweeten, Federal Highway Administration
Laura Whitney, U.S. Army Corps of Engineers

"Caltrans improves mobility across California"

STATE OF CALIFORNIA –BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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Flex your power!
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October 24, 2006

01 -Lak-29
Lake 29 Expressway Project
EA 01 -2981U
(USACE # 200300156)

Ms. Laura Whitney
Regulatory Branch
United States Army Corps of Engineers
1325 J Street, Room 1480
Sacramento, CA 958 14

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

Ms. Nancy Levin
United States Environmental Protection Agency
75 Hawthorne Street (CED-2)
San Francisco, CA 94105

RE: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project

Dear colleagues:

The intent of this letter is to provide a "clean copy" of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project that have been provided in previous electronic transmittals.

On June 30th, 2006 copies of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives were sent to your respective agencies with the intent to receive responses per the NEPA 404 integration process. Phone conversations subsequent to this request revealed that agreement on the existing Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives could not be provided until outstanding concerns were addressed. A NEPA/404 meeting was held August 16th, 2006 and comments were taken on prospective changes to the NEPA/404 documents. In addition, substantial discussion ensued on potential impacts to special status plants in the Manning Flat area.

On September 14th, 2006 revisions to the Purpose and Need were provided via e-mail to each of your agencies. The Purpose and Need was condensed by removal of the extensive background information that was included in the previous draft. The information removed is still germane to the project and will still appear in the environmental document as necessary.

On September 21st, 2006 revisions to the Range of Alternatives were provided via e-mail pursuant to comments received at the August 16th NEPA/404 meeting. The primary change was to include separate discussions for each alternative (C1-3 and D). In addition, on the same date Caltrans provided a response to a July 3rd, 2006 letter from USFWS. The response to USFWS provided a strategy for the study of potential effects to three federally endangered species: Burke's goldfields (Lasthenia burkei), Lake County stonecrop (Sedella leiocarpa), and few-flowered navarretia (Navarretia leucocephala ssp.

Pauciflora). Further, the letter indicated that in the Manning Flat area Caltrans would realign the highway away from any identified location of the endangered species.

On October 11th, 2006 EPA provided suggested language to be included in the Range of Alternatives allowing for flexibility in the range of alternatives, as more information becomes known about potential impacts.

The suggested edits were incorporated into the Range of Alternatives and sent to each of the NEPA 404 agencies on October 18th, 2006 via e-mail. The section titled "Special Considerations" includes all of the new language. The section states that further modifications to the alternatives may be necessary as a result of the studies to be conducted for the Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. Caltrans is currently working on a modification that is intended to eliminate potential indirect impacts at Manning Flat for Alternative D. The added language should provide enough assurance to allow for agreement on the Alternatives while we work on the details of this modification and any future modifications, if the additional surveys (identified in the September 21 memo to USFWS) determine additional threats to the existence of these species.

Attached is a "clean copy" of the final Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. This "clean copy" provides all three of the edited documents thereby representing the entire NEPA/404 checkpoint proposal request.

EPA, in an October 20th, 2006 e-mail message, indicated that with this transmission they would be able to provide agreement on the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. Please let us know as soon as possible if you have any further questions regarding the Purpose and Need and/or Range of Alternatives, as we are over 30 days since our last submittal of the Purpose and Need and Range of Alternatives.

Sincerely,

JEREMY KETCHUM, Chief
North Region Environmental Management, Branch S1

C : Electronic copy only:
Susan Boring, National Marine Fisheries Service
Gene Cooley, California Department of Fish and Game
Cori Gray, California Department of Fish and Game
Phil Dow, Mendocino Council of Governments
Michael Monroe, United States Environmental Protection Agency
Mary Hammer, United States Fish and Wildlife Service
Lanh Phan, Federal Highway Administration
Gary Sweeten, Federal Highway Administration

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

December 21, 2006

Regulatory Branch (200300156)

Jeremy Ketchum
Chief, California Department of Transportation
Office of Environmental Management, S-1
2389 Gateway Oaks Drive, 1st floor
Sacramento, California 95833-4231

Dear Mr. Ketchum:

I am responding to your letter dated October 24, 2006, requesting the Corps agreement on the Purpose and Need, as well as the Alternatives Selection Criteria and the Range of Alternatives for the State Route 29 Highway Project pursuant to the 2006 National Environmental Policy Act/Clean Water Act (CWA Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU).

After reviewing your letter along with the enclosures the Corps agrees with the revised Purpose and Need statement submitted in the September 14, 2006 email. In addition, the Corps agrees to both the Selection Criteria and Range of Alternatives, which allow for modifications that could be made to the alternatives as results of the plant surveys become available.

Any future modifications made to the alternatives should also ensure that the alternatives avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternative to the filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

The Corps accepts the privilege of becoming a cooperative agency. Once we receive the environmental documentation along with permit application and proposed mitigation plan we will start processing a Department of Army Individual Permit for the proposed project.

-2-

Please refer to identification number 200300156 in any correspondence concerning this project. If you have any questions, please write Ms. Laura Whitney at the letterhead address or email *Laura.A.Whitney@usace.army.mil*, or telephone 916-557-7455.

Sincerely,

L. Whitney

Laura Whitney
Project Manager

Enclosures

Copies furnished without enclosures:

Lahn Phan, Federal Highway Administration, 650 Capitol Mall, Suite 4-100, Sacramento, California 95814
Nancy Levin, U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, CED-2, San Francisco, California 94105-3901
Holly Herod, U.S. Fish and Wildlife Service, Sacramento Valley Branch, 2800 Cottage Way, Room W-2605, Sacramento, California 95825
Michael E. Aceituno, National Marine Fisheries Services, 650 Capitol Mall, Suite 8-300, Sacramento, California 95814-4706

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3, ENVIRONMENTAL MANAGEMENT
2389 GATEWAY OAKS DRIVE
SACRAMENTO, CA 95833
PHONE (916) 274-0621
FAX (916) 274-0648
TTY (530) 741-4509

Flex your power!
Be energy efficient!

December 29, 2006

01 -Lak-29
Lake 29 Expressway Project
EA 01 -2981U
(USACE # 200300156)

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

RE: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project

Dear Ms. Herod:

The purpose of this letter is to provide revised mapping for the Lake 29 Expressway Project and to request your formal response to the enclosed *Purpose and Need, Range of Alternatives*, and *Criteria for the Selection of Project Alternatives* in accordance with the April 2006 Memorandum of Understanding (MOU) for the implementation of the NEPA/404 Integration Process. This proposed project is located in Lake County on State Route 29 between the communities of Lower Lake and Kelseyville (PM 23.6 to 31.6/KP 38.3 to 50.9).

On June 30th, 2006 copies of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives were sent to your agency with the intent to receive a response per the NEPA/404 MOU integration process. Phone conversations subsequent to this request revealed that agreement on the existing Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives could not be provided until outstanding concerns were addressed. A NEPA/404 meeting was held August 16th, 2006 and comments were taken on prospective changes to the NEPA/404 documents and project features. In addition, substantial discussion ensued on potential impacts to special status plants in the Manning Flat area.

On September 14th, 2006 revisions to the Purpose and Need were provided via e-mail to your agency. The Purpose and Need was condensed by removal of the extensive background information that was included in the previous draft. The information removed is still germane to the project and will still appear in the environmental document as necessary.

On September 21st, 2006 revisions to the Range of Alternatives were provided via e-mail pursuant to comments received at the August 16th NEPA/404 meeting. The primary change was to include separate discussions for each alternative (C1-3 and D). In addition, on the same date Caltrans provided a response to a July 3rd, 2006 letter from USFWS. The response to USFWS provided a strategy for the study of potential effects to three federally endangered species: Burke's goldfields (Lasthenia burkei), Lake County stonecrop (Sedella leiocarpa), and few-flowered navarretia (Navarretia leucocephala ssp. Pauciflora). Further, the letter indicated that in the Manning Flat area Caltrans would realign the highway away from any identified location of the endangered species.

On October 11th, 2006 EPA provided suggested language to be included in the Range of Alternatives allowing for flexibility in the range of alternatives, as more information becomes known about potential

impacts. The suggested edits were incorporated into the Range of Alternatives and sent to each of the NEPA/404 agencies on October 18th, 2006 via e-mail. The section titled "Special Considerations" includes all of the new language. The section states that further modifications to the alternatives may be necessary as a result of the studies to be conducted for the Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. A hardcopy of all revised NEPA/404 documents was sent on October 24, 2006.

On November 6, 2006 USEPA provided their formal "agreement" to the project Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. On December 21, 2006, USACE provided their formal agreement on these same items.

For the past few months, Caltrans has worked hard to modify the proposed project design for Alternative D with the intention of eliminating potential direct and indirect impacts to Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. Avoidance modifications to the project design have now been made. Attached you will find revised mapping for the Konocti Camp Road and Manning Flat areas. Please note that impacts due to these changes to Alternative D include an increase in cost by several million dollars, increased disposal needs, removal of housing for park service staff, impacts to Thurston Creek and potential impacts to cultural sites. It is Caltrans understanding that the reduction in potential indirect impacts to the aforementioned species outweighs these other factors and such changes are needed in order to allow the highway improvements.

The scheduled date for circulation of the Draft Environmental Document is approaching. We would appreciate your response no later than January 12, 2006. Please let us know as soon as possible if you have any further questions regarding the Purpose and Need and/or Range of Alternatives, as it has now been over 60 days since our last submittal of the Purpose and Need and Range of Alternatives. I trust that Caltrans' efforts to be responsive to the NEPA/404 agencies concerns will meet the USFWS' approval. We look forward to your agency's agreement.

Sincerely,

JEREMY KETCHUM, Chief
North Region Environmental Management, Branch S1

C:
Hardcopy:
Nancy Levin, United States Environmental Protection Agency
Laura Whitney, United States Army Corps of Engineers

Electronic copy only:
Susan Boring, National Marine Fisheries Service
Gene Cooley, California Department of Fish and Game
Cori Gray, California Department of Fish and Game
Phil Dow, Mendocino Council of Governments
Michael Monroe, United States Environmental Protection Agency
Mary Hammer, United States Fish and Wildlife Service
Lanh Phan, Federal Highway Administration
Gary Sweeten, Federal Highway Administration

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
1-1-07-I-0519

FEB 12 2007

Mr. Jeremy Ketchum
Chief, North Region Environmental Management
California Department of Transportation, District 3
2389 Gateway Oaks Drive
Sacramento, California 95833

Subject: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake County State Route 29 Expressway Project, Lake County, California.

Dear Mr. Ketchum:

The U. S. Fish and Wildlife Service (Service) is writing in response to your letter, dated December 29, 2006, requesting our National Environmental Policy Act (NEPA) comments on the purpose and need, alternatives selection criteria, and range of alternatives for the Lake County State Route 29 Expressway Project in Lake County, California. We received your letter on January 3, 2007. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The California Department of Transportation (Caltrans) is proposing to upgrade 7.8 miles of State Route 29 from Kelseyville to Lower Lake from a two-lane highway to a four-lane expressway. The goal of the project is to provide an east-west connection from the mostly rural northern California corridor from U. S. 101 in Mendocino County, through the Clear Lake area, across the Sacramento Valley, connecting to more urbanized areas surrounding Interstate 5 and Interstate 80.

The Service does not have the NEPA expertise to comment on the proposed projects' purpose and need, alternatives selection criteria, and range of alternatives. Our comments have been and will continue to be based on our evaluation of the potential effects of the proposed project to federally-listed species along the project corridor.

TAKE PRIDE IN AMERICA

Mr. Jeremy Ketchum 2

The Service has previously expressed our concerns in writing to Caltrans (Service file number 1-1-06-I-1219) regarding the potential direct and indirect effects of the proposed project to several federally-listed plant species along the project corridor, including the endangered Burke's goldfields (*Lasthenia burkei*), endangered Lake County stonecrop (*Sedella leiocarpa*), and endangered few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), and other federally-listed species that may be present along the project corridor. In addition, we have discussed our concerns regarding the potential direct and indirect effects of the proposed project to federally-listed species at site visits and meetings with Caltrans over the last several months.

To date, we do not have enough information regarding the proposed project and the various alternatives to adequately evaluate the potential direct and indirect effects of the proposed project to federally-listed species. Caltrans has provided the Service with a map depicting revisions to Alternative D (the "avoidance" alternative) that are intended to reduce the effects of the proposed project to federally-listed plants. The revisions involve the realignment of Alternative D along portions of the project corridor. However, the Service does not have enough information to adequately evaluate the potential direct and indirect effects of the proposed project, including the revisions to Alternative D, to federally-listed species, nor do we believe the necessary information is available at this time. The Service believes that additional plant surveys and hydrological studies need to be conducted before the direct and indirect effects to federally-listed plants from the proposed project can be thoroughly evaluated.

Your letter also stated that the scheduled date for circulation of a draft environmental document is approaching. The Service is concerned that currently there is not enough information regarding the direct and indirect effects of the proposed project on federally-listed plants to evaluate these effects in a draft environmental document. The Service encourages Caltrans to obtain more information regarding the effects of the proposed project to federally-listed species and insure that this information is included in the draft environmental document.

If you have any questions regarding our response to your request, please contact Mary Hammer or Holly Herod, Sacramento Valley Branch Chief, at 916-414-6645.

Sincerely,

Susan P. Jones for

Peter A. Cross
Deputy Assistant Field Supervisor

cc:
Laura Whitney, U.S. Army Corps of Engineers,
Nancy Levin, U. S. Environmental Protection Agency
Gary Sweeten, Federal Highway Administration,
Gene Cooley, California Department of Fish and Game, Yountville
Liam H. Davis, California Department of Fish and Game, Yountville

Appendix B Summary of Relocation Benefits

Relocation Assistance Advisory Services

The California Department of Transportation (Caltrans) will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans will assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales price and rental rates of available housing. Nonresidential displacees will receive information on comparable properties for lease or purchase.

Residential replacement dwellings will be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displaces will be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include supplying information concerning federal and state assisted housing programs, and any other known services being offered by public and private agencies in the area.

Residential Relocation Payments Program / Business and Farm Relocation Assistance Program

Brochures describing displacee rights and the Caltrans relocation assistance programs are included at the end of this appendix.

Additional Information

No relocation payment received will be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments will not be required to move unless at least one comparable

"decent, safe and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex or national origin, is available or has been made available to them by the state.

Any person, business, farm or nonprofit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or the Caltrans Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal council at his/her expense. Information about the appeal procedure is available from Caltrans' Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans' laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of the Caltrans relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor at:

State of California
Department of Transportation, District 1
Office of Right of Way
PO Box 37
Eureka, California 95502-3700

Your Rights and Benefits as a Displaced Business, Farm, or Nonprofit Organization Under the California Department of Transportation Relocation Assistance Program

Caltrans

California Department of Transportation

Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

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Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their business, farm or non-profit organization, by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

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49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

> To ensure that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.

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Relocation Services

The California Department of Transportation has two programs to aid businesses, farms and nonprofit organizations which must relocate.

These are:

1. The Relocation Advisory Assistance Program, which is to aid you in locating a suitable replacement property, and

2. The Relocation Payments Program, which is to reimburse you for certain costs involved in relocating. These payments are classified as:

   - Moving and Related Expenses (costs to move personal property not acquired).
   - Reestablishment Expenses (expenses related to the replacement property).
   - In-Lieu Payment (a fixed payment in lieu of moving and related expenses, and reestablishment expenses).

   Note: Payment for loss of goodwill is considered an acquisition cost. California law and the federal regulations mandate that relocation payments cannot duplicate other payments such as goodwill.

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You will **not** be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. You will also receive at least 90 days' written notice before you must move.

Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Business: Any lawful activity, with the exception of a farm operation, conducted primarily for the purchase, sale, lease and rental of personal or real property, or for the manufacture, processing, and/or marketing of products, commodities, or any other personal property, or for the sale of services to the public, or solely for the purpose of this Act, and outdoor advertising display or displays, when the display(s) must be moved as a result of the project.

Small Business: A business having not more than 500 employees working at the site being acquired or displaced by a program or project.

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Contributes Materially: A business or farm operation must have had average annual gross receipts of at least $5,000 or average annual net earnings of at least $1,000, in order to qualify as a bona-fide operation.

Farm Operation: Any activity conducted solely or primarily for the production of one or more agricultural products or commodities, including timber, for sale and home use, and customarily producing such products or commodities in sufficient quantity to be capable of contributing materially to the operator's support.

Nonprofit Organization: A public or private entity that has established its nonprofit status under applicable law.

MOVING EXPENSES

If you qualify as a displaced business, farm or nonprofit organization, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. To qualify you must legally occupy the property as the owner or lessee/tenant when Caltrans initiates negotiations for the acquisition of the property **OR** at the time Caltrans acquires title or takes possession of the property. However, to assure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

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You Can Choose Either:

Actual Reasonable Moving Costs - You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses, with limitations, may include:

- Transportation.
- Packing and unpacking personal property.
- Disconnecting and reconnecting personal property related to the operation.
- Temporary storage of personal property.
- Insurance while property is in storage or transit, or the loss and damage of personal property if insurance is not reasonably available.
- Expenses in finding a replacement location ($2,500 limit).
- Professional services to plan and monitor the move of the personal property to the new location.
- Licenses, permits and fees required at the replacement location.

OR

Self-Move Agreement - You may be paid to

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move your own personal property based on the lower of two acceptable bids obtained by Caltrans.

Under this option, you will still be eligible for reimbursement of related expenses listed above that were not included in the bids.

OR

In-Lieu Payment – A small business may be eligible to accept a fixed payment between $1,000 and $40,000, based on your annual earnings IN LIEU OF the moving cost and related expenses. Consult your Relocation Agent for more information about this option.

Actual Reasonable Moving Costs

You may be paid the actual reasonable and necessary costs of your move when a professional mover performs the move. All of your moving costs must be supported by paid receipts or other evidence of expenses incurred. In addition to the transportation costs of your personal property, certain other expenses may also be reimbursable, such as packing, crating, unpacking and uncrating, and the disconnecting, dismantling, removing, reassembling, and

reinstalling relocated machinery, equipment, and other personal property.

Other expenses such as professional services necessary for planning and carrying out the move, temporary storage costs, and the cost of licenses, permits and certifications may also be reimbursable. This is not intended to be an all-inclusive list of moving related expenses. Your Relocation Agent can provide you with a complete explanation of reimbursable expenses.

Self-Move Agreement

If you agree to take full responsibility for all or part of the move of your business, farm, or nonprofit organization, the Department may approve a payment not to exceed the lower of two acceptable bids obtained by the Department from qualified moving firms or a qualified Department staff employee. A low-cost or uncomplicated move may be based on a single bid or estimate at the Department's discretion. The advantage of this moving option is the fact that it relieves the displaced business, farm, or nonprofit organization operator from documenting all moving expenses. The Department may make the payment without additional documentation as long as the payment is limited to the amount of

the lowest acceptable bid or estimate. Other expenses, such as professional services for planning, storage costs, and the cost of licenses, permits, and certifications may also be reimbursable if determined to be necessary. These latter expenses must be pre approved by the Relocation Agent.

Requirements:

Before you move, you must provide Caltrans with the:

- Certified inventory of all personal property to be moved.
- Date you intend to vacate the property.
- Address of the replacement property.
- Opportunity to monitor and inspect the move from the acquired property to the replacement property.

Related Expenses

1. Searching Expenses for Replacement Property: Displaced businesses, farms, and nonprofit organizations are entitled to reimbursement for actual reasonable expenses incurred in searching for a replacement property, not to exceed $2,500. Expenses may include transportation, meals, and lodging when away from home; the reasonable value of the time spent during the search; fees paid to the real estate agents, brokers or consultants; and other expenses determined to be reasonable and necessary by the Department.

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2. Direct Loss of Tangible Personal Property: Displaced businesses, farms, and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property which is incurred as a result of the move or discontinuance of the operation. This payment will be based upon the lesser of:

a) The fair market value of the item for continued use at the displacement site minus the proceeds from its sale.

OR

b) The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.

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EXAMPLE:
You determine that the "document shredder" cannot be moved to the new location because of its condition, and you will not replace it at the new location.

Fair Market Value of the Document Shredder based on its use at the current location	$ 1,500
Proceeds: Price received from selling the Document Shredder	- $ 500
Net Value	$ 1,000

OR

Estimated cost to move	$ 1,050

Based on the "lessor of", the amount of the "Loss of Tangible Personal Property" =	**$ 1,000**

Note: You are also entitled to all reasonable costs incurred in attempting to sell the document shredder (e.g. advertisement).

3. Purchase of Substitute Personal Property:
If an item of personal property, which is used as part of the business, farm, or nonprofit organization, is not moved but is promptly replaced with a substitute item that performs a

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comparable function at the replacement site, the displacee is entitled to payment of the lesser of:

a) The cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item;

OR

b) The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.

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EXAMPLE A:

You determine that the copying machine cannot be moved to the new location because it is now obsolete and you will replace it.

Cost of a substitute *Copying Machine* including installation costs at the replacement site.		$ 3,000
Trade-in Allowance	-	$ 2,500
Net Value		$ 500

OR

Estimated cost to move	$ 550

Based on the "lesser of", the amount of the "Substitute Personal Property" =	**$ 500**

EXAMPLE B:

You determine that the chairs will not be used at the new location because they no longer match the décor and you will replace them.

Cost of substitute chairs		$ 1,000
Proceeds: From selling the Chairs	-	$ 100
Net Value		$ 900

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OR

Estimated cost to move	$ 200
Based on the "lesser of", the amount of the "Substitute Personal Property" =	**$ 200**

Note: You are also entitled to all reasonable costs incurred in attempting to sell the document shredder (e.g. advertisement).

4. Disconnecting and Reinstallation: You will be reimbursed for your actual and reasonable costs to disconnect, dismantle, remove, reassemble and reinstall any machinery, equipment or other personal property in relation to its move to the new location. This includes connection to utilities available nearby and any modifications to the personalty that is necessary to adapt it to utilities at the replacement site.

5. Physical changes at the new location: You may be reimbursed for certain physical changes to the replacement property if the changes are necessary to permit the reinstallation of machinery or equipment necessary for the continued operation of the business. ***Note:*** *The changes cannot increase the value of the building*

for general purposes, nor can they increase the mechanical capability of the buildings beyond its normal requirements.

6. The cost of installing utilities from the right of way line to the structure(s) or improvements on the replacement site.

7. Marketing studies, feasibility surveys and soil testing.

8. One-time assessments or impact fees for anticipated heavy utility usage.

Reestablishment Expenses

A small business, farm or nonprofit organization may be eligible for a payment, not to exceed $25,000, for expenses actually incurred in relocating and reestablishing the enterprise at a replacement site.

Reestablishment expenses may include, but are not limited to, the following:

1. Repairs or improvements to the replacement real property required by Federal, State or local laws, codes or ordinances.

2. Modifications to the replacement of real property to make the structure(s) suitable for the business operation.

3. Construction and installation of exterior signing to advertise the business.

4. Redecoration or replacement such as painting, wallpapering, paneling or carpeting when required by the condition of the replacement site or for aesthetic purposes.

5. Advertising the new business location.

6. The estimated increased costs of operation at the replacement site during the first two years, for items such as:

   a) Lease or rental charges
   b) Personal or real property taxes
   c) Insurance premiums, and
   d) Utility charges (excluding impact fees).

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7. Other items that the Department considers essential for the reestablishment of the business or farm.

In-Lieu Payment (Fixed)

Displaced businesses, farms, and nonprofit organizations may be eligible for a fixed payment in lieu of (in place of) actual moving expenses, personal property losses, searching expense, and reestablishment expenses. The fixed payment may not be less than $1,000 or more than $40,000.

For a business to be eligible for a fixed payment, the Department must determine the following:

1. The business owns or rents personal property that must be moved due to the displacement.

2. The business cannot be relocated without a substantial loss of existing patronage.

3. The business is not part of a commercial enterprise having more than three other businesses engaged in the same or similar activity, which are under the same ownership and are not being displaced by the department.

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4. The business contributed materially to the income of the displaced business operator during the two taxable years prior to displacement.

Any business operation that is engaged solely in the rental of space to others is not eligible for a fixed payment. This includes the rental of space for residential or business purposes.

Eligibility requirements for farms and nonprofit organizations are slightly different than business requirements. If you are being displaced from a farm or you represent a nonprofit organization and are interested in a fixed payment, please consult your relocation counselor for additional information.

Note: A nonprofit organization must substantiate that it cannot be relocated without a substantial loss of existing patronage (membership or clientele). The payment is based on the average of two years annual gross revenues less administrative expenses.

The Computation of Your In-Lieu Payment:

The fixed payment for a displaced business or farm is based upon the average annual net earnings of the operation for the two taxable

years immediately preceding the taxable year in which it was displaced. Caltrans can use a different two year period if it is determined that the last two taxable years do not accurately reflect the earnings of the operation.

EXAMPLE: Caltrans acquires your property and you move in 2013:

2011 Annual Net Earnings	$ 10,500
2012 Annual Net Earnings	$ 12,500
TOTAL	$ 23,000
Average over two years	**$ 11,500**

This would be the amount of your in-lieu payment. Remember - this is in-lieu of all other moving benefits. You must provide the Department with proof of net earnings to support your claim.

Proof of net earnings can be documented by income tax returns, certified financial statements, or other reasonable evidence of net earnings acceptable to the Department.

Note: The computation for nonprofit organizations differs in that the payment is computed on the basis of average annual gross revenues less administrative expenses for the two-year period specified above.

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Before You Move:

A. Complete a "Request for Determination of Entitlement" form available from your Relocation Agent, and return it promptly.

B. Include a written statement of the reasons the business cannot be relocated without a substantial loss in net earnings.

C. Provide certified copies of tax returns for the two tax years immediately preceding the tax year in which you move. (If you move anytime in the year 2013, regardless of when negotiations began or the State took title to the property, the taxable years would be 2011 and 2012).

D. You will be notified of the amount you are entitled to after the application is received and approved.

E. You cannot receive the payment until after you vacate the property, AND submit a claim for the payment within 18 months of the date of your move.

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Relocation Advisory Assistance

Any business, farm or non-profit organization, displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your needs and desires will be determined as well as your need for assistance.

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You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Determine your needs and preferences.
- Explain the relocation benefits and eligibility.
- Provide information on replacement properties for your consideration.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits.
- Interest rates and terms.
- Typical down payments.
- Permits, fees and local planning ordinances.
- SBA loan requirements.
- Real property taxes.
- Consumer education literature.

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If you desire, your Relocation Agent will give you current listings of other available replacement property. Transportation will be provided to inspect available property, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local programs offering assistance to displaced persons. If you have special needs, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.

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YOUR RIGHTS AS A DISPLACEE

It is important to remember that your relocation benefits will not have an adverse effect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible

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agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

Americans with Disabilities Act (ADA) Notice:

This document is available in alternative formats for people with physical disabilities. Please call (916) 654-5413, or write to 'Department of Transportation - Right of Way, MS-37, 1120 N Street, Sacramento, CA 95814,' for information.

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NOTES:

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Caltrans

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Non-Residential (2nd Printing)
Effective October 1, 2014

Your Rights and Benefits as a Displacee Under the Uniform Relocation Assistance Program (Residential)

Caltrans

California Department of Transportation

Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

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Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

> To ensure that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.

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Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Comparable Replacement: means a dwelling which is:

(1) Decent, safe, and sanitary. (See definition below)

(2) Functionally equivalent to the displaced dwelling.

(3) Adequate in size to accommodate the family being relocated.

(4) In an area not subject to unreasonable adverse environmental conditions.

(5) In a location generally not less desirable than the location of your displacement dwelling with respect to public utilities and commercial and public facilities, and reasonably accessible to the place of-employment.

(6) On land that is typical in size for residential development with typical improvements.

Decent, Safe and Sanitary (DS&S): Replacement housing must be decent, safe, and sanitary - which

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means it meets all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. The dwelling shall:

(1) Be structurally sound, weather tight, and in good repair.

(2) Contain a safe electrical wiring system adequate for lighting and other devices.

(3) Contain a heating system capable of sustaining a healthful temperature (of approximately 70 degrees) for a displaced person, except in those areas where local climatic conditions do not require such a system.

(4) Be adequate in size with respect to the number of rooms and area of living space needed to accommodate the displaced person. The Caltrans policy is that there will be no more than 2 persons per room unless

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the room is of adequate size to accommodate the normal bedroom furnishings for the occupants.

(5) Have a separate, well-lighted and ventilated bathroom that provides privacy to the user and contains a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and to a sewage drainage system.

Note: In the case of a housekeeping dwelling, there shall be a kitchen area that contains a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, and adequate space and utility service connections for a stove and refrigerator.

(6) Contains unobstructed egress to safe, open space at ground level. If the replacement dwelling unit is on the second story or above, with access directly from or through a common corridor, the common corridor must have at least two means of egress.

(7) For a displaced person who is handicapped, be free of any barriers which would preclude reasonable ingress, egress, or use of the dwelling by *such displaced person.*

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Displaced Person or Displacee: Any person who moves from real property or moves personal property from real property as a result of the acquisition of the real property, in whole or in part, or as the result of a written notice from the agency to vacate the real property needed for a transportation project. In the case of a partial acquisition, Caltrans shall determine if a person is displaced as a direct result of the acquisition.

Relocation benefits will vary, depending upon the type and length of occupancy. As a residential displacee, you will be classified as either a:

- An owner occupant of a residential property (includes mobile homes)
- A tenant occupant of a residential property (includes mobile homes and sleeping rooms)

Dwelling: The place of permanent or customary and usual residence of a person, according to local custom or law, including a single family house; a single family unit in a two-family, multi-family, or multi-purpose property; a unit of a condominium or cooperative housing project; a non-housekeeping unit; a mobile home; or any other residential unit.

Owner: A person is considered to have met the requirement to own a dwelling if the person purchases or holds any of the following interests in real property:

(1) Fee title, a life estate, a land contract, a 99-year lease, oral lease including any options for extension with at least 50 years to run from the date of acquisition; or

(2) An interest in a cooperative housing project which includes the right to occupy a dwelling; or

(3) A contract to purchase any interests or estates; or

(4) Any other interests, including a partial interest, which in the judgment of the agency warrants consideration as ownership.

Tenant: A person who has the temporary use and occupancy of real property owned by another.

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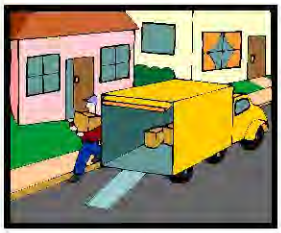
Moving Expenses



If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. The methods of moving and the various types of moving cost payments are explained below.

Displaced individuals and families may choose to be paid on the basis of actual, reasonable moving costs and related expenses, or according to a fixed moving cost schedule. However, to ensure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

You Can Choose Either:

Actual Reasonable Moving Costs - You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses may

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include:

- Transportation
- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.

OR

Fixed Moving Cost Schedule - You may be paid on the basis of a fixed moving cost schedule. Under this option, you will not be eligible for reimbursement of related expenses listed above. The fixed schedule is designed to cover such expenses.

Examples (Year 2014 Rate):
4 Rooms - $ 1,295
7 Rooms - $ 2,090

The Fixed Move Schedule for a furnished unit (e.g. you are a tenant of an apartment that is furnished by your landlord) is based on Schedule B.

Example (Year 2014 Rate):
1 Room - $450

A dormitory style room under the 2014 Schedule B rate would receive $125.

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Under the Fixed Move Schedule, you will not receive any additional payments for temporary storage, lodging, transportation or utility hook-ups.

Replacement Housing Payments

The type of Replacement Housing Payment (RHP) depends on whether you are an owner or a tenant, and the length of occupancy in the property being acquired.

If you are a qualified **owner occupant** of more than 90 days prior to the initiation of negotiations for the acquisition of your property, you may be entitled to a RHP that consists of:

Price Differential, and

Mortgage Differential, and

Incidental Expenses;

OR

Rent Differential

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If you are a qualified **tenant occupant** of at least 90 days, you may be entitled to a RHP as follows:

Rent Differential

OR

Down payment Option

Length of occupancy simply means counting the number of days that you actually occupied a dwelling before the date of initiation of negotiations by Caltrans for the purchase of the property. The term "initiation of negotiations" means the date Caltrans makes the first personal contact with the owner of real property, or his/ her representative, to give him/her a written offer for the property to be acquired.

Note: If you have been in occupancy less than 90 days before the initiation of negotiations and the property is subsequently acquired, or if you move onto the property after the initiation of negotiations and you are still in occupancy on the date of acquisition, you may or may not be eligible for a Replacement Housing Payment. Check with your Relocation Agent before you make any decision to vacate your property.

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For Owner Occupants of 90 Days or More

If you qualify as a 90-day owner occupant, you may be eligible - in addition to the fair market value of your property - for a Replacement Housing Payment that consists of a Price Differential, Mortgage Differential and Incidental Expenses.

The **Price Differential** payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling. This payment will assist you in purchasing a comparable decent, safe, and sanitary (DS&S) replacement dwelling. Caltrans will compute the maximum payment you may be eligible to receive.

In order to receive the full amount of the calculated price differential, you must spend at least the amount calculated by Caltrans on a replacement property

The **Mortgage Differential** payment will reimburse you for any increased mortgage interest costs you might incur because the interest rate on your new mortgage exceeds the interest rate on the property acquired by Caltrans. The payment computation is complex as it is based on prevailing rates, your existing loan <u>and</u> your new loan. Also, a part of this payment may be prorated such as reimbursement for a portion of your loan origination fees and mortgage points.

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To be eligible to receive this payment, the acquired property must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

You may also be reimbursed for any actual and necessary **Incidental Expenses** that you incur in relation to the purchase of your replacement property. These expenses may be those costs for title search, recording fees, credit report, appraisal report, and certain other closing costs associated with the purchase of property. You will not be reimbursed for any recurring costs such as prepaid real estate taxes and property insurance.

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EXAMPLES OF PRICE DIFFERENTIAL PAYMENT COMPUTATION:

Assume that Caltrans purchases your property for $98,000. After a thorough study of available, decent, safe and sanitary dwellings on the open market, Caltrans determines that a comparable replacement property will cost you $100,000. If your purchase price is $100,000, you will receive $2,000 *(see Example A).*

If your actual purchase price is more than $100,000, you pay the difference (see *Example B).* If your purchase price is less than $100,000, the differential payment will be based on actual costs *(see Example C).*

How much of a differential payment you receive depends on how much you actually spend on a replacement dwelling as shown in these examples:

Caltrans' Computation

Comparable Replacement Property	$100,000
Acquisition Price of Your Property	-$ 98,000
Maximum Price Differential	$ 2,000

Example A

Purchase Price of Replacement	$100,000
Comparable Replacement Property	$100,000
Acquisition Price of Your Property	-$ 98,000
Maximum Price Differential	$ 2,000

Example B

Purchase Price of Replacement Property	$105,000
Comparable Replacement Property	$100,000
Acquisition Price of Your Property	$ 98,000
Maximum Price Differential	$ 2,000

You Must Pay the Additional $5,000

Example C

Comparable Replacement Property	$100,000
Purchase Price of Replacement	$ 99,000
Acquisition Price of Your Property	$ 98,000
Price Differential	$ 1,000

In Example C you will only receive $1,000 - not the full amount of the Caltrans "Comparable Replacement Property" because the requirements to spend were not met.

IN ORDER FOR A "90 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING *PAYMENT* *(Price Differential, Mortgage Differential and Incidental Expenses)***, you must:**

A) Purchase and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the closing of escrow on State's acquisition),

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AND

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" for a replacement property,

AND

C) File a claim for relocation payments within 18 months of the later:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. Also, you will also receive at least 90 days' written notice before you must move.

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For Tenants of 90 Days or More

If you qualify as a 90-day occupant, you may be eligible for a Replacement Housing Payment in the form of a Rent Differential.

The **Rent Differential** payment is designed to assist you in renting a comparable decent, safe and sanitary replacement dwelling. The payment is based on the difference between the base monthly Rent for the property acquired by Caltrans (including average monthly cost for utilities) and the lesser of:

a) The monthly rent and estimated average monthly cost of utilities for a comparable replacement dwelling as determined by Caltrans, **OR**

b) The monthly rent and estimated average monthly cost of utilities for the decent, safe and sanitary dwelling that you actually rent as a replacement dwelling.

Utility costs are those expenses you incur for heat, lights, water and sewer - regardless of the source (e.g. electricity, propane, and septic system). It does not include garbage, cable, telephone, or security. The utilities at your property are the average costs over the last 12 months. The utilities at the comparable replacement property are the estimated costs for the last 12 months for the type of dwelling

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and area used in the calculation.

This difference is multiplied by 42 months and may be paid to you in a lump sum payment or in periodic installments in accordance with policy and regulations.

In order to receive the full amount of the calculated Rent Differential, you must spend at least the amount calculated by Caltrans on a replacement property.

This payment may - with certain limitations - be converted to a **Down payment Option** to assist you in purchasing a replacement property.

Example of Rent Differential Payment Computation:

After a thorough study of comparable, decent, safe and sanitary dwellings that are available for rent, Caltrans determines that a comparable replacement property will rent for $325.00 per month.

Caltrans Computation (rates are per month)

Rental Rate for Comparable Replacement Property:	$ 325
PLUS average estimated utilities costs:	+ 100
TOTAL Cost to Rent Comparable Replacement Property:	= $ 425

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Rental Rate for Your Current Property:	$ 300
PLUS average utilities costs:	+ 90
TOTAL Cost you pay to rent your current property:	= $ 390
Comparable Replacement Property including utilities:	$ 425
Cost you pay to rent your property including utilities:	+ 390
Difference:	=$ 35

Multiplied by 42 months = $1,470 Rent Differential

Example A:

Rental Rate for a Replacement Property, including estimated average utilities costs:	$ 525
Comparable Replacement Property including utilities:	$ 425
Cost you pay to rent your property including utilities:	$ 390

Since $425 is less than $525, the Rent Differential is based on the difference between $390 and $425.

Rent Differential ($35 x 42 months = $1,470)

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In this case you spent "at least" the amount of the Comparable Replacement Property on the replacement property and will receive the full amount.

Example B:

Rental Rate for a Replacement Property, including estimated average utilities costs:	$ 400
Comparable Replacement Property including utilities:	$ 425
Cost you pay to rent your property including utilities:	$ 390

Since $400 is less than $525, the Rent Differential is based on the difference between $400 and $390.

Rent Differential ($10 x 42 months = $420)

In this case you spent "less than" the amount of the Comparable Replacement Property on the replacement property and will not receive the full amount.

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. And, you will also receive at least 90 days' written notice before you must move.

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Down Payment Option

The Rent Differential payment may - with certain limitations - be converted to a **Down Payment Option** to assist you in purchasing a replacement property. The down payment option is a direct conversion of the Rent Differential payment.

If the Caltrans calculated Rent Differential is between $0 and $7,200, your down payment option will be $7,200, which can be used towards the purchase of a replacement decent, safe and sanitary dwelling.

If the Rent Differential is over $7,200, you may be able to convert the entire amount of the Rent Differential to a down payment option.

The down payment option must be used for the acquisition of the replacement dwelling, plus any eligible incidental expenses (see "90-day Owner Occupants Incidental Expenses") related to the purchase of the property. You must work closely with your Relocation Agent to ensure you can utilize the full amount of your down payment option towards the purchase.

If any portion of the Rent Differential was used prior to the decision to convert to a down payment option, those advance payments will be deducted from the entire benefit.

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Last Resort Housing

On most projects, an adequate supply of housing will be available for sale and for rent, and the benefits provided will be sufficient to enable you to relocate to comparable housing. However, there may be projects in certain locations where the supply of available housing is insufficient to provide the necessary housing for those persons being displaced. In such cases, Caltrans will utilize a method called Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the people displaced from a project. Caltrans can also pay above the statutory limits of $7,200 and $31,000 in order to make available housing affordable.

Relocation Advisory Assistance

Any individual, family, business or farm displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your housing needs and desires will be determined as well as your need for assistance. You cannot be required to move unless at least one comparable replacement dwelling is made available to you.

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You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Explain the relocation benefits and eligibility requirements.
- Provide the amount of the replacement housing payments in writing.
- Assure the availability of a comparable property before you move.
- Inspect possible replacement residential units for DS&S compliance.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits
- Interest rates and terms
- Typical down payments
- VA and FHA loan requirements
- Real property taxes.
- Consumer education literature on housing

If you desire, your Relocation Agent will give you current listings of other available replacement housing. Transportation will be provided to inspect available housing, especially if you are elderly or

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handicapped. You may obtain the services of a real estate broker to assist in finding a replacement dwelling but, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local housing programs offering assistance to displaced persons. If you have special problems, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans may establish a temporary Relocation Field Office on or near the project. Project relocation offices would be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions and be sure you fully understand all of your rights and available benefits.

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YOUR RIGHTS AS A DISPLACEE

All eligible displacees have a freedom of choice in the selection of replacement housing, and Caltrans will not require any displaced person to accept a replacement dwelling provided by Caltrans. If you decide not to accept the replacement housing offered by Caltrans, you may secure a replacement dwelling of your choice, providing it meets DS&S housing standards. Caltrans will not pay more than your calculated benefits on any replacement property.

The most important thing to remember is that the replacement dwelling you select must meet the basic "decent, safe, and sanitary" standards. Do not execute a purchase agreement or a rental agreement until a representative from Caltrans has inspected and certified in writing that the dwelling you propose to occupy meets the basic standards. **DO NOT jeopardize** your right to receive a replacement

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housing payment by moving into a substandard dwelling.

It is important to remember that your relocation benefits will not have an adverse affect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, minority persons shall be given reasonable opportunities to relocate to decent, safe, and sanitary replacement dwellings, not located in an area of minority concentration, and that is within their financial means. This policy, however, does not require Caltrans to provide a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

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And you have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

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Americans with Disabilities Act (ADA) Notice:

This document is available in alternative formats for people with physical disabilities. Please call (916) 654-5413, or write to 'Department of Transportation - Right of Way, MS-37, 1120 N Street, Sacramento, CA 95814,' for information.

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NOTES

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

Residential
Effective October 1, 2014 (2nd Printing)

Appendix C Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

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March 2013

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

Appendix D Glossary of Technical Terms

This appendix briefly explains the technical terms and names used in this EIR/EA. A list of acronyms appears directly before Chapter 1.

Best Management Practice (BMP)	Any program, technology, process, operating method, measure or device that controls, prevents, removes or reduces pollution.
Basin Plan	A specific plan for control of water quality within one of the nine hydrologic basins of the state under the regulation of a Water Quality Control Board.
Bypass	An arterial highway that permits traffic to avoid all or part of a certain area such as an urban area or park.
Conventional highway	A highway with no control of access roads onto the highway, which may or may not be divided or have grade separations at interchanges.
Cooperating Agency	An agency, other than the lead agency, that has jurisdiction by law or other expertise, that is formally involved in a proposed project.
Corridor	A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.
Cumulative effects	Project effects that are related to other actions with individually insignificant but cumulatively significant impacts.
DBH	Diameter (of a tree) measured at breast height.
Decibel	A numerical expression of the relative loudness of a sound.
Encroachment (floodplain)	An action within the limits of the 100-year floodplain.
Endangered	Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.
Erosion	The wearing away of the land surface by running water, wind, ice, or other geological agents.
Expressway	An arterial highway with at least partial control of access, where limits are placed on number and type of intersecting streets, roads and driveways. An expressway may or may not be divided or have separations at intersections.

Federal Register	A federal publication that provides official notice of federal administrative hearings and issuance of proposed and final federal administrative rules and regulations.
Floodplain (100-year)	The area subject to flooding by a flood or tide that has a 1 percent chance of being exceeded in any given year.
Freeway	A divided arterial highway with full control of access and with grade separations at intersections.
Habitat	The place or type of site where a plant or animal naturally or normally lives and grows.
Initial Site Assessment (ISA)	A Caltrans term for an initial study to determine hazardous waste issues on a project.
LEDPA	Least Environmentally Damaging Practicable Alternative. The Clean Water Act Section 404(b)(1) (Alternatives Analysis) is a specific evaluation to determine the LEDPA to waters of the U.S. (including wetlands) while meeting the project purpose. A Section 404 Permit can only be issued for the LEDPA.
L_{eq}	A unit used for evaluation of sound impacts, L_{eq} is the measurement of the fluctuating sound level received by a receptor averaged over a time interval (usually 1 hour).
Level of Service (LOS)	A measurement of capacity of a roadway.
Median	The area of a divided highway that separates the traveled way for traffic in opposite directions.
Mitigation	Compensation for an impact by replacement or provision of substitute resources or environments. Mitigation can include avoiding an impact by not taking a certain action, minimizing impacts by limiting the degree of an action, or rectifying an impact by repairing or restoring the affected environment.
NEPA/Section 404 MOU process	Integration of NEPA and Section 404 of the Clean Water Act by FHWA, Caltrans, USEPA, USFWS, and USACE for transportation projects that also require regulatory approval under Section 404 of the Federal Clean Water Act.
NOD	Notice of Determination. A decision statement that indicates that a project has been approved subject to the requirements of CEQA.

NOP	Notice of Preparation, part of the CEQA process. Notice sent to responsible agencies and others stating that an environmental impact report will be prepared for a project.
NPDES	National Pollutant Discharge Elimination System. A permit regulated by the Regional Water Quality Control Board that is required if more than 0.4 ha (1 acre) of original ground is graded. One condition of this permit is that the Contractor submit a Storm water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans Standard Specification 7-1.01G.
Practicable	An action that is capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes.
Receptors	Term used in air quality and noise studies that refers to houses or businesses that could be affected by a project.
Regulatory agency	An agency that has jurisdiction by law.
Responsible agency	A public agency other than the Lead Agency that has responsibility for carrying out or approving a project under CEQA.
Right of way	A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.
Riparian	Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers, whose transported freshwater provides soil moisture sufficient in excess of that available through local precipitation to potentially support the growth of vegetation.
ROD	Record of Decision, part of the NEPA process. This statement explains and concludes why an alternative has been selected and summarizes mitigation and efforts made to minimize environmental impacts.
RTP	Regional Transportation Plan, prepared by the regional agency responsible for transportation planning and funding.
SHPO	State Historic Preservation Officer is responsible, among other duties, for administrating the requirements of the National Historic Preservation Act at the state level.
Special-status species	Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species protected under the federal Migratory Bird Treaty Act; (3) protected under state endangered species laws and regulations, plant protection

	laws and regulations, Fish and Game codes, or species of special concern listings and policies; (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).
STIP	The State Transportation Improvement Program, updated every 2 years, is the California Transportation Commission's priorities for improvements on and off the state highway system.
SWPPP	A Storm Water Pollution Prevention Plan is prepared to evaluate sources of discharges and activities that may affect storm water runoff, and implement measures or practices to reduce or prevent such discharges.
Threatened	A species that is likely to become endangered in the foreseeable future in the absence of special protection.
Underground Storage Tanks (USTs)	Tanks that typically store fuel or liquid chemicals underground.
Waters of the United States	As defined by the USACE in 33 Code of Federal Regulations 328.3(a): 1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; 2. All interstate waters including interstate wetlands; 3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purposes by industries in interstate commerce; 4. All impoundment of waters otherwise defined as waters of the United States under this definition; 5. Tributaries of waters identified in paragraphs 1-4; 6. The territorial seas;

	7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.
Wetlands	When used in a formal context, such as in this EIR/EA, wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances will support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)].

Appendix E Mobile Source Air Toxics—Information That Is Unavailable or Incomplete

Information That Is Unavailable or Incomplete

Evaluating the environmental and health impacts from mobile source air toxics (MSATs) on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

Emissions

The United States Environmental Protection Agency (USEPA) tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model—emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

Dispersion

The tools to predict how MSATs disperse are also limited. The USEPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the National Ambient Air Quality Standards (NAAQS). The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program (NCHRP) is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the National Environmental Policy Act (NEPA) process and to the general public. Along with these general limitations of dispersion models, the Federal Highway Administration (FHWA) is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

Exposure Levels and Health Effects

Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of USEPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The USEPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The USEPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from USEPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

Benzene is characterized as a known human carcinogen.
The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
Formaldehyde is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
1,3-butadiene is characterized as carcinogenic to humans by inhalation.
Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
Diesel exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.

Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a nonprofit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes—particularly respiratory problems.[42] Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not

[42] South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, FHWA has provided a qualitative analysis of MSAT emissions relative to the various alternatives, and has acknowledged that (some, all, or identify by alternative) the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

Appendix F USACE Concurrence with Wetland Delineation

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

RECEIVED
STATE OF CALIFORNIA
OFFICE OF DESIGN NORTH & ESB
REDDING

REPLY TO
ATTENTION OF

May 29, 2014

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 54.821acres 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, CESPD-PDO, 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
Total Acreage of Palustrine Forested Wetland			*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
Total Acreage of Freshwater Marsh			*16.399*
Irrigated Pasture			
IP1	Thurston Lake	No	4.906
Total Acreage of Irrigated Pasture			*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
Total Acreage of Seasonal Wetlands			*33.145*
Vernal Pool			
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
Total Acreage of Vernal Pools			*0.878*
Total Isolated Wetland Acreage			***54.821***

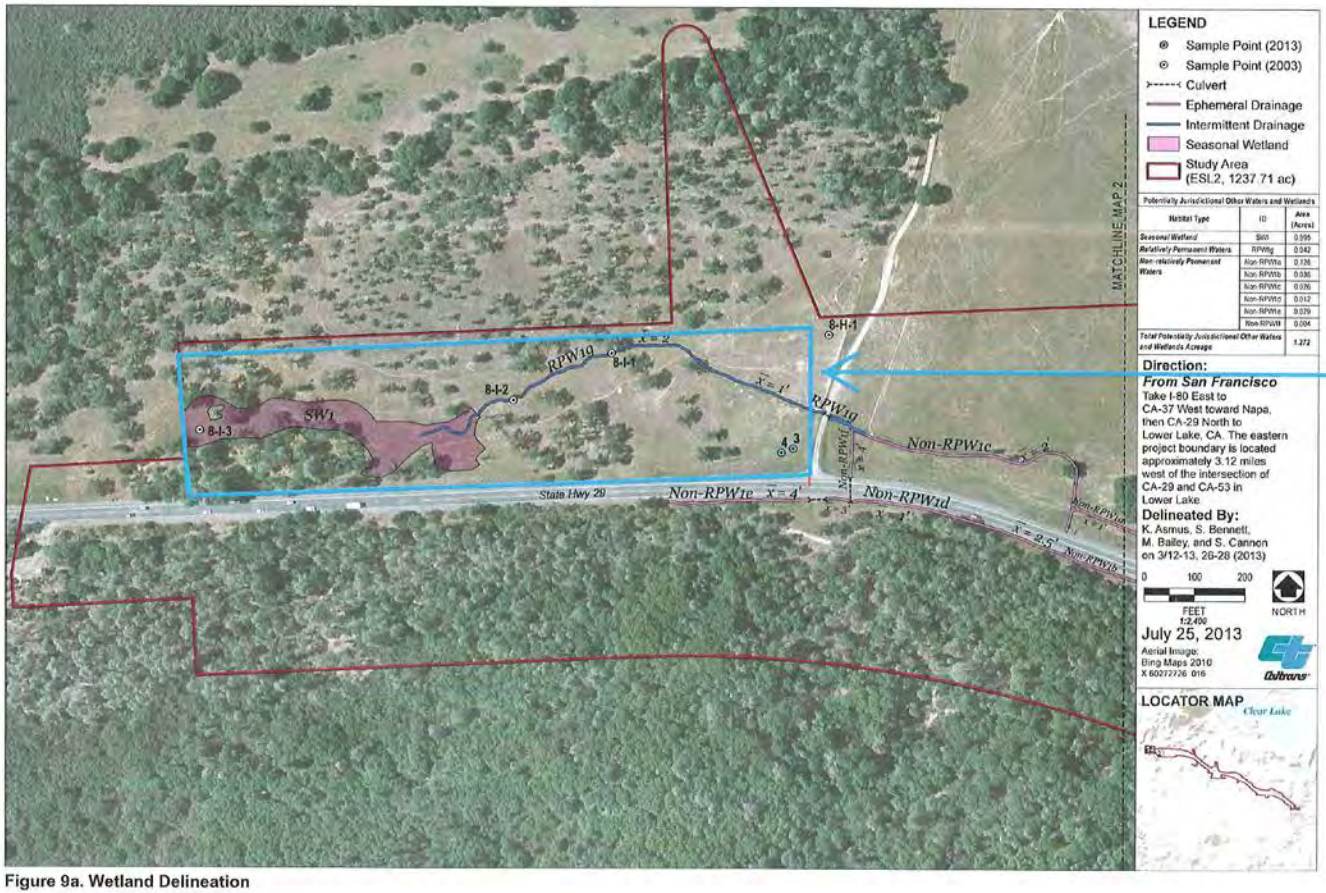
Source: Data compiled by AECOM in 2013

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
Total Acreage of RPW's			*0.682*
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
Total Acreage of Non-RPW's			*2.353*
Total Acreage of Isolated Waters			***3.035***

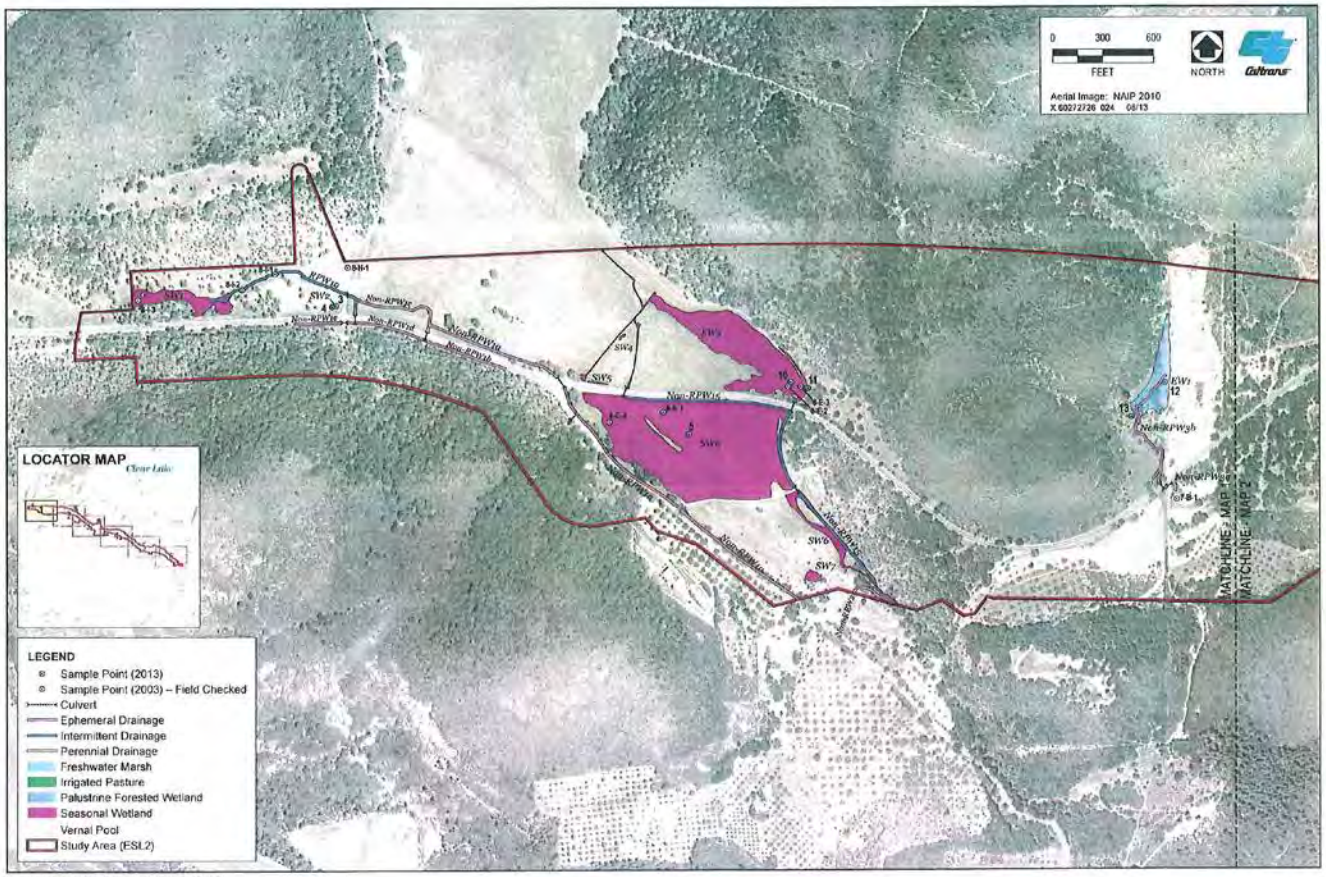
Source: Data compiled by AECOM in 2013



RPW1g and SW1 within this boundary are regulated under Section 404 of the CWA. Wetland = 0.995 acres Non-wetland waters = 0.277 acres

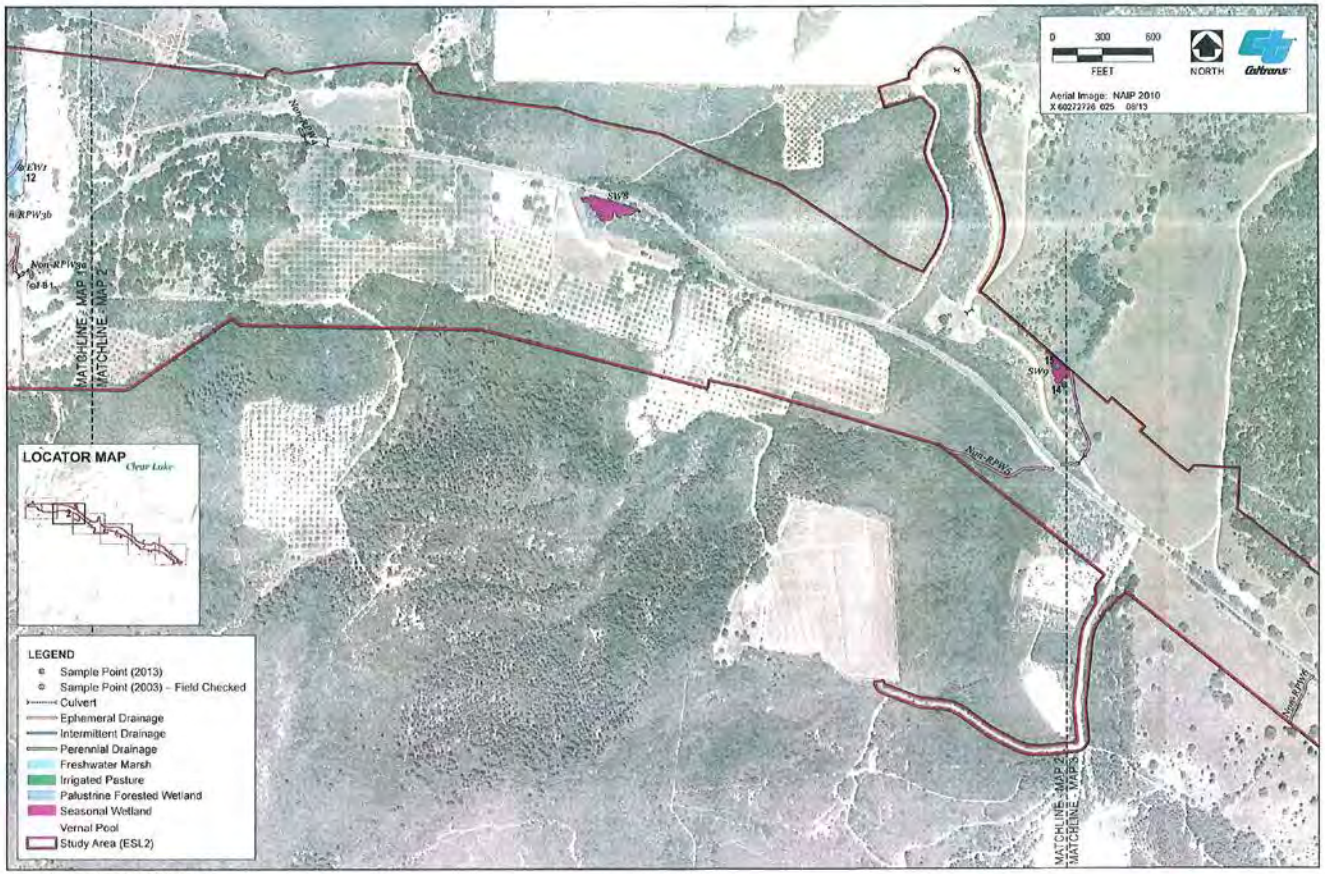
Figure 9a. Wetland Delineation

Figure 9b. Wetland Delineation



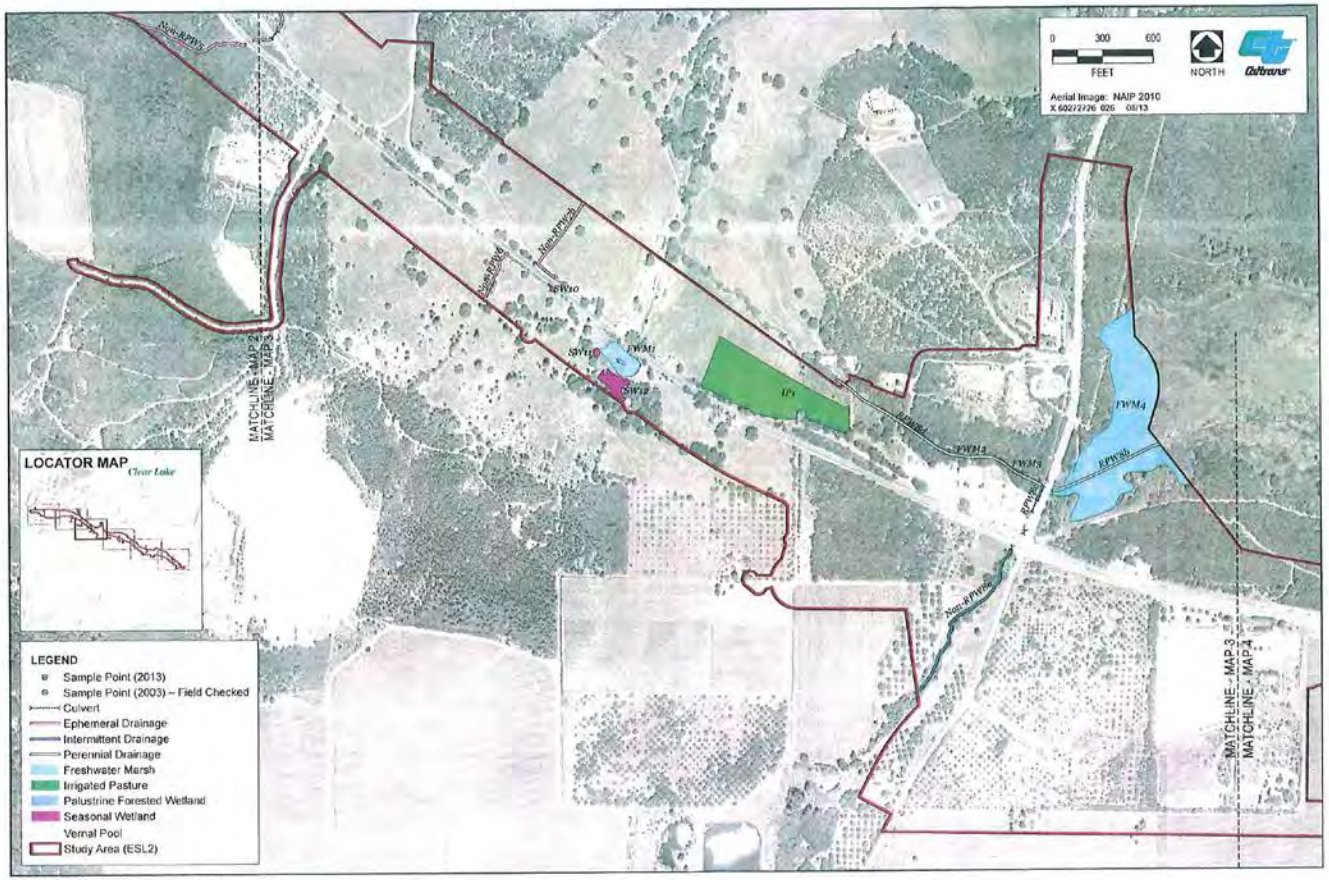
Source: Data compiled by AECOM in 2013

Figure D-1. Aquatic Resources Map



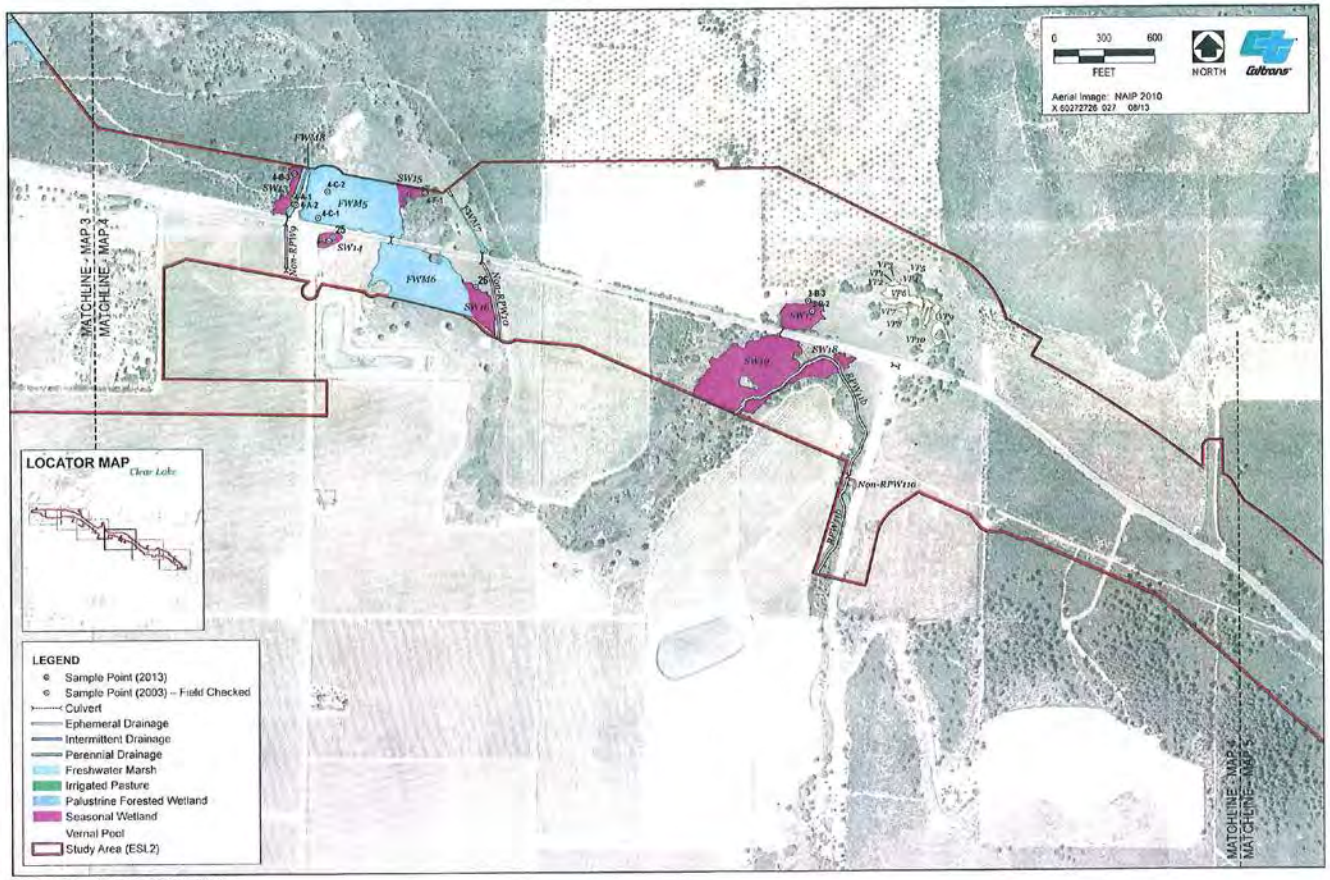
Source: Data compiled by AECOM in 2013

Figure D-2. Aquatic Resources Map



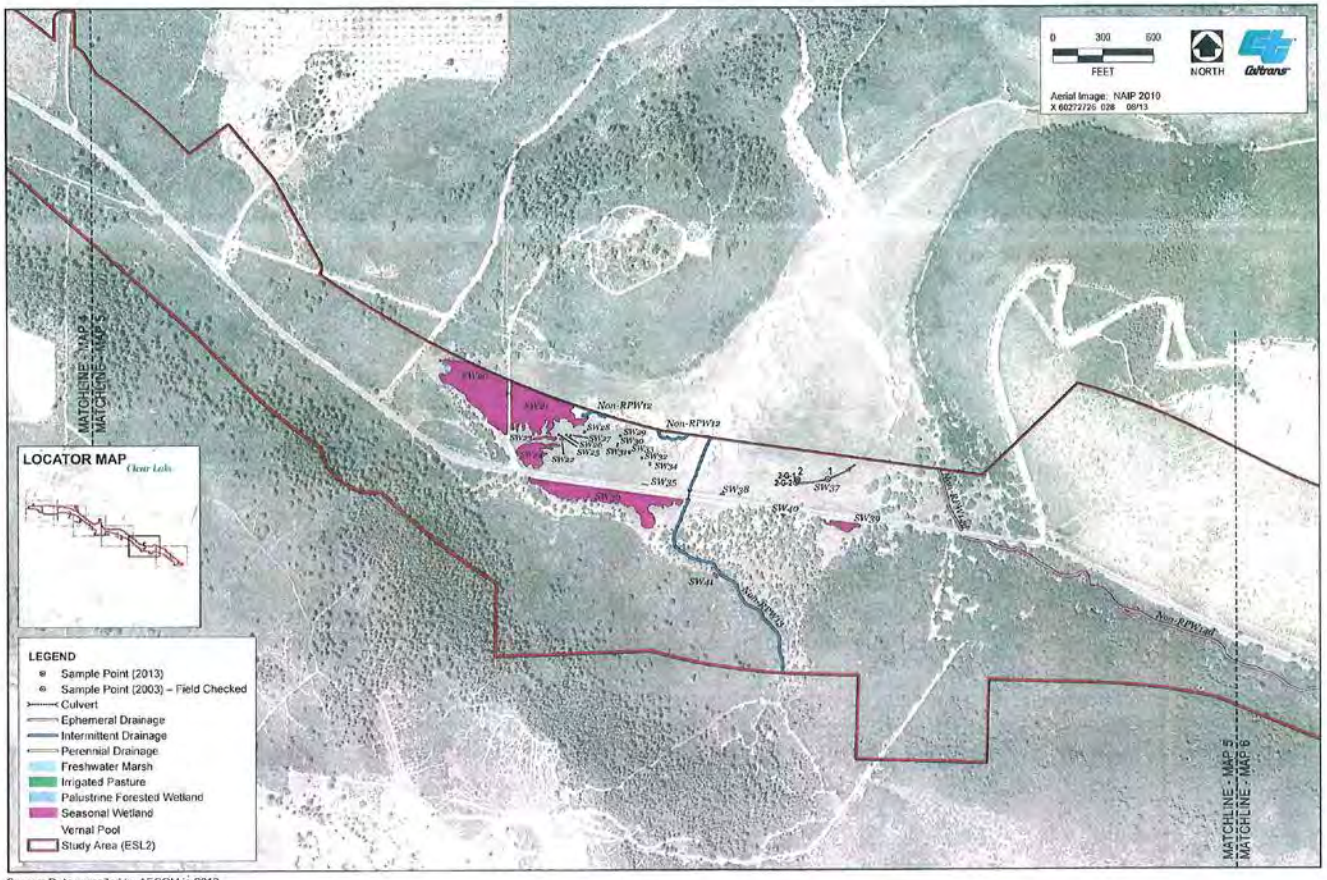
Source: Data compiled by AECOM in 2013

Figure D-3. Aquatic Resources Map



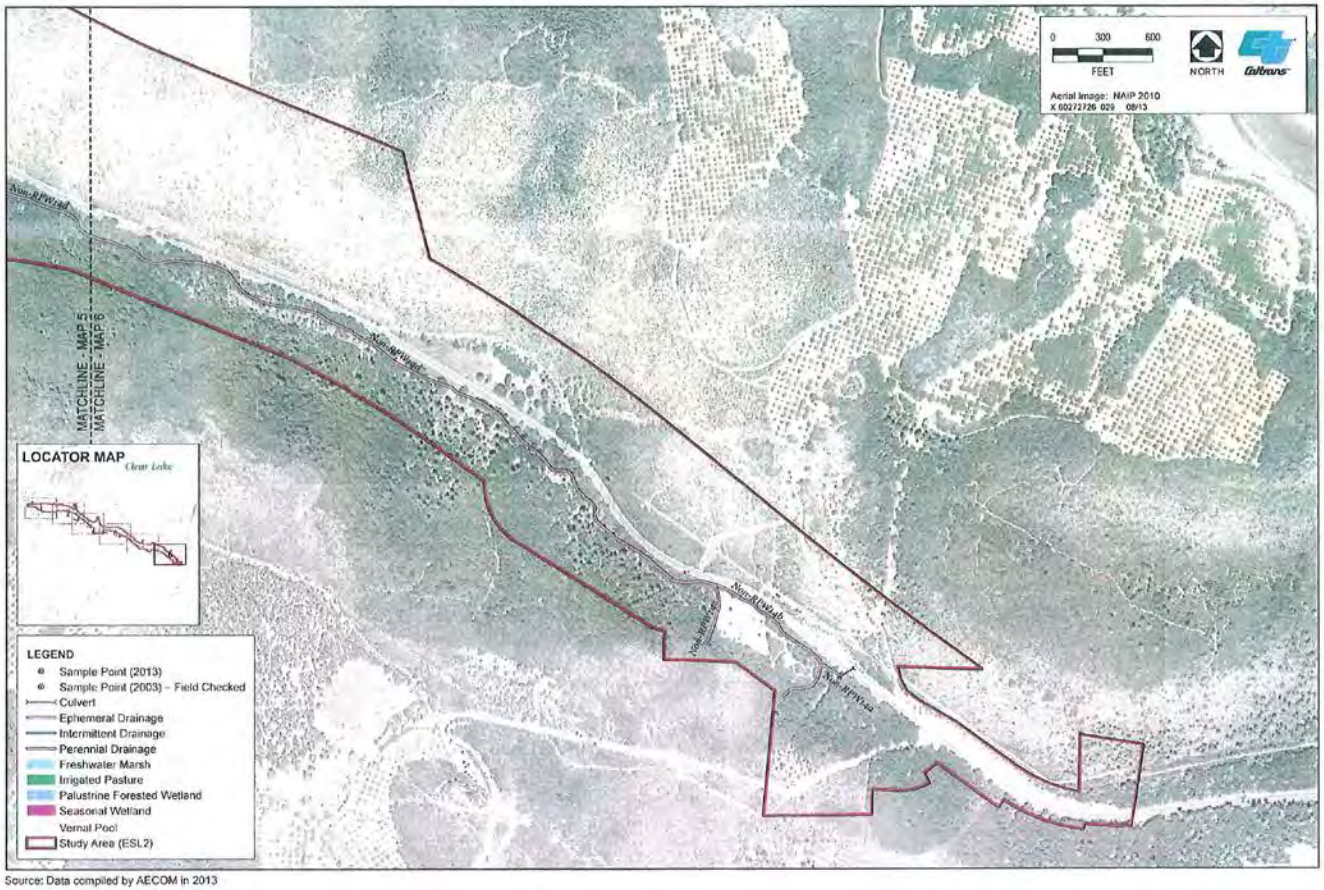
Source: Data compiled by AECOM in 2013

Figure D-4. Aquatic Resources Map



Source: Data compiled by AECOM in 2013

Figure D-5. Aquatic Resources Map



Source: Data compiled by AECOM in 2013

Figure D-6. Aquatic Resources Map

Appendix G Regional Species of Concern

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
Mammals						
Antrozous pallidus	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.
Corynorhinus townsendii townsendii	Townsend's western big-eared bat	*	Roosts in lava tubes, caves, buildings, mines, etc.	Yes	Yes	Townsend's big-eared bat *(Corynorhinus townsendii)* was identified roosting in three structures within ESL and was detected foraging within ESL.
Eumops perotis californicus	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.
Martes pennanti pacifica	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.
Myotis thysanodes	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.
Myotis volans	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.
Perognathus inornatus	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
Accipiter cooperii	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.
Accipiter gentilis	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.
Accipiter striatus	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.
Agelaius tricolor	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.
Ammodramus savannamus	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.
Amphispiza belli belli	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.
Aquila chysaetos	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
Ardea herodias	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.
Asio flammeus	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.
Athene cunicularia	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.
Botaurus lentiginosus	American bittern	FSC	Freshwater and saltwater marshes.	Yes	No	Species not observed in ESL, but potential habitat present.
Brachyramphus marmoratus	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.
Buteo regalis	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.
Chaetura vauxi	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.
Chlidonias niger	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
Chondestes grammacus	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.
Circus cyaneus	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.
Coccyzus americanus occidentalis	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.
Contopus cooperi	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.
Cypseloides niger	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.
Dendroica occidentalis	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
Dendroica petechia brewsteri	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.
Egretta thula	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.
Elanus leucurus	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.
Empidonax traillii brewsteri	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
Eremophila alpestris actia	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
Falco mexicanus	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.
Falco peregrinus anatum	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.
Haliaeetus leococephalus	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.
Icteria virens	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.
Lanius ludovicianus	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.
Melanerpes lewis	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.
Numenius americanus	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
Otus flammeolus	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.
Pandion haliaetus	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.
Phalacrocorax auritus	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.
Plegadis chihi	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.
Progne subis	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.
Riparia riparia	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.
Selasphorus rufus	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.
Selasphorus sasin	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
Sphyrapicus ruber	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.
Strix occidentalis caurina	Northern spotted owl	FT; ST	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						
Clemmys marmorata marmorata	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						
Ambystoma californiense	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.
Rana aurora aurora	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
Rana aurora draytonii	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.
Rana boylii	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 extent. FYLF are assumed absent from the project area.
Spea hammondii	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						
Archoplites interruptus	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.
Hypomesus transpacificus	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.
Hysterocarpus traski pomo	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
Lavinia exilicauda chi	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.
Oncorhynchus kisutch	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.
Oncorhynchus mykiss	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.
Oncorhynchus mykiss	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.
Oncorhynchus mykiss irideus	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.
Oncorhynchus mykiss irideus	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.
Oncorhynchus mykiss irideus	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.
Oncorhynchus tshawytsha	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.
Pogonichthys macrolepidotus	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						
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus mexicana*). 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.
Dubiraphia brunnescens	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.
Syncaris pacifica	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						
Amsinckia lunaris	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.
Arctostaphylos canescens ssp. *sonomensis*	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.
Arctostaphylos manzanita ssp. *elegans*	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.
Arctostaphylos stanfordiana ssp. *raichei*	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.
Astragalus rattanii var *jepsonianus*	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.
Balsamorhiza macrolepis var. *macrolepis*	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.
Brodiaea californica var. *leptandra*	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.
Brodiaea coronaria ssp. *rosea*	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
Calyptridium quadripetalum	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.
Calystegia collina ssp. *oxyphyla*	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.
Calystegia purpurata ssp. *saxicola*	Coastal bluff morning-glory	FSC; CNPS 1B	Coastal dunes, coastal scrub (50–345 feet).	No	No	No suitable habitat present in ESL.
Cardamine pachystigma var. *dissectifolia*	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.
Castilleja rubicundula ssp. *rubicundula*	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.
Ceanothus confusus	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.
Ceanothus divergens	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.
Chlorogalum pomeridianum var. *minus*	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.
Cryptantha clevelandii var. *dissita*	Serpentine cryptantha	FSC; CNPS 1B	Serpentine soils in chaparral (1,295–1,905 feet).	No	No	No suitable habitat present in ESL.
Didymodon norrisii	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.
Epilobium nivium	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.
Eriastrum brandegeae	Brandegee's wooly-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.
Erigeron angustatus	Narrow-leaved daisy	FSC; CNPS 1B	Serpentine soils in chaparral (265–495 feet).	No	No	No suitable habitat present in ESL.
Eriogonum luteolum var. *caninum*	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.
Eriogonum nervulosum	Snow Mountain buckwheat	FSC; CNPS 1B	Serpentine soils in chaparral (985–6,910 feet).	No	No	No suitable habitat present in ESL.

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Eryngium constancei	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.
Erythronium helenae	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.
Fritillaria pluriflora	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.
Gratiola heterosepala	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. *Gratiola* sp. identified in ESL, but not *Gratiola heterosepala*. Species not observed during focused plant surveys.
Hesperolinon adenophyllum	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.
Hesperolinon bicarpellatum	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.
Hesperolinon didymocarpum	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.
Hesperolinon drymarioides	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.
Hesperolinon serpentinum	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.
Horkelia bolanderi	Bolander's horkelia	FSC; CNPS 1B	Meadows and edges of vernally 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.
Lasthenia burkei	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.
Layia septentrionalis	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.
Legenere limosa	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.

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Linanthus jepsonii	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.
Lupinus antoninus	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.
Lupinus sericatus	Cobb Mountain lupine	FSLC; CNPS 1B	Chaparral, cismontane woodland, broadleafed upland forest, and lower montane coniferous forest from 905 to 5,005 feet.	Yes	No	Species not observed in ESL, but suitable habitat present.
Madia hallii	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.
Micropus amphibolous	Mt. Diablo cottonweed	CNPS 3	Rocky soils in broadleafed upland forest, chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	One population of this species was identified in ESL.
Mielichhoferia elongata	Elongate copper-moss	CNPS 2	Grows on metamorphic rock in vernally 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.
Monardella villosa ssp. *globosa*	Robust monardella	FSLC; CNPS 1B	Broadleafed 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.
Navarretia leucocephala ssp. *bakeri*	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.
Navarretia leucocephala ssp. *pauciflora*	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.
Navarretia leucocephala ssp. *plieantha*	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.
Navarretia myersii ssp. *deminuta*	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.
Navarretia myersii ssp. *myersii*	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.
Orcuttia tenuis	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
Panicum acuminatum var. *acuminatum (Jepson)* (=*Dicanthelium lanuginosum* var. *thermale)*	Geysers dichanthelium	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.
Parvisedum leiocarpum	Lake County stonecrop	FE; SE; CNPS 1B	Cismontane woodland, valley and foothill grassland, and vernally mesic depressions in volcanic outcrops from 1,200 to 2,595 feet.	Yes	Yes	Several populations of Lake County stonecrop were identified in ESL.
Penstemon newberryi var. *sonomensis*	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.
Plagiobothrys lithocaryus	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.
Potamogeton zosteriformis	Eel-grass pondweed	CNPS 2	Marshes and swamps (0–6,100 feet).	Yes	No	Species not observed in ESL, but suitable habitat present.
Quercus douglasii, Quercus lobata, Quercus agrifolia	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.
Sidalcea oregana ssp. *hydrophila*	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.
Streptanthus brachiatus ssp. *brachiatus*	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.
Streptanthus brachiatus ssp. *hoffmanii*	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.
Streptanthus breweri var. *hesperidis*	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.
Streptanthus morrisonii ssp. *elatus*	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.
Streptanthus morrisonii ssp. *kruckebergii*	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.
Tracyina rostrata	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.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present	Species Present	Rationale
Zigadenus micranthus var. *fontanus*	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.

*At the time of preparation and public circulation of the Lake 29 Improvement Project Revised Partial Draft EIR/EA, the Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) was listed as a State Candidate Threatened (SCT) species under the California Endangered Species Act (CESA). However, on August 25, 2016, the California Department of Fish and Wildlife, made a finding pursuant to Fish and Game Code Section 2075.5, that the petitioned action to add the Townsend's big-eared bat to the list of threatened or endangered species under the CESA (Fish & G. Code, § 2050 et seq.) is not warranted. (See also Cal. Code Regs., tit. 14, § 670.1, subd. (i)(1).)

Appendix H USFWS & NOAA 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: 08ESMF00-2017-SLI-0015 October 04, 2016
Event Code: 08ESMF00-2017-E-00020
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)

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.

Attachment

2

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: 08ESMF00-2017-SLI-0015
Event Code: 08ESMF00-2017-E-00020

Project Type: TRANSPORTATION

Project Name: Lake 29 Improvement Project
Project Description: Widening of a 2-lane state highway to 4-lanes on SR 29 roughly between Diener Lane and SR 175.

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, 10/04/2016 12:26 PM
1

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

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 *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
Birds			
Northern Spotted owl *(Strix occidentalis caurina)* Population: Wherever found	Threatened	Final designated	
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Crustaceans			
Conservancy fairy shrimp *(Branchinecta conservatio)* Population: Wherever found	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Wherever found	Threatened	Final designated	

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United States Department of Interior
Fish and Wildlife Service

Project name: Lake 29 Improvement Project

steelhead *(Oncorhynchus (=salmo) mykiss)* Population: Northern California DPS	Threatened		
Flowering Plants			
Burke's goldfields *(Lasthenia burkei)* Population: Wherever found	Endangered		
Few-Flowered navarretia *(Navarretia leucocephala ssp. pauciflora (=n. pauciflora))* Population: Wherever found	Endangered		
Lake County stonecrop *(Parvisedum leiocarpum)* Population: Wherever found	Endangered		
Loch Lomond Coyote thistle *(Eryngium constancei)* Population: Wherever found	Endangered		
Many-Flowered navarretia *(Navarretia leucocephala ssp. plieantha)* Population: Wherever found	Endangered		
Slender Orcutt grass *(Orcuttia tenuis)* Population: Wherever found	Threatened	Final designated	

http://ecos.fws.gov/ipac, 10/04/2016 12:26 PM
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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.

NMFS Species Lists: Summary of Listed Species Resources

On October 6, 2016, I obtained an updated species list from the National Marine Fisheries (NMFS) September 2016 Google Earth KMZ file for the Lake 29 Improvement Project. Per their new process, I emailed that list to NMFS and received an acknowledgement email. Both the species list and acknowledgement email are attached.

The species list request was for the quadrangles within which the project limit occurs: Clearlake Highlands and Kelseyville. The Clearlake Highland has no NMFS species listed as potential to be present within its boundaries. The Kelseyville Quad had three threatened or endangered fish species and to essential fish habitat (EFH) listed.

Kelseyville Quad:

ESA Listed Species:

- Central California Coast Coho ESU (Endangered)
- Central Coat Chinook Salmon (Threatened) & Critical Habitat
- Central California Coast Steelhead DPS (Threatened)

EFH species:

- Coho and Chinook Salmon

Habitat for ESA listed or EFH fish apply only to those streams in the Kelseyville quad that are located on the western side of the mountain range outside of the Clear Lake Basin; that is all streams that drain toward the the Russion River and Pacific coast and <u>not</u> towards the Central Valley and Sacramento River.

This project is isolated from the Central Valley drainage system in all but one small location on the western limits of the project. These intermittent and ephemeral waters, which have been identified as the only federally jurisdictional waters, are linked to the Cole Creek watershed by flow direction. The Cole Creek watershed is part of the upper Cache-Putah Creek watershed. Putah Creek, many miles downstream below Clear Lake and fish passage barriers, has salmon and steelhead habitat. Because drainages systems in the Lake 29 Improvement Project either drain into isolated basins or into a portion of the Cache-Putah Creek watershed that is not considered salmon or steelhead habitat, this project will have no effect on the above listed species.

Julie Owen, Associate Environmental Planner, NS, North Region R1

NMFS Correspondence/Species List:

From: NMFSWCRCA Species Llist - NOAA Service Account
[mailto:nmfswcrca.specieslist+canned.response@noaa.gov]
Sent: Thursday, October 06, 2016 12:10 PM
To: Owen, Julie M@DOT <julie.owen@dot.ca.gov>
Subject: Re: Caltrans: Lake 29 Improvement Project

Thank you for using NMFS' California species list, providing information for ESA, MSA, and MMPA resources under the jurisdiction of NMFS. Messages sent to this email address are not responded to directly. For questions, please contact Darren Howe by phone at 707-575-3152 or by email at darren.howe@noaa.gov.

From: Owen, Julie M@DOT
Sent: Thursday, October 06, 2016 12:10 PM
To: 'nmfswcrca.specieslist@noaa.gov' <nmfswcrca.specieslist@noaa.gov>
Subject: Caltrans: Lake 29 Improvement Project

Agency

California Department of Transportation (NEPA Assignment: Federal Highways)

North Region Environmental, District 2-Redding MS 30

1657 Riverside Drive

Redding, CA 96001

Point of Contact:

Julie Owen, Biologist

530.225.0408

julie.owen@dot.ca.gov

Project Description:

Increase the two lane state route (SR) 29 for an eight mile stretch from approximately Diener Drive to just past SR 175 (Post Mile 23.6/31.5). Project is primarily located in three isolated basins with only a very minor connection to the Cole Creek watershed via an intermittent drainage at the west end of the project.

Search Results for Kelseyville and Clearlake Highlands Quads:

[Species with a 'X' highlighted next to name, have potential habitat]

Quad Name **Clearlake Highlands**	Quad Name **Kelseyville**
Quad Number **38122-H6**	Quad Number **38122-H7**
ESA Anadromous Fish	**ESA Anadromous Fish**
SONCC Coho ESU (T) -	SONCC Coho ESU (T) -
CCC Coho ESU (E) -	CCC Coho ESU (E) - X
CC Chinook Salmon ESU (T) -	CC Chinook Salmon ESU (T) - X
CVSR Chinook Salmon ESU (T) -	CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -	SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -	NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -	CCC Steelhead DPS (T) - X
SCCC Steelhead DPS (T) -	SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -	SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -	CCV Steelhead DPS (T) -
Eulachon (T) -	Eulachon (T) -
sDPS Green Sturgeon (T) -	sDPS Green Sturgeon (T) -
ESA Anadromous Fish Critical Habitat	**ESA Anadromous Fish Critical Habitat**
SONCC Coho Critical Habitat -	SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -	CCC Coho Critical Habitat - X
CC Chinook Salmon Critical Habitat -	CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -	NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -	CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -	SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -	SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -	CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -	Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -	sDPS Green Sturgeon Critical Habitat -
ESA Marine Invertebrates	**ESA Marine Invertebrates**
Range Black Abalone (E) -	Range Black Abalone (E) -
Range White Abalone (E) -	Range White Abalone (E) -
ESA Marine Invertebrates Critical Habitat	**ESA Marine Invertebrates Critical Habitat**
Black Abalone Critical Habitat -	Black Abalone Critical Habitat -
ESA Sea Turtles	**ESA Sea Turtles**
East Pacific Green Sea Turtle (T) -	East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -	Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -	Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -	North Pacific Loggerhead Sea Turtle (E) -
ESA Whales	**ESA Whales**
Blue Whale (E) -	Blue Whale (E) -
Fin Whale (E) -	Fin Whale (E) -
Humpback Whale (E) -	Humpback Whale (E) -
Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -	North Pacific Right Whale (E) -
Sei Whale (E) -	Sei Whale (E) -
Sperm Whale (E) -	Sperm Whale (E) -
ESA Pinnipeds	**ESA Pinnipeds**

Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -
Essential Fish Habitat	**Essential Fish Habitat**
Coho EFH -	Coho EFH - X
Chinook Salmon EFH -	Chinook Salmon EFH - X
Groundfish EFH -	Groundfish EFH -
Coastal Pelagics EFH -	Coastal Pelagics EFH -
Highly Migratory Species EFH -	Highly Migratory Species EFH -
MMPA Species (See list at left)	**MMPA Species (See list at left)**
ESA and MMPA Cetaceans/Pinnipeds **See list at left and consult the NMFS Long Beach office** **562-980-4000**	**ESA and MMPA Cetaceans/Pinnipeds** **See list at left and consult the NMFS Long Beach office** **562-980-4000**
MMPA Cetaceans -	MMPA Cetaceans -
MMPA Pinnipeds -	MMPA Pinnipeds -

Julie Owen

Associate Environmental Planner, NS

California Department of Transportation

North Region Office of Environmental Mgnt., District 2

(530) 225-0408

Appendix I Avoidance, Minimization, and Mitigation Summary

Avoidance and Minimization Measures

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.

Hazardous Waste/Materials

- Should any underground storage tanks be discovered, proper removal, cleanup, and disposal would take place prior to or during construction activities.
- If NOA and/or ADL is found at hazardous levels, remediation activities in accordance with all applicable local, state, and federal regulations would be implemented.
- All regulated asbestos-containing materials would be abated by licensed asbestos contractors prior to demolition.

Biological Resources

Natural Communities

- 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.

- Caltrans would preserve in perpetuity heritage oak woodlands protected by SCR No. 17 at a 1:1 ratio for a total of 32.2 acres. The preservation of heritage oak woodlands would take place 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. 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. Caltrans would also implement the creation of heritage oak woodlands at a 0.5:1 ratio. Creation of oak woodlands would take place at an off-site location. For oak woodland creation, the preference would be to collaborate with a land managing agency or nonprofit organization to fund a planting project. If no such partnership can be established, Caltrans would secure land through acquisition or a conservation easement and plant to create habitat similar to that removed by the project. The density and species of oak trees would vary based on what the site conditions would support. To ensure success, a planting plan would be developed to guide the planting, and short-term maintenance and monitoring effort. As with the preservation, 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.

  The goal is not to preserve or create an exact replica of the affected habitat concerning species frequency and density, but to preserve and create a self-sustaining habitat that would provide ecological functions similar to what was lost as a result of the proposed project. Preservation and creation of heritage oak woodlands would take place within the 8 digit hydrological unit code (HUC) of the project, with priority given to any suitable properties within the “project’s watersheds.” If an oak woodland mitigation bank or suitable in-lieu program becomes available, Caltrans would also consider these options. As previously stated the project would likely be constructed in phases (segments) as funding becomes available. Oak woodland preservation and creation would take place commensurate with the segment in construction and the corresponding heritage oak woodland impacts.
- 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 and regenerate post construction.
- 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

- 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.

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 during previous project surveys. 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. These maps and databases are then

used to identify areas where construction and maintenance forces will implement precautionary measures to avoid impacts to resources of concern, including the restriction of herbicide use. Herbicides would not be used as a part of the proposed project nor will they be used during future construction or routine maintenance activities in areas which contain sensitive biological resources.

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 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.

North Western Pond Turtle (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 not detect NWPT, this measure is to ensure that turtles that may have been missed during the surveys 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 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 construction activities would be allowed within tributaries to Thurston Lake, including Thurston Creek, from December 31 through June 1to avoid impacts to CLH in the unlikely event they are present within the project area of disturbance.

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 storm water 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.

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 corridor 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 (excluding vernal pools) of the U.S. and the State (under USACE or RWQCB 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 because the mitigation has already been successfully established. Purchase of mitigation credits is the preferred method of the USACE and RWQCB. Mitigation credits would be purchased at a 1:1 ratio to ensure there is no net loss to wetlands. If bank credits are not available, Caltrans would contribute funds to the USACE- and RWQCB-approved in-lieu fee program.
- Mitigation for permanent impacts to vernal pool habitat would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program at a 2:1 ratio. The in-lieu fee program would be used to compensate for impacts to vernal pools because there are no known mitigation banks in the project area that offer vernal pool mitigation credits.
- Mitigation for permanent impacts to “other waters” would include the contribution of funds to the USACE- and RWQCB-approved in-lieu fee program at a 2:1 ratio. The in-lieu fee program would be used to compensate for impacts to

"other waters" because there are no known mitigation banks in the project area that offer "other waters" mitigation credits.

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

A flow spreader system would be incorporated into the proposed highway storm water drainage system 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 J Comments on Notice of Preparation

A Notice of Preparation (NOP) was sent to the State Clearinghouse on February 2, 2003. The following agencies responded:

- United States Bureau of Land Management
- Lake County Air Quality Management District
- United States Fish and Wildlife Service
- California Department of Toxic Substances Control

Their letters of response follow.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ukiah Field Office
2550 N. State Street
Ukiah, CA 95482
www.ca.blm.gov/ukiah

March 3, 2003

In Reply Refer To:
2800
CA-340

Cher Daniels, Chief
Office of Environmental Management, S-1
Caltrans District 3 Sacramento Office
2389 Gateway Oaks Dr., 1st floor
Sacramento, CA 95833

Dear Ms. Daniels:

We received your notice of preparation of a draft Environmental Impact Report/Statement to improve traffic flow and safety on Route 29 from KP 38.3 to KP 50.9. Since there are no Bureau of Land Management administered lands involved on this section of highway, there are no permits needed from us and we do not need to be involved in the EIR/EA.

Thank you for giving us the opportunity to comment.

Sincerely,

Jonna Hildenbrand (Acting)

Rich Burns
Ukiah Field Manager

LAKE COUNTY AIR QUALITY
MANAGEMENT DISTRICT
885 Lakeport Blvd
Lakeport, CA 95453
Phone (707) 263-7000

Robert L. Reynolds
Air Pollution Control Officer
Fax (707) 263-0421
bobr@pacific.net

February 10, 2003

Cher Daniels, Branch Chief
ATTN: Lupe Jimenez
Office of Environmental Management
California Department of Transportation
2389 Gateway Oaks Dr., 1st Floor
Sacramento, CA 95833

Subject: NOP of a DEIR for SR 29 improvements KP 38.3 to KP 50.9

Dear Ms. Jimenez :

Highway construction projects will result in short and long term air emissions impacts. Construction related impacts include heavy equipment combustion emissions from largely mobile diesel equipment and particulate from grading, earth moving and paving operations. Long term emissions will result from growth inducement. Construction emissions have a variety of sources and can be mitigated through the application of various control methods. Particulate matter control is the most significant local issue.

The Lake County Air Basin is the only District in the State that is in attainment will all State Ambient Air Quality Standards (AAQS). The three most difficult standards to meet are the PM-10 particulate, visibility and ozone. Particulate emissions are locally important due to the health and nuisance potential and can be readily mitigated with good dust and combustion control practices.

Where feasible, stripped vegetation should be chipped and used for exposed ground surfacing to limit wind and water erosion. Excavation and grading activities should utilize adequate soil moisture and vehicle speed controls to reduce dust emissions. Materials tracked onto the roadway where they can be disturbed by vehicular traffic should be cleaned up as soon as possible. Track out barriers should be constructed of sufficient length to remove material from vehicle wheels. Water washing and wet brooming or vacuum brooming are effective removal methods.

Durable temporary road base should be installed and palliatives or temporary paving utilized to reduce vehicular traffic dust.

To the extent possible, excavation and grading should be designed to have balanced cut and fill. Off site borrow and spoils disposal areas should be identified.

Aggregate processing, concrete and asphalt production equipment may require District permits. The EIR should consider the location and duration of operation if such is anticipated to be included in the project.

Cher Daniels, Branch Chief 2/10/2003

Buildings demolition activities are regulated by the District's Asbestos NESHAP Regulation 467. Structures are required to be adequately surveyed for asbestos and a demolition notice filed with the District 14 days in advance of any asbestos removal or demolition activity.

There are references in the (Project Description page 2) and Justification (page 2) documents that refer to bypassing the "Route 29" north shore alignment. I believe these to be a "typo" and meant to refer to the "Route 20" north shore alignment.

Should you have any questions in the above regard, please give me a call. I am the District staff contact for this project and may be reached at (707) 263-7000, FAX (707) 263-0421, e-mail rossk@lcaqmd.net.

Sincerely,

Ross L. Kauper, Deputy APCO

rlk

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
PPN 2954

MAR 12 2008

Ms. Cher Daniels, Chief
Office of Environmental Management
California Department of Transportation
District 3 Sacramento Office
2389 Gateway Oaks Drive
Sacramento, California 95833

Dear Ms. Daniels:

Thank you for the opportunity to review the Notice of Preparation of an Environmental Impact Report/Environmental Assessment for the State Route (SR) 29 Improvement Project in Lake County, California. The California Department of Transportation and the Federal Highway Administration, in partnership with Lake County, have proposed the upgrade of SR 29 between postmile 23.8 and postmile 31.6. The proposed 7.8 mile project is a component of the larger corridor improvement project described in the report: *Route 20 Corridor Study, State Route 20 Principle Arterial Corridor Between U.S. 101 Freeway and Interstate 5 Freeway*. The enclosures are intended to assist you in your continued environmental review of this proposal. Future consultation with the U.S. Fish and Wildlife Service (Service) may be required under the Fish and Wildlife Coordination Act if project activities are anticipated to impact jurisdictional wetlands, and/or the Endangered Species Act if project activities are anticipated to affect federally listed species.

Enclosure A provides a list of sensitive species that may occur in or near the project site. The Service recommends that surveys be completed by a qualified biologist on the proposed project site to confirm the presence or absence of special-status species or their habitats. Enclosure B recommends general guidelines for identifying and mitigating project impacts to fish, wildlife, and their habitats. The Council on Environmental Quality developed regulations for implementing the National Environmental Policy Act, and defines mitigation to include: (1) avoiding the impact; (2) minimizing the impact; (3) rectifying the impact; (4) reducing or eliminating the impact over time; and (5) compensating for impacts. The Service supports and adopts this definition of mitigation and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. Accordingly, we maintain the best way to mitigate adverse biological impacts is avoidance when at all possible.

We encourage you to use these guidelines to develop a comprehensive environmental document that addresses these needs. If you have any questions regarding these comments, please contact

Jerry Bielfeldt (Watershed Planning Branch) in the Sacramento Fish and Wildlife Office at (916) 414-6584.

Sincerely,

for David L. Harlow
Acting Field Supervisor

Enclosures

cc:
AES, Portland, OR
RM, CDFG, Region 3, Yountville , CA (w/o enclosures)

Department of Toxic Substances Control

Edwin F. Lowry, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

March 18, 2003

Cher Daniels, Chief
Attn.: Ms. Lupe Jimenez
Associate Environmental Planner
Office of Environmental Management, S-1
Caltrans District 3 Sacramento Office
2389 Gateway Oaks Drive, 1st Floor
Sacramento, California 95833

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT/STATEMENT FOR ROUTE 29 KP 38.3 TO KP 50.9 LAKE COUNTY (NO SCHEDULE NUMBER)

Dear Ms. Jimenez:

The Department of Toxic Substances Control (DTSC) has reviewed the document referenced above and has the following comment. After reviewing our hazardous substances site data base (Calsites), we have identified sites in the immediate area (list enclosed). DTSC has not done an evaluation to determine whether any of these sites could impact the subject project. DTSC recommends that the draft EIR/EIS include a discussion on hazards/hazardous materials if the project may be impacted by a hazardous substances release site.

If you have any questions. Please contact me by email at tmiles@dtsc.ca.gov or telephone at (916) 255-3710.

Sincerely,

Tim Miles

Tim Miles
Hazardous Substances Scientist

Enclosure

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at www.dtsc.ca.gov.

Printed on Recycled Paper

Cher Daniels, Chief
March 18, 2003
Page 2

cc. Planning & Environmental Analysis Section (PEAS)
CEQA Tracking Center
1001 "I" Street, 22nd Floor
P.O. Box 806
Sacramento, California 95812-0806

State Clearinghouse
Office of Planning and Research
1400 10th Street, Room 121
Sacramento, California 95814-0613

03/17/03 CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PAGE 1

DEPARTMENT OF TOXICS SUBSTANCES CONTROL

CALSITES

SHORT SUMMARY REPORT

R	CO	SITE NAME	SITE ADDRESS	SITE CITY	ZIP CODE	IDNUM	STATUS
1	17	SULPHUR BANK MERCURY MINE	SULPHUR BANK ROAD	CLEARLAKE	95422	17100001	AWP
1	17	ABBOTT MINE	HWY 20 (N SIDE), E OF JCT OF HWY 20 & 53	CLEARLAKE OAKS	95423	17100002	PEAR
1	17	MOYER CHEMICAL CO.	2532 VALLEY ROAD	LAKEPORT	95453	17280003	REFOA
1	17	S BAR S QUARRY	7769 HIGHWAY 29	KELSEYVILLE	95451	17320001	REFRW
1	17	CARTER & SONS AIRCRAFT PAINT	OLD HIGHWAY 53	CLEARLAKE	95422	17340001	REFOA
1	17	EASTLAKE SANITARY LANDFILL	DAVIS STREET (EAST END)	CLEARLAKE	95422	17490001	REFRW
1	17	GEOTHERMAL, INC	19020 BUTTE CANYON ROAD (BOX 480)	MIDDLETOWN	95461	17490002	REFRW
1	17	IT BENSON RIDGE	7260 SOUTH HIGHWAY 29	KELSEYVILLE	95451	17490005	CERT
1	17	CAVEMAN BATTERY	2335 SOUTH MAIN	LAKEPORT	95453	17500001	REFOA
1	17	KELSEYVILLE AUTO DISMANTLERS	7666 HIGHWAY 29	KELSEYVILLE	95451	17500002	REFOA
1	17	HIDDEN VALLEY AUTO WRECKERS	HIGHWAY 29 AT GRANGE RD	MIDDLETOWN	95461	17500003	REFOA
1	17	LAST MILE AUTO DISMANTLERS	1205 WEST HIGHWAY 29	UPPER LAKE	95485	17500004	REFOA
1	17	AMINOIL USA, INC	KGRA GEYERS FLD NR	MIDDLETOWN	95461	17510001	REFOA
1	17	TIME OIL CO	202 S MAIN ST	LAKEPORT	95453	17510002	REFOA
1	17	AN-LEE	201 S MAIN ST	LAKEPORT	95453	17510005	REFOA
1	17	UNION CO OF CAL AGENCY	16445 MAIN ST	LOWER LAKE	95457	17510007	REFOA
1	17	RUSH OIL CO	3720 HIGHLAND SPRINGS	LAKEPORT	95453	17510009	REFRW
1	17	JACKPOT STATION	202 S MAIN	LAKEPORT	95453	17510010	REFOA
1	17	SNIDER & SONS AUTO & MACH SHOP	5315 GADDY LANE	KELSEYVILLE	95451	17510011	REFOA
1	17	AIRPOWER, INC	4745 HIGHLAND SPRINGS ROAD	LAKEPORT	95453	17750001	REFRW
1	17	USCG LORAN C STA	E. GRANGE ROAD	MIDDLETOWN	95461	17960001	REFRC
1	17	REDBUD COMMUNITY HOSP-MIDDLETOWN CLINIC	21268 CALISTOGA STREET	MIDDLETOWN	95461	17800001	NA
1	17	CLEARLAKE COMMUNITY SCHOOL	6945 OLD HIGHWAY 53	CLEARLAKE	95422	17880001	VCP

TOTAL NUMBER OF RECORDS FOR THIS REPORT = 23

Appendix K 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 Final 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 Final 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 storm water 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.

Appendix L SHPO Concurrence

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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August 28, 2015
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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

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Appendix M USFWS NLAA Concurrence and Correspondence

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

In Reply Refer to:
08ESMF00-2013-
I-0523-2

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 draytonii*) (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(j), 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.

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-I-1219 and 2013-I-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

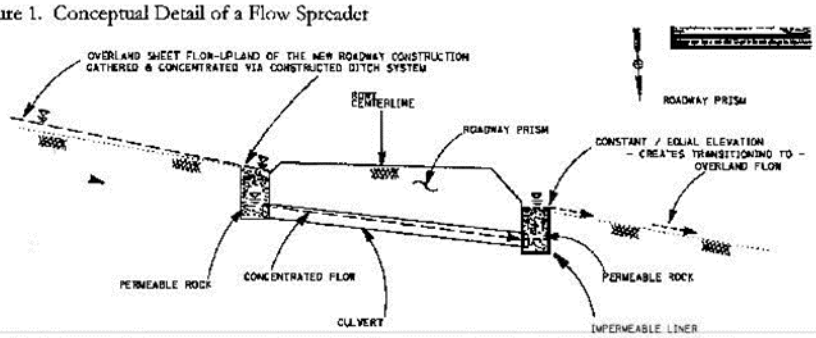
The proposed new expressway alignment will be constructed entirely outside of Manning Flat, diverging south from the existing Lake 29 highway, which currently transects the flat. Because Manning Flat consists of highly erodible soil, a system of flow spreaders will be installed along the length of the 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

- 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.

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;

- 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

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.

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 (CNDDB), five of which are in Lake County (CNDDB 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 (CNDDB 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 (CNDDB 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.

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 (CNDDB 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 (CNDDB 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 (CNDDB 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

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

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Appendix N CEQA Checklist

Supporting documentation for all California Environmental Quality Act (CEQA) checklist determinations is provided in Chapters 2 and 3 of this EIR/EA. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapters 2 and 3.

CEQA Environmental Checklist

01-Lake-29	23.8/31.6	2981U
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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	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
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?	☐	☐	☒	☐

	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?	☐	☐	☒	☐
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
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)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐

	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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
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:	☐	☐	☐	☒
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?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒

	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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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)?	☐	☐	☐	☒
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐

	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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

	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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
) 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?	☐	☐	☐	☒
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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
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?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
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?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	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?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

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?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐