State Route 4 Wagon Trail Realignment Project

Calaveras County
District 10-CAL-4-Post Mile R10.3/R16.4 (Post Mile 12.66/19.10)
10-0E5300/10-0000-0025

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment

Prepared by the
State of California Department of Transportation
and Calaveras County

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.

September 2015

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project in Calaveras County in California. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures. Caltrans is the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) lead agency.

What you should do:

- Please read the document.
- Additional copies of the document and the related technical studies are available for review at the California Department of Transportation, District 10, 1976 East Charter Way/East Dr. Martin Luther King Jr. Blvd, Stockton, CA 95205; Calaveras County Public Works, 891 Mountain Ranch Road, San Andreas, CA 95249; Calaveras County Library-Angels Camp Branch, 426 N. Main Street, Angels Camp, CA 95249; Calaveras County Library-Copperopolis Branch, Suite 106 Lake Tulloch Plaza, Copperopolis, CA 95228. This document can be downloaded at the following website: http://www.dot.ca.gov/dist10/environmental/projects/sr4wagontrail/index.html
- Attend the public information meeting or public hearing on: October 8, 2015
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the public information meeting and/or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Scott Smith, Senior Environmental Planner, California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721.
- Submit comments via email to: Scott.Smith@dot.ca.gov.
- Submit comments by the deadline: October 24, 2015.

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Scott Smith, Senior Environmental Planner, 855 M Street, Suite 200, Fresno, CA 93721; (559) 445-6172 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice), or 711.

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Federal Highway Administration Highway ID No. ____

SCH #_____
District 10-CAL-4-Post Mile R10.3/R16.4 (Post Mile 12.66/19.10)
10-0E5300
10-0000-0025

Realign a segment of State Route 4 in Calaveras County from about 2.6 miles east of Copperopolis (near Bonanza Mine Way) to about 1.6 miles west of the State Route 4/49 junction (near Stockton Road) Post Mile R10.3/R16.4 (Post Mile 12.66/19.10)

INITIAL STUDY
with Proposed Mitigated Negative Declaration/
ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation
and
Calaveras County

9/11/15
Date of Approval

Margaret L. Lawrence
Margaret L. Lawrence
Office Chief, Central Region
Environmental North
California Department of Transportation
NEPA and CEQA Lead Agency

The following person may be contacted for additional information concerning this document:

Scott Smith, Senior Environmental Planner
California Department of Transportation
855 M Street, Suite 200, Fresno, CA 93721
(559) 445-6172

SCH: _____

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), in cooperation with Calaveras County, proposes to improve a segment of State Route 4 in Calaveras County from about 2.6 miles east of Copperopolis (near Bonanza Mine Way) to about 1.6 miles west of the State Route 4/49 junction (near Stockton Road), from post miles R10.3to R16.4.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Mitigated Negative Declaration is subject to change based on comments received from interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on Coastal Zones, Wild and Scenic Rivers, Timberlands, Section 4(f), Parks and Recreational Facilities, and Growth.

In addition, the proposed project would have less than significant effects to Existing and Future Land Use, Consistency with State, Regional, and Local Plans and Programs, Farmlands, Community Character and Cohesion, Environmental Justice, Traffic and Transportation/Pedestrian, Hydrology and Floodplain, Paleontology, Hazardous Waste and Materials, Air Quality, Bicycle Facilities, Water Quality and Storm Water Runoff, Geology/Soils/Seismic/Topography, Hazardous Waste/Materials, Utilities, Emergency Services, Air Quality, Invasive Species, and Noise.

With the following mitigation measures incorporated, the proposed project would have less than significant effect to Real Property Acquisition, Visual/Aesthetics, Cultural Resources, Natural Communities, Wetlands and Other Waters, Plant Species, Animal Species, and Threatened and Endangered Species:

Real Property: Property owners will be treated fairly and in compliance with the California Department of Transportation Relocation Assistance program and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

Visual/Aesthetics: Oak tree mitigation would occur on-site or at a California Department of Fish and Wildlife approved off-site location.

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Cultural Resources: Specific mitigation to address effects to cultural resources will be refined in detail in a Memorandum of Agreement prepared for the project following circulation of the Draft Environmental Document. The Memorandum of Agreement will be signed by The Department and the State Historic Preservation Officer. Proposed mitigation measures to identify, avoid, and/or minimize the effects are described in Mitigation Measures CR-2 through CR-23 contained within the Draft Initial Study/Environmental Assessment.

Biological Resources: Impacts to biological resources would be minimized through biological monitoring, preconstruction surveys, environmentally sensitive area fencing, and work windows. Impacts to threatened and endangered species would be mitigated by terms and conditions provided in the U.S. Fish and Wildlife Service Biological Opinion concurrence to be obtained for the project following circulation of the Draft Environmental Document, standard contract provisions, and Best Management Practices. Impacts to wetlands and waters of the United State would be mitigated by the terms and conditions provided in the Streambed Alteration Agreement, U.S. Army Corps of Engineers Section 404 and 401 permits. All construction activity would be limited to the project impact area and environmental sensitive areas would be implemented. Proposed mitigation measures to identify, avoid, and/or minimize the effects are described in Bio Mitigation Measures 3, 5, 6, 7, 31, and 33 as contained within the Draft Initial Study/Environmental Assessment.

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Nabeelah Hanif Date
Acting Division Chief
Central Region Environmental
California Department of Transportation

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), in cooperation with Calaveras County, proposes to improve a segment of State Route 4 from Bonanza Mine Way to Stockton Road from 2.6 miles east of Copperopolis to about 1.6 miles west of the State Route 4/49 junction in Altaville (Angels Camp), post miles 10.3 to 16.4 (see Figures 1 and 2). The State Route 4 Wagon Trail Realignment Project is located in Calaveras County, California. Caltrans is the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) lead agency.

State Route 4 is a major thoroughfare from the San Joaquin Valley to the Sierra Nevada Mountains and is subject to a high volume of recreational vehicles. The accident rate within the project area is over twice the statewide average.

The project proposes to construct a new alignment with two standard-width lanes and paved shoulders. The project would improve sight distance by increasing curve radii with the incorporation of longer, smoother curves. The project is intended to enhance safety by improving alignment geometrics.

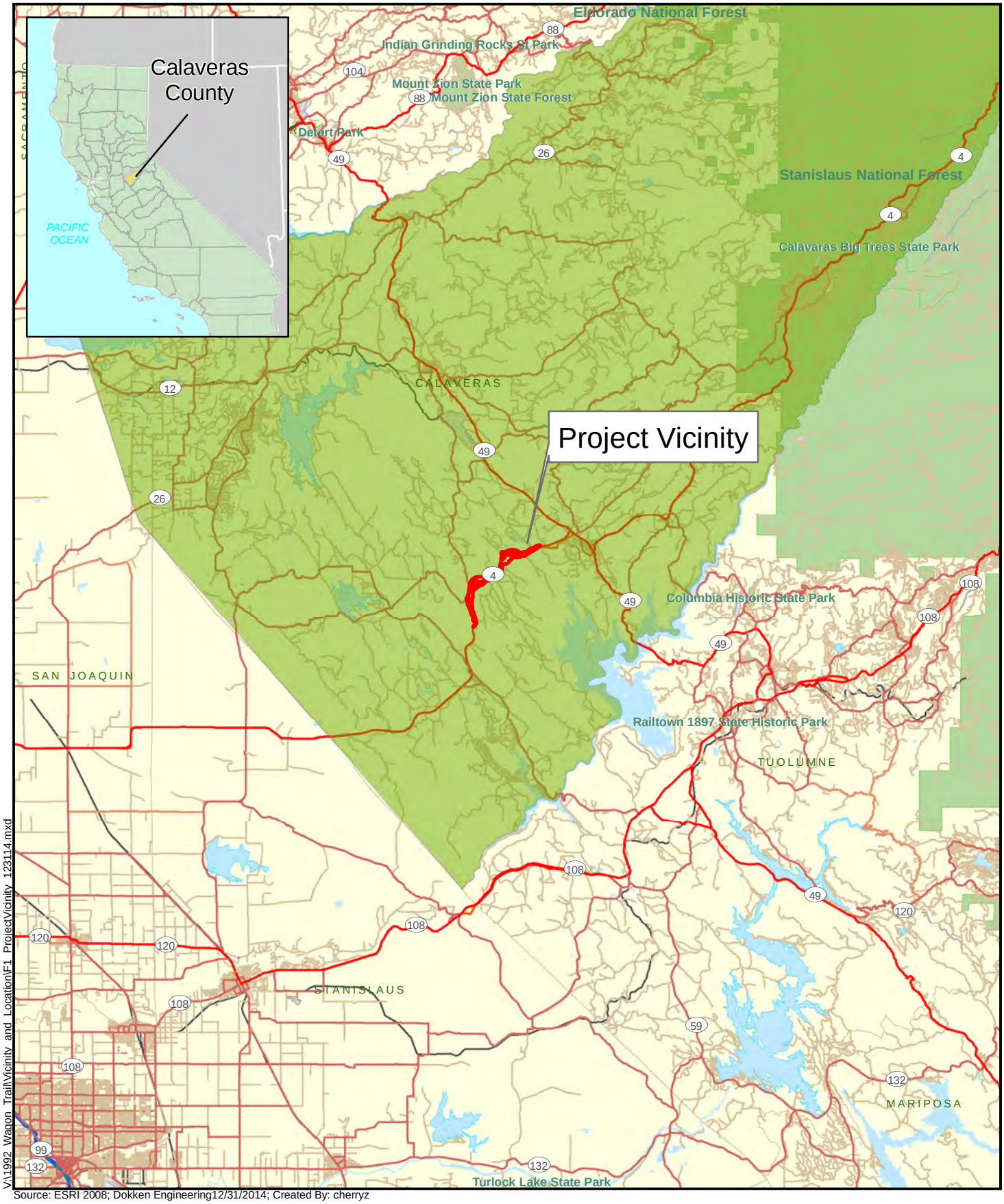
The County, in coordination with Caltrans, has developed two build alternatives for the project: Alternative 1 and Alternative 2. A No-Build Alternative is also under consideration.

The project may be built in phases depending on availability of funding. The phases would be built so that each roadway would tie into the existing highway.

The State Route 4 Wagon Trail Realignment Project is listed in the 2007 *Regional Transportation Plan* as well as the 2012 *Regional Transportation Plan* update, approved by the Calaveras Council of Governments. The project is identified as providing a more efficient and safer alignment on State Route 4 between Copperopolis and Angels Camp.

<u>Background</u>

In the early 1960s, the Division of Highways (predecessor of Caltrans) began studies to upgrade the segment of State Route 4 between the San Joaquin/Stanislaus County line and the junction of State Route 49 in Altaville. A freeway route from post miles R10.0 to R21.4 was adopted in 1963. Freeway agreements covering the highway from post miles R10.0 to R21.4 were executed in 1969.



Source: ESRI 2008; Dokken Engineering12/31/2014; Created By: cherryz

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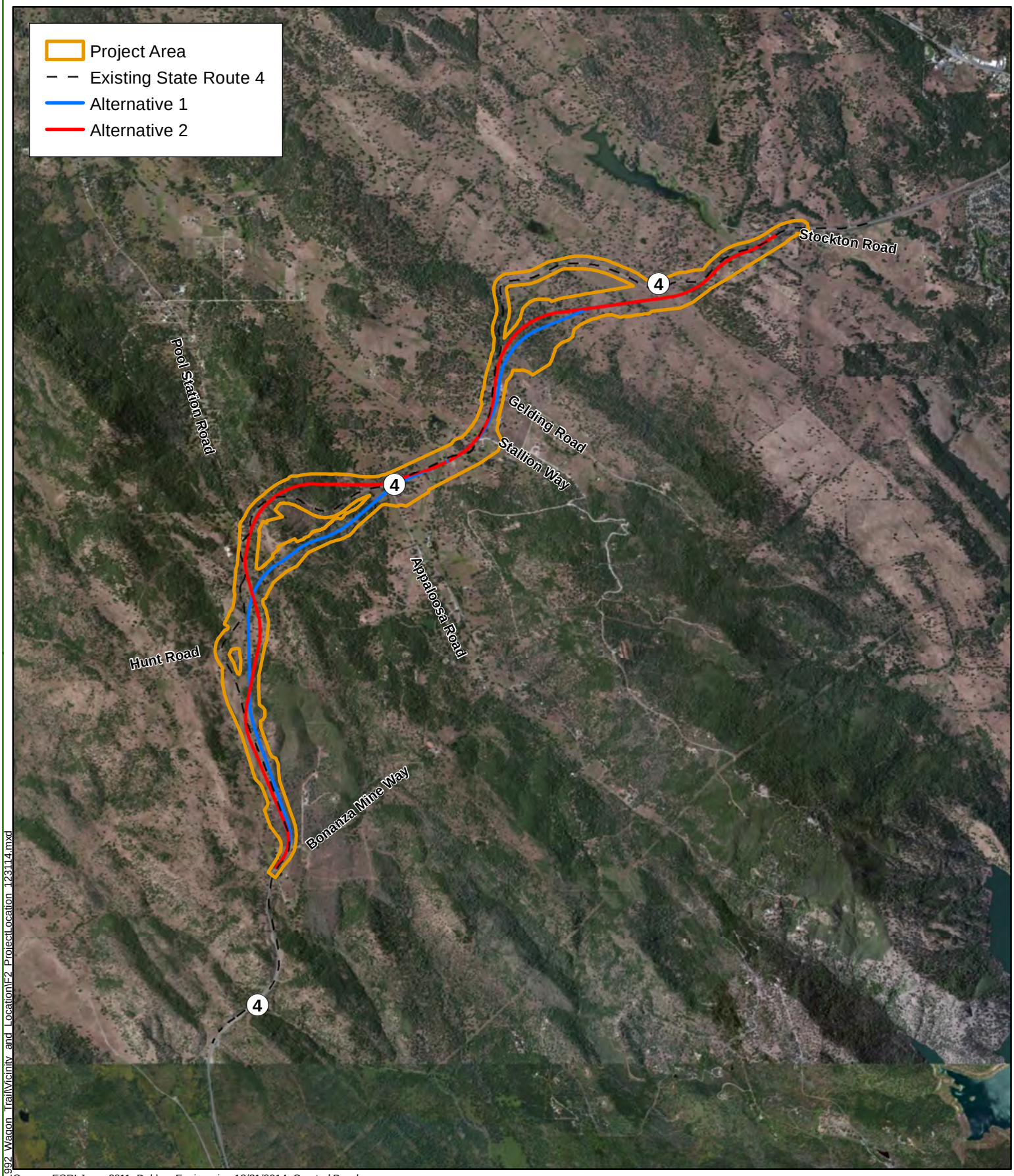
0 5 10 Miles

Figure 1
Project Vicinity
EA # 10-0E5300; PM R10.3/R16.4
State Route 4 Wagon Trail Realignment
Project Calaveras County, California



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Source: ESRI June, 2011; Dokken Engineering 12/31/2014; Created By: cherryz

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0 0.5 1 1.5 2 Miles

FIGURE 2
Project Location

EA # 10-0E5300; 10-CAL-4 (PM R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

In January 1985, the California Transportation Commission passed Resolution HRA 85-9 that included the designation of the new segment of State Route 4 as a Controlled Access Highway.

In 1989, Caltrans started construction to widen and realign a 0.6 mile segment of State Route 4 east of Copperopolis, from post miles R9.9 to R10.5. The project upgraded this segment to a 40-foot-wide standard two-lane limited access highway and was completed in 1991.

In April 2001, Caltrans prepared a Project Study Report/Project Development Support document for the State Route 4 Wagon Trail Realignment Project that identified a need to make improvements to the roadway to improve safety operations. As noted in the Project Study Report/Project Development Support, this project was intended to relieve current and future congestion and enhance safety. It would also improve system continuity.

State Route 4 is a major interregional east/west route through Calaveras County, a region that has among the highest percentage growth rate in the state. The highway begins near Hercules in Contra Costa County and ends at Route 89, south of Markleeville in Alpine County. State Route 4 is the main access route to Calaveras Big Trees State Park and to ski resorts in Alpine County. State Route 4, within the project limits, is a two-lane east-west highway. Except for the 0.6 mile segment that is 40 feet wide, most of the roadway varies between 18 to 20 feet wide with no shoulders.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the State Route 4 Wagon Trail Realignment Project is to:

- Enhance safety;
- Improve sight distance; and
- Limit access to State Route 4.

1.2.2 Need

The proposed project is needed to correct the roadway's narrow lanes and lack of shoulders in the project area. The horizontal and vertical alignments follow the existing rolling topography, resulting in numerous curves and limited sight distance. The existing tight curves and rapid gain in elevation limit the drivers sight distance. The width and geometry of the roadway, combined with the high traffic volumes, increase the number of accidents throughout the project area. Accidents that occurred within the proposed project area between January 2008 and June 2012 included:

Table 1: Accidents within the Project Area Accident Type	**Number of Occurrences**
Overturn	21
Hit Object	24
Rear End	7
Sideswipe	2
Other	1
Source: California Statewide Integrated Traffic Records System, 2013	

Currently, there is no controlled access to State Route 4.

Existing Roadway Conditions

Like many older facilities, State Route 4 does not meet current design standards. The existing facility has the following design features:

- Pavement width varies between 18 to 20 feet for most of the roadway;
- Shoulder widths vary from 0 to 4 feet with most of the project having no shoulders, except for the 0.6 mile, 40-foot-wide section near the Pool Station Road intersection;
- Access to State Route 4 is currently uncontrolled. Vehicles can enter or exit the facility from connecting private driveways, commercial driveways, city streets and county roads; and
- The alignment contains curves and limited sight distance.

System Safety Needs

An accident analysis was done based on Traffic Accident Surveillance and Analysis System (TASAS) records on file at Caltrans for the segment of State Route 4 from post miles R10.3 to R19.4; however, no records were reviewed from post miles 14.5 to 14.8 within the limits of the recently completed Pool Station Road intersection improvements (November 2012). Several geometric deficiencies were corrected with the intersection improvements, and therefore potential causes of accidents at that location for the date range analyzed may no longer be applicable. Traffic Accident Surveillance and Analysis System accident information from January 1, 2010 to December 31, 2012 was reviewed. Table 2 shows this information. Fatal plus Injury and Total accidents is higher for post mile R10.3 to post mile R14.5 segment than the statewide average for similar roadways (see Table 2).

Table 2. Traffic Accident Surveillance and Analysis System (TASAS) Accident Rates from Post Miles R10.3 to R19.4 (January 2010 to December 2012)

Segment	Actual			Statewide Average		
	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
PM R10.3 to PM R14.5	0.00	1.04	1.59	0.032	0.73	1.46
PM R14.8 to PM R19.4	0.034	0.51	1.16	0.033	0.74	1.48
California Statewide Integrated Traffic Records System (2013)						

Roadway Deficiencies

Roadway deficiencies at this segment of State Route 4 consist of sub-standard geometrics caused by numerous curves and inadequate cross sections caused by narrow roadway widths.

System Linkages

While this project is not the type to result in growth or economic development, it serves the public by providing a link from the San Joaquin Valley to destinations in Calaveras County. The new alignment would be used by the residents within the project area in addition to those commuting between Copperopolis and Angels Camp. Recreational users, such as those traveling to tourist destinations such as ski resorts, Gold Country towns along State Route 49, parks and campgrounds, also use State Route 4.

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Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations 771.111 [f]) require that the action evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
2. Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made).
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts.

A project has "independent utility" when the project can function as a stand-alone project without forcing other improvements which may have impacts.

Both Alternatives 1 and 2 of the proposed project have logical termini and independent utility. The improvements would tie into State Route 4 where the route currently meets Caltrans design standards. The project would function as a stand-alone improvement and would not force other improvements to take place.

1.3 Project Description

This section describes the proposed action and the project alternatives that were developed to meet the identified purpose and need of the project, while avoiding or minimizing environmental impacts. The alternatives under consideration are Alternative "1," Alternative "2," and the "No-Build Alternative."

The project sits in Calaveras County on Route 4 from 2.6 miles east of Copperopolis (post mile 10.3) to west of the State Route 4/49 junction in Altaville (Angels Camp) (post mile 16.4). Total length of the project is about 6 miles. Within the limits of the proposed project, State Route 4 does not meet current design standards.

The State Route 4 Wagon Trail Realignment Project would:

- Provide a standard pavement width of 40 feet (two 12-foot lanes and two 8-foot shoulders) with an additional 12 feet to provide passing lanes or turn lanes where needed;
- Change alignments that reduce the number of curves, and increase curve radii with longer, smoother curves; and
- Reduce the number of access points and using frontage roads to consolidate private driveways.

1.4 Project Alternatives

Guiding criteria used for alternative evaluation included environmental constraints, use of existing infrastructure, property acquisition needs, ease of phasing, and balancing cut-and-fill with desired geometrics.

1.4.1 Build Alternatives

Common Design Features of the Build Alternatives

The total length of the project is approximately six miles. The proposed project has two build alternatives (Alternative 1 and 2) (see Figures 3 and 4) and a No-Build Alternative. Alternatives 1 and 2 realign existing State Route 4, a rural two-lane highway, between Bonanza Mine Way (post mile 10.3) to the west and just west of Stockton Road (post mile 16.4) to the east.

Alternatives 1 and 2 would provide two 12-foot lanes, two 8-foot shoulders, and turn lanes at road intersections as appropriate.

The following intersection improvements would be constructed as part of the State Route 4 Wagon Trail Realignment Project:

- State Route 4 / Hunt Road – 560 foot eastbound left-turn lane (including a 120 foot bay taper), widened westbound approach for right-turning vehicles, and widened southbound stop-controlled approach for right-turning vehicles.
- State Route 4 / Appaloosa Road - 560 foot westbound left-turn lane (including a 120 foot bay taper), widened eastbound approach for right-turning vehicles, and widened southbound stop-controlled approach for right-turning vehicles.
- State Route 4 / Stallion Way - 570 foot westbound left-turn lane (including a 120 foot bay taper), widened eastbound approach for right-turning vehicles, and widened southbound stop-controlled approach for right-turning vehicles.
- State Route 4 / Consolidated Driveway - A new State Route 4 / Consolidated Driveway would be constructed 1,500 feet east of Stallion Way and would serve a total of 4 properties (3 to the north and 1 to the south).

Alternatives 1 and 2 would realign large portions of the existing roadway in order to standardize roadway curves and sight distance. This would require a large amount of cut and fill because they would realign large portions of the existing highway to obtain minimum roadway curvature and maximize sight distances.

Access points along the alignment would be combined where appropriate to avoid conflicts with merging and through traffic. Post construction, the existing State Route 4 would be used in select locations as a new frontage road and collector street. Currently there are 16 access points, including gates and other means of accessing property, and 12 driveways within the project area.

To reduce the impact and cost of the project, Alternatives 1 and 2 use the existing highway right-of-way corridor, where feasible. The proposed minimum width of highway right-of-way is 150 feet. The right- of- way would be larger where excavation and fill limits exceed the minimum width.

Relocation of utilities would be necessary to construct either build alternative. Utilities identified in the project area include underground telephone and fiber optic lines (CALTEL), underground and overhead telephone lines (AT&T), and overhead electrical lines (PG&E and Northern California Power).

Alternatives 1 and 2 would also provide for the conveyance of cross drainage at existing water crossings. Conveyance facilities would include the installation and/or upgrade of drainage pipes, culverts, and bridges.

Unique Features of the Build Alternatives

Alternative 1

Alternative 1 requires reconfiguration of intersections and portions of the adjoining roads to conform to the proposed project. The intersections are at Hunt Road, Pool Station Road, Appaloosa Road, and Stallion Way.

Total length of Alternative 1 is approximately 5.6 miles, which reduces the length of travel for this segment of highway by about 0.8 miles.

Alternative 1 has a potential to impact 26 private parcels, including 19 different property owners. These impacts are a combination of temporary and permanent encroachments on parcels and do not necessarily reflect the number of parcels where permanent acquisition is required. Temporary impacts include temporary access for construction equipment and adjusting driveways/property frontages to conform to the proposed project. Twenty-two of these parcels are expected to require permanent acquisition to accommodate the new highway alignments and features (see Section 2.1.4.2) Alternative 1 would modify driveway connection for 19 parcels.

The estimated cost of constructing Alternative 1 is approximately $91,095,000.

Alternative 2

Alternative 2 requires reconfiguration of intersections and portions of the adjoining roads to conform to the proposed project. These intersections include are at Hunt Road, Appaloosa Road, and Stallion Way. Alternative 2 uses and conforms to recent improvements at the intersection of State Route 4 and Pool Station Road.

Alternative 2 would also provide for the conveyance of cross drainage at existing water crossings. These features would include installation of drainage pipes, culverts, and bridges.
Total length of Alternative 2 is approximately 5.9 miles, which reduces the length of travel for this portion of highway by about 0.5 miles.

Alternative 2 has a potential to impact 25 private parcels, including 18 different property owners. These impacts are a combination of temporary and permanent encroachments on parcels and do not necessarily reflect the number of parcels where permanent acquisition is required. Temporary impacts include temporary access for construction equipment and adjusting driveways/property frontages to conform to the proposed project. Twenty-three of these parcels are expected to require permanent acquisition to accommodate the new highway alignments and features (see Section 2.1.4.2). Alternative 2 would modify driveway connection for 18 parcels.

The estimated cost of constructing Alternative 2 is approximately $73,673,000.

Source: ESRI May 2011; Dokken Engineering 2/11/2015; Created By: cherryz

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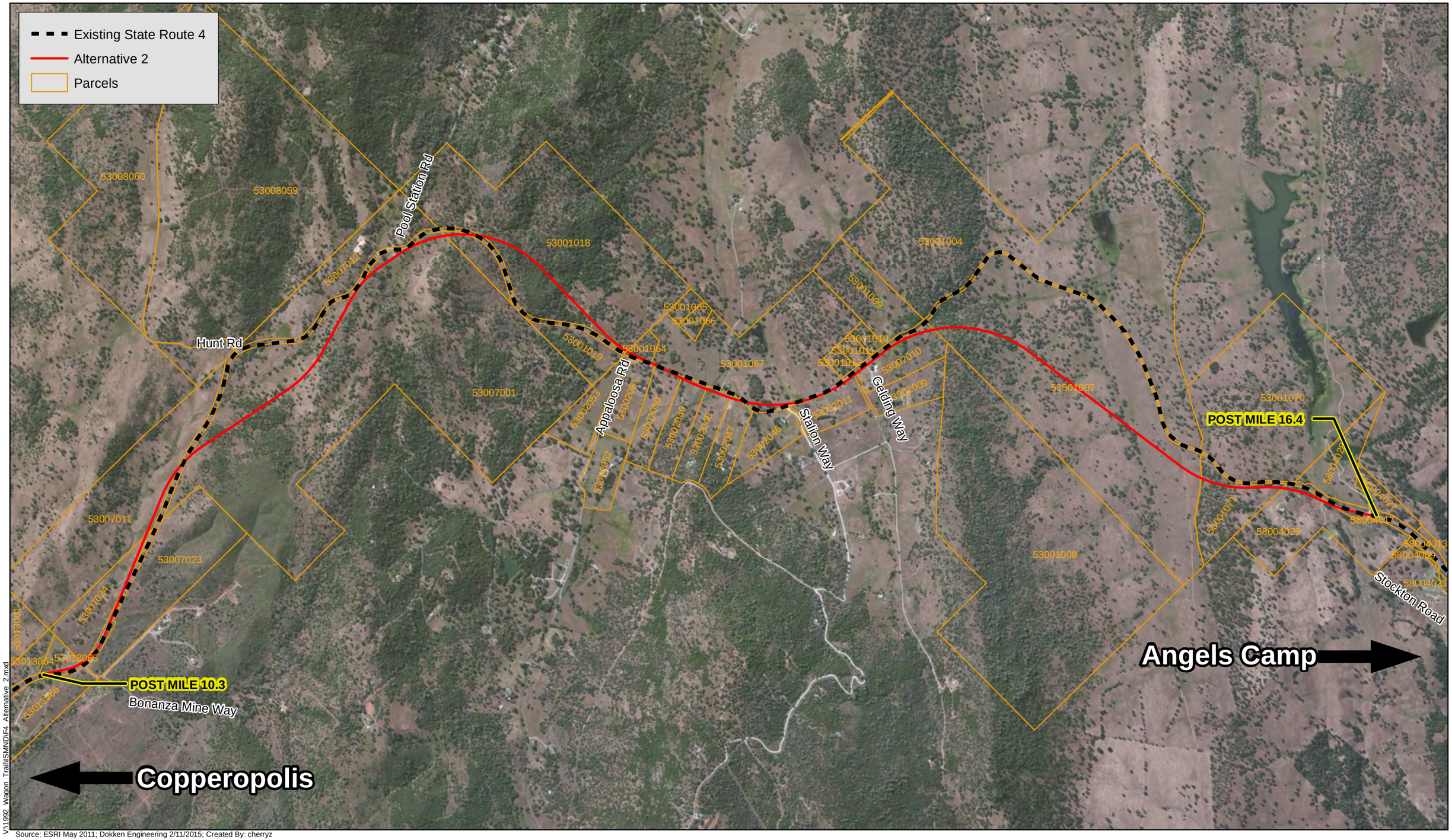
0 0.5 1 1.5 Miles

FIGURE 3
Alternative 1
EA 0E530; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



Source: ESRI May 2011; Dokken Engineering 2/11/2015; Created By: cherryz

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0 0.5 1 1.5 Miles

FIGURE 4
Alternative 2

EA 0E530; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management and Transportation Demand Management alternatives are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of Transportation System Management strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. Transportation System Management also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit. Transportation System Management and Transportation Demand Management alternatives would not meet the purpose of enhancing safety; the project already does not add through lanes.

Although Transportation System Management measures alone could not satisfy the purpose and need of the project, the following Transportation System Management measure has been incorporated into the build alternatives for this project: A Class III bicycle facility would be provided along the project segment of State Route 4. In addition to providing an alternative modal option, the project would be consistent with the Calaveras County Bicycle Master Plan (2007).

1.4.2 No-Build Alternative

The No-Build Alternative would not alter State Route 4. The existing condition is an outdated alignment with two narrow lanes and no shoulders. The current conditions include poor sight distance and high accident rates, which would not be addressed or changed with the No-Build Alternative.

1.5 Comparison of Alternatives

Criteria used for evaluating the alternatives consisted of environmental impacts, use of existing infrastructure, property acquisition needs, ease of phasing, and balancing cut-and-fill geometrics. While numerous options were presented based on topography, using existing infrastructure and minimizing property acquisition were most desired.

Both Alternatives 1 and 2 use existing infrastructure by following the existing alignment of State Route 4 for the segments near Bonanza Way, Appaloosa Road and Stallion Way, and Stockton Way. As a result, staying close to the existing alignment also minimizes property acquisition with these alternatives.

Alternative 1 allows for a slightly straighter route through the corridor. Alternative 2 allows for more use of the existing infrastructure near Pool Station Road.
The following table shows the alternatives' potential impacts to resources.

Table 3. Summary of Potential Impacts

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
Land Use	**Consistency with the Calaveras County General Plan**	Consistent with Plan.	Consistent with Plan.	Not Consistent.
	Regional Transportation Plan	Consistent with Plan.	Consistent with Plan.	Not Consistent**.**
	Federal Transportation Improvement Program	Consistent with Plan.	Consistent with Plan.	Not Consistent.
Farmlands		Would affect 5 parcels for a total conversion of approximately 111.6 acres of Williamson Act land.	Would affect 6 parcels for a total conversion of approximately 79.3 acres of Williamson Act land.	No Impact.
Community Character and Cohesion		No Impact.	No Impact.	No Impact.
Relocations and Real Property Acquisition	**Temporary Construction Easement**	Would affect 26 parcels totaling 24 acres.	Would affect 25 parcels totaling 26 acres.	No Impact.
	Partial Acquisition	Would affect 22 parcels totaling 158 acres.	Would affect 24 parcels totaling 129 acres.	No Impact.
	Utility service relocation	PG&E, Northern California Power Agency, Calaveras Telephone Company, AT&T, Calaveras County Road Department	PG&E, Northern California Power Agency, Calaveras Telephone Company, AT&T, Calaveras County Road Department	No Impact.
Environmental Justice		No Impact.	No Impact.	No Impact.
Utilities and Emergency Services		Will require relocation of Pacific Gas and Electric (PG&E) transmission towers.	Will require relocation of Pacific Gas and Electric (PG&E) transmission towers.	No Impact.
Traffic and Transportation/Pedestrian and Bicycle Facilities		Consistent with Calaveras County Bicycle Master Plan; Class III bicycle facility included.	Consistent with Calaveras County Bicycle Master Plan; Class III bicycle facility included.	Not consistent with Calaveras County's Bicycle Master Plan.
Visual/Aesthetics		Approximately 1,147 oak trees	Approximately 965 oak trees	No Impact.

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
		impacted.	impacted.	
Cultural Resources		There are potentially 7 Historic Properties and 7 areas with buried site potential.	There are potentially 4 Historic Properties and 7 areas with buried site potential.	No Impact.
Hydrology and Floodplain		Approximately 9.1 acres of floodplain would be encroached upon. Three creeks would be affected.	Approximately 7.7 acres of floodplain would be encroached upon. Three creeks would be affected.	No Impact.
Water Quality and Storm Water Runoff		Approximately 29.7 acres net new impervious surfaces.	Approximately 27.2 acres net new impervious surfaces.	No Impact.
Geology, Soils, Seismicity and Topography		No Impact.	No Impact.	No Impact.
Paleontology		No Impact.	No Impact.	No Impact.
Hazardous Waste and Materials	**Naturally Occurring Asbestos**	Naturally Occurring Asbestos would be encountered.	Naturally Occurring Asbestos would be encountered.	No Impact.
	Aerially Deposited Lead	Hazardous levels of Aerially Deposited Lead would not be encountered.	Hazardous levels of Aerially Deposited Lead would not be encountered.	No Impact.
	Asbestos-Containing Material	Asbestos – containing material would be encountered in structures.	Asbestos – containing material would be encountered in structures	No Impact.
	Lead Paint	Lead paint would be encountered in the structures.	Lead paint would be encountered in the structures.	No Impact.
Air Quality		Construction related dust emissions and NOA.	Construction related dust emissions and NOA.	No Impact.
Noise and Vibration		Noise levels would increase by up to 5 dB over existing volumes.	Noise levels would increase by up to 2 dB over existing volumes.	No Impact.

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
Natural Communities		Approximately 1,147 oak trees impacted.	Approximately 965 oak trees impacted.	No Impact.
Wetlands and Other Waters		Other Waters (Creeks): 0.22 acre temporary impacts and 0.43 acres of permanent impacts on Waters of the U.S. 0.61 acre temporary impacts and 1.18 acres of permanent impacts on Waters of the State. Wetlands: 0.28 acre of temporary impacts and 0.80 acres of permanent impacts on Waters of U.S. 0.28 acre of temporary impacts and 0.80 acres of permanent impacts on Waters of State.	Other Waters (Creeks): 0.20 acre temporary impacts and 0.33 acres of permanent impacts on Waters of the U.S. 0.56 acre temporary impacts and 2.82 acres of permanent impacts on Waters of the State. Wetlands: 0.64 acre of temporary impacts and 0.60 acres of permanent impacts on Waters of U.S. 0.64 acre of temporary impacts and 0.60 acres of permanent impacts on Waters of State.	No Impact.
Plant Species	**Oak Trees**	Approximately 1,147 oak trees affected.	Approximately 965 oak trees affected.	No Impact.
	Tuolumne button-celery	One specimen of button-celery would be directly affected. Approximately 0.74 acre of potential habitat would be permanently affected.	No specimen directly affected. Approximately 0.23 acre of potential habitat would be permanently affected.	No Impact.
	Red Hills soaproot	Approximately 68.46 acres of potential habitat would be	Approximately 43.99 acres of potential habitat would be	No Impact.

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
		permanently affected.	permanently affected.	
	Mariposa cryptantha	Approximately 1.47 acres of potential habitat would be permanently affected.	No permanent impacts.	No Impact.
	Forked hare-leaf	Approximately 56.74 acres of potential habitat would be permanently affected.	Approximately 49.50 acres of potential habitat would be permanently affected.	No Impact.
	Congdon's lomatium	Approximately 68.46 acres of potential habitat would be permanently affected.	Approximately 43.99 acres of potential habitat would be permanently affected.	No Impact.
	Foothill yellow-legged frog	Approximately 1.61 acres of potential creek habitat would be permanently affected.	Approximately 3.15 acres of potential creek habitat would be permanently affected.	No Impact.
	Western pond turtle	Approximately 56.74 acres of potential habitat would be permanently affected.	Approximately 49.50 acres of potential habitat would be permanently affected.	No Impact.
	Western red bat	Approximately 50.31 acres of potential habitat would be permanently affected.	Approximately 41.46 acres of potential habitat would be permanently affected.	No Impact.
Threatened and Endangered Species	**Chinese Camp brodiaea**	Approximately 123.73 acres of potential habitat would be permanently impacted.	Approximately 93.49 acres of potential habitat would be permanently impacted.	No Impact.
	Valley elderberry longhorn beetle	Based on shrubs that could be accessed, 1 shrub would be removed and 6 shrubs would be indirectly affected.	Based on shrubs that could be accessed, 13 shrubs would be removed and 3 shrubs would be indirectly affected.	

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
	California red-legged frog	Potential CRLF habitat is located within the proposed project area. A Biological Opinion will be obtained from USFWS prior to final environmental document being finalized.	Potential CRLF habitat is located within the proposed project area. A Biological Opinion will be obtained from USFWS prior to final environmental document being finalized.	

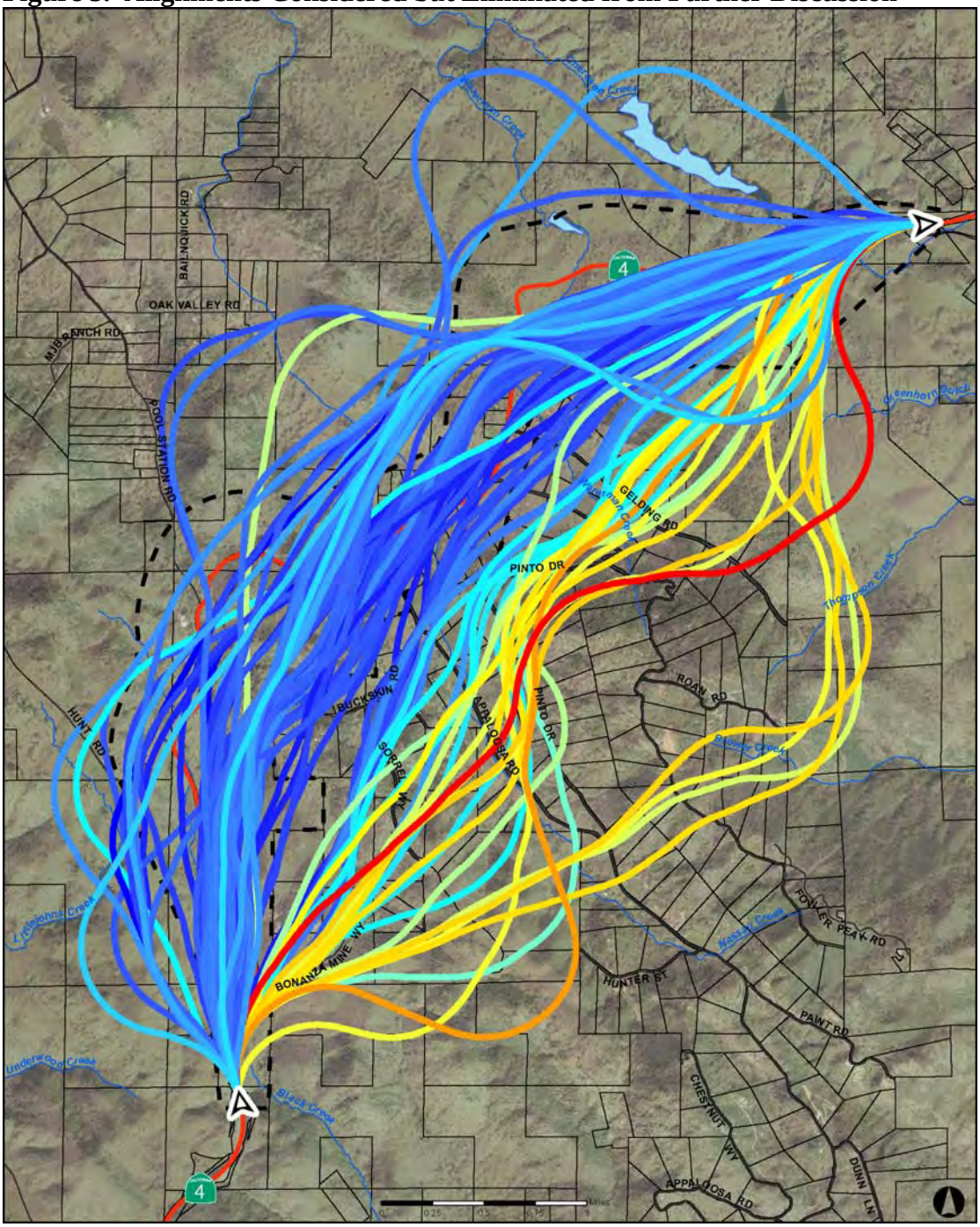
After the public circulation period, all comments would be considered, and Caltrans would select a preferred alternative and make the final determination of the project's effect on the environment. Under the CEQA, if no un-mitigatable significant adverse impacts are identified, Caltrans would prepare a Mitigated Negative Declaration. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration, would issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.6 Alternatives Considered but Eliminated from Further Discussion

Caltrans initiated the State Route 4 Wagon Trail Realignment Project, completing a Project Study Report/Project Development Support document in April 2001. The Project Study Report/Project Development Support document evaluated two build alternatives and the No-Build Alternative. The first build alternative was an expressway with a new alignment and a 70 miles-per-hour design speed. The second build alternative provided for a 55 miles-per-hour design speed that incorporated curve corrections, geometric improvements, and the addition of shoulders largely on the existing alignment.

Beginning in 2008, preliminary studies and conceptual alignments were further evaluated. Numerous alignments were looked at and several public meetings were facilitated to identify the most cost-effective, environmentally sensitive alignment that was also supported by the local community. Figure 5 shows the multitude of potential alignments considered during that time.

Figure 5. Alignments Considered but Eliminated from Further Discussion



Source: Caltrans and Calaveras County of Governments (2009), *Community Workshop Meeting*.

In addition to the two Build Alternatives studied in this document, a northern alignment was preliminarily evaluated. It was eliminated from further consideration due to the following:

- The northern alignment did not maximize the use of existing infrastructure, including the newly improved Pool Station Road Intersection, and therefore would have had a greater footprint of disturbance. Because more of the northern alignment crossed undisturbed areas, and thus would have required longer roads/driveways to maintain access to existing properties, there was a higher potential for impacts to cultural and other sensitive natural habitats.
- Because the northern alignment did not maximize the use of existing infrastructure, the amount of property acquisition would have been higher.
- The northern alignment was found not to be well suited to staged construction/phasing due to its infrequent use and connectivity to the existing alignment. Due to the large overall project cost, phasing will likely be required as funding becomes available, potentially making the northern alignment difficult to fund.

Alignment 2 became Alternative 2 and was added to the considered alternatives and was brought forward to the Project Approval/Environmental Document phase, which addressed the deficiencies in the northern alignment.

1.7 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Section 404 Permit	Application for Section 404 permit to be submitted before construction during final design.
Regional Water Quality Control Board	Section 401 Permit	Application for Section 401 permit to be submitted before construction during final design.
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Application for Section 1602 agreement to be submitted before construction during final design.
U.S. Fish and Wildlife Service	Formal Section 7 Consultation for Valley elderberry longhorn beetle and California red-legged frog	To be initiated after a preferred project alternative is selected. This would be after public circulation of the environmental document.
State Historic Preservation Office	Section 106 Compliance	State Historic Preservation Officer letter received December 17, 2014.
Calaveras County Air Pollution Control District	NESHAP Notification	10 days before renovation or demolition.

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

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. As a result there is no further discussion of these issues in this document.

- Coastal Zones—The project is about 90 miles inland from the Pacific Ocean and 80 miles from the San Francisco Bay Area. This is well outside the Coastal Zone.
- Wild and Scenic Rivers— No National Wild and Scenic Rivers or California Wild and Scenic Rivers are at or near the project site. The nearest National Wild and Scenic River and California Wild and Scenic River is the Tuolumne River about 17 miles southeast of the project site. "Potential" California Wild and Scenic Rivers, as described and shown in California's Wild and Scenic Rivers, Northern Sierra Nevada Map (accessed 2014), are the North and Middle Forks of the Stanislaus River, 16 miles northeast of the project site.
- Timberlands—No Timber Production Zones are in the vicinity of the project; the nearest is 8 miles to the northeast.
- Section 4(f)—No Section 4(f) resources would be affected. No parks are in the vicinity, and cultural resources evaluated do not meet the definition of a Section 4(f) resource.
- Parks and Recreational Facilities—There are no parks or recreational facilities within the project vicinity.
- Growth—The project is not the type that warrants further analysis because it does not increase capacity or increase accessibility and is on an existing facility.

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

The *Community Impact Assessment* for this project was approved in August 2015 and provides the basis for the following discussion. Sources consulted included the 1996 General Plan for the County of Calaveras and applicable land use and aerial maps. The 2012 Calaveras *Regional Transportation Plan* also provided a cumulative project list for the communities adjacent to the project area and was used for the Land Use, Growth, and Community sections of this document.

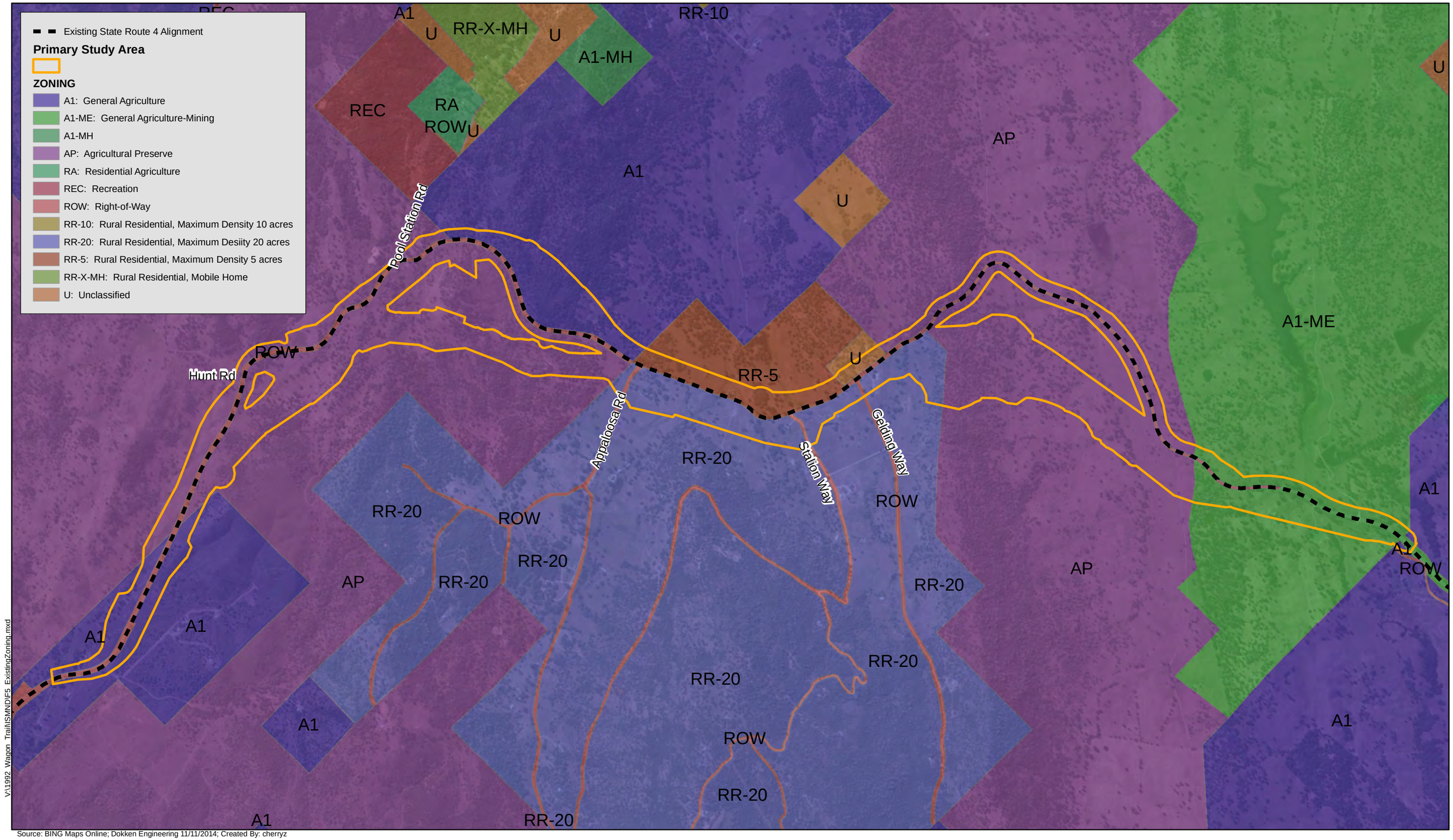
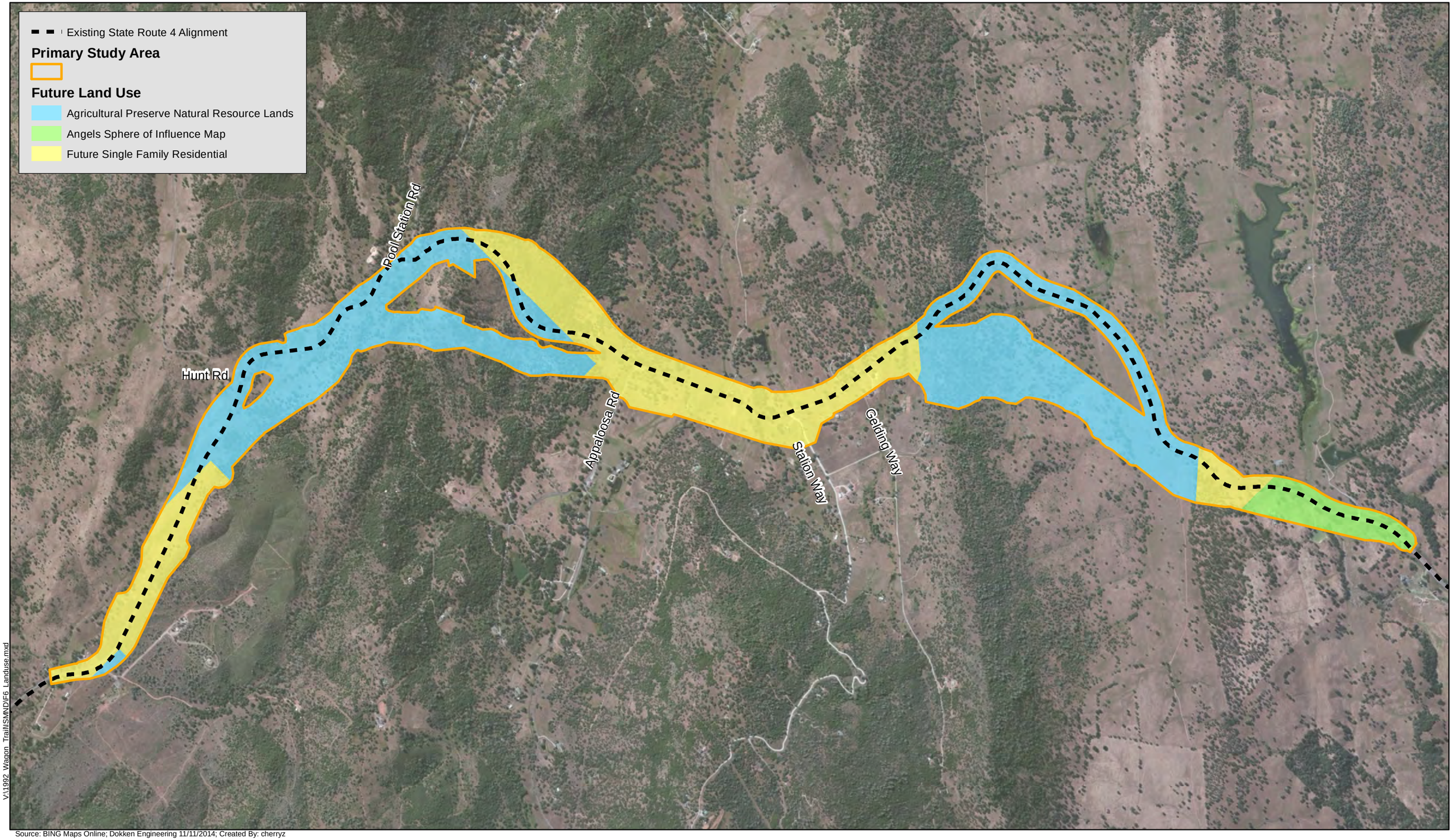


FIGURE 6
Existing Zoning
EA 0E530; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project Calaveras County, California



V:\1992 Wagon Trail\SM\DJF6 Landuse.mxd

Source: BING Maps Online; Dokken Engineering 11/11/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 7
Future Land Use

EA 0E530; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

The project area is characterized by hilly terrain, mixed oak woodlands, grasslands, mixed chaparral, and some riparian vegetation next to State Route 4. Land uses within the corridor are mostly rural residential and agriculture (mainly cattle grazing).

The project area is zoned as "Future Single- Family Residential (5- acre minimum)" and "Agriculture Preserve Natural Resource Lands," as shown in Figures 6 and 7.

The development projects listed in Table 4 represent the types of residential and/or commercial development being considered in the nearby areas of Angels Camp, Murphy's, Arnold, and Copperopolis. None were found within the project limits.

Table 4. Local Development Projects

Name	Jurisdiction	Proposed Uses	Status
Forest Meadows	Angels Camp/Murphys/Arnold	220 units	In approval process
Murphys Rocky Hill (in Murphys)	Angels Camp/Murphys/Arnold	43 units	In approval process
Mitchell Ranches (in Vallecito)	Angels Camp/Murphys/Arnold	113 units	In approval process
Coyote Creek (near Douglas Flat)	Angels Camp/Murphys/Arnold	104 units	In approval process
Sutton Enterprises (on State Route 49 at Melones)	Angels Camp/Murphys/Arnold	14 units	In approval process
Deaver Projects on State Route 49 at Melones: Nielsen Rasmussen Wilson Field	Angels Camp/Murphys/Arnold	Deaver Projects on State Route 49 at Melones 5 units 5 units 4 units 4 units	In approval process
Novogradac (Camp Connell area)	Angels Camp/Murphys/Arnold	15 units	In approval process
Khosla (Sheep Ranch Road)	Angels Camp/Murphys/Arnold	44 units	In approval process
Copper Town Square	Copperopolis	39 to 69 units and commercial space	Final Map approved in phases
Copper Town Square Condos	Copperopolis	May be included in total for Copper Town Square	Final Map approved in phases
Sawmill Lake	Copperopolis	800 units and Village	In approval process

(Table 4 continued)

Name	Jurisdiction	Proposed Uses	Status
Vineyard Estates	Copperopolis	18 lots	In approval process
Saddle Creek	Copperopolis	1,650 lots	Tentative and Final Map approved in phases
Oak Canyon	Copperopolis	2,275 lots, 400 permanent units, 800 transient	Tentative Map approved; Land ownership has changed or Application has changed hands. Status is uncertain
Tuscany Hills	Copperopolis	300 lots	Tentative Map approved; Land ownership has changed or Application has changed hands. Status is uncertain
Copper Valley Ranch	Copperopolis	2,400 lots	In approval process
Source: Calaveras County, 2014			

Environmental Consequences

While Alternatives 1 and 2 would result in partial acquisition of areas not currently zoned for public right-of-way, the overall existing and future land uses in the vicinity would not be changed. Land uses next to the alignment would continue to be zoned as "Future Single-Family Residential (5- acre minimum)" and "Agriculture Preserve Natural Resource Lands."

The project area includes all areas of construction, new or existing right-of-way, temporary staging areas and temporary construction easements. Permanent right- of- way acquisitions for Alternative 1 would affect approximately 172 acres, composed of 55 acres of Future-Single Family Residential, 107 acres of Agriculture Preserve Natural Resource Lands, and 10 acres within the Angels Camp Sphere of Influence as delineated in the 1996 Calaveras County General Plan. Right-of-Way acquisitions for Alternative 2 would permanently affect approximately 148 acres, composed of 61 acres of Future Single- Family Residential, 77 acres of Agriculture Preserve Natural Resource Lands, and 10 acres within the Angels Camp Sphere of Influence as delineated in the 1996 Calaveras County General Plan.

The existing highway portions would be either removed or used for driveway access for local property owners. With Alternative 1, approximately 31 acres of the existing highway would be relinquished to property owners and approximately 158 acres would be acquired for the realignment. With Alternative 2, approximately 26 acres of the existing highway would be relinquished to property owners and 129 acres would be acquired for the realignment (see Figures 8 and 9).

Relinquished portions of the existing highway would no longer be public right-of-way and is anticipated to revert back to the adjacent property owners. With Alternatives 1 and 2, zoning

of relinquished portions are anticipated to become the same as the surrounding area (i.e. Agricultural Preserve or Single-Family Residential).

Acquired areas for Alternatives 1 or 2 would become public right-of-way. Alternative 1 would have a more pronounced change in the location of the highway and therefore public right-of-way due to the alignment near Pool Station Road. Alternative 2 stays closer to the existing alignment near Pool Station Road.

With either Alternative 1 or 2, land use impacts are not considered substantial as no new land uses or zoning (such as commercial or industrial, etc.) are being introduced to this area of Calaveras County. While the project would acquire a larger area of public right-of-way and would shift public right-of-way to the chosen alternative, zoning and land uses are expected to continue being Agricultural Preserves and Single-Family Residential in this general corridor (see Figure 6 and 7).

While temporary construction easements would be needed during construction, this would be a temporary and non-significant impact. Alternative 1 is estimated to require 24 acres of temporary construction easement, and Alternative 2 is estimated to require 26 acres of temporary construction easement.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.2 Consistency with State, Regional, and Local Plans and Programs

Affected Environment

Pertinent state, regional, and local plans are the Calaveras Council of Government's 2012 *Regional Transportation Plan*, the Calaveras Council of Government's 2012 *Regional Transportation Improvement Program*, and the Calaveras County *General Plan* (1996) (which defers to the Caltrans District 10 District *System Management Plan*).

<u>Road Impact Mitigation (RIM) Fee Program</u>

In February of 2004, the Calaveras County Board of Supervisors adopted a RIM Fee Program ordinance. The intent of the program is to provide funding for transportation improvements that mitigate impacts from new developments. All new developments within the unincorporated areas of the County are subject to the RIM fee based on the proportion of impact caused on the Regional Transportation Network. The RIM Fee Nexus Study identified a list of "RIM Fee Capital Projects" and estimated the proportion of the total project cost which could be attributed to new developments. For projects marked as State highway projects, 25 percent of costs that can be attributed to development are allocated to the RIM program. It is important to note that funding accumulated through the RIM Fee Program will only pay for a portion of RIM Fee capital project costs.

The goal of the RIM fee is to maintain adequate LOS, facilitate emergency response, reduce collisions, improve air quality, foster economic development, and enhance quality of life for residents.

The proposed project is listed as a RIM Priority Project within Calaveras County and is in Construction Tier 1; a short-range tier to occur by 2021.

2012 Regional Transportation Plan

The 2012 *Regional Transportation Plan* was adopted by the Calaveras Council of Governments on October 3, 2012. The project is included on page 104 of the 2012 *Regional Transportation Plan* as PPNO 3067 with the project name "STATE ROUTE 4 Wagon Trail Realignment."

2012 Regional Transportation Improvement Program

The 2012 Regional Transportation Improvement Program consists of projects nominated by the Calaveras Council of Governments for State Transportation Improvement Program funding. The project is included on page 4 of the 2012 Regional Transportation Improvement Program as PPNO 3067 with the project name "Calaveras, Route 4 Wagon Trail Realignment" as a highway project. It is also discussed in further detail on page 10 of the Regional Transportation Improvement Program as a project that would "provide a safer and faster route between Copperopolis and Angels Camp."

Calaveras County General Plan (1996) and Caltrans District 10 District System Management Plan

The Calaveras County General Plan defers to the Caltrans District 10 District System Management Plan. The District System Management Plan "describes the current transportation system, identifies opportunities, and provides strategies for improving overall transportation and mobility throughout the eight counties of District 10." The District 10 District System Management Plan states that State Route 4 is "regionally significant and is part of the [Interregional Road System]."

Environmental Consequences

The project has been identified in both the *Regional Transportation Plan* and Regional Transportation Improvement Program. The project is consistent with state, regional, and local plans and programs, as shown in (able 5.

Table 5. Consistency with State, Regional, and Local Plans and Programs

Policy	Alternative 1	Alternative 2	No-Build Alternative
County General Plan			
Policy 2.5: To sustain the viability of County agriculture by restraining division and use of land which is harmful to continued agricultural use of non-replaceable land resources.	**Consistent.** Alternative 1 would acquire narrow strips of farmland along the sides of the existing roadway, but these acquisitions would not result in the subdivision of agricultural parcels, substantially diminish the size of agricultural parcels, or change the existing use, designation, or zoning of agricultural parcels.	**Consistent.** Alternative 2 would acquire narrow strips of farmland along the sides of the existing roadway, but these acquisitions would not result in the subdivision of agricultural parcels, substantially diminish the size of agricultural parcels, or change the existing use, designation, or zoning of agricultural parcels.	**Consistent.** The No-Build Alternative would not result in conversion of farmland to non-agricultural uses.
Goal III-4: Provide and maintain a State highway system with capacity to serve projected State highway traffic at acceptable levels of service. *Policy III-4A: Utilize Caltrans' concept levels of service as guidelines for establishing acceptable levels of service on State highways and to determine improvements to be required of new development.* *Implementation measure III-4A-1: As appropriate, require traffic analysis for new development that may result in the degradation of a State highway below the concept level of service or that may otherwise have a significant impact on the State highway serving the development. Traffic analysis includes identification of all State highway impacts of the project and potential mitigation measures to avoid degradation of levels of service.*	**Consistent:** A Traffic Operations Analysis Report (2014) was prepared for the project. Level of service on the facility would remain acceptable, with or without the project.	**Consistent:** A Traffic Operations Analysis Report (2014) was prepared for the project. Level of service on the facility would remain acceptable, with or without the project.	**Consistent:** A Traffic Operations Analysis Report (2014) was prepared for the project. Level of service on the facility would remain acceptable, with or without the project.

Policy III-4B: Consult with Caltrans for recommendations whether new development necessitates general improvements and/or project specific improvements to maintain the existing service level on any affected State Highway. *Implementation Measure III-4B-2: Address potential impacts of State highway safety deficiencies as part of project approval.*	**Consistent.** The project addresses safety deficiencies on the facility.	**Consistent.** The project addresses safety deficiencies on the facility.	**Not consistent.** With the No-Build Alternative, safety deficiencies would not be addressed.
Regional Transportation Plan			
State Highways: Increasing traffic congestion and decreasing [Level of Service] on [State Route] 4 due to increased traffic volumes and lack of passing opportunities. Potential Solution: Implementation of roadway capacity projects and intersection improvements in RTP.	**Consistent.** Level of Service was evaluated in the Final Traffic Operations Analysis Report for the proposed project. Level of Service was found to be acceptable without capacity improvements. The proposed project does not add through-lanes.	**Consistent.** Level of Service was evaluated in the Final Traffic Operations Analysis Report for the proposed project. Level of Service was found to be acceptable without capacity improvements. The proposed project does not add through-lanes.	**Not consistent.** Under the No-Build Alternative, no changes to the existing roadways would occur in the project area. This alternative would not provide an efficient route for freight trucks between the state highway and industrial areas that would minimize conflicts with automobile traffic and incompatibility with other land uses.
Countywide: Lack of passing opportunities on state highways and inadequate right-of-way (ROW) to meet minimum safety improvement criteria for projects. Potential Solution: Provide additional passing lanes where feasible and identify, map and secure funding for dedication of future arterial, collector, and local ROW to improve safety.	**Consistent.** Alternative 1 would incorporate passing lanes or turn pockets where needed for enhanced safety.	**Consistent.** Alternative 2 would incorporate passing lanes or turn pockets where needed for enhanced safety.	**Not Consistent.** The segment of State Route would continue to have narrow widths.
Source: Calaveras County, 2014; Community Impact Analysis, 2015.			

The project is consistent with state, regional and local plans and programs. State, regional, and local plans and programs are generally oriented to long-term, permanent topics.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed. The project is consistent with state, regional, and local plans and programs.

2.1.3 Farmland

Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (7 United States Code 4201-4209; and its regulations, 7 Code of Federal Regulations Part 658) require federal agencies, such as the Federal Highway Administration, to coordinate with the Natural Resources Conservation Service 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 non-agricultural 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 discourage the early conversion of agricultural and open space lands to other uses.

Affected Environment

The *Community Impact Assessment* for this project was approved in August 2015 and provides the basis for the following discussion. Agricultural activities within the project study area include grape production and rangeland with animal grazing. Grape production and cattle ranching within the study area make up a small portion of such activities in Calaveras County as a whole.

Farmland Protection Policy Act

Information about Prime, Unique, or other important farmlands as defined under the Farmland Protection Policy Act is currently unavailable for Calaveras County. The Natural Resources Conservation Service and California Department of Conservation Farmland Mapping and Monitoring Program have not identified or mapped prime, unique, or other important farmlands in Calaveras County.

Williamson Act

There are approximately 143,000 acres of land in Calaveras County under Williamson Act contract (Calaveras County Report of Agriculture). The largest mass of these lands is in the southwestern portion of the county near the Stanislaus County border. The remaining sites are scattered throughout the middle of the county.

Non-Prime Agricultural Land is land enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (see California Government Code Section 1614), and

may be identified as such in other documents. Williamson Act land parcels throughout the project are in grazing use and not actively farmed.

Environmental Consequences

Table 6 shows the estimated number of acres affected within the primary study area that consist of grape production and rangeland.

Table 6. Acreages Harvested by Commodity Type

Agricultural Commodity	**Approximate Project Impacts**	
	2013	
Grapes (Wine)	910 acres	Acquire/remove 1 acre next to Appaloosa Road with both Alternative 1 and Alternative 2
Rangeland	188,300 acres	Acquire 158 acres with Alternative 1 and 128 acres with Alternative 2
Source: Community Impact Assessment, 2015		

Alternatives 1 and 2 would convert portions of parcels under Williamson Act contract to public use. All of the Williamson Act-affected parcels are designated as Williamson Act Non-Prime Agriculture Land.

For each alternative, portions of parcels would be acquired for right-of-way purposes that are currently under Williamson Act contracts. Alternative 1 would affect 5 parcels for a total conversion of approximately 111.6 acres of Williamson Act land. Alternative 2 would affect 6 parcels for a total conversion of approximately 79.3 acres of Williamson Act land. Table 7 lists the affected parcels for each alternative. Williamson Act Land parcels will need to be adjusted to reflect the project's impacts to the parcel boundaries.

Table 7. Affected Williamson Act Contracted Parcels

	ALTERNATIVE 1		ALTERNATIVE 2	
APN#	Acreage Converted to Public Use	Total Acreage of Affected Parcel	Acreage Converted to Public Use	Total Acreage of Affected Parcel
053-007-011	8.3	142.8	6.4	142.8
053-007-001	64.1	502.2	32.9	502.2
053-007-012	-	-	2.5	64.0
053-001-019	4.5	39.6	2.5	39.6
053-001-009	--	--	0.1	40
053-001-007	--	--	34.9	328.0
053-001-008	0.3	405.3	--	--
053-001-007	34.4	328.0	--	328.0
TOTAL	**111.6**	**1417.9**	**79.3**	**1444.6**
Source: Community Impact Assessment, 2015				

Construction activities for Alternatives 1 and 2 would not have a substantial impact on use of the lands for agriculture. Agricultural activities may continue taking place because access to these neighboring parcels would be maintained throughout construction.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure CIA-1: Final design efforts will be made to minimize right-of-way for the selected alternative.

Mitigation Measure CIA-2: Property owners will be treated fairly and in compliance with the California Department of Transportation Relocation Assistance program and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

2.1.4 Community Impacts

2.1.4.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code 4331[b][2]). The Federal Highway Administration in its implementation of the National Environmental Policy Act (23 United States Code 109[h]) directs that final decisions on 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 the California Environmental Quality Act, 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. Because this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

The *Community Impact Assessment* for this project was approved in July 2015 and provided the basis for the following discussion.

The project area is rural in character and consists of large parcels with single-family residential houses, ranches, and currently just one existing commercial business (which is a "bed and breakfast" business). Homes and ranches next to the existing State Route 4 have relatively large spaces between them. Based on residents' comments, cohesion in the community is fairly high, as residents know and communicate with their neighbors regularly through telephone or in-person interaction.

The project connects the two populated areas of Copperopolis and Angels Camp. The area along the alignments is not anticipated for large commercial development because planned uses are agricultural and residential. Further, the project type does not induce growth because it does not add additional through lanes or increase accessibility.

As shown in Table 8, census data indicate that the median age of residents in Calaveras County is 49.5 years old, approximately 21% is over the age of 65, and approximately 94.1% is white. A high percentage of older populations and a high percentage of ethnic homogeneity can be indicators of a high degree of community cohesion.

Table 8. Demographic Information for Calaveras County

Calaveras County				
Year	Median Age	% Over 65	Median Household Income	Ethnicity (% White)
2010[1]	49.5	21.0	$54,686[3]	94.1
2000[2]	44.6	18.2	$41,022	94.3
*US Census Bureau Poverty Threshold for a family of four: 2000 - $ 17,603 / 2010 - $ 22,314. Source: [1]U.S. Census Bureau, Census 2010, [2]U.S. Census Bureau, Census 2000, [3]2008-2012 American Community Survey 5-Year Estimates				

No community facilities, such as community centers, churches, senior centers, teen centers, or libraries are in the project area.

Environmental Consequences

Community character and cohesion is not expected to change with the realignment of State Route 4. The alignments do not remove homes and the project does not induce growth. Community character would not change substantially because State Route 4 would still be a two-lane road (one lane each direction) and adjacent land uses would not be changed as a result of the project.

While there would be some partial acquisition along the frontage of privately owned parcels, no homes would be removed or relocated.

Construction would have no substantial impact on community character and cohesion because construction would be staged to accommodate traffic and access to residences. State Route 4 would remain open during construction.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.4.2 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (Code of Federal Regulations) 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 so that such persons would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix B for a summary of the Relocation Assistance Program.

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 United States Code 2000d, *et seq*.). Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

A Draft Relocation Impact Memorandum was approved March 2015 and was used in the preparation of this section.

Parcels within the project area are primarily used for agriculture and rural residential uses. Residences are scattered because parcels are 20 acres or more, except for three that are about 5 acres each. There are no neighborhoods or public facilities.

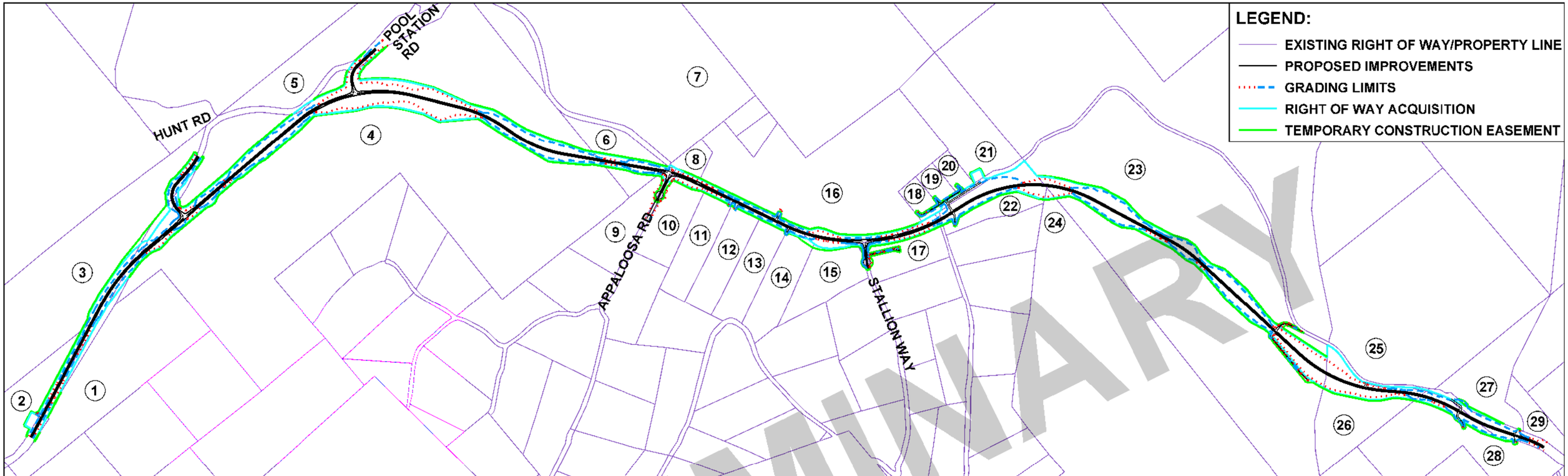
There are currently 16 access points within the study area. This includes 12 driveways and gates or other means of accessing the property. Limiting the number of access points is part of the purpose of the project.

Environmental Consequences

Build Alternatives

There is a potential for partial property acquisition and temporary construction easement to be required from 26 parcels for Alternative 1 and 25 parcels from Alternative 2 throughout the proposed project study area (see Figures 8 and 9). To enhance safety, both Alternatives 1 and 2 would limit access to State Route 4 by reducing the number of driveways from four to one while utilizing using existing State Route 4 as a frontage road at approximately PM 14.0 to consolidate private driveways. In addition, driveways on opposite sides of the roadway near each other would be aligned directly across from one another. Driveways that may be too close to a road intersections will be realigned and connect to a County road. Under either build alternative, no businesses or farms would be displaced. Alternative 1 and 2 are not expected to result in residential relocations.

Alternative 1 would require permanent partial acquisition from 22parcels (see Figure 8 and Table 9). These parcels amount to 158 acres. In addition to the land required for road right-of-way, a portion of each parcel would be needed for cut and fill earthwork. Temporary construction easement would be needed from 26 parcels, totaling approximately 24 acres. Approximately four parcels would have access changes to State Route 4, as indicated in Table 9. Road easement quantities are approximate and subject to change as the design is refined.



PRELIMINARY

	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
1	053-007-023	<1	<1
2	053-007-024	5	1
3	053-007-011	7	2
4	053-007-001	58	6
5	053-007-012	<1	<1
6	053-001-019	4	1
7	053-001-018	0	0
8	053-001-064	<1	<1
9	053-002-053	1	<1
10	053-002-051	2	<1

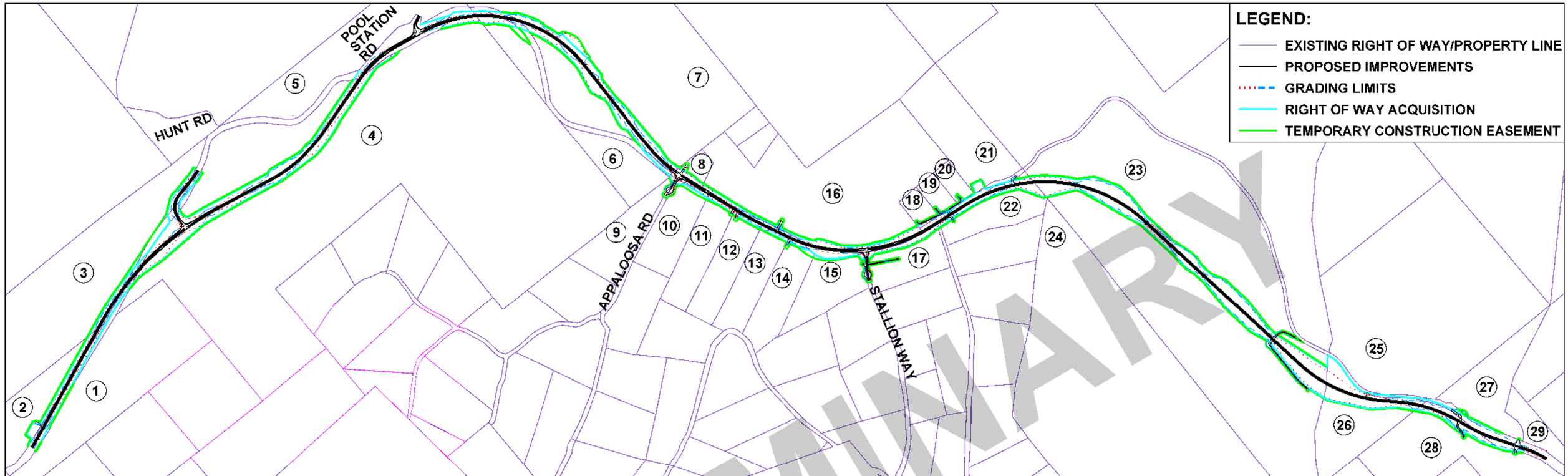
	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
11	053-002-050	2	<1
12	053-002-049	2	<1
13	053-002-048	2	<1
14	053-002-047	1	1
15	053-002-046	0	1
16	053-001-067	7	1
17	053-002-011	4	1
18	053-001-012	0	<1
19	053-001-011	0	<1
20	053-001-010	0	<1

	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
21	053-002-009	1	<1
22	053-002-010	13	1
23	053-001-007	35	5
24	053-001-008	<1	<1
25	053-001-070	0	0
26	053-001-071	11	1
27	058-004-028	<1	<1
28	058-004-029	5	1
29	058-002-027	0	0
	TOTAL	158	24

	ASSESSORS PARCEL NUMBER	APPROXIMATE RELINQUISHMENT
		ACRES
5	053-007-012	6
6	053-001-019	12
21	053-002-009	1
23	053-001-007	9
25	053-001-070	2
27	053-004-028	1
	TOTAL	31

1000 0 250 500 1000 FT

Figure 8
Potential Right of Way Acquisitions for Alternative 1
EA 0E530K; 10-CAL-4 (PM 12.66/19.10)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



PRELIMINARY

	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
1	053-007-023	<1	<1
2	053-007-024	4	1
3	053-007-011	4	1
4	053-007-001	28	4
5	053-007-012	0	0
6	053-001-019	2	1
7	053-001-018	17	3
8	053-001-064	2	<1
9	053-002-053	<1	<1
10	053-002-051	<1	1

	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
11	053-002-050	1	<1
12	053-002-049	2	<1
13	053-002-048	2	<1
14	053-002-047	1	1
15	053-002-046	<1	1
16	053-001-067	9	2
17	053-002-011	2	1
18	053-001-012	<1	<1
19	053-001-011	<1	1
20	053-001-010	<1	<1

	ASSESSORS PARCEL NUMBER	APPROXIMATE ACQUISITION	TEMPORARY CONSTRUCTION EASMENT
		ACRES	ACRES
21	053-002-009	1	<1
22	053-002-010	5	1
23	053-001-007	35	5
24	053-001-008	0	0
25	053-001-070	0	0
26	053-001-071	11	1
27	053-004-028	<1	<1
28	053-004-029	4	1
29	053-002-047	0	0
	TOTAL	129	26

	ASSESSORS PARCEL NUMBER	APPROXIMATE RELINQUISHMENT
		ACRES
5	053-007-012	6
6	053-001-019	7
21	053-002-009	1
23	053-001-007	9
25	053-001-070	2
27	053-004-028	1
	TOTAL	26

1000 0 250 500 1000 FT

Figure 9
Potential Right of Way Acquisitions for Alternative 2
EA 0E530K; 10-CAL-4 (PM 12.66/19.10)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Table 9. Alternative 1 Right-of-Way Acquisition Needs

Assessor's Parcel Number (APN)	Approximate Permanent Acquisition (acres)	Temporary Construction Easement (acres)
053-007-023	<1	<1
053-007-024	5	1
053-007-011	7	2
053-007-001	58	6
053-007-012	<1	<1
053-001-019	4	1
053-001-018	0	0
053-001-064	<1	<1
053-002-053	1	<1
053-002-051	2	<1
053-002-050	2	<1
053-002-049	2	<1
053-002-048	2	<1
053-002-047	1	1
053-002-046	0	1
053-001-067	7	1
053-002-011*	4	1
053-001-012*	0	<1
053-001-011*	0	<1
053-001-010*	0	<1
053-002-009	1	<1
053-002-010	13	1
053-001-007	35	5
053-001-008	<1	<1
053-001-070	0	0
053-001-071	11	1
058-004-028	<1	<1
058-004-029	5	1
058-004-027	0	0
TOTAL	158 acres (22 parcels)	24 acres (26 parcels)
Bolded = Driveway modifications anticipated **Asterisk* = Access to State Route 4 anticipated to change**		

Alternative 2 would require partial acquisition from 24 parcels (see Figure 9 and Table 10), totally 129 acres. In addition to the land required for road right-of-way, a portion of each parcel would be needed for cut and fill earthwork. Temporary construction easement would be needed from 25 parcels, totaling 26 acres. Approximately four parcels would have access changes to State Route 4, as indicated in Table 10. Road easement quantities are approximate and subject to change as design is refined.

Table 10. Alternative 2 Right-of-Way Acquisition Needs

Assessor's Parcel Number (APN)	Approximate Permanent Acquisition (acres)	Temporary Construction Easement (acres)
053-007-023	<1	<1
053-007-024	4	1
053-007-011	4	1
053-007-001	28	4
053-007-012	0	0
053-001-019	2	1
053-001-018	17	3
053-001-064	2	<1
053-002-053	<1	<1
053-002-051	<1	1
053-002-050	1	<1
053-002-049	2	<1
053-002-048	2	<1
053-002-047	1	1
053-002-046	<1	1
053-001-067	9	2
053-002-011*	2	1
053-001-012*	<1	<1
053-001-011*	<1	1
053-001-010*	<1	<1
053-002-009	1	<1
053-002-010	5	1
053-001-007	35	5
053-001-008	0	0
053-001-070	0	0
053-001-071	11	1
058-004-028	<1	<1
053-004-029	4	1
053-002-047	0	0
TOTAL (APPROXIMATE)	129 acres (24 parcels)	26 acres (25 parcels)
Bolded = Driveway modifications anticipated **Asterisk* = Access to State Route 4 anticipated to change**		

Both Alternatives 1 and 2 result in changed access to properties in the project area. Alternative 1 would change access to 4 parcels and Alternative 2 would change access to 4 parcels. Other parcels in the area would have their driveways re-graded or shifted to conform to the new alignment. The project would modify driveways to conform to new highway grade. Alternative 1 would modify driveway connection for 19 parcels and Alternative 2 would modify driveway connections for 18 parcels. Access would be maintained to properties during construction. Construction of Alternatives 1 and 2 would require temporary construction easements at privately owned parcels.

No-Build Alternative

Under the No-Build Alternative, there would be no partial property acquisitions.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure CIA-3: Where acquisition and relocation are unavoidable, the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the 1987 Amendments, as implemented by the Uniform Relocation Assistance and Real Property Acquisition regulations for Federal and Federally Assisted Programs adopted by the U.S. Department of Transportation (March 2, 1989) shall be followed. Relocation advisory assistance shall be provided to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use.

2.1.4.3 Environmental Justice

Regulatory Setting

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, signed by President William J. Clinton on February 11, 1994. 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 2014, this was $23,850 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. Caltrans' 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 B of this document.

Affected Environment

The three measures used to evaluate the potential for environmental justice impacts are:

- Percentage of minority residents in the project area census tracts;
- Percentage of population below the poverty level in the project area census tracts;
- Median household income in the project area census tracts.

Table 11 and 12 summarizes the percentage of minority and low income populations averaged over a 5-year span in Copperopolis, Angels Camp, and Calaveras County and the Census Tracts that encompass the project area.

Table 11. Minority Populations

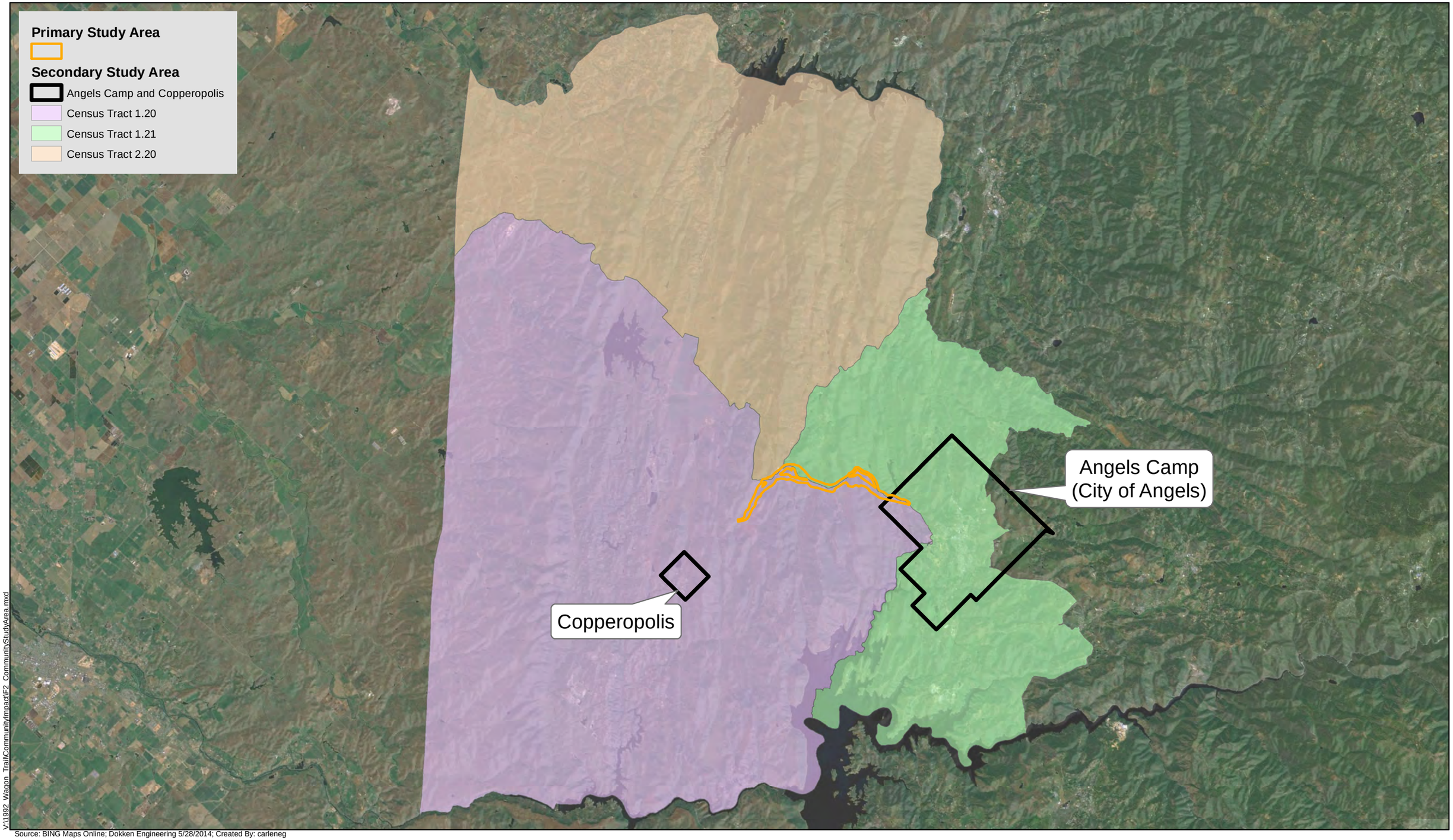
Town of Copperopolis		
Race	Population	Percentage
American Indian and Alaska native	43	1.17
Asian	36	0.98
Black or African American	31	0.84
Native Hawaiian/Pacific Island	12	0.33
Some other race	83	2.26
Two or more races	148	4.03
White	3,318	90.38
Total Population	**3,671**	
Not of Hispanic or Latino Origin	3,217	87.63
Hispanic or Latin Origin	454	12.37
City of Angels Camp		
Race	Population	Percentage
American Indian and Alaska native	48	1.25
Asian	49	1.28
Black or African American	12	0.31
Native Hawaiian/Pacific Island	5	0.13
Some other race	270	7.04
Two or more races	123	3.21
White	3,329	86.78
Total Population	**3,836**	
Not of Hispanic or Latino Origin	3,338	87.02
Hispanic or Latin Origin	498	12.98
Calaveras County		
Race	Population	Percentage
American Indian and Alaska native	689	1.51
Asian	571	1.25
Black or African American	383	0.84
Native Hawaiian/Pacific Island	79	0.17
Some other race	1,534	3.37
Two or more races	1,800	3.95
White	40,522	88.91
Total Population	**45,578**	
Not of Hispanic or Latino Origin	40,875	89.68
Hispanic or Latin Origin	4,703	10.32
Source: Community Impact Assessment, August 2015		

Table 12. Low-Income Populations

Area	Percent below Poverty	Median Household Income
Town of Copperopolis	4.6%	$72,241
City of Angels Camp	5.9%	$71,392
Calaveras County	6.9%	$66,699
Census Tract 1.20, Calaveras County, CA	6.3%	$66,154
Census Tract 1.21, Calaveras County, CA	11.8%	$52,444
Census Tract 2.20, Calaveras County, CA	6.0%	$65,417
Source: Community Impact Assessment, August 2015		

Minority Populations

To evaluate whether a project could potentially disproportionately affect minority populations, percentages of minorities bordering the project area were compared against percentages of minorities in the larger geographical area surrounding the project. Minority populations that are substantially higher within the project area only could result in disproportionate effects to the minority population. The proposed project is located within the boundaries of three contiguous Census tracts, Census Tracts 1.20, 1.21, and 2.20. As shown in Table 12, while Census Tract 2.20 has a slightly higher percentage of minorities than Calaveras County as a whole. Census Tracts 1.20 and 1.21 also have a lower percentage of minorities than Calaveras County as a whole. Minority populations are not substantially higher in this area. This area would not be disproportionately affected by the proposed project as discussed below in the Environmental Consequences Section (see Figure 10: Census 2010 Tract Map).



V:\1992_Wagon_Trail\Community\Impact\F2_CommunityStudyArea.mxd

Source: BING Maps Online; Dokken Engineering 5/28/2014; Created By: carleneg

0 2 4 6 8 10 Miles

Figure 10
CENSUS 2010 Tract Map
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment
Calaveras County, California

Low Income Populations

To further consider low income impacts, we must look at two versions of federal poverty measures. The first is the use of poverty thresholds, which takes into account size of family and number of related children under 18 years old in the family unit. The second version of federal poverty measure is the use of poverty guidelines (which is a simplification of the poverty threshold method). The Department of Health and Human Services (2014) identifies a poverty guideline of $15,730 for a family of two; $19,790 for a family of three; and $23,850 for a family of four.

While Census data did not differentiate median household income based on family size, Census data regarding the median household income in combination with the average household size was compared against the Department of Health and Human Services poverty guidelines to evaluate potential of low -income populations in the project area. Census Tract 1.20 average house size is 2.55 persons and the median household income is $66,154 (Census Bureau 2010). Census Tract 1.21 average house size is 2.21 persons and the median household income is $52,444 (Census Bureau 2010). Census Tract 1.20 average house size is 2.78 persons and the median household income is $65,417 (Census Bureau 2010). All three Census Tracts are well above the poverty threshold. Based on this information, none of the Census Tracts should be considered a low- income population.

No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.

Environmental Consequences

There would be no environmental consequences because minority and/or low-income populations would not be adversely affected by the proposed project.

Minority Populations

The project area does not have a large minority population. This area would not disproportionately affect minority populations as a result of the proposed project.

Low Income Populations

The median income at the Census Tracts are well above the Department of Health and Human Services poverty thresholds. No impact on low-income populations would result from Alternatives 1 or 2.

Based on the above discussion and analysis, Alternatives 1 and 2 would not cause disproportionately high and adverse effects on any minority or low-income populations per Executive Order 12898 regarding environmental justice.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.4.4 Utilities and Emergency Services

Affected Environment

Utilities

Utility companies that have identified facilities within the proposed project area and expect utility relocations are listed in Table 13.

Table 13. Potential Utilities

Utility Relocation	Utility Company
Electric facilities	PG&E
Electric facilities	NCPA (Northern California Power Agency)
Telephone facilities	CALTEL (Calaveras Telephone Company)
Telephone facilities	AT&T
Drainage	Calaveras County Road Department
Power	Northern California Power Agency

Implementation of the proposed project would not result in the need for additional water supply, nor would it generate any wastewater or require new water supplies.

Emergency Services

Calaveras County is located in the western slopes of the Sierra Nevada mountain range, where the most likely natural disasters and hazards of concern include flooding, landslides, mudslides, and wildfires. As a part of transportation infrastructure, STATE ROUTE 4 is important for disaster recovery and response and is indicated as critical infrastructure in the Calaveras County Local Hazard Mitigation Plan (2009).

Fire
The City of Copperopolis provides fire protection services, to the project area and it is likely that the project would be served by Fire District Station 3. Fire Station 3 is located at 9164 Pool Station Road approximately 4.5 miles from the proposed project site.

Police
The Angels Camp Police Department provides police protection service approximately 4 miles from the project area. It is located at 200 Monte Verda Street.

Hospital

The Mark Twain St. Joseph's Hospital is the nearest emergency services facility to the project area. The hospital is located at 768 Mountain Ranch Road within Angels Camp. The proposed project area is located approximately 9 miles from the project area.

Environmental Consequences

Alternatives 1 and 2 would relocate electric and telephone facilities with minimal disruption to service. Utility companies possibly involved in the proposed project include PG&E, Northern California Power Agency (NCPA), Calaveras Telephone Company (CALTEL), and AT&T. Details regarding utility relocation may be modified and refined during the final design phase of the proposed project. Measure CIA-4 would be implemented to minimize interruptions during construction.

The proposed project would provide a more efficient and safer alignment for a five-mile portion between Copperopolis and Angels Camp, which is a primary east-west link to the Central Valley. STATE ROUTE 4 as an existing evacuation route would become more efficient and safer for Calaveras County residents to utilize.

Accommodations would be made to ensure that construction of the proposed project does not negatively affect emergency access. The segments of the existing alignment that deviate from the proposed alignments of Alternatives 1 and 2 would remain open during construction. For the areas where the designs of the proposed alignments coincide with existing, traffic controls would be in place. Measure CIA-5 would be implemented to avoid affecting emergency services. A traffic management plan will be required prior to construction and is discussed further in section of 2.1.4.4 of this document.

Construction

Construction of the proposed project would generate a small amount of solid waste through the removal of earthen material and general debris from project construction. Earthen material (native soils) generated during construction would be used on-site as fill where feasible. Any remaining solid waste caused by project construction would be disposed of at an appropriate disposal site.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure CIA-4: To minimize interruptions of service to utility customers, a series of coordination letters shall be sent to all impacted utility companies to identify utilities within the proposed project. Letters would indicate where utility relocations are to be performed and the required time to relocate them. Design plans would be sent to involved utility owners during the project development phase. Meetings would be arranged with utility companies as necessary to discuss impacts and relocation plans prior to construction.

Minimization Measure CIA-5: Emergency public services, local law enforcement agencies, and local businesses would be notified of the proposed project and of any temporary lane closures before construction begins.

2.1.4.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code 794). Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

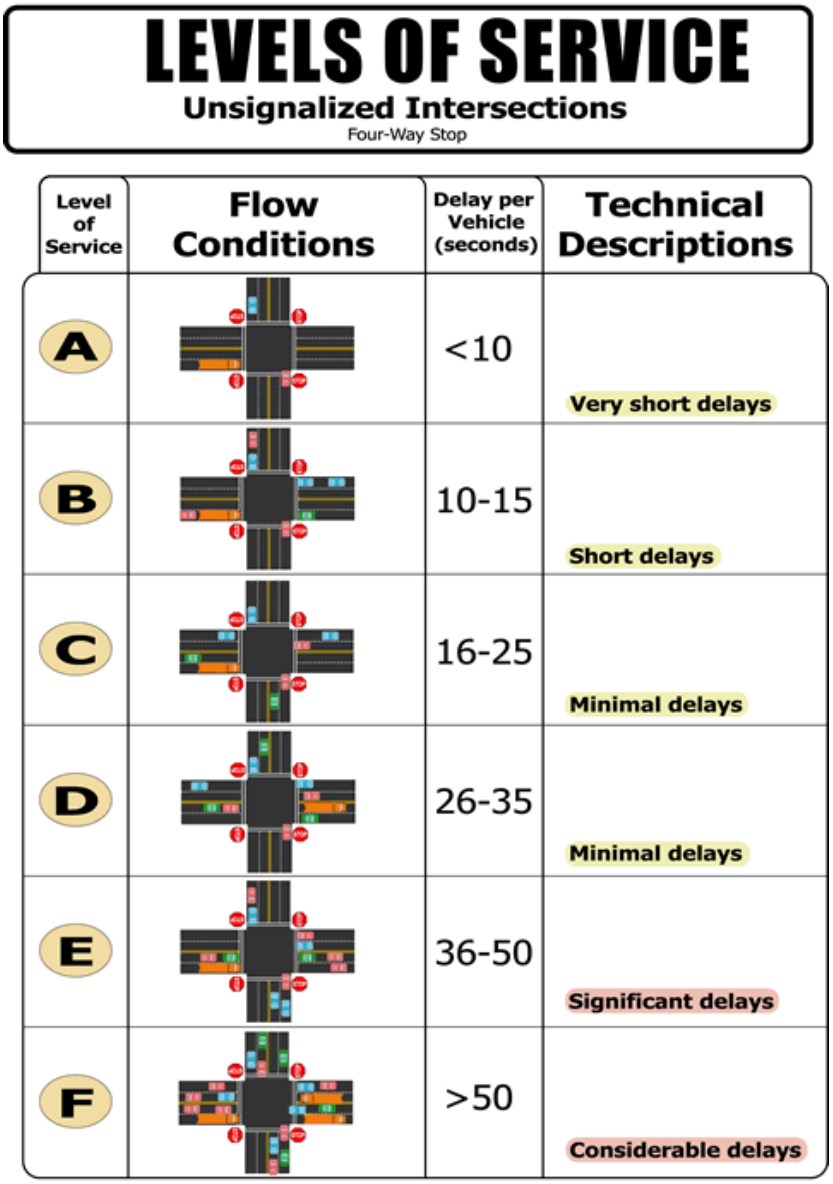
Most of the data in this section is from the *Final Traffic Operations Analysis Report for the State Route 4 Wagon Trail Realignment Project in Calaveras County, CA*, which was approved in 2014. The study area extends along the State Route 4 corridor from 1.37 miles west of Hunt Road (Post Mile 12.66) to 2.83 miles east of Stallion Way (Post Mile 19.10). There are currently 16 access points within the study area. This includes 12 driveways and gates or other means of accessing the property. Limiting the number of access points is part of the purpose of the project. The following four intersections were analyzed for weekday morning and afternoon peak hours:

1. State Route 4 / Hunt Road;
2. State Route 4 / Pool Station Road;
3. State Route 4 / Appaloosa Road; and
4. State Route 4 / Stallion Way.

Level of Service

Transportation planners use the term “level of service” to describe a roadway’s performance based on average delay per vehicle. LOS is a measure of traffic operating conditions, which

varies from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity resulting in long queues and delays). The LOS is determined differently depending on the type of control at the intersection. Freeway, multilane highway, and urban street facility operations are also described in terms of LOS. The service level for a freeway section and multilane highway is based on vehicle density expressed as passenger/cars/lane/mile, and the service level for urban streets is based on average through-vehicle speed for each roadway segment, which is influenced both by the number of signals per mile and by the intersection control delay. LOS standards on Caltrans facilities are based on the Transportation Concept Report for each facility, or applied by jurisdiction.



Source: 2000 HCM, Exhibit 17-22, Level of Service Criteria for AWSC Intersections

Figure 11. Level of Service for Unsignalized Intersections

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Figure 12. Level of Service for Two-lane Highways

State Route 4 is an east-west two-lane rural highway within the study area that connects State Route 99 in Stockton to the west with State Route 89 and eventually US 395 in the State of Nevada to the east. In the project study area, side-street stop controlled intersections are located at Hunt Road (PM 14.00), Pool Station Road (PM 14.70), Appaloosa Road (PM 15.83) and Stallion Way (PM 16.44). Currently, State Route 4 experiences free-flow conditions. All of the study intersections and segments operate at Level of Service A.

Hunt Road – Traveling eastbound on State Route 4, the unsignalized side street stop-controlled intersection of State Route 4 / Hunt Road is the first intersection in the project

study area. Hunt Road provides one travel lane in each direction and connects State Route 4 with Milton Road to the west. For eastbound State Route 4 vehicles, a left-turn pocket is currently not provided, resulting in vehicles having to stop within the eastbound travel lane as they wait for gaps in westbound State Route 4 traffic.

Pool Station Road – Traveling eastbound on State Route 4, the unsignalized side street stop-controlled intersection of State Route 4 / Pool Station Road is the second intersection in the project study area. Pool Station Road provides one travel lane in each direction and connects State Route 4 with State Route 49 and the Town of San Andreas to the north. For eastbound State Route 4 vehicles, a 630 foot left-turn pocket (including a 120 foot bay taper) was recently completed in 2012 by Caltrans. In the westbound State Route 4 direction, a widened westbound travel lane allows vehicles to decelerate as they make the right-turn onto northbound Pool Station Road. Lastly, a widened southbound stop-controlled approach allows vehicle making the right-turn movement onto westbound State Route 4 to wait next to left-turning vehicles. This intersection does not meet signal warrants under

Appaloosa Road – Traveling eastbound on State Route 4, the unsignalized side-street stop controlled intersection of State Route 4 / Appaloosa Road is the third intersection in the project study area. Appaloosa Road provides one travel lane in each direction and is a local street providing access to low density residences on the south side of State Route 4.

Stallion Way – Traveling eastbound on State Route 4, the unsignalized side-street stop controlled intersection of State Route 4 / Stallion Way is the fourth intersection in the project study area. Stallion Way provides one travel lane in each direction and is a local street providing access to low density residences on the south side of State Route 4.

Under Existing Conditions, all four study intersections are side-street stop controlled. As shown in Table 14, all four study intersections currently operate with very short delays (described as Level of Service A) during the morning and afternoon peak hours. LOS is a qualitative measure of traffic operations from a driver's perspective, which varies from LOS A (the best) to LOS F (the worst).

Table 14. Intersection Analysis - Existing Conditions 2014

Intersection	Control	Morning Peak Hour		Afternoon Peak Hour	
		Delay (sec/veh*)	Level of Service	Delay (sec/veh*)	Level of Service
1. State Route 4 / Hunt Road	Side-Street Stop	EB LT = 1.8	A	EB LT = 2.2	A
		EB TH = 1.5	A	EB TH = 1.4	A
		WB TH = 1.6	A	WB TH = 2.0	A
		WB RT = 0.5	A	WB RT = 0.7	A
		SB LT = 6.0	A	SB LT = 6.8	A
		SB RT = 3.2	A	SB RT = 3.9	A
		Entire = 1.6	A	Entire = 1.8	A
2. State Route 4 / Pool Station Road	Side-Street Stop	EB LT = 2.2	A	EB LT = 2.6	A
		EB TH = 1.4	A	EB TH = 1.3	A
		WB TH = 4.4	A	WB TH = 5.2	A
		WB RT = 2.7	A	WB RT = 3.0	A
		SB LT = 7.4	A	SB LT = 8.2	A
		SB RT = 6.3	A	SB RT = 7.2	A
		Entire = 2.9	A	Entire = 3.8	A
3. State Route 4 / Appaloosa Road	Side-Street Stop	EB TH = 1.9	A	EB TH = 1.9	A
		EB RT = 0.6	A	EB RT = 0.6	A
		WB LT = 3.5	A	WB LT = 5.1	A
		WB TH = 3.6	A	WB TH = 5.2	A
		NB LT = 6.7	A	NB LT = 7.6	A
		NB RT = 3.5	A	NB RT = 3.2	A
		Entire = 2.7	A	Entire = 3.7	A
4. State Route 4 / Stallion Way	Side-Street Stop	EB TH = 4.4	A	EB TH = 4.2	A
		EB RT = 3.4	A	EB RT = 3.3	A
		WB LT = 3.3	A	WB LT = 4.2	A
		WB TH = 2.6	A	WB TH = 3.9	A
		NB LT = 6.6	A	NB LT = 8.1	A
		NB RT = 3.8	A	NB RT = 3.1	A
		Entire = 3.7	A	Entire = 4.0	A

*Seconds Per Vehicle
Source: Traffic Operations Analysis Report, 2014

Traffic Accident Surveillance and Analysis System Data

As shown in Table 15, two of the project segments have a higher accident rate than the average for similar facilities in California.

Table 15. Traffic Accident Surveillance and Analysis System Data for the Project Area

Segment	Actual	Average for Similar Facilities* (per million miles traveled)
	Accident Rate	Accident Rate
Post Miles 12.80 to 14.72	1.38	0.80
Post Miles 14.72 to 16.75	0.61	
Post Miles 16.75 to 19.05	0.58	
Post Miles 12.80 to 19.05	0.83	
*Conventional 2-Lane Highway on Rolling Terrain with a Design Speed greater than 55 miles per hour for the January 2010 through December 2012 time period. Source: California Statewide Integrated Traffic Records System, 2015.		

Driveways and Access Points

Current driveway locations have limited sight distance and/or close in proximity with each other. Design standards require access openings not to be closer than half-mile to an adjacent public road or to another access opening. Design guidelines recommend that when several access openings are closely spaced, consolidations of access points occurs to improve spacing between openings and/or frontage roads are considered.

Pedestrian and Bicycle Facilities

There are currently no pedestrian, bicycle, or parking facilities or lots in the project area. The Draft Calaveras County Pedestrian Master Plan (2007) was reviewed and pedestrian facilities were proposed along State Route 4. As detailed in the *Calaveras County Bicycle Master Plan* (2007) a Class III bikeway, consisting of signage only, is planned at the State Route 4 segments from Salt Spring Valley Road to Pool Station Road and from Pool Station Road to the city limits of Angels Camp. Both of these Class III bikeway segments have been assigned a priority "B" by the County.

Transit

The project segment of State Route 4 is currently served by Bus Route 5 operated by Calaveras Transit. Route 5 runs from Copperopolis to Angels Camp with five scheduled stops at the O'Byrnes Ferry Road Chevron, Copper Library, Copper Cove at Little John Road, Cooper Town Squire, and State Route 49 at Demarest Transfer Stop. No scheduled transit stops are within the project footprint.

Environmental Consequences

In the Design Year 2040, State Route 4 would still operate at acceptable LOS A and LOS B at most of the movements with or without the project. A few turning movements would

operate at LOS C, D, with or without the project and LOS E at one location with the No-Build Alternative.

Hunt Road – The State Route 4 Wagon Trail Realignment Project would improve this existing operational issue by providing a 560-foot eastbound State Route 4 left-turn pocket (including a 120 foot bay taper), a widened westbound State Route 4 approach for right-turning vehicles, and a widened southbound approach for right turning vehicles. This intersection does not meet signal warrants under Construction Year 2020 or Design Year 2040 conditions, and will remain side-street stop controlled.

Pool Station Road – This intersection does not meet signal warrants under Construction Year 2020 or Design Year 2040 conditions, and will remain side-street stop controlled.

Appaloosa Way – The State Route 4 Wagon Trail Realignment Project would provide a 560-foot westbound State Route 4 left-turn pocket (including a 120 foot bay taper), a widened eastbound lane for vehicles making a right-turn movement onto southbound Appaloosa Road, and a widened northbound stop-controlled approach allows vehicle making the right-turn movement onto eastbound State Route 4 to wait next to left-turning vehicles. This intersection does not meet signal warrants under Construction Year 2020 or Design Year 2040 conditions, and will remain side street stop controlled.

Stallion Way – The State Route 4 Wagon Trail Realignment Project would provide a 570-foot westbound State Route 4 foot-turn pocket (including a 120 foot bay taper), a widened eastbound lane for vehicles making a right-turn movement onto southbound Stallion Way, and a widened northbound stop-controlled approach allows vehicle making the right-turn movement onto eastbound State Route 4 to wait next to left-turning vehicles. This intersection does not meet signal warrants under Construction Year 2020 or Design Year 2040 conditions, and will remain side-street stop controlled.

<u>Design Year 2040 Build Conditions</u>

When comparing Design Year 2040 Build conditions to No-Build conditions, the results of traffic analysis (Table 16) showed that all 28 movements (100.0%) would continue to operate at LOS D conditions or better during morning peak hour conditions. During afternoon peak our conditions, all 28 movements (100.0%) would also operate at LOS D conditions or better. Table 14 shows that as a direct result of the State Route 4 Wagon Trail Realignment Project, the following movements would improve:

- The southbound left-turn movement from Pool Station Road to eastbound State Route 4 would improve from unacceptable LOS E with average delays of 39.5 seconds to LOS D with average delays of 29.6 seconds;
- The northbound left-turn movement from Appaloosa Road to westbound State Route 4 would marginally improve from LOS C with average delays of 16.8 seconds to LOS B with average delays of 14.5 seconds; and

- The northbound left-turn movement from Stallion Road to westbound State Route 4 would marginally improve from LOS C with average delays of 15.2 seconds to LOS B with average delays of 15.0 seconds.
- At the new State Route 4/Consolidated Driveway intersection, the results of the traffic analysis (Table 16) show that all 10 movements would operate at LOS A conditions during both morning and afternoon peak hours.

Table 16. Intersection Analysis--Design Year 2040 with Alternative 1 and 2 Conditions

Intersection	Control	Morning Peak Hour		Afternoon Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1. State Route 4 / Hunt Road	Side-Street Stop	EB LT = 3.3 EB TH = 2.3 WB TH = 2.3 WB RT = 0.7 SB LT = 20.2 SB RT = 7.1 Entire = 3.0	LOS A LOS A LOS A LOS A LOS C LOS A LOS A	EB LT = 7.2 EB TH = 2.0 WB TH = 2.9 WB RT = 1.0 SB LT = 24.6 SB RT = 11.4 Entire = 3.2	LOS A LOS A LOS A LOS A LOS C LOS B LOS A
2. State Route 4 / Pool Station Road	Side-Street Stop	EB LT = 6.4 EB TH = 2.1 WB TH = 6.5 WB RT = 3.9 SB LT = 29.3 SB RT = 10.8 Entire = 5.7	LOS A LOS A LOS A LOS A LOS D LOS B LOS A	EB LT = 8.4 EB TH = 1.9 WB TH = 7.4 WB RT = 4.4 SB LT = 29.6 SB RT = 17.3 Entire = 7.4	LOS A LOS A LOS A LOS A LOS D LOS C LOS A
3. State Route 4 / Appaloosa Road	Side-Street Stop	EB TH = 2.6 EB RT = 1.0 WB LT = 6.6 WB TH = 4.4 NB LT = 13.3 NB RT = 8.3 Entire = 3.7	LOS A LOS A LOS A LOS A LOS B LOS A LOS A	EB TH = 2.7 EB RT = 0.9 WB LT = 7.5 WB TH = 5.1 NB LT = 14.5 NB RT = 6.7 Entire = 4.3	LOS A LOS A LOS A LOS A LOS B LOS A LOS A
4. State Route 4 / Stallion Way	Side-Street Stop	EB TH = 5.8 EB RT = 4.4 WB LT = 5.5 WB TH = 2.1 NB LT = 14.3 NB RT = 7.8 Entire = 4.6	LOS A LOS A LOS A LOS A LOS B LOS A LOS A	EB TH = 5.5 EB RT = 3.9 WB LT = 4.4 WB TH = 2.5 NB LT = 15.0 NB RT = 5.8 Entire = 4.0	LOS A LOS A LOS A LOS A LOS B LOS A LOS A
5. State Route / Consolidated Driveway	Side-Street Stop	EB LT = 0.0 EB TH = 2.6 EB RT = 0.0 WB LT = 0.0 WB TH = 2.6 WB RT = 1.7 NB LT = 13.8 SB LT = 0.0 SB RT = 3.2 Entire = 2.6	LOS A LOS A LOS A LOS A LOS A LOS A LOS B LOS A LOS A LOS A	EB LT = 3.7 EB TH = 2.5 EB RT = 0.9 WB LT = 0.0 WB TH = 3.3 WB RT = 2.4 NB LT = 12.8 SB LT = 0.0 SB RT = 2.4 Entire = 3.0	LOS A LOS A LOS A LOS A LOS A LOS A LOS B LOS A LOS A LOS A
Source: Traffic Operations Analysis Report, 2014					

Design Year 2040 No-Build Conditions

As shown in Table 17, during the morning peak hour, all 28 of the 28 movements (100.0%) would continue to operate at Level of Service D conditions or better. The following key movements were identified to marginally degrade during the morning peak hour:

- The southbound left-turn movement from Hunt Road to eastbound State Route 4 marginally declines from Level of Service A to Level of Service C conditions;
- The southbound left-turn movement from Pool Station Road to eastbound State Route 4 marginally declines from Level of Service A to Level of Service D conditions;
- The southbound right-turn movement from Pool Station Road to westbound State Route 4 marginally declines from Level of Service A to Level of Service B conditions;
- The northbound left-turn movement from Appaloosa Road to westbound State Route 4 marginally declines from Level of Service A to Level of Service B conditions; and
- The northbound left-turn movement from Stallion Road to westbound State Route 4 marginally declines from Level of Service A to Level of Service B conditions.
- During the evening peak hour, 27 of the 28 movements (96.4%) would continue to operate at Level of Service D conditions or better. The following key movements were identified to marginally degrade during the A morning peak hour:
- The southbound left-turn movement from Hunt Road to eastbound State Route 4 marginally declines from Level of Service A to Level of Service C conditions;
- The southbound left-turn movement from Pool Station Road to eastbound State Route 4 marginally declines from Level of Service A to unacceptable Level of Service E conditions;
- The southbound right-turn movement from Pool Station Road to westbound State Route 4 marginally declines from Level of Service A to unacceptable Level of Service C conditions;
- The northbound left-turn movement from Appaloosa Road to westbound State Route 4 marginally declines from Level of Service A to Level of Service B conditions; and
- The northbound left-turn movement from Stallion Road to westbound State Route 4 marginally declines from Level of Service A to Level of Service C conditions.

As described in the Calaveras County *General Plan* (1996), the Caltrans' 1989 System Management Plan specifies a concept Level of Service C for State Route 4 in Calaveras County and State Route 4 is considered a route of regional importance.

Table 17. Intersection Analysis - Design Year 2040 No-Build Conditions

Intersection	Control	Morning Peak Hour		Afternoon Peak Hour	
		Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
1. State Route 4 / Hunt Road	Side-Street Stop	EB LT = 5.1	A	EB LT = 6.8	A
		EB TH = 3.2	A	EB TH = 3.1	A
		WB TH = 2.6	A	WB TH = 3.1	A
		WB RT = 0.9	A	WB RT = 1.3	A
		SB LT = 18.0	C	SB LT = 21.8	C
		SB RT = 7.0	A	SB RT = 9.1	A
		Entire = 3.5	A	Entire = 3.6	A
2. State Route 4 / Pool Station Road	Side-Street Stop	EB LT = 7.1	A	EB LT = 9.9	A
		EB TH = 2.1	A	EB TH = 1.9	A
		WB TH = 7.0	A	WB TH = 7.7	A
		WB RT = 4.0	A	WB RT = 4.4	A
		SB LT = 28.8	D	SB LT = 39.5	E
		SB RT = 10.6	B	SB RT = 20.5	C
		Entire = 5.9	A	Entire = 8.3	A
3. State Route 4 / Appaloosa Road	Side-Street Stop	EB TH = 2.6	A	EB TH = 2.7	A
		EB RT = 1.0	A	EB RT = 0.9	A
		WB LT = 6.8	A	WB LT = 9.1	A
		WB TH = 5.5	A	WB TH = 7.1	A
		NB LT = 12.2	B	NB LT = 16.8	C
		NB RT = 7.1	A	NB RT = 6.8	A
		Entire = 4.1	A	Entire = 5.4	A
4. State Route 4 / Stallion Way	Side-Street Stop	EB TH = 5.7	A	EB TH = 5.6	A
		EB RT = 4.2	A	EB RT = 4.1	A
		WB LT = 7.0	A	WB LT = 7.1	A
		WB TH = 4.4	A	WB TH = 5.8	A
		NB LT = 13.5	B	NB LT = 15.2	C
		NB RT = 8.0	A	NB RT = 5.2	A
		Entire = 5.4	A	Entire = 5.7	A
Source: Calaveras County General Plan, 1996					

Vehicle Hours of Delay, Vehicle Miles Traveled, and Vehicle Hours of Travel

Currently, State Route 4 within the project area experiences 7 vehicle hours of delay in the morning peak hour and 8.4 in the afternoon. There are 163 total stops in the morning peak hour and 149 in the afternoon. Average Delay per Vehicle is 32.9 seconds in the morning and 35.9 seconds in the afternoon peak hour. Vehicle Miles of Travel is 4,408 and 4,878 VHT in the morning and afternoon, respectively. Vehicle Hours Traveled is 90.4 and 100.7 in the morning and afternoon, respectively. Total Fuel Consumption is 126.3 and 139.3 gallons in the morning and afternoon, respectively. Total Vehicle Emissions are 24,000 pounds and 2,647pounds in the morning and afternoon peak hours, respectively.

Comparison

When compared to Design Year 2040 No-Build conditions, the following benefits of the State Route 4 Wagon Trail Realignment Project were identified for morning Peak Hour Conditions:

- Total Vehicle Hours of Delay would be reduced by 9.3% from 20.5 to 18.6;
- Total Stops would be reduced by 3.4%, from 496 to 479;
- Average Delay Per Vehicle would be reduced by 8.7%, from 45.0 to 41.1 seconds;
- Vehicle Miles Travelled through the project study area would be reduced by 7.6%, from 8,883 to 8,210;
- Vehicle Hours of Travel through the project study area would be reduced by 7.6%, from 190.2 to 176.3;
- Fuel Consumption would be reduced 7.2%, from 255.3 to 236.8 gallons, resulting in 351 fewer pounds of vehicular emissions (exhaust gases).
- Average eastbound State Route 4 travel speed from Post Mile 12.66 to Post Mile 19.10 would increase from 48.6 miles per hour to 48.7 miles per hour (+0.1 mph);
- Average westbound State Route 4 travel speed from Post Mile 19.10 to Post Mile 12.66 would increase from 48.7 miles per hour to 49.2 miles per hour (+0.5 mph).

When compared to Design Year 2040 No-Build conditions, the following benefits of the State Route 4 Wagon Trail Realignment Project were identified for PM Peak Hour Conditions:

- Total Vehicle Hours of Delay would be reduced by 11.9%, from 24.3 to 21.4;
- Total Stops would be reduced by 8.2%, from 548 to 503;
- Average Delay Per Vehicle would be reduced by 10.5%, from 49.6 to 44.4 seconds;
- Vehicle Miles Travelled through the project study area would be reduced by 7.7%, from 9,570 to 8,837;
- Vehicle Hours of Travel through the project study area would be reduced by 7.6%, from 207.1 to 191.4;
- Fuel Consumption would be reduced 7.7%, from 275.1 to 253.9 gallons, resulting in 403 fewer pounds of vehicular emissions (exhaust gases).
- Average eastbound State Route 4 travel speed from Post Mile 12.66 to Post Mile 19.10 would increase from 49.1 miles per hour to 49.4 miles per hour (+0.3 miles per hour);
- Average westbound State Route 4 travel speed from Post Mile 19.10 to Post Mile 12.66 would increase from 47.7 miles per hour to 48.2 miles per hour (+0.5 miles per hour).

The project would improve traffic circulation and conditions by upgrading the facility to current design standards. Safety would be enhanced by providing a standard pavement width of 40 feet (two 12-foot lanes and two 8-foot shoulders) with an additional 12 feet to provide turn lanes where needed. Sight distance would be improved through engineered alignments that reduce the number of curves and increase curve radii. The project would also enhance

safety by reducing the number of access points and utilizing frontage roads to consolidate private driveways.

Driveways and Access Points

The project would modify driveways to conform to new highway grade. Alternative 1 would modify driveway connection for 19 parcels and Alternative 2 would modify driveway connections for 18 parcels. Access would be maintained to properties during construction. Construction of Alternatives 1 and 2 would require temporary construction easements at privately owned parcels.

Pedestrian and Bicycle Facilities

No parking facilities would be affected because none are within the project area. No sidewalks or facilities subject to the Americans with Disabilities Act would be affected. Access to State Route 4 would change for local residents. Instead of direct access, several driveways would lead to frontage roads, which would lead to State Route 4. A Class III bikeway is included in the project, consistent with the 2007 *Calaveras County Bicycle Master Plan*.

Transit

The existing State Route 4 segment would continue to serve traffic throughout the duration of construction. The project would be staged to allow such access, and a Traffic Management Plan would be implemented per measure TRA-1. While public transportation services may experience delays during construction, these would be temporary and minor. No scheduled transit stops are within the project footprint.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure TRA-1: A Traffic Management Plan shall be implemented during construction of the project to allow traffic access to State Route 4.

2.1.4.6 Visual/Aesthetics

Regulatory Setting

The National Environmental Protection Act establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Protection Act (23 United States Code 109[h]) directs that final decisions on 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.

The California Environmental Quality Act 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" (CA Public Resources Code Section 21001[b]).

Affected Environment

The *Visual Impact Assessment, State Route 4 Wagon Trail Realignment* was approved in May 2014 and provides most of the information in this section. The project area's visual landscape is characterized by hilly terrain, mixed oak woodlands, grasslands, mixed chaparral, and riparian vegetation next to State Route 4. Land uses within the corridor are primarily rural residential and agriculture (mainly cattle grazing).

The Project corridor was divided into a series of "outdoor rooms" or *visual assessment units*. Each visual assessment unit has its own visual character and visual quality. It is typically defined by the limits of a particular viewshed. Key viewpoints 1, 2, 3, 4, and 5 were selected to display the visual results of the proposed Project as viewed from primary viewer groups potentially affected. Key views were determined based on viewer locations and typical views and are not restricted to individual visual assessment units. Visual assessment units in the project area are grassland, oak woodland, and rural residential. Six key view locations (KV 1A, 1B, 2, 3, 4 and 5) were identified (see Figure 13) based on viewer locations and typical views. Motorists and residents are the main viewer groups. For this Project, the following five visual assessment units and their associated key views have been identified (see Figure 13):

- Key View 1: This key view shows eastbound SR-4 and is surrounded by grassland and oak woodland, which is the dominant landcover type in the area. This key view is comprised of two nearby locations to show both build alternatives. The dominant landforms in the key view are hills in the foreground, middleground, and background. This view is representative of the views seen by motorists, the main viewers of the Project.
- Key View 2: This key view shows westbound SR-4 just east of the intersection with Appaloosa Rd. This view shows agricultural, rural residential land, and oak woodlands. The hills seen to the west are the dominant landform in the Project site. This view is representative of the views seen by motorists, the main viewers of the Project.
- Key View 3: This key view shows eastbound SR-4 and contains rural residential, grassland, and oak woodlands, landcover typical of this section of the Project area. The hills seen in the back-ground are the typical landform in Project area. This view is representative of the views seen by motorists, the main viewers of the Project.
- Key View 4: This key view shows the view from a rural residence adjacent to SR-4 approximately 0.33 mi east of Stallion Way; and contains residential driveway, fencing, and barn landcover typical of a residence. The view shows the front yard of the residence and wooded hillsides in the background. This view is representative of the views seen by a residence adjacent to the project

- Key View 5: This key view shows the view from a rural residence adjacent to SR-4 approximately 0.6 mi west of Stockton Rd and contains fencing, a shed and electrical poles. The view shows a hilly, lightly wooded section of the Project. This view is representative of the views seen by a residence near the Project.

Scenic Resources

National Scenic Byway Designation: The project site is not an officially designated National Scenic Byway. The nearest National Scenic Byway is Ebbetts Pass National Scenic Byway from post mile 41.6 on State Route 4 to post mile 14.6 on State Route 89, which begins about 22 miles east.

State Scenic Highway Designation: The project site does not contain officially designated State Scenic Highways (Caltrans 2013). The nearest designated State Scenic Highway is about 22 miles east on State Route 4, from Arnold to Alpine County. The nearest eligible State Scenic Highway is about 1.6 miles east at the junction of State Route 4 and State Route 49.

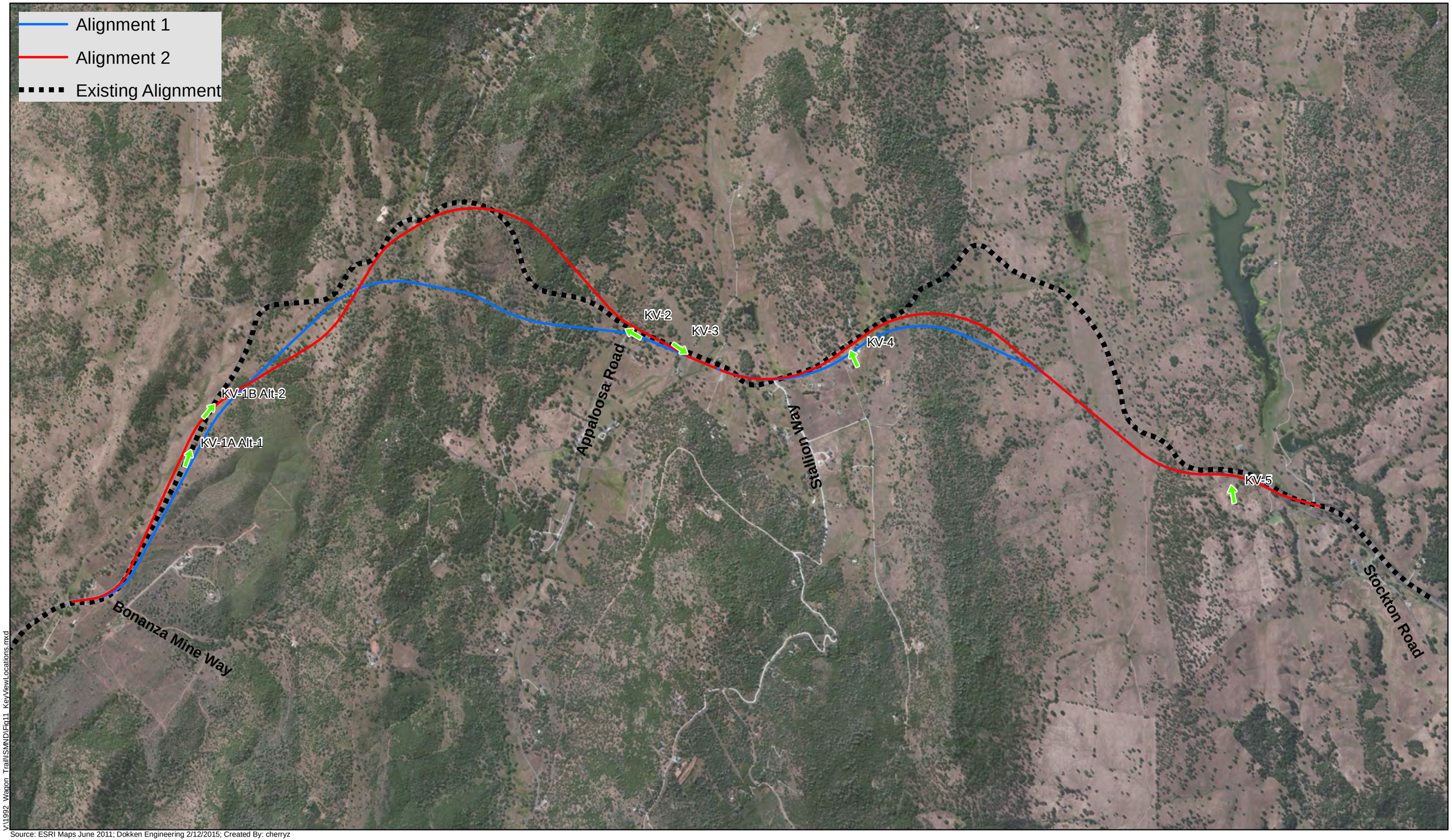
Local/Calaveras County: The project area includes a section of State Route 4 that is a locally designated scenic highway in the *Calaveras County General Plan* (1996) and *Calaveras County Regional Transportation Plan* (2012). The *Calaveras County General Plan* identifies Goal III: 14: "Preserve and enhance the natural and historic character of scenic highway corridors in Calaveras County."

The *Calaveras County Regional Transportation Plan* defines two mitigation measures to protect scenic highways:

RTP Mitigation Measure 1: Prior to construction, the implementing agency would consider the following measures in the design of a project:

- Design transportation systems in a manner where the surrounding landscape dominates.
- Design transportation systems to be compatible with the surrounding environment (e.g., colors and materials of construction material). Design transportation systems such that landscape vegetation complements the natural landscape.
- Design transportation systems such that trees are maintained intact, or if removal is necessary, incorporate new trees into the design.
- Design grades to be consistent with the construction guidelines required by the County or Angels Camp.

RTP Mitigation Measure 2: Prior to the design approval of a project, the implementing agency would consider whether the Project would remove any significant visual resources in the project area (trees, outcroppings, buildings) or obstruct views of the identified scenic resources.



Source: ESRI Maps June 2011; Dokken Engineering 2/12/2015; Created By: cherryz

0 0.5 1 1.5 2 Miles

FIGURE 11
Key View Locations
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Y:\1992_Wagon_Trail\SMND\Fig11_KeyViewLocations.mxd

If it is determined that a project would impact scenic resources, the implementing agency should consider alternative designs that avoid, minimize or mitigate the visual impacts to the extent feasible.

Key Views 1A and 1B

Key Views 1A and 1B (see Figures 14 and 16) represent the view experienced by drivers driving eastbound on State Route 4, 0.8 mile eastbound from Bonanza Mine Way. Key View 1A and 1B consist of grasslands in the foreground, the existing State Route 4 in the middle ground, and rolling hills covered by oak woodlands in the background. Key View 1B is closer to a hillside.

Key View 2

Key View 2 (see Figures 18) represents the view from the intersection of State Route 4 and Appaloosa Road looking westbound. Key View 2 consists of the existing State Route 4 in the foreground and middle ground. Oak woodlands are seen in the middle ground, and rolling hills, also covered with oak woodlands, are in the background. Key View 2 shows substandard site-lines due to humps in the roadway. Site lines here are important due to the existence of the Appaloosa Road intersection, as seen in the foreground.

Key View 3

Key View 3 (see Figures 22) represents the view experienced by motorists driving eastbound on State Route 4, 0.25 mile eastbound from Appaloosa Road. Key View 3 consists of State Route 4, grasslands, and oak woodlands in the foreground, middleground, and background of the view.

Key View 4

Key View 4 (see Figures 24) represents the view experienced from a residence along State Route 4. Key View 4 is looking towards State Route 4, about 0.33 mile east of the intersection with Stallion Way. Key View 4 shows an existing residential driveway in the foreground and middleground and oak woodlands in the background. State Route 4 is in the middleground/background of this view.

Key View 5

Key View 5 (see Figures 28) represents the view experienced from a residences and a viewer standing on a hill overlooking State Route 4 approximately 0.65 mile west of the intersection with Stockton Road. Key View 5 consists of a private yard with grasses in the foreground and hillsides with oak woodlands in the middleground and background.

Environmental Consequences

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the Project corridor. Public attitudes validate the assessed level of quality and predict how changes to the Project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the Project. The three criteria for evaluating visual quality are defined below:

- **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness** is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- **Unity** is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality of the existing corridor would be altered by the proposed Project. Existing visual quality of the Project area is moderately-high due to the, vividness, intactness, and unity throughout the area. The *vividness* of the Project corridor is moderately-high as the landform consists of rolling with dense oak woodlands contrasted by open grasslands. Rural homes and fencing along the alignment also provide an element of aesthetic interest. *Intactness* of the Project corridor is moderate as the Project area is largely free from encroachment. The vast majority of the viewshed is open and undeveloped, and comprised of ranches and passive land uses such as cattle grazing. The Project corridor also has high *Unity* due to the integration of State Route 4 with the terrain. The road generally conforms to the topography of the area as it moves through the viewshed.

The proposed Project is not anticipated to have a substantial effect on visual resources. The Build Alternatives do not block views of visual resources and the overall visual quality would decrease only slightly. Because the Project proposes to improve and realign an existing road, visual character change would be low. Visual resource change throughout the Project would be low. Motorists would have a moderate viewer response and residents would have a moderately-high viewer response. Overall the visual impact of the project would be moderately-low to moderate.

<u>Key Views 1A and 1B</u>

Key Views 1A and 1B (see Figures 14 through 17) represent the view experienced by drivers driving eastbound on State Route 4, 0.8 mile eastbound from Bonanza Mine Way.

Alternative 1 would shift the roadway eastward in this view. This view shows the scenario where the old alignment would be removed and allowed to return to natural conditions. The hills and oak woodlands in the background are still visible.

Alternative 2 would shift the roadway eastward and would result in slightly cutting into the existing hillside at Key View 1B. The hillside would be disturbed with the cut, but the ridgeline and background views of other hills would not be affected.

The Visual Impact Assessment concluded that Alternative 1 and Alternative 2 would result in moderate visual impact to motorists (the viewer group for this Key View). This is due to a low amount of resource change, since views of grasslands and oak woodlands would still largely be intact.

Figure 14. Key View 1A- Existing Condition

Figure 15. Key View 1A Proposed Condition-Alternative 1

Figure 16. Key View 1B-Existing Condition Facing Eastbound

Figure 17. Key View 1B-Proposed Condition—Alt 2 Facing Eastbound

Key View 2

Key View 2 (see Figures 18 through 21) represents the view from the intersection of State Route 4 and Appaloosa Road looking westbound.

Alternative 1 would shift State Route 4 southward of the existing road. Figure 19 shows the scenario where the old alignment would be removed and allowed to re-vegetate. Views of adjacent woodlands and hills in the background are still visible. The roadway would be straighter, and the large humps would be removed.

Alternative 2 would also shift State Route 4 northward of the existing road. Figure 20 shows the scenario where the old alignment would be removed and allowed to re-vegetate. Oak woodland trees would be removed along the alignment. Adjacent woodlands, aside from the trees to be removed, and hills in the background are still visible. Alternative 2 would have a large curved alignment that is less wavy than the existing condition.

The *Visual Impact Assessment* concluded that Alternatives 1 2 would result in moderate visual impact to motorists (the viewer group for this Key View). This is due to a low amount of resource change--- views of grasslands and oak woodlands would still largely be intact.

Figure 18. Key View 2 - Existing Condition Facing Westbound

Figure 19. Key View 2- Proposed Condition—Alternative 1 Facing Westbound

Figure 20. Key View 2 - Existing Condition Facing Westbound (repeated for visual comparison)

Figure 21. Key View 2-Proposed Condition--Alternative 2 Facing Westbound

Alternative 1 would shift the roadway eastward in this view. This view shows the scenario where the old alignment would be removed and allowed to return to natural conditions. The hills and oak woodlands in the background are still visible.

Alternative 2 would shift the roadway westward and would result in slightly cutting into the existing hillside at Key View 1B. The hillside would be disturbed with the cut, but the ridgeline and background views of other hills would not be affected.

The *Visual Impact Assessment* concluded that Alternatives 1 2 would result in moderate visual impact to motorists (the viewer group for this Key View). This is due to a low amount of resource change----- views of grasslands and oak woodlands would still largely be intact.

Key View 3

Key View 3 (see Figures 22 and 23) represents the view experienced by motorists driving eastbound on State Route 4, 0.25 mile eastbound from Appaloosa Road.

Alternatives 1 and 2 would shift State Route 4 southward of the existing road. Figure 23 shows the scenario where the old alignment would be removed and allowed to re-vegetate. Views of adjacent woodlands and hills in the background are still visible. The roadway would be straighter, and the large humps would be removed.

The *Visual Impact Assessment* concluded that Alternative 1 and Alternative 2 would result in moderate visual impact to motorists (the viewer group for this Key View). This is due to a low amount of resource change----- views of grasslands and oak woodlands would still largely be intact.

Figure 22. Key View 3-Existing Condition Facing Eastbound

Figure 23. Key View 3-Proposed Condition--Alternatives 1 and 2 Facing Eastbound

Key View 4

Key View 4 (see Figures 24 through 27) represents the view experienced from a residence along State Route 4. Key View 4 is looking towards State Route 4, about0.33 mile east of the intersection with Stallion Way.

Alternative 1 would shift State Route 4 southward of the existing road and, as a result, this view would have a raised slope where the roadway fill would be placed. The driveway connection to State Route 4 would be closer in the foreground, and views of the oak woodlands across the road would be fully obscured.

Alternative 2 would also shift State Route 4 southward of the existing road, but less southerly than Alternative 1. In the middle-ground, this view would have a raised slope where the roadway fill would be placed. In the background, views of the oak woodlands across the road would be partially blocked. In the foreground, the driveway's connection with State Route 4 would be somewhat closer but the view of the driveway would largely remain intact.

The *Visual Impact Assessment* concluded that Alternative 1 would result in a moderate to high visual impact to residents (the viewer group for this Key View). Views of oak woodlands would be blocked, and the elevated roadway would be a more dominant feature. Alternative 2 would result in a moderate impact to residents. This is due to a low amount of resource change, since views of oak woodlands would still largely be intact.

Figure 24. Key View 4 Existing Condition Facing Northward

Figure 25. Key View 4-Proposed Condition--Alternative 1 Facing Northward

Figure 26. Key View 4 Existing Condition (repeated for visual comparison)

Figure 27. Key View 4-Proposed Condition--Alternative 2

Key View 5

Key View 5 (see Figures 28 and 29) represents the view experienced from a residences and a viewer standing from a hill overlooking State Route 4 about 0.65 mile west of the intersection with Stockton Road.

Alternatives 1 and 2 would shift the alignment southward of the existing alignment and would result in a more visible elevated roadway. In the background, the rolling hillsides and oak woodlands would remain visible. In the middle-ground, the elevated roadway and associated fill slopes would be visible; this differs from the existing view because State Route 4 is currently mostly blocked from this viewpoint. The foreground at Key View 5, consisting of the backyard, would not be affected.

The *Visual Impact Assessment* concluded that Alternative 1 would result in a moderate visual impact to residents (the viewer group for this Key View). The *Visual Impact Assessment* concluded that Alternatives 1 and 2 would result in a moderate visual impact to residents (the viewer group for this Key View). There would be moderate resource change and moderate to moderately-high viewer response.

Figure 28. Key View 5 Existing Condition

Figure 29. Key View 5-Proposed Condition--Alternatives 1 and 2

Table 18 summarizes and compares the narrative ratings for visual resource change, viewer response and visual impacts between alternatives for each key view.

Table 18. Summary of Key View Narrative Ratings

VISUAL ASSESSMENT UNIT	KEY VIEW	Alt. 1			Alt. 2		
		Resource Change	Viewer Response	Visual Impact	Resource Change	Viewer Response	Visual Impact
Motorist	1	L	MH	M	L	MH	M
	2	L	MH	M	L	MH	M
	3	L	MH	M	L	MH	M
Residents	4	M	MH	H	ML	MH	M
	5	ML	MH	M	ML	MH	M
L=Low; M=Moderate; ML=Moderately Low; MH=Moderately High Source: Visual Impact Assessment, 2014							

Based on analysis of the Key Views of the project, visual impacts range from moderate to high. The increase in road width with the proposed project would not substantially increase or block current views for motorists at Key Views 1-3 or residents at Key View 5. At Key View 4, views of the roadway would be blocked with the project. Vegetation removal would be necessary throughout the project area to accommodate widening and realignment. Revegetation plans would minimize this impact by restoring vegetation in nearby areas. A summary of visual impacts has been prepared for the following alternatives:

- Alternative 1 would result in a low to moderate resource change. Alternative 1 would not impair or diminish the public's visual enjoyment of the area. Viewer response would be moderately-high and visual impacts would be moderate to high.
- Alternative 2 would result in a low to moderately-low resource change. Alternative 2 would not impair or diminish the public's visual enjoyment of the area. Viewer response would be moderately-high and visual impacts would be moderate.

The key difference between the two alternatives is seen in Key View 4 where Alternative 1 would more greatly block existing views of oak woodlands.

No-Build Alternative

With the No-Build Alternative, no changes would result compared to the existing, therefore no impacts would occur.

The proposed project would not have substantial impacts on visual resources due to the following:

- The Build Alternatives do not block most views of visual resources and the overall visual quality would decrease only slightly.
- Because the Build Alternatives would improve and realign an existing road, visual character change would be low. Views of grasslands, oak woodlands, and rolling hills would still be viewable to most viewers.

- While a large number of oak trees within the project area would be removed, they would be removed from a large area and many oak trees would still remain viewable in the project area. With the inclusion of measures VIS-4 and VIS-5, the removal of these trees is not anticipated to result in substantial adverse changes in visual quality or character.
- The visual impact of exposed slopes due to new roadway cut and fill would be minimized through standard re-vegetation. This would particularly be useful for visual impacts from Alternative 1, as seen with Key View 4.

Construction

During construction of the proposed project, temporary activities such as grading, asphalt laying, truck movement and truck shipments and other routine construction activities within the project area would be visible by motorists traveling along State Route 4 and nearby roadways, and from adjacent residential properties. Construction-related materials, such as road-building material, staging areas, stockpiles, temporary traffic barriers, and construction equipment would be visible to these viewer groups. Areas may also be lighted during construction. Motorists and other viewer groups would experience a change in their physical view of the highway, however, the change is temporary and construction would be subject to local ordinances regarding construction time periods of lighting. The construction area would be kept neat and orderly with regards to trash. Standard special provisions regarding site maintenance would be implemented.

Avoidance, Minimization, and/or Mitigation Measures

The following measures to avoid or minimize visual impacts would be incorporated into the project:

Minimization Measure VIS-1: Where feasible, Build Alternatives would use the existing highway right –of- way corridor.

Minimization Measure VIS-2: Per Caltrans standards regarding erosion control, exposed slopes would be re-vegetated.

Minimization Measure VIS-3: Aesthetic elements incorporated during Final Design, would be designed and implemented with coordination between local agencies and Caltrans.

Minimization Measure VIS-4: Vegetation clearing would only occur within the delineated project boundaries in an effort to minimize the impacts. Oak trees located in areas along the edge of the construction zone would be trimmed whenever possible and only those oak trees that lie within the active construction areas would be removed.

Mitigation Measure VIS-5: Oak tree mitigation would occur on-site or at a California Department of Fish and Wildlife approved off-site location.

2.1.4.7 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

- The National Historic Preservation Act 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 listing in the National Register of Historic Places.
- Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation [36 Code of Federal Regulations 800].

On January 1, 2014, a Section 106 Programmatic Agreement between the Advisory Council, the Federal Highway Administration, State Historic Preservation Officer, and Caltrans went into effect for Department projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 C 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code 327).

Historical resources are considered under CEQA, as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

Affected Environment

A Historic Property Survey Report was completed November 2014 for the proposed project. This report also included the Archaeological Survey Report and Historic Resources Evaluation Report. These reports were prepared to identify potential significant cultural resources, consisting of historic and prehistoric resources, within the project study area.

The Area of Potential Effects consists of approximately 797 acres and encompasses all proposed project construction activities for both Alternatives 1 and 2. The Area of Potential Effects included areas for removal of existing pavement, potential staging areas, utility relocation, drainage facilities, vegetation clearing, re-planting areas, temporary construction

easement, permanent right-of-way acquisition, and, at a minimum, a 100-foot-wide buffer around all anticipated cut and fill limits as shown in Figure 30.

Records searches, supplemental records searches, and pedestrian field surveys were conducted to identify resources within the Area of Potential Effects. Records searches obtained from the Central California Information Center in 2008, 2012, and 2013 identified previously recorded resources in the area. The record search disclosed 78 previously recorded cultural resources within the project study area. Twenty-nine of those resources fall within the current Area of Potential Effects. They include nine prehistoric resources, 17 historic resources, and three multi-component resources (those containing both historic and prehistoric resources).

Pedestrian field surveys were conducted in April, May, and October 2013 by archaeologists. In addition to the surveys conducted in April, May, and October 2013, 32 archaeological investigations have been undertaken within the study area and include field surveys and Phase II test excavations. As a result, a majority of the current Area of Potential Effects has been surveyed since 1977, with many portions of the Area of Potential Effects being repeatedly surveyed over the last 32 years.

The Native American Heritage Commission was contacted to request a Sacred Lands Search and a list of Native American Groups with whom consultation should be conducted. Native American groups were sent letters with maps that provided a summary of the project and requested information regarding comments or concerns the Native American community might have about the project. As a result of the coordination, the California Valley Miwok Tribe, Calaveras Band of Mi-Wuk Indians, and Ione Band of Miwok requested that they be contacted if any artifacts and/or human remains area encountered within the project area (2014).

Environmental Consequences

Consultation and identification efforts for this project resulted in the identification of 31 cultural resources (29 previously recorded, 2 new) within the Area of Potential Effects for the proposed project. Of those resources, six will be evaluated in a phased effort (upon selection of a build alternative), three have been previously determined to be eligible for listing in the National Register and that determination is still valid, two cultural resources have been previously determined not eligible for listing in the National Register and that determination is still valid, 13 are assumed eligible for this project only and will be avoided or protected through establishment of an Environmentally Sensitive Area, and four cultural resources were exempted from review pursuant to Attachment 4 of the Programmatic Agreement between Caltrans and the State Historic Preservation Officer.

<u>Cultural Resources within Alternative 1</u>

- Cultural resources previously determined eligible for the NRHP and/or CRHR
- 16 Cultural resources either presumed eligible for the NRHP and/or CRHR for this project only or requiring additional NRHP evaluations

- 2 Cultural resources previously determined not eligible for the NRHP and/or CRHR
- 3 Cultural resources determined not eligible for the NRHP and/or CRHR as part of this project
- 2 Cultural resources exempt from NRHP and/or CRHR evaluation
- 1 Cultural resource likely previously destroyed but monitoring recommended
- 4 Cultural resources not impacted by Alternative 1

Cultural Resources within Alternative 2

- 3 Cultural resources previously determined eligible for the NRHP and/or CRHR
- 10 Cultural resources either presumed eligible for the NRHP and/or CRHR for this project only or requiring additional NRHP evaluations
- 2 Cultural resources previously determined not eligible for the NRHP and/or CRHR
- 2 Cultural resources determined not eligible for the NRHP and/or CRHR as part of this project
- 3 Cultural resources exempt from NRHP and/or CRHR evaluation
- 1 Cultural resource likely previously destroyed but monitoring recommended
- 10 Cultural resources not impacted by Alternative 2

Also, Caltrans has determined that there are three State-owned resources (built environment, archaeological and non-structural resources) within the APE that do not meet National Register and/or California Historical Landmark eligibility criteria pursuant to PRC § 5024(b). Further, Caltrans has determined that there are three additional State-owned archaeological sites, landscapes, non-structural resources within the APE that meet the National Register of Historic Places criteria and/or California Historic Landmark eligibility criteria is pursuant to PRC § 5024(f). The project will have no adverse effect to two of the sites and will have an adverse effect to the third.

As part of the Archaeological Survey Report, a geoarchaeological investigation was completed November 2014 to determine the potential for buried archaeological sites within the project APE. Eleven geoarchaeological sensitive landforms (GSL) were identified and categorized as to their sensitivity levels. Three GSLs (1, 7, 9) have known archaeological deposits. Three GSLs (2, 8, 9) will require archaeological monitoring during project construction ground disturbing activities, including one site already known to have deposits. 4 more GSLs (3, 6, 10, 11) will require Extended Phase I efforts to determine presence or absence of deposits. GSL 5 has previously been tested for presence or absence and was found to be negative for deposits. GSL 4 would not be impacted by Alternatives 1 or 2. Table 19 summarizes the sensitivity of these locations and makes recommendations regarding the proposed project.

Table 19. Geoarchaeological Sensitive Landforms Recommendations

GSL location	Sensitivity Level	Recommendation
1	High	Phase III data recovery is recommended at CAL-1679. CAL-789 will not be impacted by either Alternative 1 or 2. CAL-636H has been previously determined ineligible for the National Register of Historic Places.
2	High	Archaeological monitoring shall occur during the removal of pavement at this location.
3	High	XPI efforts shall take place within the proposed right of way, once acquired.
4	Low	Not impacted by either Alternative 1 or 2. No recommendations.
5	Low	Previous subsurface investigations have returned negative results for the presence of cultural resources. No additional investigations are recommended for GSL 5.
6	High	Based on the high level of sensitivity, XPI efforts shall be conducted to determine the presence of buried archaeological deposits.
7	High	Phase II testing should occur at CA-133/H.
8	Moderate	Archaeological monitoring shall occur during the removal pavement at this location.
9	High	Due to the presence of CAL-640 (see management strategy above) it is recommended that archaeological monitoring occur during the removal of the pavement at this location.
10	High	XPI efforts shall be conducted at this location once right-of-entry is obtained.
11	High	XPI efforts shall be conducted at this location due to the presence of CAL-132 (Habitation) to determine whether any portion of CAL-132 remains, once right-of-way is obtained.
Source: Archaeological Survey Report, 2013		

Should archaeological deposits be identified during XPI efforts, these results would be documented in a supplemental Archaeological Survey Report (ASR). With these recommendations, along with proposed minimization measure CR-1 and mitigation measures CR-2 through CR-9, no significant impacts to cultural resources are anticipated permanently or during construction.

In a letter dated December 17, 2014, as attached in Appendix D, the State Historic Preservation Officer has concurred with determinations that the three archaeological features, P-05-3088, P-05-3090 and P-053091 (identified above) are not eligible for inclusion on the National Register of Historic Places under any criteria. However, the State Historic Preservation Officer looks forward to further consultation once a build alternative is selected and access to the remaining resources for evaluation is granted.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure CR-1: Conduct a verification pedestrian survey of areas previously surveyed prior to the 2013 efforts once right-of-way is acquired. Should cultural resources be encountered, they shall be documented in a supplemental Historic Property Survey Report.

Mitigation Measure CR-2: Conduct pre-construction pedestrian survey of those areas where previously recorded resources were not relocated. Should cultural resources be encountered, they shall be documented in a supplemental Historic Property Survey Report.

Mitigation Measure CR-3: Conduct Extended Phase I identification efforts at potential resources detailed in the final 2014-2015 cultural studies for this project. Based on the results of these efforts, either ESA fencing shall be implemented to protect the resource, or, should it be determined that the site would be impacted by the proposed project, Phase II testing shall be conducted to verify NRHP eligibility. Phase I identification and Phase II testing as needed.

Mitigation Measure CR-4: Assess NRHP eligibility for all sites currently "Presumed Eligible" that would be impacted by proposed construction activities. These evaluations would be documented in a supplemental Historic Property Survey Report/Historic Resources Evaluation Report.

Mitigation Measure CR-5: Assess adverse effect for all NRHP-eligible properties in a Finding of Effect report, should any be present after additional evaluation efforts are concluded. Should the Finding of Effect reach a determination of adverse effect, a mitigation program must be designed and implemented. The Finding of Effect shall be submitted for review and approval by the State Historic Preservation Officer.

Mitigation Measure CR-6: Implementation of ESA fencing and archaeological/Native American monitoring shall be used at potential resources detailed in the final 2014-2015 cultural technical studies for this project.

Mitigation Measure CR-7: Implementation of ESA fencing and archaeological/Native American monitoring shall occur at the NRHP- eligible resources detailed in the final 2014-2015 cultural technical studies for this project. ESA fencing and archaeological/Native American monitoring shall occur to avoid potential damage to any previously undisturbed portions of the site that may remain.

Mitigation Measure CR-8: Conduct Extended Phase I identification efforts for resources with high sensitivity for buried archaeological deposits detailed in the final 2014-2015 cultural studies for this project. Should any cultural resources be identified, the results shall be documented in a supplemental Historic Property Survey Report and Phase II testing and/or Phase III data recovery would be necessary.

Mitigation Measure CR-9: Conduct Phase II testing for previously non-evaluated resources detailed in the final 2014-2015 cultural technical studies for this project.

Mitigation Measure CR-10: Prepare a Finding of Effect for those resources determined to be historic properties.

Mitigation Measure CR-11: Following an adverse Finding of Effect determination, conduct Phase III Data Recovery on all historic properties adversely impacted by the proposed alternative.

Mitigation Measure CR-12: Implementation of Environmentally Sensitive Area fencing to avoid project impacts shall occur for the resources detailed in the final 2014-2015 cultural technical studies for this project. An Environmentally Sensitive Area Action Plan should be drafted, reviewed, approved and implemented prior to construction. Archaeological/Native American monitoring shall take place during construction activities near all Environmentally Sensitive Area fencing.

Mitigation Measure CR-13: Conduct archaeological/Native American monitoring during project ground- disturbing activities adjacent to Environmentally Sensitive Area fencing for the resources detailed in the final 2014-2015 cultural technical studies for this project.

Mitigation Measure CR-14: If previously unidentified cultural materials are unearthed during maintenance activities, work shall be halted in that area until an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards in Archaeology can assess the significance of the discovery and develop a plan for documentation and removal of resources, if necessary.

Mitigation Measure CR-15: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which will then notify the Most Likely Descendent. Further provisions of PRC 5097.98 are to be followed as applicable.

Mitigation Measure CR-16: Conduct XPI identification efforts for resources detailed in the final 2014-2015 cultural technical studies for this project. The XPI efforts would involve a mixed methodology and shall be conducted in tandem with geotechnical investigations in an effort to 1) supplement the original Geoarchaeological Investigation results (to provide a larger sample volume) and to 2) coordinate right-of-entry. The mixed methodology would include archaeological/Native American monitoring of geotechnical trenches and bore holes and archaeological excavation of standard test units and/or shovel test pits to determine presence/absence. Should any cultural resources be identified, such results shall be documented in a supplemental Historic Property Survey Report and Phase II testing and/or Phase III data recovery would be necessary.

Mitigation Measure CR-17: Conduct Phase II testing for previously non-evaluated resources as detailed in the final 2014-2015 cultural technical studies for this project.

Mitigation Measure CR-18: Prepare a Finding of Effect for those resources determined to be historic properties. The Finding of Effect shall be submitted for review and approval by the State Historic Preservation Officer.

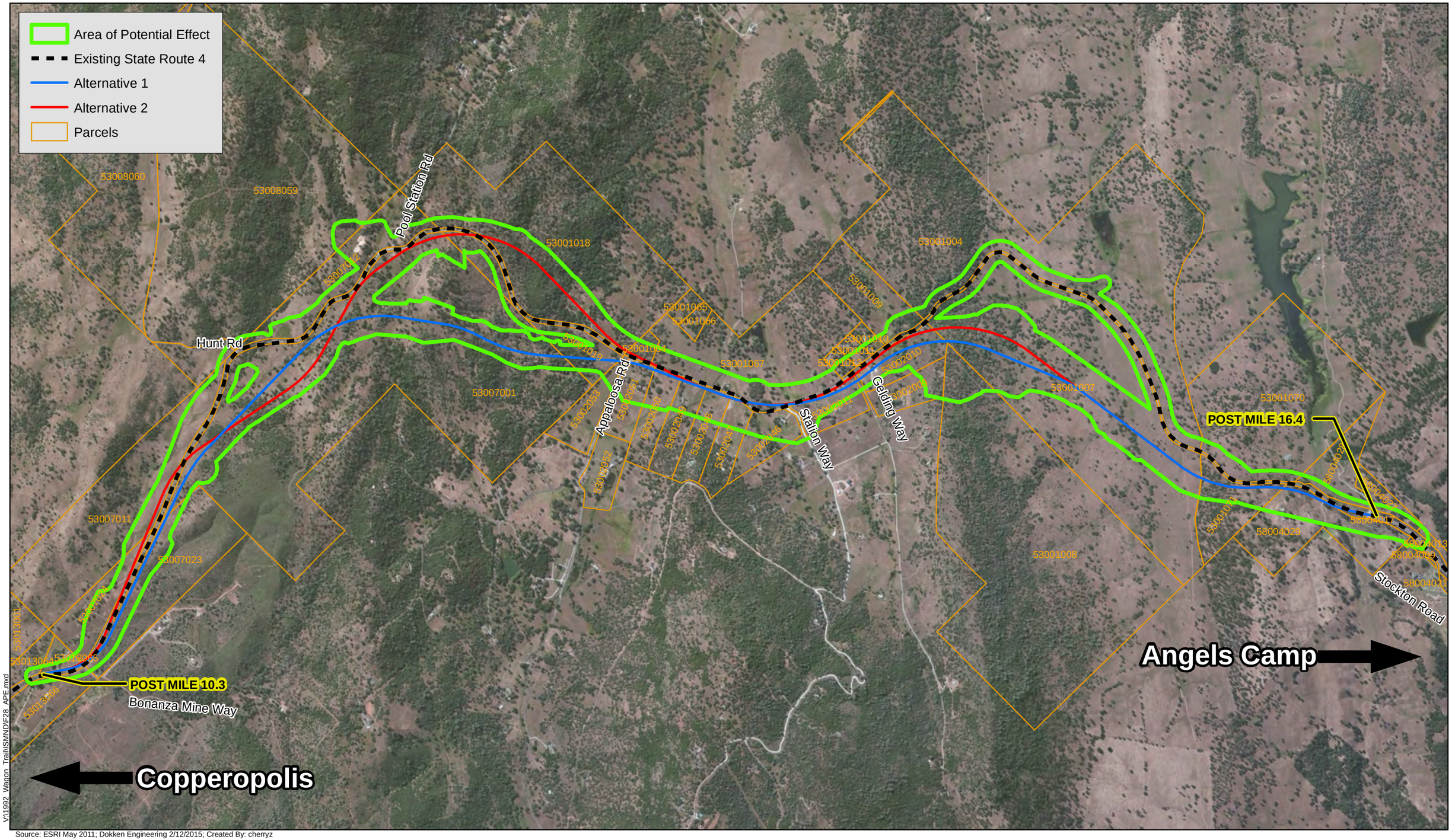
Mitigation Measure CR-19: Following an adverse Finding of Effect determination, conduct Phase III Data Recovery on all historic properties adversely impacted by the proposed alternative.

Mitigation Measure CR-20: Implementation of Environmentally Sensitive Area fencing to avoid project impacts shall occur for the applicable resources detailed in the final 2014-2015 cultural technical studies for this project. An Environmentally Sensitive Area Action Plan should be drafted, reviewed, approved, and implemented prior to construction. Archaeological /Native American monitoring shall take place during construction activities near all Environmentally Sensitive Area fencing.

Mitigation Measure CR-21: Conduct archaeological/Native American monitoring during project ground disturbing activities adjacent to Environmentally Sensitive Area fencing and within applicable resources detailed in the final 2014-2015 cultural technical studies for this project.

Mitigation Measure CR-22: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. Further provisions of PRC 5097.98 are to be followed as applicable.

Mitigation Measure CR-23: Environmentally sensitive areas will be established for known resources in or near project construction.



Source: ESRI May 2011; Dokken Engineering 2/12/2015; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 28
Area of Potential Effect
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

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 Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A.

To comply, the following must be analyzed:

- 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 one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

The Location Hydraulic Study, approved in July 2015, provides the hydraulic and floodplain information in this section.

There are four major creeks that run through the project area. Waterman Creek, Nassau Creek and Cherokee Creek are within the Upper Calaveras River watershed, and are tributaries to the South Fork Calaveras River. The South Fork Calaveras River drains into the New Hogan Reservoir, northwest of the project. Black Creek lies within the Upper Stanislaus River watershed and flows south into Tulloch Lake, downstream of the New Melones Lake southeast of the project.

<u>Black Creek</u>

The Black Creek watershed resides along the westerly segment of the project. The main channel flows south-southwesterly about parallel with State Route 4, and several of its tributaries cross the existing highway through various cross culverts. The Black Creek channel carries intermittent water flow with dispersed rock and soil, ranging from 0.5 to 10 feet in width with divergences of many tributaries in open pastureland vegetation and foothill mixed oak forests.

Nassau Creek

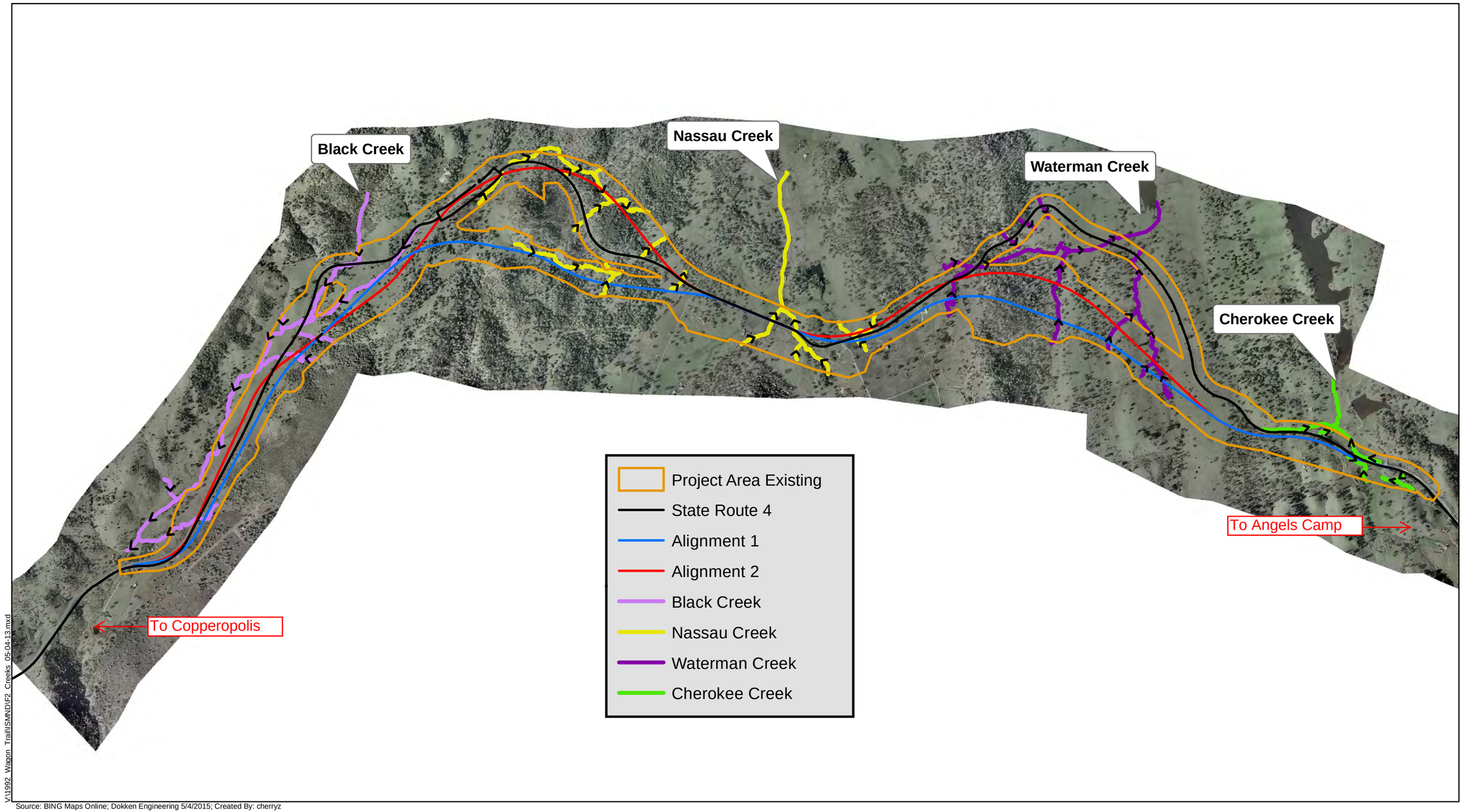
The Nassau Creek watershed is in the central region of the project. The main channel and its many tributaries generally flow northerly and cross the highway in several locations between Pool Station Road and Stallion Way. The Nassau Creek channel retains its natural banks and ranges from 3 to 25 feet wide with a mix of cobble and rock substrate. The channel flows through dense intermittent valley foothill riparian corridor as it makes its way north to Cherokee Creek and South Fork Calaveras River. Nassau Creek's tributaries originate in open pastureland vegetation and foothill mixed oak forests.

Waterman Creek

The Waterman Creek watershed lies in the easterly area of the project. The main channel and its tributaries flow in a general northerly direction and are conveyed under State Route 4 with a series of culverts and bridges just east of Gelding Road. The main channel of Waterman Creek has natural banks and a cobble bottom. The channel varies from 0.5 to 20 feet in width, going through pasturelands and mixed oak forests as it flows north to Cherokee Creek and South Fork Calaveras River. Waterman Creek contains several tributaries in foothill mixed oak forests and dense valley foothill riparian vegetation.

Cherokee Creek

The Cherokee Creek watershed is at the easterly limits of the project. Flowing northerly, the main channel of Cherokee Creek crosses the existing highway just west of Stockton Road via several large culverts. The channel ranges from 3 to 30 feet in width with an earthen bottom and defined vegetated banks. It crosses mixed oak forests as it meanders north toward Cherokee Creek Lake and eventually to South Fork Calaveras River.



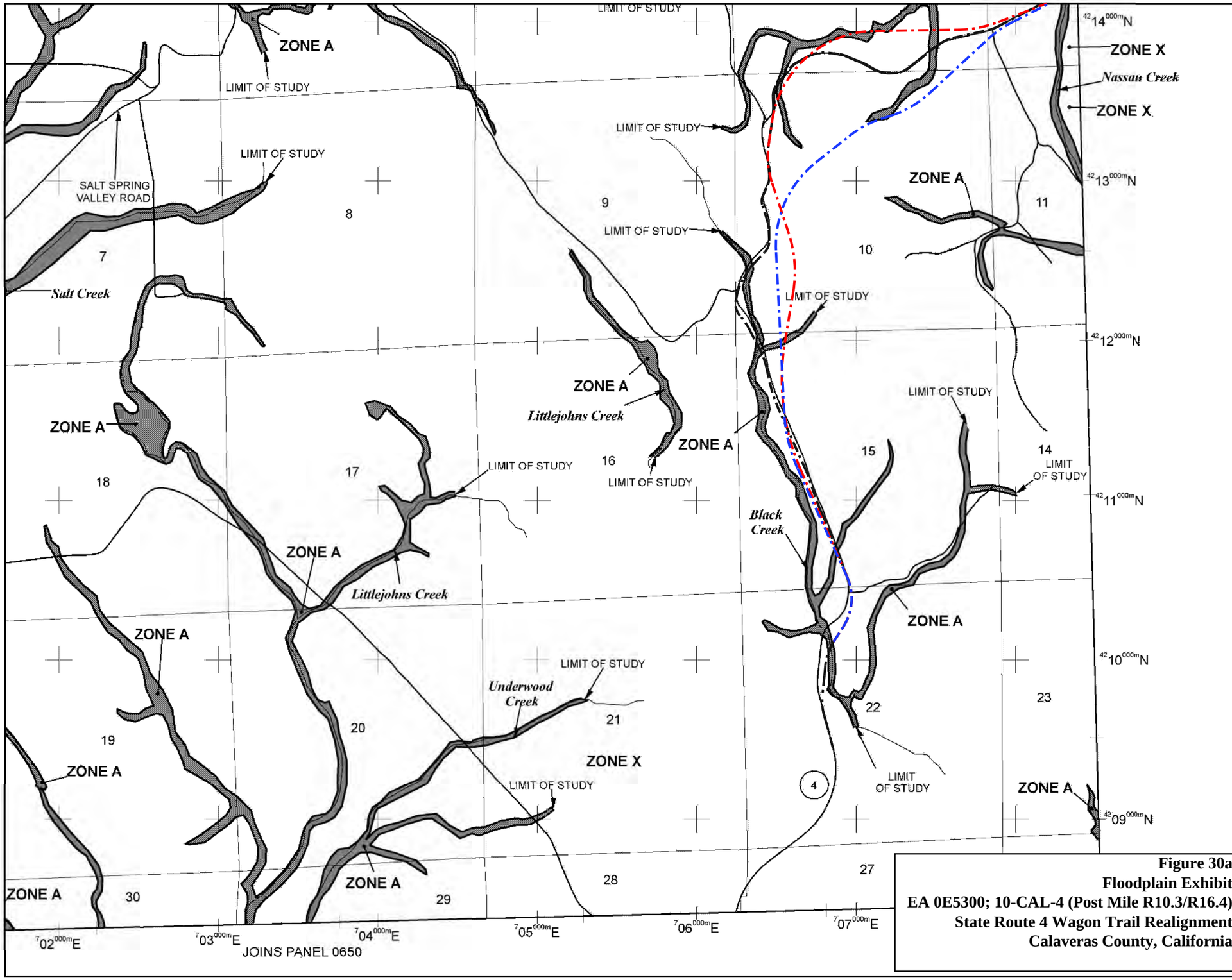
Y:\1992_Wagon_Trail\SMND\F2_Creeks_05-04-13.mxd

Source: BING Maps Online; Dokken Engineering 5/4/2015; Created By: cherryz

FIGURE 29

Creeks

EA 0E530K; CAL-10-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0550E

FIRM

FLOOD INSURANCE RATE MAP

CALAVERAS COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 550 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CALAVERAS COUNTY	060633	0550	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06009C0550E

EFFECTIVE DATE
DECEMBER 17, 2010

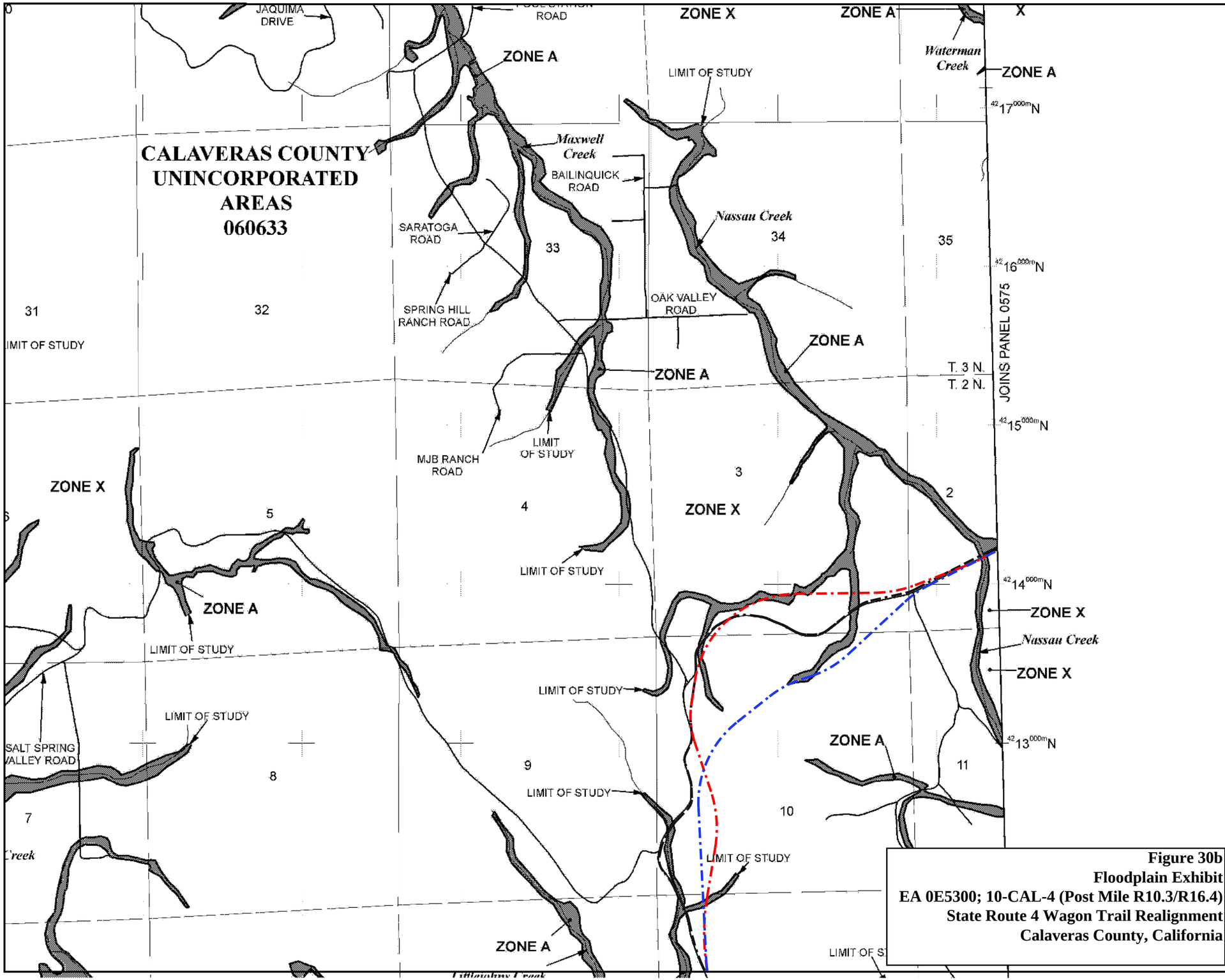
Federal Emergency Management Agency

LEGEND:

- ALTERNATIVE 1
- ALTERNATIVE 2
- EXISTING HIGHWAY

Figure 30a
Floodplain Exhibit
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment
Calaveras County, California

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



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NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0550E

FIRM

FLOOD INSURANCE RATE MAP

CALAVERAS COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 550 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CALAVERAS COUNTY	060633	0550	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06009C0550E

EFFECTIVE DATE
DECEMBER 17, 2010

Federal Emergency Management Agency

LEGEND:

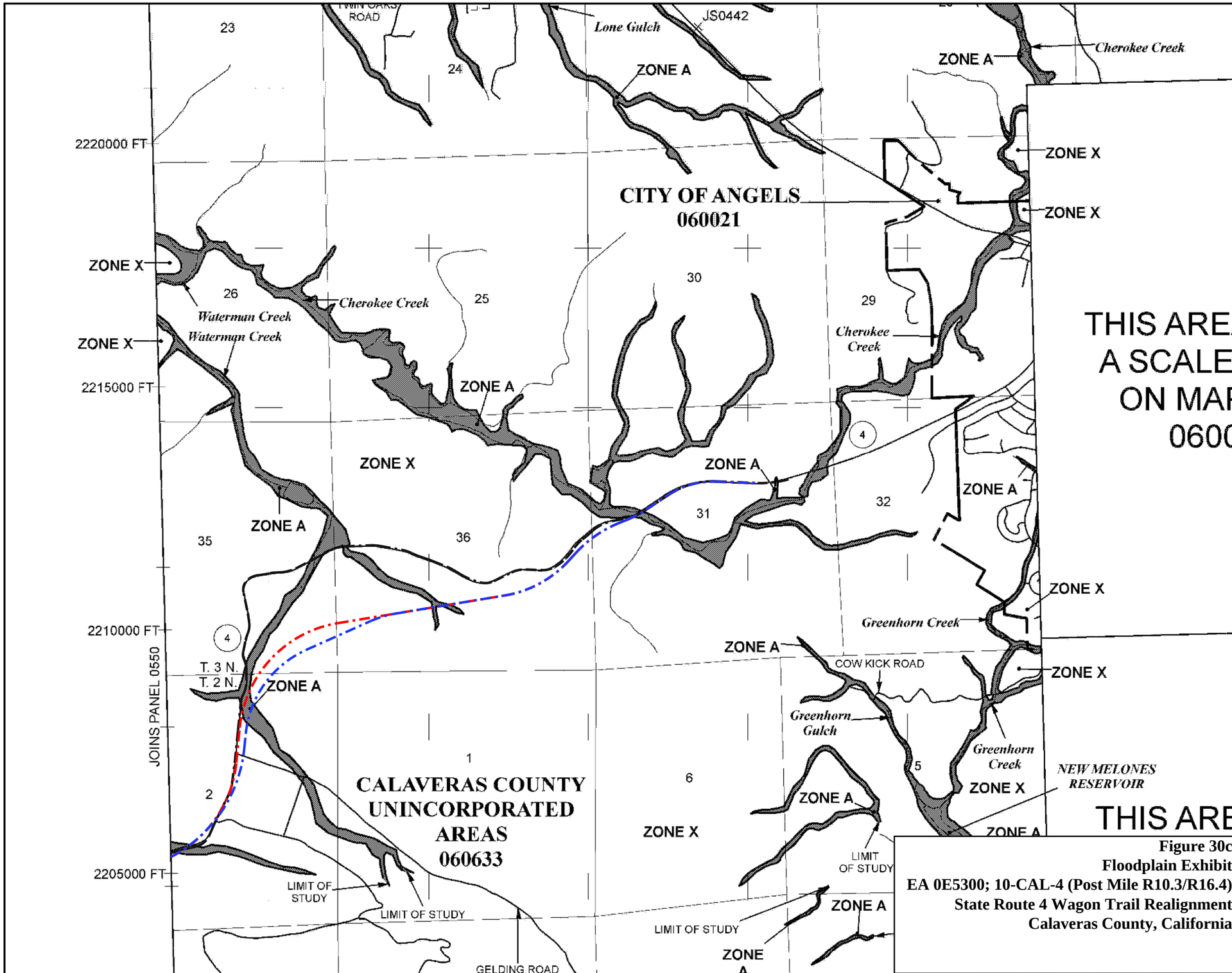
ALTERNATIVE 1

ALTERNATIVE 2

EXISTING HIGHWAY

Figure 30b
Floodplain Exhibit
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment
Calaveras County, California

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



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NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0575E

FIRM

FLOOD INSURANCE RATE MAP

CALAVERAS COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 575 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ANGELS, CITY OF	060021	0575	E
CALAVERAS COUNTY	060633	0575	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06009C0575E

EFFECTIVE DATE
DECEMBER 17, 2010

Federal Emergency Management Agency

LEGEND:

ALTERNATIVE 1

ALTERNATIVE 2

EXISTING HIGHWAY

Figure 30c
Floodplain Exhibit
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment
Calaveras County, California

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

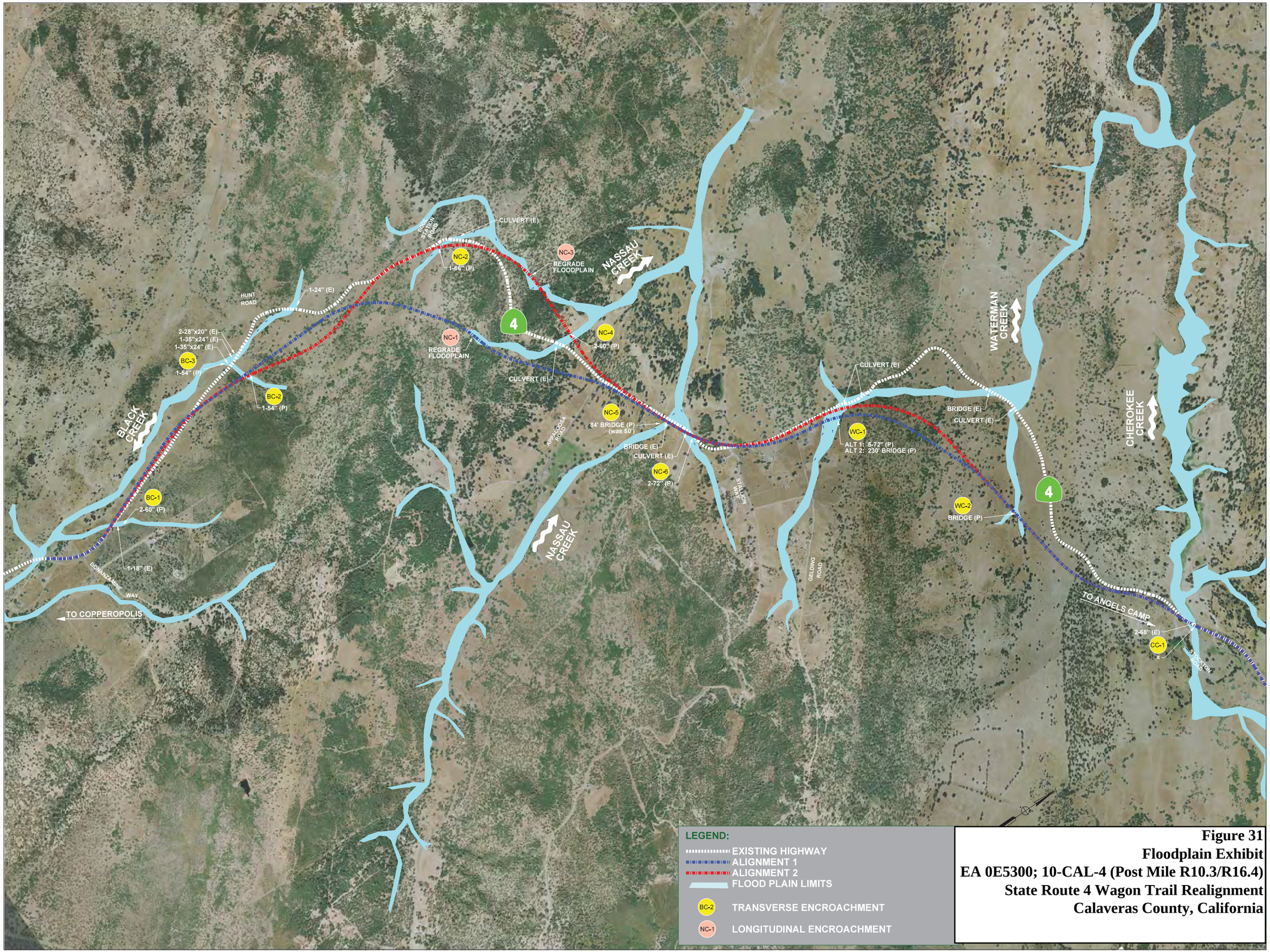

Figure 31
Floodplain Exhibit
EA 0E5300; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment
Calaveras County, California

As shown in the FEMA Flood Insurance Rate Maps (FIRMs) #06009C0550E and #06009C0575E for Calaveras County, most of the project is in Zone X, which is defined as the area outside the 0.2% annual chance floodplain (500-year frequency) (see Figures 31 through 33). Where State Route 4 crosses Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek, the project lies within Zone A. Zone A is defined as a special flood hazard area subject to inundation by the 1% annual chance flood (100-year frequency) with no Base Flood Elevations determined.

Heavy flooding has been observed by the property owners within the project area near the existing State Route 4 crossings of both Waterman Creek and Nassau Creek.

Environmental Consequences

Each of the two Build Alternatives would cross Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek and their associated tributaries. At each channel crossing, the proposed project would encroach on the floodplain of the waterways. Potential encroachments at the creek crossings would be minor and are not expected to create a risk associated with the project for the following reasons:

- A combination of culverts, bridges, and detention facilities would be used to reduce existing flooding upstream of the highway and to maintain/reduce flows downstream of the highway. As a result, the project would not result in property damage upstream and downstream of the facility caused by flooding,
- The culverts and bridges used to convey these creeks under the highway would be sized to prevent overtopping of the roadway for up to a 100-year storm frequency. Therefore, the potential for damage or loss of the proposed facility due to flooding and the potential for interruption of traffic due to flooding are not substantial.
- The addition of adequately sized culverts/bridges and detention facilities would reduce the instances of flooding in the vicinity of the project area. As a result, there is no potential for loss of service during the service life of the facility as a result of flooding.

<u>Impacts on Floodplain Values</u>

Natural and beneficial floodplain values are defined by the Federal Highway Administration (FHWA) to 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 floodplain associated with the four major creeks within the project area varies from 50 to 250 feet in width. The realignment of State Route 4 would encroach on approximately 9.1 acres (Alternative 1) and 7.7 acres (Alternative 2) of existing floodplain with new pavement and fill. The proposed alignment for each alternative would result in the removal of existing pavement when the proposed and existing alignments are concurrent. For the portions of the

existing highway that would not be used as part of the proposed highway alignment, it is anticipated that the remaining pavement would be relinquished to the adjacent parcel owners.

Hydrologic Engineering Centers River Analysis System (HEC-RAS) analyses were completed to determine hydraulic impacts to the floodplains at each crossing for each alternative. Figure 33 shows the areas where floodplain encroachment would take place. Although the alternatives have slightly different alignments and impacts based on their respective profiles, the floodplain values affected remain virtually the same. The project has the potential to affect five floodplain values: wildlife, plants, open space, natural moderation of floods, and water quality maintenance as follows:

Wildlife: Black Creek, Nassau Creek, Waterman Creek and Cherokee Creek also function as wildlife migration corridors because they provide a clear pathway and vegetation cover for animals as they move through the area. While each alignment alternative would encroach into the floodplain of these creeks, creating a potential diversion to the wildlife migration corridor, many of the culverts and bridges that would be used to convey storm water under the highway would also function as wildlife crossings, thereby reducing the impediments to the wildlife corridor. In terms of temporary impacts during construction, any wildlife that is encountered would be allowed to leave the construction area unharmed. In addition, all trash would be kept in wildlife-proof receptacles and any non-natural food and water sources would not be left unattended for the duration of the project construction. Therefore, impacts to the natural and beneficial floodplain values associated with wildlife are considered minimal and negligible for the project.

Plants: The proposed alignments of Alternative 1 and 2 encroach on existing floodplains that support plant life, including common spikerush, clustered field sedge, common rush, and a special-status species called the Tuolumne button-celery. The Tuolumne button celery was observed in the vicinity of Waterman Creek and its tributaries. Alternative 1 would directly impact one Tuolumne button-celery specimen and permanently impact a total of approximately 0.74 acre of habitat for this special plant species. Alternative 2 would have no direct impacts to the Tuolumne button-celery specimen and would permanently impact approximately 0.23 acre of habitat. Mitigation, minimization and avoidance measures would be used to reduce impacts to a less than significant level, including: ESA fencing, relocation of plants to suitable habitat, and environmental awareness training of construction personnel.

Open Space: Both alternatives include segments of roadway that would go through undisturbed land and create new impervious surfaces within the floodplain. Both alternatives include segments of roadway that will create new impervious surfaces. Alternative 1 will result in a total of approximately 47.7 acres of impervious area and Alternative 2 will result in a total of approximately 45.2 acres of impervious area. These acreages include both new impervious surfaces as well as portions of the existing State Route 4 that would no longer be used. Removal or maintenance of the existing State Route 4 pavement would be at the owners' discretion, therefore, as a conservative measure, the existing State Route 4 pavement is included in the proposed impervious area calculations. Table 20 summarizes the existing and proposed impervious area, in addition to the net new impervious area for each alternative. Open space is identified by FEMA as a societal resource with recreational

opportunity benefits. Given the project would not meaningfully change current land uses and potential for recreational opportunities within the project area, it is anticipated that impacts to open space would be non-significant.

Natural Moderation of Floods: Flood flows in the existing project area are currently moderated by undersized culvert and/or bridge crossings of the existing highway as well as the large expanses of land over which the flows can spread. Although the proposed culvert and/or bridge crossings for each alternative alignment would be designed to pass the 100-year flow, if it is determined that this would cause flooding downstream, detention basins would be incorporated to reduce the downstream flows to existing conditions. There would continue to be large areas of land over which flows can spread. However, in the immediate vicinity of the project, those areas would be contained, as needed, to protect nearby residents and roadway infrastructure. As a result, there is not anticipated to be a substantial impact to the natural moderation of flood flows in the project area.

Water Quality Maintenance: Both alternatives would go through previously undeveloped land, creating additional impervious surfaces as discussed in the Open Space section above. While this additional impervious surface is expected to slightly increase the amount of storm water runoff, it is not expected to increase the amount of storm water pollutants because the project would not increase traffic capacity. Therefore, the amount of traffic using the roadway would remain the same, as would the amount of pollutants generated by the traffic on the roadway. The project would seek to improve storm water quality by incorporating permanent treatment Best Management Practices (BMPs). The following permanent treatment BMPs are being considered for this project: infiltration/detention basins and biofiltration swales. In terms of temporary impacts during construction, standard practices for erosion and water quality control, as dictated in the project-specific Storm Water Pollution Prevention Plan (SWPPP), would provide adequate protection against water quality degradation.

Support of Incompatible Development

Incompatible floodplain development is defined as development that is not consistent with a community floodplain development plan (FHWA Technical Advisory T 6640.8A, 1987). Based on the Calaveras County Land Use Designations, the floodplain is zoned for Agriculture Preserve and Rural Residential. The realignment and widening of State Route 4 and the subsequent encroachment on the floodplain would not support development that is inconsistent with the current Calaveras County General Plan and Land Use Designations.

Minimization of Floodplain Impact

Measures to minimize impacts would be included as part of the project implementation. Temporary impacts due to construction activity would be minimized through the implementation of construction BMPs included in the SWPPP and any additional measures specified in the regulatory permits obtained for this project.

Restoration and Preservation of Floodplain Values

Floodplain values would be preserved in accordance with the discussion provided in "Impacts on Floodplain Values."

Construction

During construction, disruption to emergency supply, vehicle access, and/or evacuation routes by way of State Route 4 between Copperopolis and Angels Camp is not expected. Non-qualified persons would not be allowed onto the jobsite during construction. Exposed slopes as a result of cutting operations would be properly stabilized. Construction of drainage structures would occur during the non-rainy season to prevent need for diversion and possible inundation of storm water into unplanned areas. Risk associated with loss of property or loss of life is not expected.

Flooding

During large storms, State Route 4 in the existing condition does experience traffic interruptions due to flooding because the 100-year water surface elevation exceeds the roadway elevation in many locations along the highway. In the proposed condition, culverts and bridges would be sized to convey the 100-year flood storm event underneath the roadway without overtopping. In the built condition, potential for interruption or termination of a vehicular emergency or evacuation route is not expected.

In locations where proposed culverts would be replacing existing undersized culverts, detention basins would be built either upstream to attenuate the flows before they reach the roadway or downstream to prevent tail water damages from occurring because of the additional volume of water being conveyed past the roadway. Proposed culverts and bridges in locations where the roadway does not currently exist would be sized to perpetuate existing floodplain conveyance conditions. Therefore, the risk associated with the implementation of this project is considered negligible and the potential for loss of life or property is not substantial. Substantial adverse impacts due to flooding on natural or beneficial floodplain values are not expected. Refer to the discussion in "Risk Associated with Implementation."

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Alternatives to Longitudinal Encroachment

A longitudinal encroachment is defined by the FHWA to be an encroachment that is parallel to the direction of flow. Each of the alternative alignments would have a single longitudinal encroachment along the existing Nassau Creek floodplain. For Alternative 1, the longitudinal encroachment occurs at Crossing NC-1 and for Alternative 2, the longitudinal encroachment occurs at Crossing NC-3 (see Figure 33). Numerous geometric alternatives for each roadway alignment have been evaluated to meet the project constraints, and it has been determined that the roadway alignments cannot be adjusted to completely avoid the longitudinal encroachment. Given the rural nature of the area, there are significantly fewer constraints associated with the location of the creek alignment. As a result, the creek channel and associated floodplain are proposed to be realigned to avoid the roadway, thus eliminating the

longitudinal encroachment. The realignments are relatively minor in nature and would be accomplished in accordance with the resource agency permits. The remaining crossings would be transverse, or perpendicular, encroachments and would be able to convey the floodplain across the roadway via culverts and bridges.

The results of the Hydrologic Engineering Centers River Analysis System (HEC-RAS) analysis show that the creek realignment does not impact hydraulics, water surface elevations, or velocities upstream or downstream of the limits of realignment. Within the limits of realignment, the creek geometry is designed to match existing conditions to the extent possible, and results show the flow is contained in the creek and does not result in substantial backwater effects or flooding.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure HYD-1: A Storm Water Pollution Prevention Plan (SWPPP) would be implemented during construction to provide adequate erosion and water quality control.

Minimization Measure HYD-2: Permanent treatment Best Management Practices would be incorporated consistent with the project's Storm Water Data Report.

Minimization Measure HYD-3: Longitudinal encroachments will be avoided through localized realignment of water features.

Minimization Measure HYD-4: Culverts and basins would be sized and designed to accommodate storm water per Caltrans design standards.

2.2.2 Water Quality and Storm Water Runoff

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[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. This act and its amendments are known today as the Clean Water Act. 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 National Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act sections:

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

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

- 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 would 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 National Pollutant Discharge Elimination System, 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 administer this permitting program in California. Section 402(p) requires permits for discharges of storm 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 United States. This permit program is administered by the U.S. Army Corps of Engineers.

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

The U.S. Army Corps of Engineers 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 U.S. Army Corps of Engineer's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. Environmental Protection Agency Code of Federal Regulations 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. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, 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 U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative 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[2] 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 U.S. Army Corps of Engineers, even if

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

not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative 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 Clean Water Act 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 Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act 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 Regional Water Quality Control Board Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions 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 State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act 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 (National Pollutant Discharge Elimination System permits or Water Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads 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 State Water Resources Control Board 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, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards 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 Program
Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System 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 State Water Resources Control Board has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.
Caltrans' 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. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans 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 State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Storm Water Management Plan assigns responsibilities within Caltrans 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 Statewide Storm Water Management Plan describes the minimum procedures and practices Caltrans 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 Best Management Practices (BMPs).

Construction General Permit

The 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 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 Regional Water Quality Control Board. 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 Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with Disturbed Soil Area less than one acre.

Section 401 Permitting

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

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements 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. Water Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

The *Water Quality Assessment* for this project, approved in January 2014, provides the basis for the following discussion.

Water features in the project area include Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, and their tributaries. Black Creek is runs along the southwest side of the project and is the only creek in the project area that flows south to Tulloch Reservoir. Nassau Creek is between Appaloosa Road and Stallion Way, Waterman Creek is about one mile

northeast of Gelding Way, and Cherokee Creek is at the east end of the project about 0.45 mile west of Stockton Road. Nassau, Waterman and Cherokee creeks flow north into the South Fork Calaveras River eventually to New Hogan Lake. Where State Route 4 transects each creek and their tributaries, culverts convey their waters under the highway.

The proposed project sits within the Upper Calaveras River and Upper Stanislaus River sub-basin, which is part of the San Joaquin River basin and sub-region (see Figure 35) (California Watershed Portal 2007). The San Joaquin basin includes the entire area drained by the San Joaquin River, which is approximately 15,880 square miles. Major tributaries within the basin include the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major water bodies in the area are New Hogan Lake, Salt Spring Valley Reservoir, New Melones Lake, and Tulloch Reservoir. All drainage water from the San Joaquin and Sacramento rivers ultimately meet and form the Sacramento-San Joaquin Delta, which drains west to the Pacific Ocean through the San Francisco Bay.

The CalWater 2.2.1 delineation classifies the project in the San Joaquin Hydrologic Region, within the San Antonio Creek-South Fork Calaveras River and Upper Stanislaus River Hydrologic Unit (major rivers), in the Cherokee Creek and Black Creek Hydrologic Area [HA (major tributaries)]. The San Antonio Creek-South Fork Calaveras River Hydrologic Unit encompasses the upper drainages of the Calaveras River and New Hogan Lake from its origins in the Sierra Nevada Mountains to the base of the Sierra foothills, while the Upper Stanislaus River Hydrologic Units encompasses the upper drainages of the Stanislaus River. These Hydrologic Unis are shown in Figure 35.

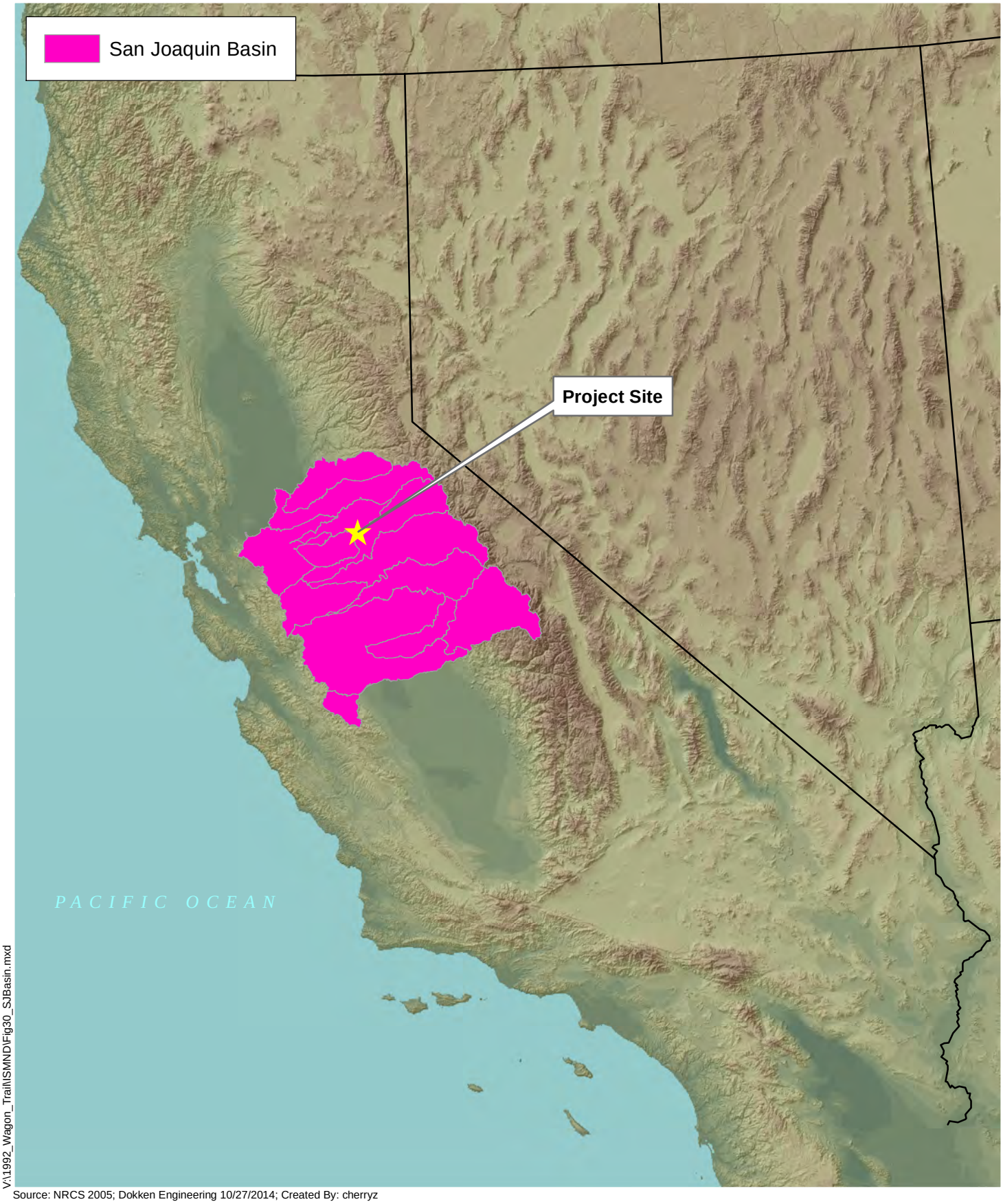
Within the project area, the following four prime waters of the U.S. and State were identified: Black Creek, Nassau Creek, Watermen Creek and Cherokee Creek (numerous smaller natural drainages were also identified). None of these features are listed in the States Section 303(d) list of impaired waters. Further detail on these four water features can be found in the Hydrology and Floodplain section of this document.

Downstream of Black Creek, the Tulloch Reservoir is listed as impaired with mercury from an unknown source, as described by the Environmental Protection Agency:

> Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. (Environmental Protection Agency, 2014).

The Total Maximum Daily Load for Tulloch Reservoir is estimated to be completed (i.e., established) in 2021. Downstream of Nassau Creek, Waterman Creek and Cherokee Creek, the New Hogan Lake is listed as impaired with mercury from resource extractions. The estimated completion date for New Hogan Lake Total Maximum Daily Load is 2021.

There are no sole source aquifers at or near the project area.

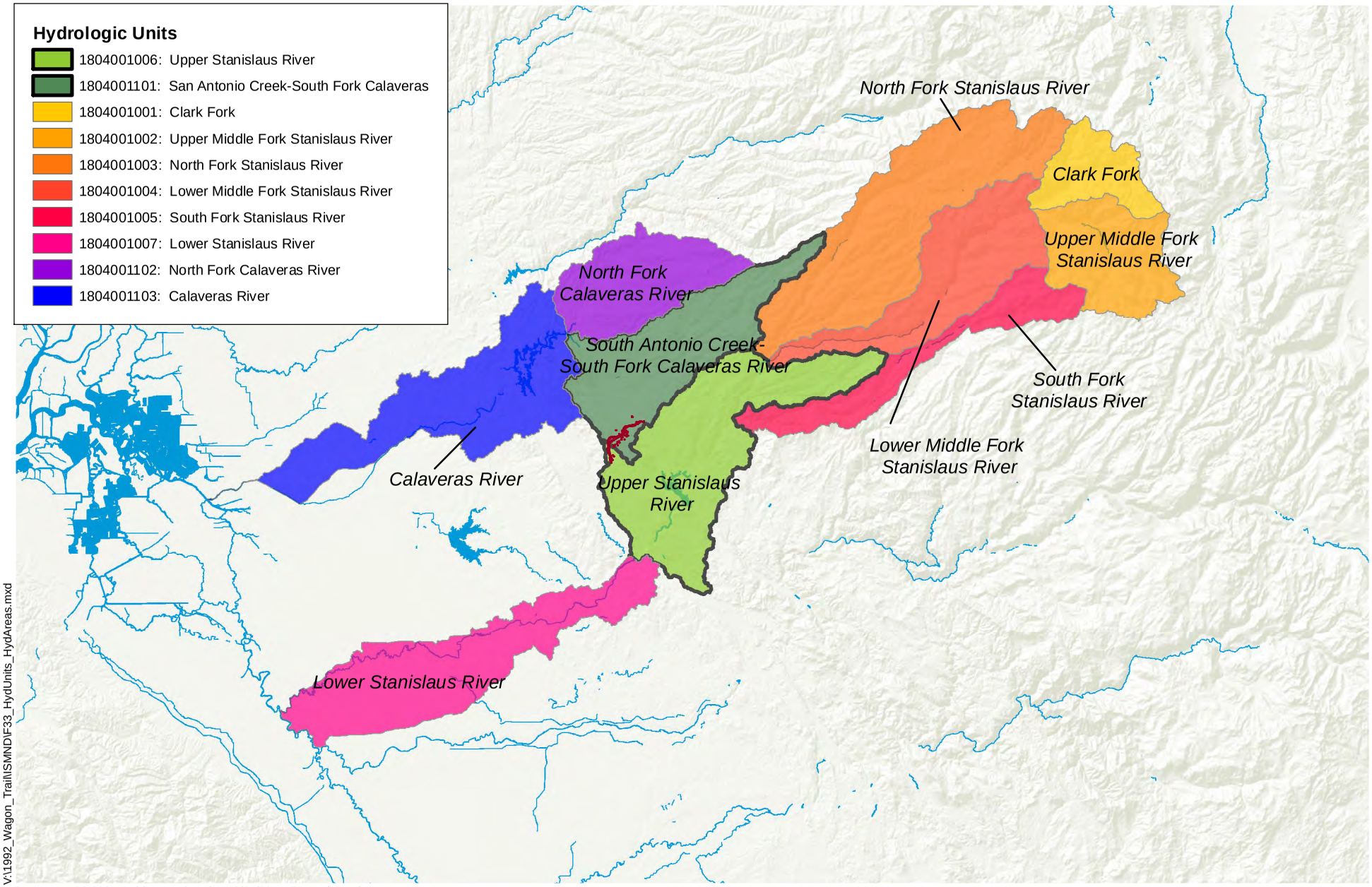


V:\1992_Wagon_Trail\SMND\Fig30_SJBasin.mxd

Source: NRCS 2005; Dokken Engineering 10/27/2014; Created By: cherryz

0 50 100 150 Miles

FIGURE 32
San Joaquin Basin
EA 0E530; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



V:\1992_Wagon_Trail\SMND\F33_HydUnits_HydAreas.mxd

Source: NRCS 2005; Dokken Engineering 10/27/2014; Created By: cherryz

0 10 20 30 Miles

FIGURE 33
Hydrologic Units and Hydrologic Areas
EA 0E530; 10-CAL-4 (Post Mile R10.3/R16.4)
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Environmental Consequences

Construction

Construction activities associated with the project would include disturbances to the ground surface from earthwork, including grading and fill within Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek. Removal of some of the existing riparian vegetation would be required due to project construction, which could increase the potential for slope erosion. These activities could potentially increase the amount of sediments entering all four creeks and tributaries. Runoff during the winter season is of greater concern due to the potential erosion of unprotected or graded surfaces during rain events. Sediments could potentially harm aquatic resources and water quality. However, standard Best Management Practices, as included in measures WQ-1 through WQ-6, would be included in the project to avoid or minimize the release of pollutants, including sediments and chemical toxins, into the environment during construction.

Materials used during construction of the project (e.g., concrete curing compounds) could have chemicals that are potentially harmful to aquatic resources and water quality. Accidents or improper use of these materials could result in the release of contaminants into the environment, including the creeks themselves. Additionally, oil and other petroleum products used to maintain and operate construction equipment could be accidentally released. However, standard Best Management Practices would be included in the project to avoid or minimize the release of pollutants, including chemical toxins, into the environment during construction.

The project would be constructed in accordance with applicable water quality regulations and would not be expected to result in substantial water quality impacts during construction.

Erosion, Turbidity, and Total Dissolved Solids

Suspended material is considered a pollutant of primary concern for construction projects. Exposure of loose soil and erosion during excavation, grading, and filling activities are the primary sources of suspended material. Construction activities for this project would occur on State Route 4 and within the surrounding area. The project would include some construction impacts to Black Creek, Nassau Creek, Waterman Creek and Cherokee Creek and could temporarily increase the sediment load thus increasing the turbidity, and total dissolved solids present in stream water. However, standard BMPs would be included in the project to avoid or minimize the release of pollutants, including sediments and chemical toxins, into the environment during construction.

The suspended solids, dissolved solids, and organic pollutants in surface water bodies could also increase while nearby soils are disturbed and dust is generated. These conditions would likely persist until completion of construction activities and long-term erosion control measures have been implemented.

Oil, Grease, and Chemical Contamination

Accidental spills of petroleum hydrocarbons (fuels and lubricating oils), sanitary wastes, and or concrete waste are also a concern during construction activities. An accidental release of these wastes during construction could adversely affect surface water quality, vegetation, and wildlife habitat. Impacts are not expected to cause a long-term impact due to the construction time limits and the use of standard Best Management Practices. The extent of potential environmental effects depends on the erodibility of soil types encountered, type of construction practices, extent of disturbed area, duration of construction activities, timing of precipitation, and proximity to drainage channels.

Other short-term negative impacts to surface water quality that could occur during construction include slight changes in temperature, pH, dissolved oxygen, nutrient concentrations, toxicity, and ionic concentrations. Standard Best Management Practices would be included in the project to avoid or minimize the release of pollutants, including chemical toxins, into the environment during construction.

Long-Term Water Quality Impacts

The new impervious area was determined by adding the new alignment to the existing area to provide a conservative estimate.

Both alternatives include segments of roadway that will create new impervious surfaces. Alternative 1 will result in a total of approximately 47.7 acres of impervious area and Alternative 2 will result in a total of approximately 45.2 acres of impervious area. These acreages include both new impervious surfaces as well as portions of the existing State Route 4 that would no longer be used. Removal or maintenance of the existing State Route 4 pavement would be at the owners' discretion, therefore, as a conservative measure, the existing State Route 4 pavement is included in the proposed impervious area calculations. Table 20 summarizes the existing and proposed impervious area, in addition to the net new impervious area for each alternative.

Table 20. Net New Impervious Area by Alternative

Alternative Number	Existing Impervious Area (acres)	Net New Impervious Area (acres)	Proposed Impervious Area (acres)*
1	18.0	29.7	47.7
2	18.0	27.2	45.2
*Assumes existing impervious area being relinquished to adjacent owners remains in place Source: Storm Water Data Report, 2015.			

This construction could potentially increase the volume of storm water runoff from the roadways surface that could enter the drainage system and eventually the creeks themselves. The increased amount of storm water runoff would be determined during final design. Roadways may contain oil, grease, petroleum products, zinc, copper, lead, cadmium, iron, or other trace metals, which could harm aquatic life. Concentrations of these pollutants in storm

water runoff would be greatest during the "first flush" storm event, generally the first major rains of the season.

As previously noted, none of the four creeks is included in the Regional Water Quality Control Board's list of impaired waters. Although there is the potential for a slight increase in polluted runoff due to increased impervious surfaces (that would be calculated during final design), the project impacts to water quality would be minimal.

Avoidance, Minimization, and/or Mitigation Measures

The following measures are recommended for inclusion on applicable plans prepared for the project. BMPs will be incorporated into project design and project management to minimize impacts on the environment including reduction of sedimentation and release of pollutants (oil, fuel, etc.). Examples of minimization efforts include the use of silt fencing, temporary energy dissipation facilities, and wattles. Implementation of BMPs will reduce the potential for impacts from 29 occurring outside of the construction footprint. The following measures will be implemented to ensure BMPs. All BMPs and other measures will be prepared in consultation with the project engineer, Calaveras County, the RWQCB, and other regulatory agencies:

- Minimization Measure WQ-1: A Section 401 Water Quality Certification will be obtained from the State Water Resources Control Board.

- Minimization Measure WQ-2: A Section 404 Permit will be obtained from the U.S. Army Corps of Engineers.

- Minimization Measure WQ-3: A National Pollutant Discharge Elimination System Construction General Permit for Discharges of storm water associated with construction activities (CGP 2009-009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ (National Pollutant Discharge Elimination System No. CAS000002) will be obtained through the State Water Resources Control Board.

- Minimization Measure WQ-4: Water pollution control practices will be implemented as required in the Caltrans Standard Specifications.

- Minimization Measure WQ-5: A spill prevention and countermeasure plan will be incorporated into the Stormwater Pollution Prevention Plan.

- Minimization Measure WQ-6: A Section 1602 Streambed Alteration Agreement will be obtained through the California Department of Fish and Wildlife to ensure protection from impacts to the streambed or associated riparian habitat.

2.2.3 Geology, Soils, Seismicity and Topography

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." Topographic and geologic 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. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using Caltrans Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification would determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

The *Paleontological Identification Report* for this project was approved in December 2013 and provides the basis for the following discussion. The project is in the Sierra Nevada section of the Cascade-Sierra Mountains physiographic province as mapped in Nevin Fenneman's Physiographic Regions of the Lower 48 United States (1948). As described by U.S. Geological Survey (2000), the Sierra Nevada is a "west-tilting 350-mile-long block of granite…[which] intruded the crust in Mesozoic time and was uplifted and faulted in the Tertiary during formation of the Basin and Range province to the east." The local topography of the project site is composed of rolling hills and gradual undulations characteristic of the Sierra Nevada foothills. The build alternatives range in elevation from 1287 feet above sea level to 1321 feet above sea level.

Calaveras County is not affected by Alquist-Priolo Earthquake Fault Zones (California Geological Survey, 2014).

The project site is mapped as mostly Paleozoic to Mesozoic rock units of volcanic and metamorphosed sedimentary rocks (Clark, Stromquist, and Tatlock 1963). Tuffs are common. Details on the formations and units at the project site follow:

- Green Schist--Green schist derived from basaltic and andesitic breccia and tuff, consists largely of saussuritized feldspar and actionlite with some epidote, clinozoisite, chlorite, and sericite; possibly in partequivalent to volcanic rocks of the Calaveras Formation. Paleozoic and Mesozoic in age.
- Mariposa Formation--Chiefly slate, tuff, and greywacke; petromict conglomerate abundant west and south of Deer Peak; metachert and quartzose slate abundant

southwest of Hogback Mountain. Locally contains large slumped blocks of Calaveras Formation. Upper Jurassic in age. Brower Creek Volcanic Member; very coarse, heterogeneous volcanic breccia in vicinity of Fowler Lookout; elsewhere ranges from very fine tuff to coarse breccia; contains pillow lava near Bear Creek.

- Sedimentary Rocks of Uncertain Stratigraphic Position--Mostly slate, possibly in part tuffaceous, with some interbedded tuff and greywacke. Lenticular petromict conglomerate abundant northwest of San Andreas and west of Bernasconi Ranch. Contains large slumped blocks of Paleozoic rocks in some places. Possibly in part equivalent to Mariposa Formation or Consumnes Formation. Upper Jurassic in age.
- Volcanic Rocks of Uncertain Stratigraphic Position--Mafic or intermediate bedded tuff and volcanic breccia; possibly equivalent in part to other volcanic units in the map area or to the Peon Blanco Volcanics to the south. Upper Jurassic in age.
- Copper Hill Volcanics--Mafic intermediate and sparse felsic volcanic rocks. Upper Jurassic in age. Includes tuff, lapilli tuff, and some volcanic breccia; southwestern part altered to schist containing fibrous amphibole, chlorite, and epidote, northwestern part chiefly bedded tuff and lapilli tuff. Also amygdaloidal mafic lava.
- Ultramafic Rocks--Mostly serpentine, but includes some dunite. Some bodies contain narrow chrysotile veinlets and pods or diffuse layers of chromite. Some serpentine is included with KJt in northeastern part of quadrangle. Upper Jurassic in age.
- Colluvium--Debris resulting from landslides and other mass wastage processes. Quaternary in age.
- Soils--Information regarding the soil conditions in proximity to the project site were obtained from the United States Department of Agriculture (USDA) General Soil Map (USDA, 1966) (Geocon, 2014). The USDA map indicates that the predominant soil types in the project site are the Guenoc-Stonyford soils on greenstone and sedimentary rocks, the Whiterock-Auburn soils on vertically tilted slate and schist rocks, and the Delpeidra-Fancher soils on serpentine rock. These soil units are formed on 5 to 50 percent slopes and range from very shallow to deep.

Environmental Consequences

The proposed project would be designed in accordance with design and construction requirements of the Caltrans Highway Design Manual, Caltrans Design Specifications, and applicable seismic standards. Structures would be designed according to recommended seismic values as defined by the California Building Code 2007. As a result, no significant exposure to strong seismic ground shaking or seismic-related ground failure, including liquefaction, and landslides, is anticipated. The proposed project would be designed and constructed in accordance with recommendations provided in the Geotechnical Design Report, which would be prepared during Final Design.

Avoidance, Minimization, and/or Mitigation Measures

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

2.2.4 Paleontology

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

16 United States Code (USC) 431-433 (the "Antiquities Act") prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered "objects of antiquity" by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.

16 United States Code (USC) 461-467 (the National Registry of Natural Landmarks) establishes the National Natural Landmarks (NNL) program. Under this program property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated NNLs, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under NEPA.

16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

Also, 23 United States Code (USC) 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.

And, 23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 U.S. Code 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Environment

The *Paleontological Identification Report*, approved in 2013, provides the basis for the following discussion.

The Paleontological Study Area is mapped as mostly Paleozoic to Mesozoic rock units of volcanic and metamorphosed sedimentary rocks (Clark, Stromquist, and Tatlock 1963).

Section 2.2.3 Geology, Soils, Seismicity and Topography, describe the geological units in the study area. The following geologic units are in the Paleontological Study Area:

- Green Schist;
- Mariposa Formation;
- Sedimentary Rocks of Uncertain Stratigraphic Position ;
- Volcanic Rocks of Uncertain Stratigraphic Position;
- Copper Hill Volcanics;
- Ultramafic Rocks; and,
- Colluvium.

A search of records at the University of California Museum of Paleontology determined that vertebrate Pleistocene fossils have been recovered in the county. However, nearly every fossil recovered has been found in the county's numerous caves and caverns. Only a single occurrence of a fossil older that Pleistocene has been recorded. Although older fossils might exist, they would likely be recovered from colluvium, but could lack integrity and context due to decomposition and mass wasting processes.

Invertebrate fossils are known from the Mariposa Formation in California but not locally. No scientifically significant fossils are known within a mile of the project area.

Environmental Consequences

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information. Knowledge of the geological formations gleaned from the survey and records of previous fossils recovered from an area are the basis for determining the paleontological sensitivity of projects. Caltrans uses a three-part scale to characterize paleontological sensitivity (Table 21, Caltrans 2003, updated 2008).

Table 21. Paleontology Sensitivity Scale

Sensitivity	Description
High	Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate or significant plant fossils. These units include sedimentary formations that contain significant nonrenewable resources anywhere within the geographical extent.
Low	Rock units that are not known to have produced significant fossils in the past but possess a potential to contain fossils or those that yield common fossil invertebrates.
No	Rock units of igneous origin or metamorphosed transformation.
Source: Paleontological Identification Report, 2013.	

The Paleontological Identification Report documented that all rock units in the Paleontological Study Area have low or no sensitivity with regard to producing significant fossils (see Table 22).

Table 22. Paleontology Sensitivity

Caltrans Sensitivity	High	Low	No
Rock Units			
Green Schist			X
Mariposa Formation		X	
Cretaceous quartz diorite		X	
Sedimentary rocks of uncertain stratigraphic position		X	
Volcanic rocks of uncertain stratigraphic position			X
Copper Hill Volcanics		X	
Ultramafic rocks			X
Colluvium		X	
Source: Paleontological Identification Report, 2013.			

No significant fossils are expected to be disturbed by the proposed project. No further paleontological work is required. If unexpected paleontological resources are observed during project construction, work would be suspended in the immediate vicinity of the find until it can be evaluated by a qualified paleontologist per measure PAL-1.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure PAL-1: If unanticipated paleontological resources are observed during project construction, work would be suspended in the immediate vicinity of the find until it can be evaluated by a qualified paleontologist.

2.2.5 Hazardous Waste and Materials

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 Comprehensive Environmental Response, Compensation and Liability Act of 1980 and the Resource Conservation and Recovery Act of 1976. The purpose of Comprehensive Environmental Response, Compensation and Liability Act, often referred to as "Superfund," is to identify and clean up abandoned 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 waste generated by operating entities. 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 (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts 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 California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act 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 clean-up 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 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 addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

Affected Environment

The Hazardous Waste Initial Site Assessment for this project, approved in January 2014, and the Aerially Deposited Lead, Metals, and Naturally Occurring Asbestos Site Investigations Report, approved in March 2015, provide the background and technical information for this section. The objective of the Initial Site Assessment was to determine the potential presence of "recognized environmental conditions" as defined by the American Society for Testing and Materials Designation E 1527-05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

The Hazardous Waste Initial Site Assessment included a governmental records search, aerial photograph and topographic map review, and site reconnaissance and field surveys.

<u>Records Search/Database Review</u>

A search of federal, state, and local databases was performed for the project site and surrounding area. The objective of the records search was to obtain and review records that

would help identify recognized environmental conditions at or potentially affecting the project site. However, no properties/facilities within the project study area were identified in the database searches. The searches did identify 31 properties in the Orphan Summary. These are properties that have incomplete address information and could not be specifically plotted. Based on what location information was available for orphan properties, no adverse impacts are expected for the project.

The USGS Mineral Resource Data System (http://mrdata.usgs.gov/mineral-resources/mrds-us.html) was also reviewed for information regarding former and current mining locations in the Project Site. Nineteen mining sites (classified as Unknown, Producer, Past Producer, Prospect or Occurrence) were identified. The primary commodity for the identified mine sites was gold. Other listed commodities include chromium, copper, asbestos, silver, manganese, iron and zinc.

Site Reconnaissance and Field Surveys

A site reconnaissance was performed along the existing State Route 4 alignment on October 15, 2013. Except for tailings associated with historical mining activities and the presence of Naturally Occurring Asbestos along the bedrock cut slope along State Route 4 near Pool Station Road, evidence of potential hazardous material/waste impacts or recognized environmental conditions was not observed.

Field surveys were performed in April and May 2013 along the Alternative 1 and 2 alignments within privately owned parcels that granted right-of-entry access. Site Owner Questionnaires were provided to each of the parcel owners within the project site to aid in determining potential hazardous material/waste impacts. Questionnaires were completed by seven parcel owners. Past historical land use was reported as livestock grazing, stage stop/livery stable (Elkhorn Station), gold exploration, and a charcoal factory. Other reported parcel features included ponds, reservoirs, seasonal creeks, springs, wetlands, septic tanks, leach fields, and common household chemicals/hazardous materials. Except for historical mining activities and aboveground fuel/oil storage, no evidence of hazardous material/waste impacts or recognized environmental conditions with potential to impact the project site was observed.

Historical Mining Activities

The primary commodity for the identified mine sites was gold. Other listed commodities include chromium, copper, asbestos, silver, manganese, iron and zinc. Tailings from historical mining activities occur within the project area which potentially indicate toxic metal residue presence.

Aerially Deposited Lead and Heavy Metals

An Aerially Deposited Lead, Metals, and Naturally Occurring Asbestos Site Investigation Report was approved in February 2015. Twenty-two borings were collected at various depths within the project study area. These borings were used for 64 soil samples that were analyzed

to evaluate whether ADL, heavy metals, or NOA are present in soil within the existing State Route 4 right of way. The report documented soil testing results.

Aerially Deposited Lead

Elevated aerially deposited lead levels associated with historical leaded gasoline emissions may be present in shallow soil in the unpaved shoulders of the existing State Route 4 alignment.

Heavy Metals

The project sits in a mining region with the potential for elevated levels of naturally occurring metals. Heavy metals may be present in burn ash deposits observed adjacent to the State Route 4 shoulder near the western end of the site.

Naturally Occurring Asbestos

The project is in an area known to have ultramafic/serpentinite rock in which asbestos is commonly found. A Naturally Occurring Asbestos and Title 22 Metals Site Investigation was completed for Caltrans for the State Route 4 alignment between post miles 12.5 and 13.0 next to the southern project site boundary. One soil/rock sample detected asbestos (chrysotile).

An Initial Site Assessment dated January 30, 2014 for the project identified recommendations for naturally occurring asbestos at the site. Serpentine bedrock outcrops containing exposed naturally occurring asbestos were observed in cut slopes along State Route 4 near Pool Station Road, which could pose a potential health hazard when it becomes an airborne particulate.

Asbestos and Lead-Containing Paint

Asbestos-containing materials and lead-based paint were commonly used in the construction of older bridges. An asbestos and lead-containing paint survey was conducted of three bridges and three concrete box culverts located along the existing State Route 4 that are subject to demolition or modification. Chrysotile asbestos at a concentration of less than (<) 0.1% was detected in samples representing concrete used on Bridge #30-0036 and on the box culvert at post mile R16.15 (post mile 17.71). Asbestos was not detected on any of the other bridges or culverts.

Two paint samples collected from the West Branch Cherokee Creek Bridge (Bridge #30-0036) contained lead at concentrations exceeding California and federal hazardous waste levels. Deteriorated paint observed on this bridge would require abatement before demolition.

Environmental Consequences

General

The ISA recommended testing to verify the presence/extent of Recognized Environmental Conditions. This included testing for aerially deposited lead and heavy metals and asbestos-containing material and lead-based paint. The Initial Site Assessment also identified potential hazardous waste risks or impacts at multiple private properties within the project site that would require further evaluation including parcels containing historical mining sites/features and aboveground fuel/oil tanks. These sites were found during the October 2013 site reconnaissance on either side of State Route 4 between Hunt Road and Appaloosa Road. Further, vehicle and equipment storage (pick-up and box trucks, trailers, jet skis, storage container, etc.) was observed at the northeast corner of the intersection of State Route 4 and Bonanza Mine Way on the Frazier parcel (Assessor's Parcel Number [APN] 053-007-023). Three 55-gallon drums labeled as "Racing Fuel" were noted on the Frazier parcel. A damaged, open-top 55-gallon drum was further noted. No obvious leakage/impacts were noted near the drums.

Both Alternative 1 and 2 will affect this property (Assessor's Parcel Number 053-007-023) similarly.

Historical Mining Activities

Identified mine shafts, prospecting pits or other open excavations within the existing or planned ROW acquisition parcels should be properly abandoned (filled in) or sealed (engineered plug/cap) for public safety or to support planned highway improvements.

Aerially Deposited Lead

Soils along the existing alignment were tested for aerially deposited lead. Aerially deposited lead concentrations were less than the California hazardous waste criteria screening levels. Soil excavated from the top 2.0 feet or shallower within the proposed realignment would not be classified as a California hazardous waste and could be reused, relinquished to the contractor, or disposed of as non-hazardous soils with respect to lead content.

Heavy Metals

Soils along the existing alignment were tested for heavy metals. While elevated chromium and nickel concentrations were found, the concentrations are within the range of naturally occurring background levels for this region. Arsenic was detected in the soil samples with reported concentrations greater than the California Human Health Screening Levels (CHHSLs) and Environmental Screening Levels (ESLs) for residential and commercial/industrial land use; however, the reported levels of arsenic fall within the range of naturally occurring background levels. The remaining heavy metals concentrations generally fall within the range of naturally occurring background levels. It is unlikely that excavated soils generated within the project boundaries would be classified as hazardous

waste. However, the designated disposal facility may require additional testing to confirm waste classification based on chromium content. Although elevated chromium concentrations of 1.1 milligrams per liter (mg/L) were detected, the concentration did not exceed state or federal hazardous waste thresholds of 5.0 mg/L. Soil excavated to a depth of 2.0 feet or shallower with respect to chromium could be reused, relinquished to the contractor, or disposed of as non-hazardous soil (for Alternative 1 or 2).

Based on the statistical analysis for nickel, soil excavated to a depth of 2.0 feet or shallower would not be classified as a California hazardous waste. Consequently, soil excavated to a depth of 2.0 feet or shallower could be reused, relinquished to the contractor, or disposed of as non-hazardous soil with respect to nickel content (for Alternative 1 or 2).

Naturally Occurring Asbestos

Naturally occurring asbestos generally exists around and south-southwest of Pool Station Road. Alternatives 1 and 2, which both have cut/fill and ground disturbance in this area, are expected to have it also.

Based on field observations, published geologic mapping, and professional experience, the project site was recommended to be divided into two segments for the purpose of soil management during the proposed realignment. Approximately the western one-third of the site is underlain by geologic materials considered likely to contain NOA, while materials underlying approximately the eastern two-thirds of the site are considered relatively less likely to contain NOA.

Due to the presence of ultramafic rock and an observed vein of NOA in bedrock, earthen material generated during construction activities from Bonanza Mine Way to north of Pool Station Road is considered Restricted Material. Therefore, the contractor(s) should implement asbestos worker protection measures and NOA-containing soil management practices. See proposed mitigation measures HAZ-3, HAZ-4, and HAZ-5.

The geologic materials within the remaining portion of the project (north of Pool Station to Stockton Road) consist of a mix of Paleozoic-Mesozoic metavolcanic and metasedimentary rocks in the eastern two-thirds of the site. This segment is relatively less likely to contain naturally occurring asbestos, and it was not detected at concentrations of 0.25% or greater in the 13 samples of soil/rock collected from borings within this segment. Therefore, native earthen material generated from the proposed realignment project within this highway segment can be reused or disposed of without restrictions with regard to naturally occurring asbestos.

Asbestos and Lead-Containing Paint

Asbestos: National Emissions Standards for Hazardous Air Pollutants regulations do not require that materials containing 1% or less of asbestos (i.e., concrete identified on Bridge 30-0036 and on the box culvert at post mile R16.15 (post mile 17.71) be removed prior to demolition, renovation, or be treated as hazardous waste. Demolition of concrete containing

less than 0.1% asbestos would not require asbestos registration or certification with the State of California Occupational Safety and Health Administration; however, the demolition contractor must follow certain requirements of the State of California Occupational Safety and Health Administration asbestos standard (i.e., the use of wet methods, prompt cleanup, etc.) when disturbing the concrete, per measure HAZ-3. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos waste. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal. Bridge 30-0036 is expected to be demolished with either Build Alternative 1 or 2 unless that portion of the roadway is relinquished to local property owners. Both alternatives would cross the West Branch Cherokee Creek just south of the existing location of Bridge 30-0063.

Lead Paint: Deteriorated white paint on the Bridge 30-0036 barriers represented by samples collected during the survey would be classified as a California and federal hazardous waste based on lead content. As such, the deteriorated paint must be removed and disposed of before renovation, demolition, or other activities that would disturb the paint. Bridge 30-0036 is expected to be demolished with either Build Alternative 1 or 2 unless that portion of the roadway is relinquished to local property owners

Gray paint on the Bridge 30-0036 steel girders represented by samples collected during the survey would be classified as a California hazardous waste (and assumed to be a federal hazardous waste) based on lead content if stripped, blasted, or otherwise separated from the substrate. Bridge 30-0036 is expected to be demolished with either Build Alternative 1 or 2 unless that portion of the roadway is relinquished to local property owners.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure HAZ-1: Excavation/earthwork activities in the western one-third of the site should be observed and documented by a Professional Geologist experienced in the recognition of NOA.

Minimization Measure HAZ-2: Soil/rock excavated from such areas, specifically at Pool Station Road, should be placed as deep fill elsewhere within the segment at a location where it is unlikely to be disturbed by future excavation/construction activities.

Minimization Measure HAZ-3: Contractors working in areas identified as containing or likely to contain naturally occurring asbestos will consult CAL-OSHA to establish the appropriate regulatory protocol and actions necessary for excavation and/or disturbance of asbestos-containing soils.

Minimization Measure HAZ-4: Prior to construction activities, the contractor(s) shall prepare and implement an Asbestos Dust Mitigation Plan (ADMP) that describes measures that will be taken to control the potential release of NOA-containing dust from the soil/rock as a result of construction excavation activities. Asbestos dust control and soil management activities to be implemented shall be in compliance with applicable state, federal, and local laws. Special provisions will be included in the construction contract.

Minimization Measure HAZ-5: Prior to beginning construction activities, the contractor(s) must prepare and implement a Lead and Asbestos Compliance-Health and Safety Plan. Special provisions will be included in the construction contract.

Minimization Measure HAZ-6: Contractors that would be conducting renovation or related activities in areas or on structures shall be notified of the presence of asbestos in their work areas (i.e., the contractor[s] shall be provided a copy of the Site Investigation and bridge survey data and a list of asbestos removed during subsequent activities). Contractors not trained for asbestos work shall be instructed not to disturb asbestos during their activities.

Minimization Measure HAZ-7: National Emissions Standards for Hazardous Air Pollutants (NESHAP) notification will be made to the Calaveras County Air Pollution Control District 10 days prior to bridge demolition or renovation activities whether asbestos is present or not.

Minimization Measure HAZ-8: All paints at the project location (signage, graffiti, graffiti abatement, etc.) shall be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during maintenance, renovation, and demolition activities. In accordance with Title 8, CCR, §1532.1(p), written notification to the nearest Cal/OSHA district office is required and shall be conducted at least 24 hours prior to certain lead-related work. Contractors are responsible for segregating and characterizing waste streams prior to disposal. Special provisions will be included in the construction contract.

Minimization Measure HAZ-9: Following the completion of private parcel right-of-way acquisition for the selected alternative alignment, additional site investigation may be necessary to address potential impacts associated with aboveground fuel/oil tanks or other identified potential contamination sources, including the active vineyard next to Appaloosa Road.

Minimization Measure HAZ-10: Sampling may be required to obtain a discharge permit for disposal of any extracted groundwater generated during bridge demolition/construction activities.

Minimization Measure HAZ-11: Due to the potential for elevated lead and chromium levels associated with yellow striping paint, centerline paint removed during planned roadway improvement activities may require sampling, analytical testing, and/or special handling and disposal requirements unless combined with sufficient asphalt grindings. Special Provisions will be included in the construction contract.

Minimization Measure HAZ-12: Asbestos-containing pipe may be encountered during construction of the planned highway and bridge improvements. Any encountered asbestos-containing pipe would require proper handling and disposal in accordance with regulatory requirements.

Minimization and Avoidance Measure HAZ-13: If present or encountered within the new right-of-way, undocumented Underground Storage tanks, septic systems, and unused

domestic agricultural wells or cisterns should be properly removed or abandoned in accordance with Calaveras County requirements.

2.2.6 Air Quality

Regulatory Setting

The Federal Clean Air Act, 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 U.S. Environmental Protection Agency and California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards 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, which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), 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 National Ambient Air Quality Standards 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 NEPA. In addition to this environmental analysis, a parallel "conformity" requirement under the Federal Clean Air Act also applies.

<u>Conformity</u>

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plan for attainting the National Ambient Air Quality Standards. "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 National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. U.S. Environmental Protection Agency regulations at 40 Code of Federal Regulations 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 (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California) sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, 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 and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years for the Regional Transportation Plan) and 4 years (for the Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Project 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 State Improvement Program are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration, make determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the FCAA. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program 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 Regional Transportation Plan and Federal Transportation Improvement Program, 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 (PM_{10} or $PM_{2.5}$). 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. Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially re-designated to attainment by U.S. Environmental Protection Agency 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).

Affected Environment

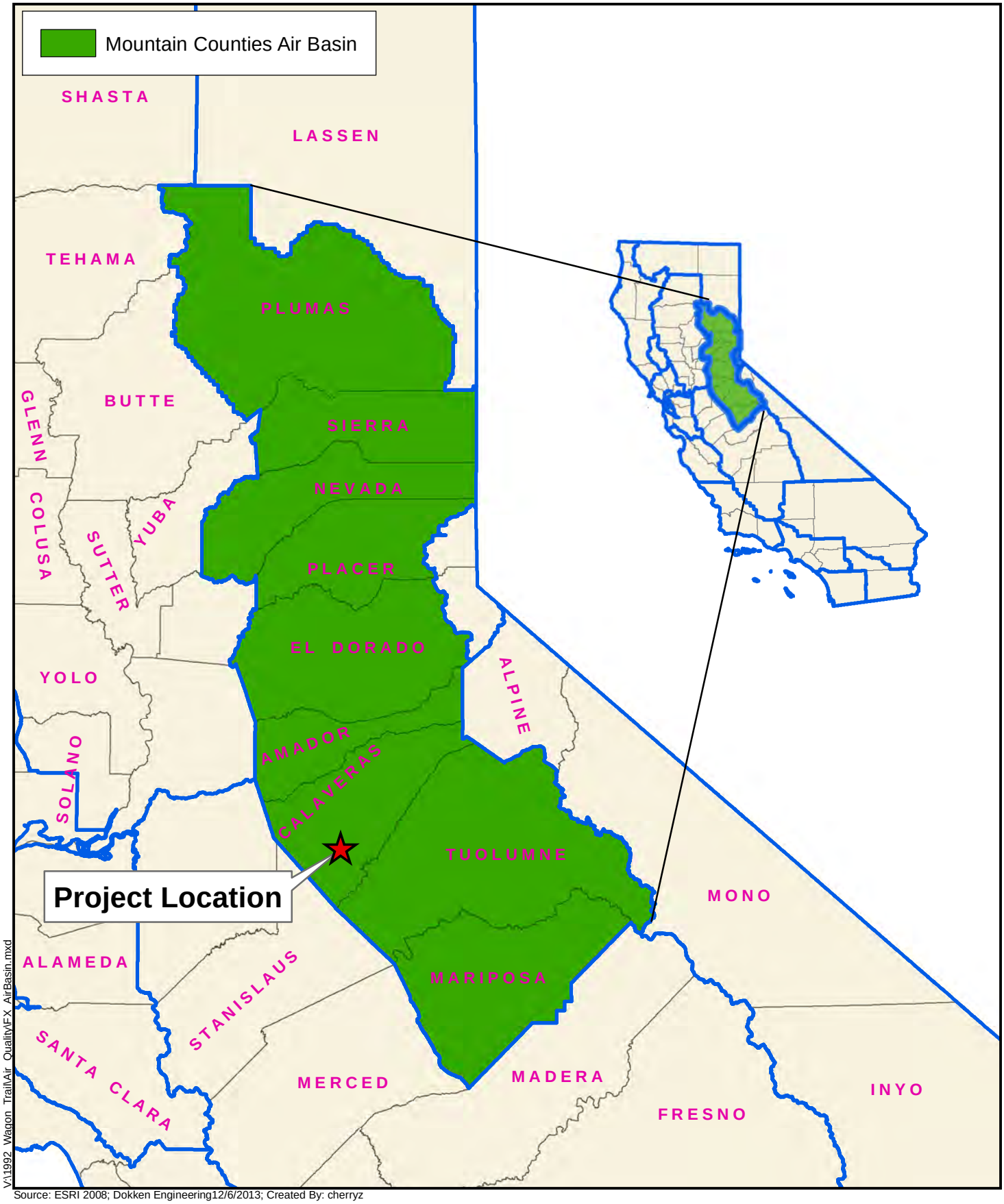
The *Air Quality Report*, approved in May 2014, provides the information for this section along with standard air pollutant emissions information from the Calaveras County Air Pollution Control District website.

The proposed project sits in the foothills of the Sierra Nevada at an elevation ranging from about 1,500 to 1,750 feet above mean sea level. According to the Natural Resources Conservation Service National Water and Climate Center, temperatures average a high of 92.3 degrees Fahrenheit and a low of 76.2 degrees Fahrenheit during the summer. In the winter, the average high temperature is 47.9 degrees Fahrenheit and the low is 39.9 degrees Fahrenheit. Winds are generally from the west and northwest. This is of particular importance regarding the dispersal of pollutants, as Calaveras County is influenced by the generation of ozone precursors from the urbanized areas of Sacramento, Stockton, and the Bay Area. These precursors are blown eastward, react with sunlight, and can result in high levels of ozone in Calaveras County as well as other mountain counties.

The project is in the Mountain Counties Air Basin, as shown in Figure 36. The Calaveras County Air Pollution Control District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Calaveras County. The district also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The district is precluded from such activities under state law. The Calaveras County Air Pollution Control District is the agency responsible for preparing regional air quality plans under the state and federal Clean Air Acts.

The current regional clean air plan addresses ozone and PM_{10} and identifies strategies for progressive reduction in emissions of ozone precursors and particulate matter.

Under the National Ambient Air Quality Standards, Calaveras County is in non-attainment for 8-hour ozone and is in attainment or is unclassified for other federal criteria pollutants. Under the California Ambient Air Quality Standards, Calaveras County is in non-attainment for ozone and PM_{10}. It is in attainment or is unclassified for all other state criteria pollutants. Table 23 summarizes the ambient air quality designations for Calaveras County.



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Source: ESRI 2008; Dokken Engineering12/6/2013; Created By: cherryz

0 50 100 Miles

Figure 34
Mountain Counties Air Basin
EA 0E530; Post Miles R10.3/R16.4
State Route 4 Wagon Trail Realignment
Calaveras County, California

Table 23. Calaveras County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – 8-Hour	Nonattainment	Nonattainment
Ozone – 1-Hour	N/A	Nonattainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Unclassified
Carbon Monoxide	Unclassified/Attainment	Unclassified
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified	Attainment
Sulfates	N/A	Attainment
Lead	Unclassified/Attainment	Attainment
Hydrogen Sulfide	N/A	Unclassified
Visibility Reducing Particles	N/A	Unclassified
Source: California Air Resources Board 2014		

Table 24 summarizes all of the National Ambient Air Quality Standards and California Ambient Air Quality Standards for criteria pollutants.

Environmental Consequences

Regional Conformity

This project is exempt from regional conformity (40 Code of Federal Regulations 93.127) requirements since it does not add through lanes and is only composed of "changes in vertical and horizontal alignment." Separate listing of the project in the *Regional Transportation Plan* and Transportation Improvement Program, and their regional conformity analyses, is not necessary. The project would not interfere with timely implementation of Transportation Control Measures identified in the applicable State Implementation Plan and regional conformity analysis.

Table 24. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
Ozone (O_3) [2]	1 hour 8 hours	0.09 ppm 0.070 ppm	--- [4] 0.075 ppm (4th highest in 3 years)	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.	1 hour: Federal: n/a State: Nonattainment 8 hour: Federal: Nonattainment State: Nonattainment
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm [1] 6 ppm	35 ppm 9 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 and neighborhood scale.	Federal: Unclassified/Attainment State: Unclassified
Respirable Particulate Matter (PM_{10}) [2]	24 hours Annual	50 µg/m³ 20 µg/m³	150 µg/m³ --- [2] (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.	Federal: Unclassified State: Nonattainment
Fine Particulate Matter ($PM_{2.5}$) [2]	24 hours Annual 24 hours (conformity process [5]) Secondary Standard (annual; also for	--- 12 µg/m³ --- ---	35 µg/m³ 12.0 µg/m³ 65 µg/m³ 15 µg/m³ (98th	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical	Federal: Unclassified/Attainment State: Unclassified

Pollutant	Averaging Time	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
	conformity process [5])		percentile over 3 years)	– a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic & other aerosol and solid compounds are part of $PM_{2.5}$.	reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm [6] (98th percentile over 3 years) 0.053 ppm	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.	Federal: Unclassified/Attainment State: Attainment
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours	0.25 ppm --- 0.04 ppm	0.075 ppm [7] (99th percentile over 3 years) 0.5 ppm [9]	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.	Federal: Unclassified State: Attainment
Lead (Pb)[3]	Monthly Rolling 3-month average	1.5 µg/m³ ---	--- 0.15 µg/m³ [11]	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.	Federal: Unclassified/Attainment State: Attainment
Sulfate	24 hours	25 µg/m³	---	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.	Federal: n/a State: Attainment

Pollutant	Averaging Time	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
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.	Federal: n/a State: Unclassified
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.	Federal: n/a State: Unclassified

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

Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; ppb=parts per billion (thousand million)

1 Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

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

3 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.

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 The 65 $\mu g/m^3$ $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. The 15 $\mu g/m^3$ annual $PM_{2.5}$ standard was not revoked when the 12 $\mu g/m^3$ 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.

6 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 redesignation to nonattainment in some areas after 2016.

7 EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010. Nonattainment areas have not yet been designated as of 9/2012.

8 State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise. Federal standards are "not to exceed more than once a year" or as described above.

9 Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.
10 Standards no longer apply in CA starting in 2013 (1 year after designations to attainment/unclassified statewide) were completed. Do not use or quote any more. Will be removed in 2013 edition of this table.
11 Lead NAAQS are not considered in Transportation Conformity analysis.

Greenhouse Gases and Climate Change:

Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

Project-Level Conformity

Carbon Monoxide

Calaveras County is in a carbon monoxide (CO) attainment area. In CO attainment areas, only projects that are likely to worsen air quality necessitate further analysis. Projects that worsen air quality are defined as those that significantly increase the percentage of vehicles in cold start mode, those that significantly increase traffic volumes, and those that worsen traffic flow. These criteria are evaluated when comparing build and no-build scenarios. The determination of project-level CO impacts was carried out according to the Local Analysis flowchart that was provided in the CO Protocol document.

There is a series of questions that need to be answered to determine the projects requirements:

Question 3.1.1: Is the project exempt from all emissions analyses?

The proposed project description does not fit any of the projects listed in Table 1 of the protocol and therefore must proceed to question 3.1.2.

Question 3.1.2: Is the project exempt from regional emissions analyses?

Yes, the proposed project is exempt from regional emissions analysis. The project is exempt from regional conformity per 40 Code of Federal Regulations 93.127 under project type "Changes in vertical and horizontal alignment."

Question 4.7.1: Does the project worsen air quality?

No, the proposed project does not worsen air quality. The following criteria from the CO Protocol is discussed to help determine whether the project is likely to worsen air quality for the area:

Does the project significantly increase the percentage of vehicles operating in cold start mode? Increasing the number of vehicles operating in cold start mode by as little as 2% should be considered potentially significant.

Answer: The project does not increase the number of vehicles operating in cold start mode because it accommodates projected future traffic that is anticipated with or without the project. The project also does not introduce new residential or commercial land uses.

Does the project significantly increase traffic volumes? Increases in traffic volume in excess of 5% should be considered potentially significant. Increasing the traffic volume by less than 5% may still be potentially significant if there is also a reduction in average speeds.

Answer: The project does not increase traffic volumes through the project site. Future traffic volumes are the same with the no-build and build Alternatives.
Does the project worsen traffic flow? For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 mph) should be regarded as worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered as worsening traffic flow.

Answer: The project would not worsen traffic flow. Based on the Traffic Operations Analysis Report (2014), average speeds would increase or stay the same. Delay Per Vehicle is also estimated to be reduced by approximately 20% to 30%.

Based on these answers, the flowchart concludes with "Project satisfactory, no further analysis needed."
PM10 and PM2.5 Hot-Spot Analysis

The project is not in a PM_{10} and $PM_{2.5}$ nonattainment area. Calaveras County is unclassified for federal PM_{10} and $PM_{2.5}$ standards. As a result, PM_{10} and $PM_{2.5}$ conformity analysis is not required.

Construction

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities are major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Dust generation also depends on soil type and soil moisture. Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the project area and may require frequent washing during the construction period. Asphalt-paving materials used during construction would present temporary, minor sources of hydrocarbons that are precursors of ozone.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that comes from NO_x and VOCs in the presence of sunlight and heat.

The project's construction emissions were estimated using the Roadway Construction Emissions Model by the Sacramento Metropolitan Air Quality Management District. As shown in Table 25, construction activities from the project would not exceed emission thresholds established by the Calaveras County Air Pollution Control District.

Table 25. Calaveras County Air Pollution Control District CEQA Construction Thresholds of Significance

	Project Construction Emissions (pounds/day)	Local Threshold (pounds/day)
Reactive Organic Gases	13.2	150
NO_X	136.9	150
PM_{10}	106.3	150
Source: *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects* (Calaveras County, 2014) and Road Construction Emissions Model, Version 5.2 (Sacramento Metropolitan Air Quality Management District, 2013).		

Measures AQ-1 through AQ-8 would be implemented during construction of the project. These measures are from the recommended dust control plan conditions noted in Calaveras County Air Pollution Control District's *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*.

Construction activities would not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 Code of Federal Regulations 93.123(c)(5)).

Naturally Occurring Asbestos

Naturally Occurring Asbestos occurs at the project site. Hazardous waste measures would be implemented to mitigate potential impacts from Naturally Occurring Asbestos and are discussed in detail in the Hazardous Waste section of this document.

Mobile Source Air Toxics

Neither Alternative 1 nor 2 would have meaningful potential Mobile Source Air Toxics effects. The purpose of this project is to enhance safety by providing a standard pavement width of 40 feet (two 12-foot lanes and two 8-foot shoulders) with an additional 12 feet to provide passing lanes or turn lanes where needed; improve sight distance through engineered alignments that reduce the number of curves, and increase curve radii with longer, smoother curves; and limit access to State Route 4 by reducing the number of access points and using frontage roads to consolidate private driveways. This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns.

As such, this project would not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, Environmental Protection Agency regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with the Environmental Protection Agency's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle miles of travel are projected to increase by over 100%. This would both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Avoidance, Minimization, and/or Mitigation Measures

The following measures are proposed during construction of the project. Measures AQ-2 through AQ-10 are from the recommended dust control plan conditions noted in Calaveras County APCDs *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*.

Minimization Measure AQ-1: To control exposure to potentially naturally occurring asbestos-containing dust, engineering controls will be implemented, such as wetting of materials disturbed.

Minimization Measure AQ-2: According to the Department's Standard Specifications, the contractor must comply with all local Air Pollution Control District (APCD) rules, ordinances, and regulations for air quality restrictions.

Minimization Measure AQ-3. The applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.

Minimization Measure AQ-4. All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.

Minimization Measure AQ-5. All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.

Minimization Measure AQ-6. All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.

Minimization Measure AQ-7. All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.

Minimization Measure AQ-8. All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved non-toxic soil stabilizers (according to manufacturer's specifications)

to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.

Minimization Measure AQ-9. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of six (6) inches of freeboard in the bed of the transport vehicle.

Minimization Measure AQ-10. Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud that may have resulted from activities at the project site.

Minimization Measure AQ-11: Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.

Climate Change

Climate change is analyzed at the end of this chapter. Neither the U.S. Environmental Protection Agency nor Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on Federal Highway Administration's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), 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 would aid decision-making and improve efficiency at the program level, and would inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily 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.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate CEQA discussion at the end of this chapter and may be used to inform the NEPA decision. The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

2.2.7 Noise

Regulatory Setting

NEPA of 1969 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.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project would 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 those measures are not feasible. The CEQA noise analysis is included at the end of this section.

National Environmental Policy Act and 23 Code of Federal Regulations 772

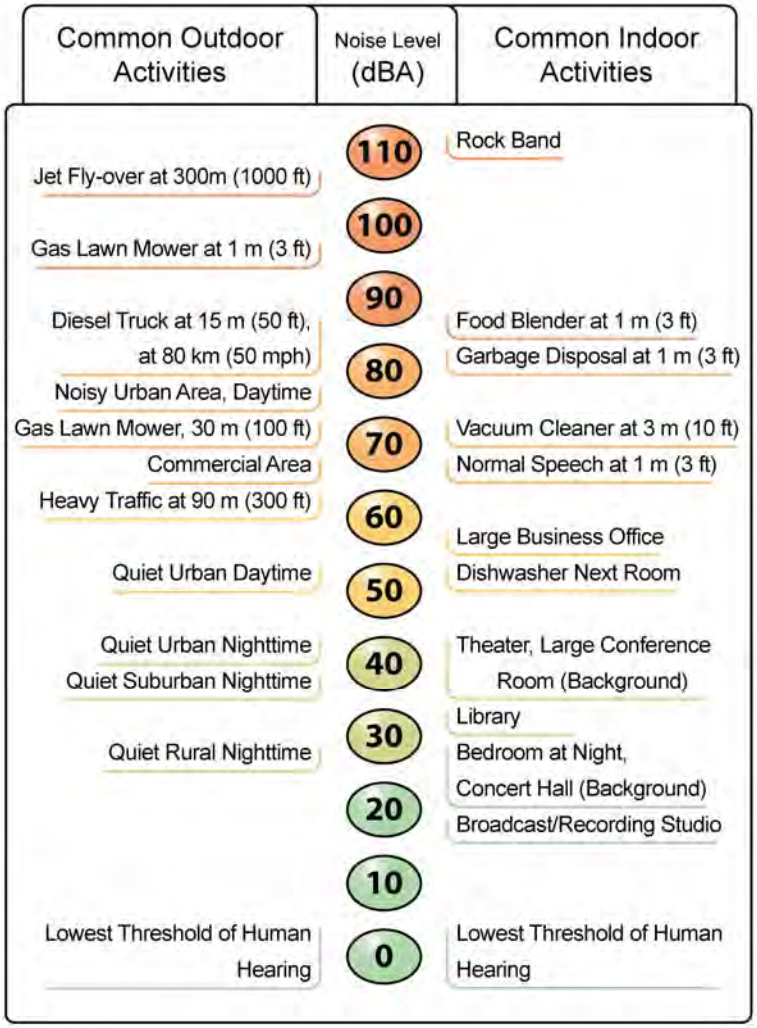
For highway transportation projects with Federal Highway Administration (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations 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 decibel) is lower than the NAC for commercial areas (72 decibels). Table 26 lists the noise abatement criteria for use in the NEPA 23 Code of Federal Regulations 772 analysis.

Table 26. Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, L (h)	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.
B1	67 (Exterior)	Residential.
C1	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.		
Source: Noise Study Report, June 2015		

Figure 37 lists the noise levels of common activities to help you compare the actual and predicted highway noise levels discussed in this section with common activities.

Figure 37. Noise Levels of Common Activities



According to Caltrans' 2011 Noise Protocol 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 decibel 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 decibel 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. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' 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 decibel in the future noise level must be achieved for an abatement measure to be considered feasible. 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.

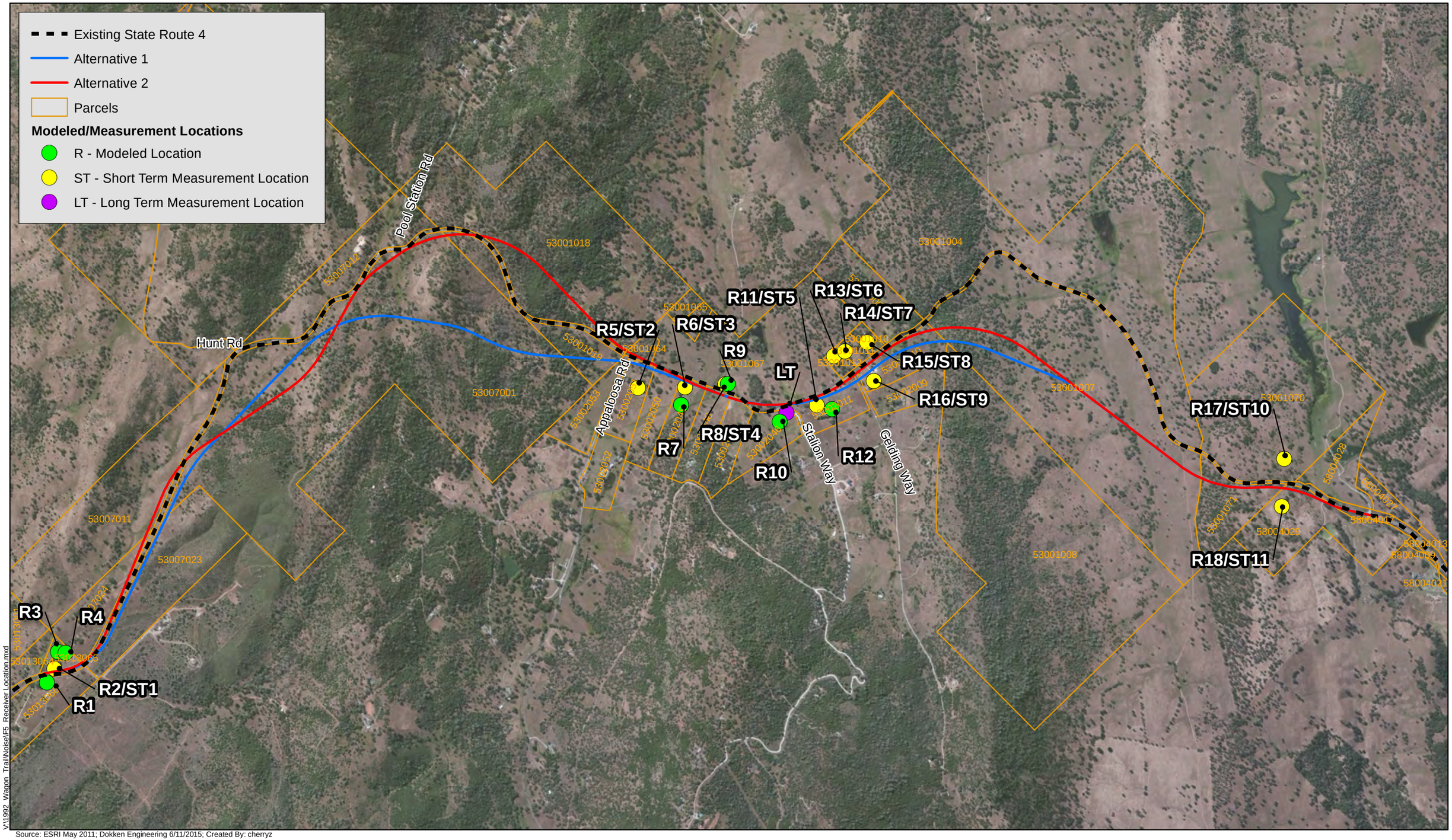
Affected Environment

The Noise Study Report for this project, approved in June 2014, provides the basis for this section. The noise setting consists of sparsely populated ranches and single-family residential properties. The dominant noise source for sensitive land uses within the proposed project area is traffic traveling on State Route 4. Fourteen single-family sensitive noise receptors were identified in those areas where outdoor frequent human use would occur. Locations of receptors are shown in Figure 38.

Environmental Consequences

The project is a Type 1 project per 23 Code of Federal Regulations 772 because it consists of a substantial horizontal or vertical alteration of an existing highway. Existing noise levels were measured at representative locations along the proposed alignments. Using the measurements, noise levels at sensitive receptors were modeled for the existing conditions and for the Design Year 2040 for Alternatives 1 and 2 as well as the No-Build Alternative. The design-year is the year the project is designed to, considering regional transportation plans; and it is typically a minimum of 20 years out from the beginning of the project. Results are presented in Tables 28 and 29.

The design-year traffic noise modeling results for Alternative 1 range from 49 to 60 decibels as shown in Table 27. Noise levels for the design-year under Alternative 1 are expected to increase up to 5 decibels over design-year No-Build noise levels. Although evaluated receivers would experience an increase in design-year Build noise levels, the increases do not cause noise levels to approach or exceed their respective Noise Abatement Criteria Activity Category criterion. Noise levels from Existing to Build conditions are expected to increase up to 8 decibels. The increase in noise levels from Existing to Build conditions is due to the doubling of traffic volumes from Existing to No-Build conditions. While the new segment of roadway would bring traffic closer to existing sensitive receiver locations, the increases do not cause a substantial increase, or cause the noise levels to approach or exceed their respective Noise Abatement Criteria activity criterion of 67 decibels for the exterior of a residence. A noise abatement evaluation was not required.



Source: ESRI May 2011; Dokken Engineering 6/11/2015; Created By: cherryz

V:\1992_Wagon_Trail\Noise\F5_Receiver Location.mxd

0 0.5 1 1.5 Miles

FIGURE 36
Modeled/Measurement Locations
EA 0E530K; PM 10.3/16.4
SR 4 Wagon Trail Realignment Project
Calaveras County, California

Table 27. Noise Modeling Results - Alternative 1

Receptor # and Location	Existing Noise Level (decibel)	Predicted Noise Level without Project (decibel)	Predicted Noise Level with Project (decibel)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (decibel)			Reasonable and Feasible	Difference between Existing and Future Predicted with Project
					6-foot Wall	9-foot Wall	12-foot Wall		
R1	56	59	60	No	N/A			N/A	4
R3	51	55	55	No					4
R4	54	57	59	No					5
R5/ST2	44	46	49	No					5
R7	47	49	51	No					4
R9	57	60	59	No					2
R10	51	54	53	No					2
R12	51	54	56	No					5
R13/ST6	51	54	54	No					3
R14/ST7	53	56	55	No					2
R15/ST8	53	56	53	No					0
R16/ST9	52	55	60	No					8
R17/ST10	56	59	58	No					2
R18/ST11	50	53	55	No					5
Source: Noise Study Report, June 2014									

The design-year traffic noise modeling results for Alternative 2 range from 51 to 60 decibels as shown in Table 28. Noise levels for the design-year under Alternative 2 are expected to increase up to 2 decibels over design-year No-Build noise levels. Although, evaluated receivers would experience an increase in design-year Build noise levels, the increases do not cause noise levels to approach or exceed their respective NAC Activity Category criterion. Noise levels from Existing to Build conditions are expected to increase up to 5 decibel. The increase in noise levels from Existing to Build conditions is due to the doubling of traffic volumes from Existing to No-Build conditions. The new segment of roadway would bring traffic closer to existing sensitive receiver locations occurring under Build conditions. However, Alternative 2 would not cause a substantial increase, or cause the noise levels to approach or exceed their respective NAC Activity criterion. Therefore, a noise abatement evaluation was not required.

Table 28. Noise Modeling Results - Alternative 2

Receptor # and Location	Existing Noise Level (decibel)	Predicted Noise Level without Project (decibel)	Predicted Noise Level with Project (decibel)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (decibel)			Reasonable and Feasible	Difference between Existing and Future Predicted with Project
					6-foot Wall	9-foot Wall	12-foot Wall		
R1	56	59	60	No	N/A			N/A	4
R3	51	55	56	No					5
R4	54	57	59	No					5
R5/ST2	44	46	46	No					2
R7	47	49	51	No					4
R9	57	60	59	No					2
R10	51	54	53	No					2
R12	51	54	54	No					3
R13/ST6	51	54	55	No					4
R14/ST7	53	56	56	No					3
R15/ST8	53	56	56	No					3
R16/ST9	52	55	56	No					4
R17/ST10	56	59	59	No					3
R18/ST11	50	53	55	No					5

Construction

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Table 29 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 decibels at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 decibel per doubling of distance.

Table 29. Construction Equipment Noise

Equipment	Maximum Noise Level (decibel at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Source: Federal Transit Administration (1995)	

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Standard Specification 14-8.02, SSP 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

To minimize the construction-generated noise, abatement measures in Standard Specification 14-8.02, "Noise Control" and Standard Special Provision (SSP) 14-8.02 must be followed, as described in measure NOI-1.

CEQA Noise Analysis

In a comparison of the baseline existing noise level and the design-year build noise level, Alternative 1 would result in perceptible yet non-significant increases at receptors R1, R3, R4, R5/ST2, R7, R12, R13/ST6, R16/ST9, and R18/ST11 during peak noise hour. R16 would experience the most difference with an 8 dB increase. As a result, no significant noise impacts under CEQA are anticipated.

Avoidance, Minimization, and/or Noise Abatement Measures

Only measures to minimize construction noise were needed.

Minimization Measure NOI-1: To minimize the construction-generated noise, abatement measures in Standard Specification 14-8.02, "Noise Control" and Standard Special Provision (SSP) 14-8.02 must be followed:

- Do not exceed 86 decibel at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Equip an internal combustion engine with the manufacturer recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

Standard Special Provision (SSP) 14-8.02 would be edited specifically for this project during the Plans, Specifications & Estimates phase.

2.3 Biological Environment

2.3.1 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 are discussed below in the Threatened and Endangered Species section, Section 2.3.5. Wetlands and other waters are also discussed in Section 2.3.2.

Affected Environment

As discussed in the Natural Environment Study (August 2014) for this project, the only natural community of concern within the Biological Study Area is native mixed oak

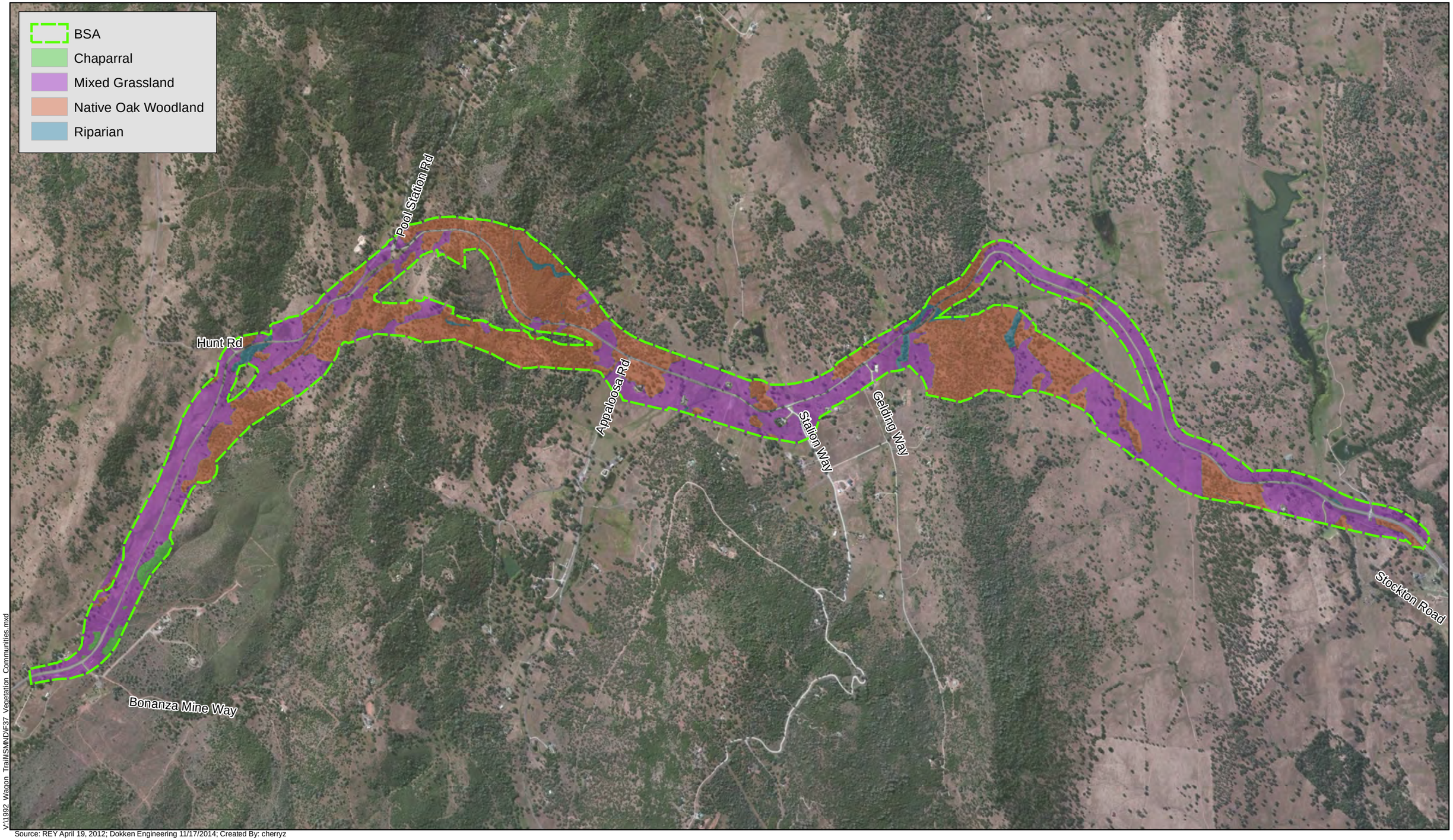
woodland. Mixed oak woodland communities (see Figure 39) are composed of broad-leaved deciduous trees, including blue oak, interior live oak, valley oak, California buckeye, ponderosa pine, madrone, and foothill pine (an evergreen) with an understory of poison oak, coyote brush, and wild oat This community typically inhabits uplands with valleys and gentle to steep slopes between 250 to 2,000 feet above mean sea level.

Native mixed oak woodlands are well established and dominated by blue oak, valley oak, foothill pine, and interior live oak within the Biological Study Area. Trees were observed to have a diameter at breast height of up to 51 inches, with an average diameter of about 16 inches during the tree density surveys. The Biological Study Area is estimated to contain approximately 4,000 oak trees and approximately 340 acres of oak woodland habitat.

In February 18, 2004, the California State Legislature passed the Oak Woodland Conservation Act, Public Resource Code Section 21083.4, requiring a county or city to prepare an oak woodland management plan for any project that may have significant effect on the environment as determined by a lead agency. The act defines "oak" as a native tree species in the genus *Quercus* that is 5 inches or more in diameter at breast height.

According to California State Concurrent Resolution No. 17, state agencies are requested to preserve and protect native oak woodlands and to provide for replacement plantings whenever blue, engelmann, or valley oaks, or coast live oaks are removed from the native woodland (California Statutes 1989). Also, as established by in the Oak Woodlands Conservation Act, mitigation options require the County to prepare an oak woodland management plan (OWMP 2007).

Other natural communities in the Biological Study Area are mixed chaparral, California annual non-native grassland, and valley foothill riparian. The chaparral community within the Biological Study Area encompasses approximately 6.6 acres at the southwestern side and is dominated by coyote bush, interior live oak, buckbrush, and manzanita. Mixed grassland community makes up approximately 395 acres and is dominated by smooth brome, filaree, needle goldfields, lupine, rabbitfoot grass, medusa head, and barbed goatgrass . Riparian communities are associated with lakes, ponds, seeps, rivers and streams and are typically composed of trees and shrubs. The riparian community within the Biological Study Area encompasses approximately 13 acres and is dominated by valley oak, willows, and California buckeye.

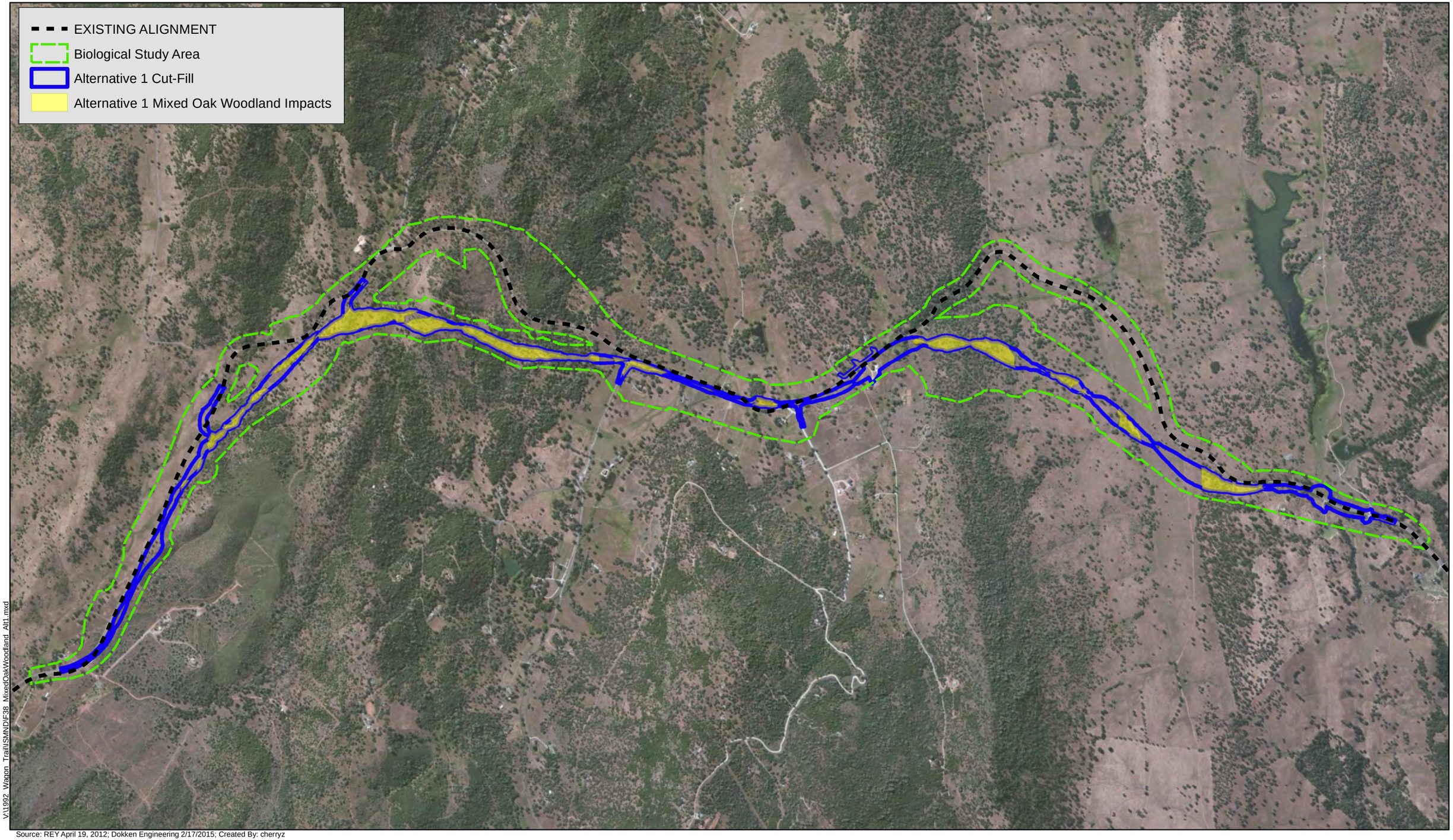


V:\1992_Wagon_Trail\SM\NDF37_Vegetation_Communities.mxd

Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 37
Vegetation Communities
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

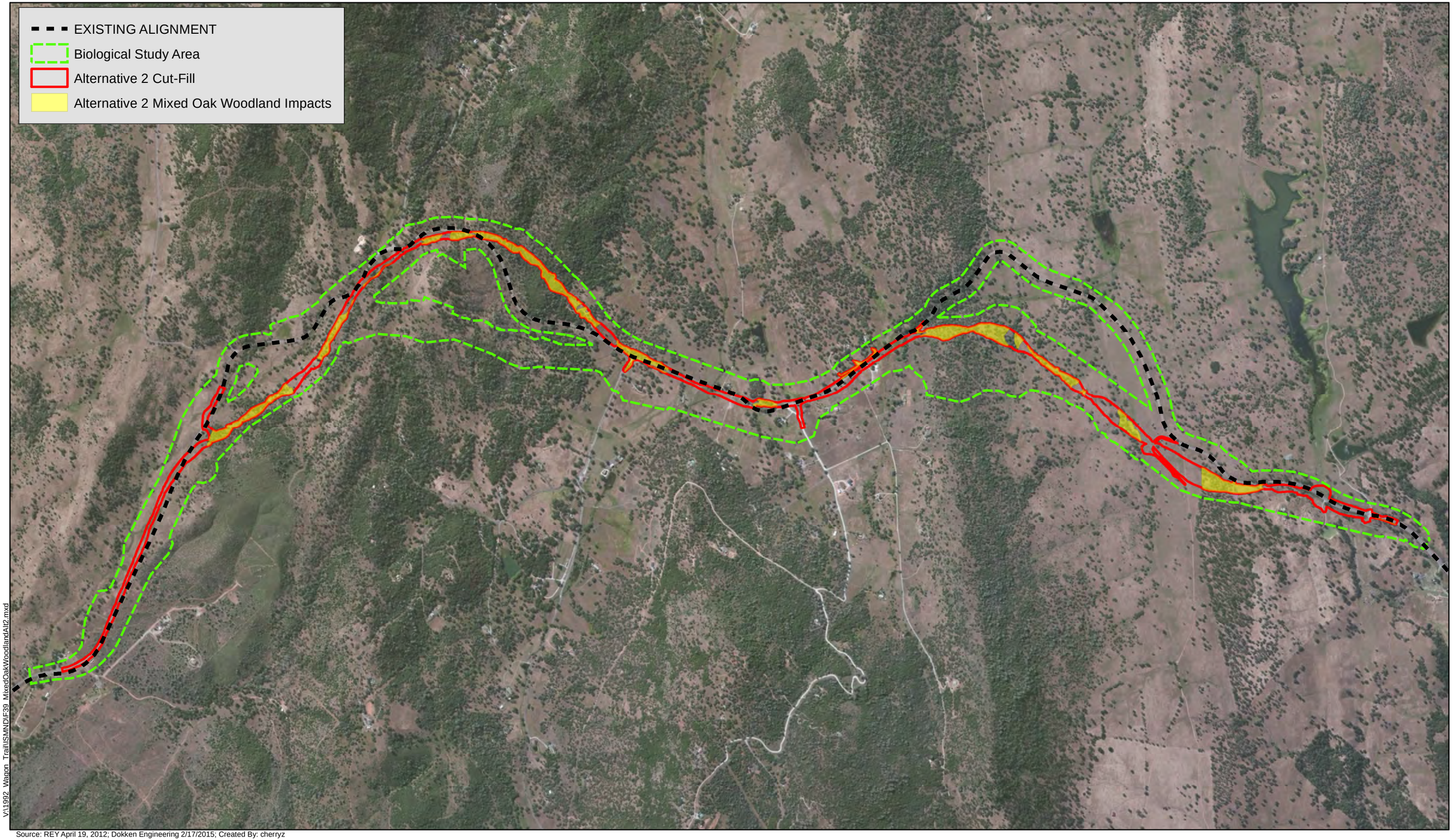


Y:\1992_Wagon_Trail\ISMND\F38_MixedOakWoodland_Alt1.mxd

Source: REY April 19, 2012; Dokken Engineering 2/17/2015; Created By: cherryz

0 0.5 1 1.5 Miles

Figure 38
Mixed Oak Woodland Impacts Alternative 1
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



V:\1992_Wagon_Trail\SMND\F39_MixedOakWoodlandAlt2.mxd

Source: REY April 19, 2012; Dokken Engineering 2/17/2015; Created By: cherryz

0 0.5 1 1.5 Miles

Figure 39
Mixed Oak Woodland Impacts of Alternative 2
EA 0E5300; PM R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Environmental Consequences

Alternatives 1 and 2 would have permanent and temporary construction impacts to native oak woodlands (see Figures 40 and 42). Permanently impacted areas are those along the roadway alignments requiring tree removal. The temporarily impacted areas are those requiring cut/fill and would be used for access roadways and staging areas. These impacts are considered temporary due to the restoration and natural re-vegetation of native oak trees after the completion of construction. It is anticipated that oak mitigation would take place off-site. The approximate acreages impacted by the project are shown in Table 30.

Table 30. Native Mixed Oak Woodland Impacts

Alternative	Permanent Impacts (acres)	Temporary Impacts (acres)	Estimated Number of Oak Trees
Alternative 1	58	2	1,147
Alternative 2	44	5	965
Source: Natural Environment Study, 2014			

The project has been designed to minimize temporary and permanent impacts to mixed oak woodlands to the maximum extent practicable. Prior to impacting oak woodlands, an oak woodland mitigation plan would be coordinated with the California Department of Fish and Wildlife to compensate for the removal of oak trees. The project would comply with measures BIO-1, BIO-2, and BIO-3, which require environmentally sensitive area fencing, minimizing vegetation clearing, and the oak woodland mitigation plan. Measure BIO-4 includes further details on oak planting.

For Alternative 1, approximately 826 trees between 5to 15 inches in diameter at breast height, 195 trees between 16to 30 inches in diameter at breast height, and 126 trees over 31 inches in diameter at breast height are expected to be impacted. For Alternative 2, an estimated 695 trees between 5to15 inches in diameter at breast height, 164 trees between 16to 30 inches in diameter at breast height, and 106 trees over 31 inches in diameter at breast height are expected to be impacted. Estimates of required mitigation for oak trees removed for Alternatives 1 and 2 are shown below in Table 31.

Table 31. Anticipated Oak Tree Mitigation

Alternative	5-15 inch diameter breast height		6-30 inch diameter breast height		31+ inch diameter breast height		Total Re-plantings
	Mitigation Ratio	Re-plant	Mitigation Ratio	Re-plant	Mitigation Ratio	Re-Plant	
Alternative 1	1:1	826	2:1	390	3:1	378	1,594
Alternative 2	1:1	695	2:1	328	3:1	318	1,341
Source: Natural Environment Study, 2014							

Approximately 1,147 trees are expected to be impacted with implementation of Alternative 1 and approximately 965 trees are expected to be impacted with Alternative 2. Impact to Oak

trees would be minimized through project design by preserving habitat (through avoidance), planting oaks, or a combination of both.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance Measure BIO-1: Environmentally Sensitive Area fencing would be established at the driplines of oak trees that would be avoided within or adjacent to construction to ensure no further encroachment on the trees.

Minimization Measure BIO-2: Vegetation clearing would only occur within the delineated project boundaries in an effort to minimize the impacts. Oak trees located in areas along the edge of the construction zone would be trimmed whenever possible, and only those oak trees that lie within the active construction areas would be removed.

Mitigation Measure BIO-3: An oak woodland mitigation plan will be established with the California Department of Fish and Wildlife.

Caltrans will permanently preserve mixed oak woodland habitat at a minimum acreage ratio of 1.5:1, will plant oaks at a ratio described below, or will mitigate through a combination of both methods.

Diameter at Breast Height (in inches)	Mitigation Ratio
5-15	1:1
16-30	2:1
31+	3:1
Source: Natural Environment Study, August 2014.	

If oak planting is to occur, the following requirements will be followed:

- Native oak planting will come from local stock and can use acorns or potted plants.
- Native oak planting will begin at the onset of the rainy season.
- Browse protection from wildlife and livestock will be installed around newly planted native oaks and will remain maintained for 7 years.

Planted oak trees will be monitored and replanted (if necessary) for a minimum of three years.

2.3.2 Wetlands and Other Waters

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 (33 U.S. Code 1344), is the primary law regulating wetlands and surface waters. One purpose of the Clean Water Act 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 Clean Water Act, 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 Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the United States Environmental Protection Agency U.S. Environmental Protection Agency.

The U.S. Army Corps of Engineers 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 U.S Army Corps of Engineer's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (U.S. Environmental Protection Agency 40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, 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 that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative 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 (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration 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, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or 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 would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. California Department of Fish and Wildlife jurisdictional limits are usually 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 U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards 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 and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for additional details.

Affected Environment

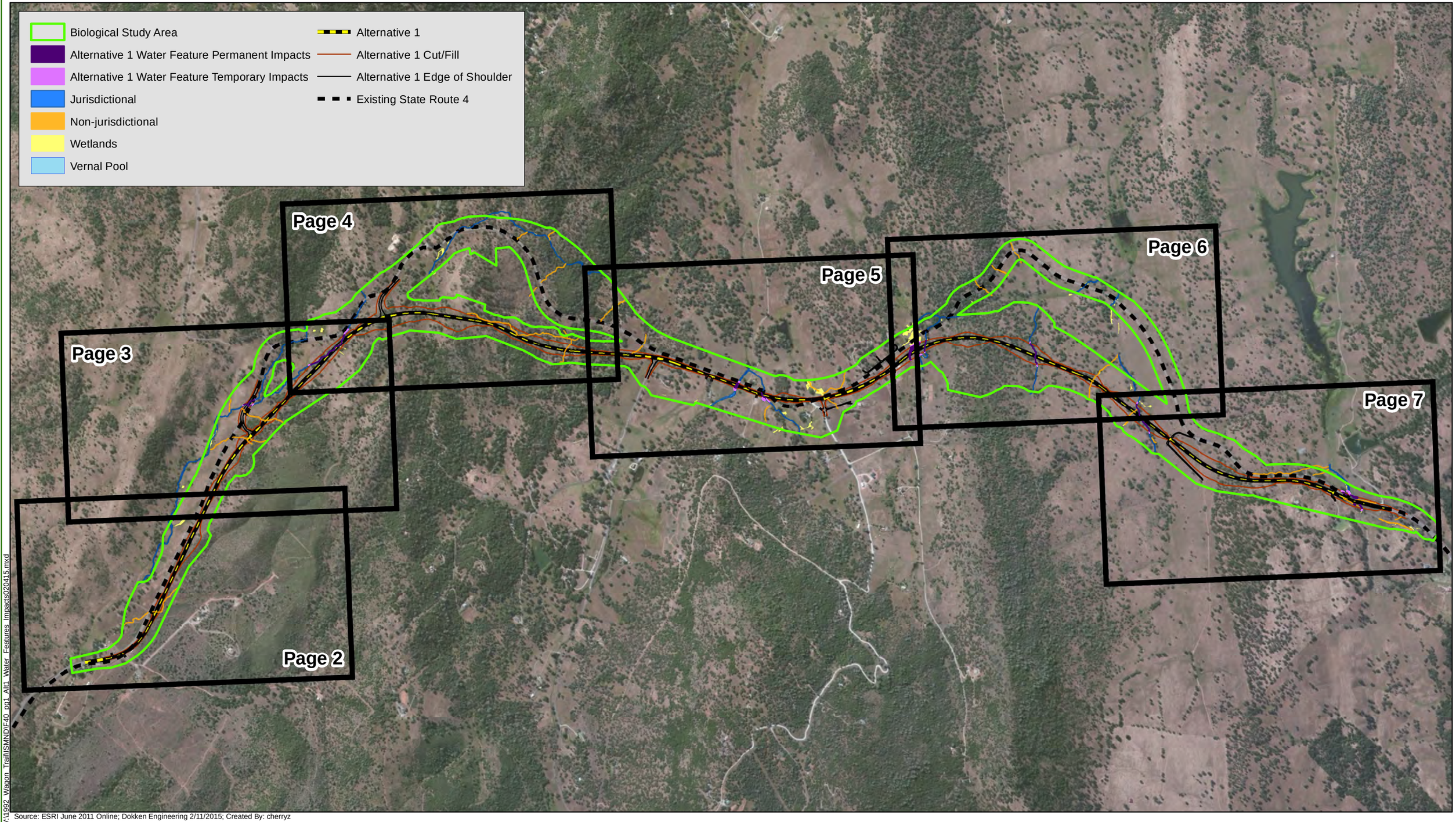
A Jurisdictional Delineation Report was prepared for the project in August 2014. A Jurisdictional Delineation was conducted to identify potential Waters of the U.S. and Waters of the State. Surveys identified Black Creek, Nassau Creek, Waterman Creek and Cherokee Creek, associated tributaries, and wetlands within the Biological Study Area. All water features were provided preliminary jurisdictional status based on aerial photographs, investigations for connectivity to known jurisdictional waters, topography of the site in relation to the feature, presence or absence of aquatic vegetation and the likely source of flow (natural depression and creek channel etc.).

During surveys conducted on March 26, April 1-2, April 10, and April 15-16 in 2013 and on April 29, 2014 within the Biological Study Area, 57 features were identified as potential Waters of the U.S. (see Figure 42 and Figure 43).

Black Creek, Nassau Creek, Waterman Creek and Cherokee Creek, along with six associated relatively permanent water tributaries, were classified as Waters of the U.S. A total of approximately 4 miles and 2.9 acres of proposed jurisdictional creeks/tributaries are within the Biological Study Area.

<u>Wetlands</u>

Wetlands were identified by wetland vegetation, inundation, and soil complex during surveys conducted on March 26, April 1-2, April 10, and April 15-16, 2013. Within the project area, a total of 68 wetlands were observed.



V:\1992 Wagon Trail\ISMND\F40 pg1 Alt1 Water Features Impacts020415.mxd

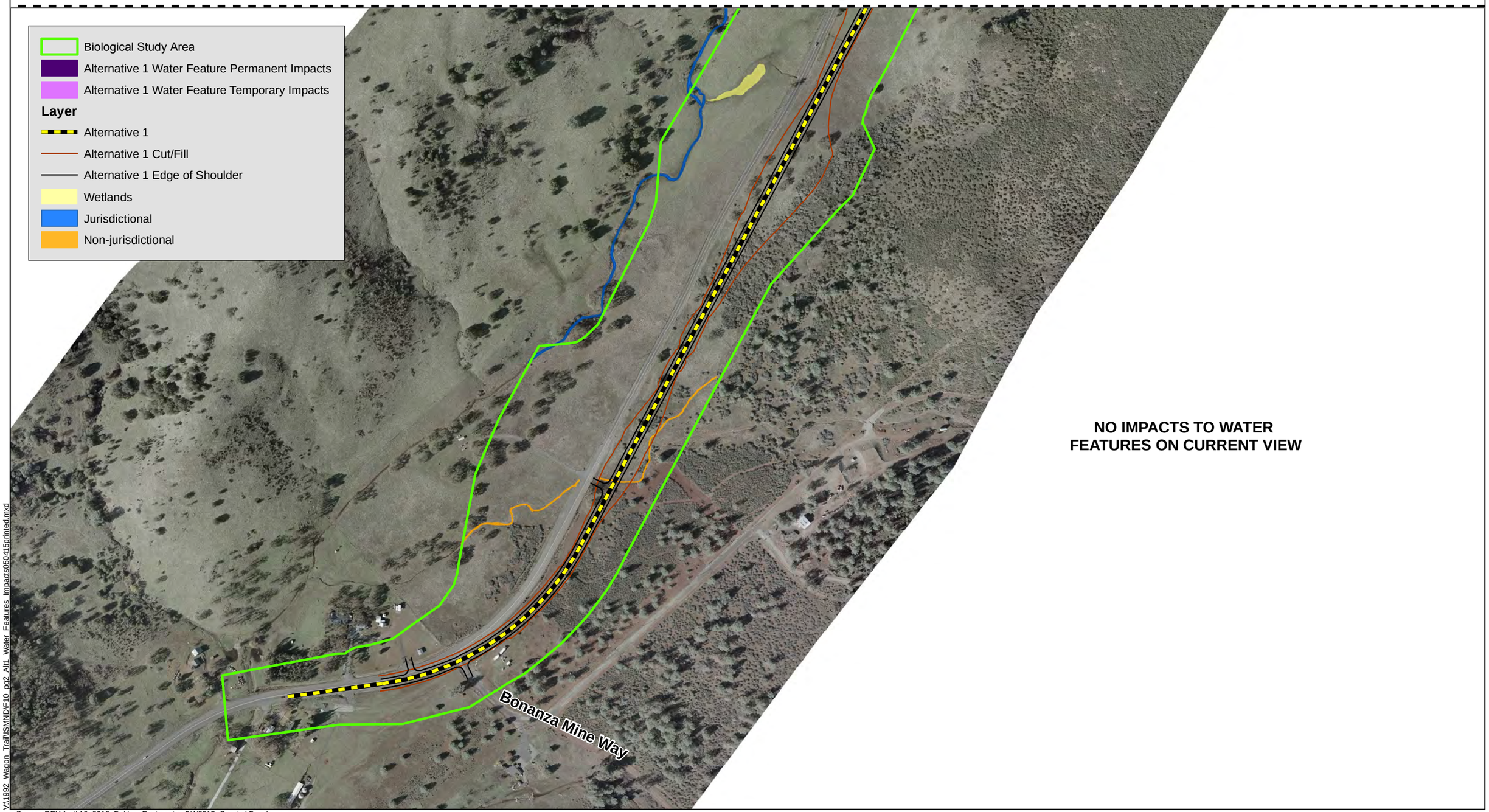
Source: ESRI June 2011 Online; Dokken Engineering 2/11/2015; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 40
Page 1 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Match Line - See Page 3



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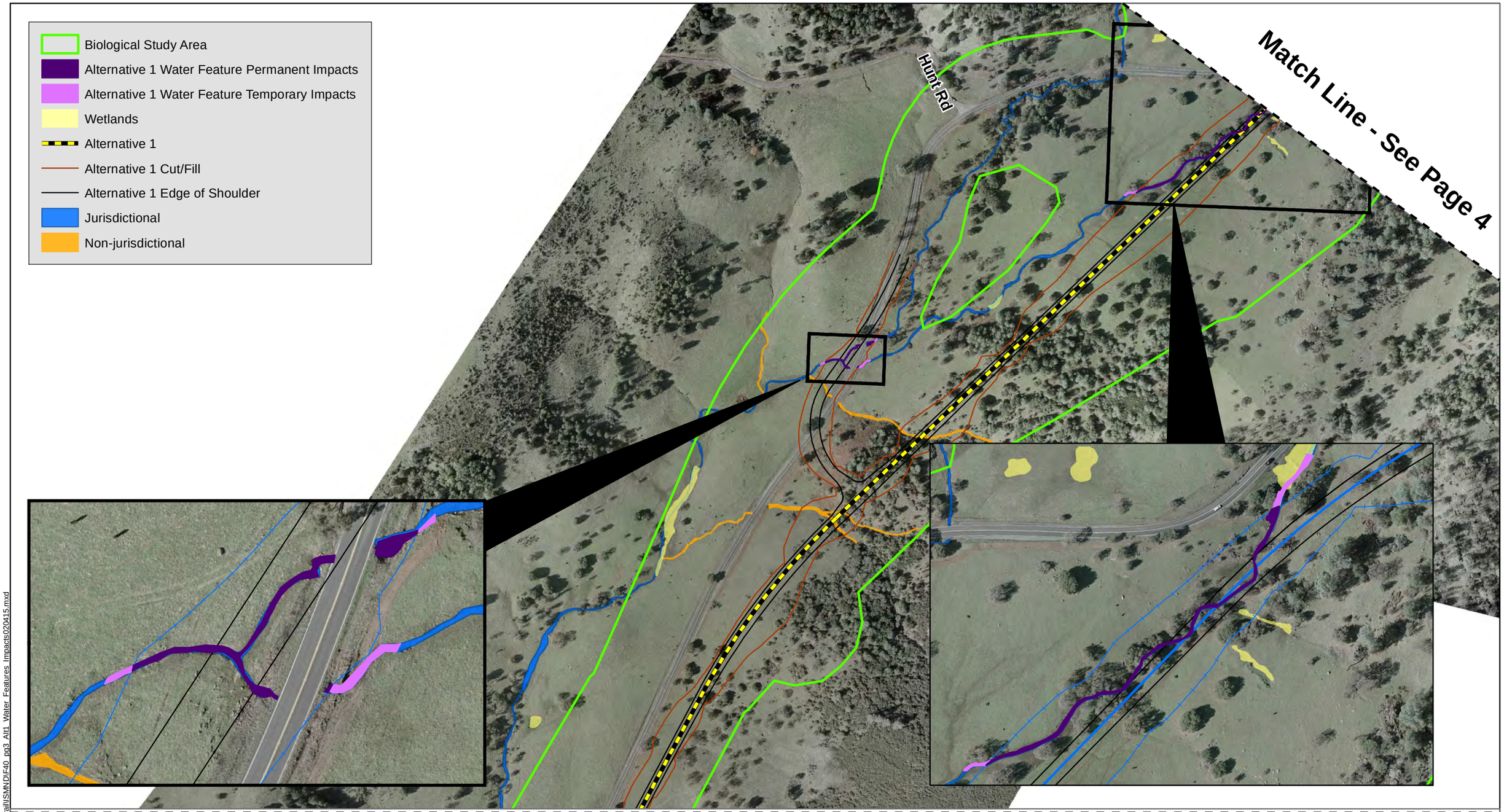
Source: REY April 19, 2012; Dokken Engineering 5/4/2015; Created By: cherryz

0 500 1,000 1,500 2,000 Feet

FIGURE 40
Page 2 of 7
Water Features Impacts Alternative 1
EA 0E530; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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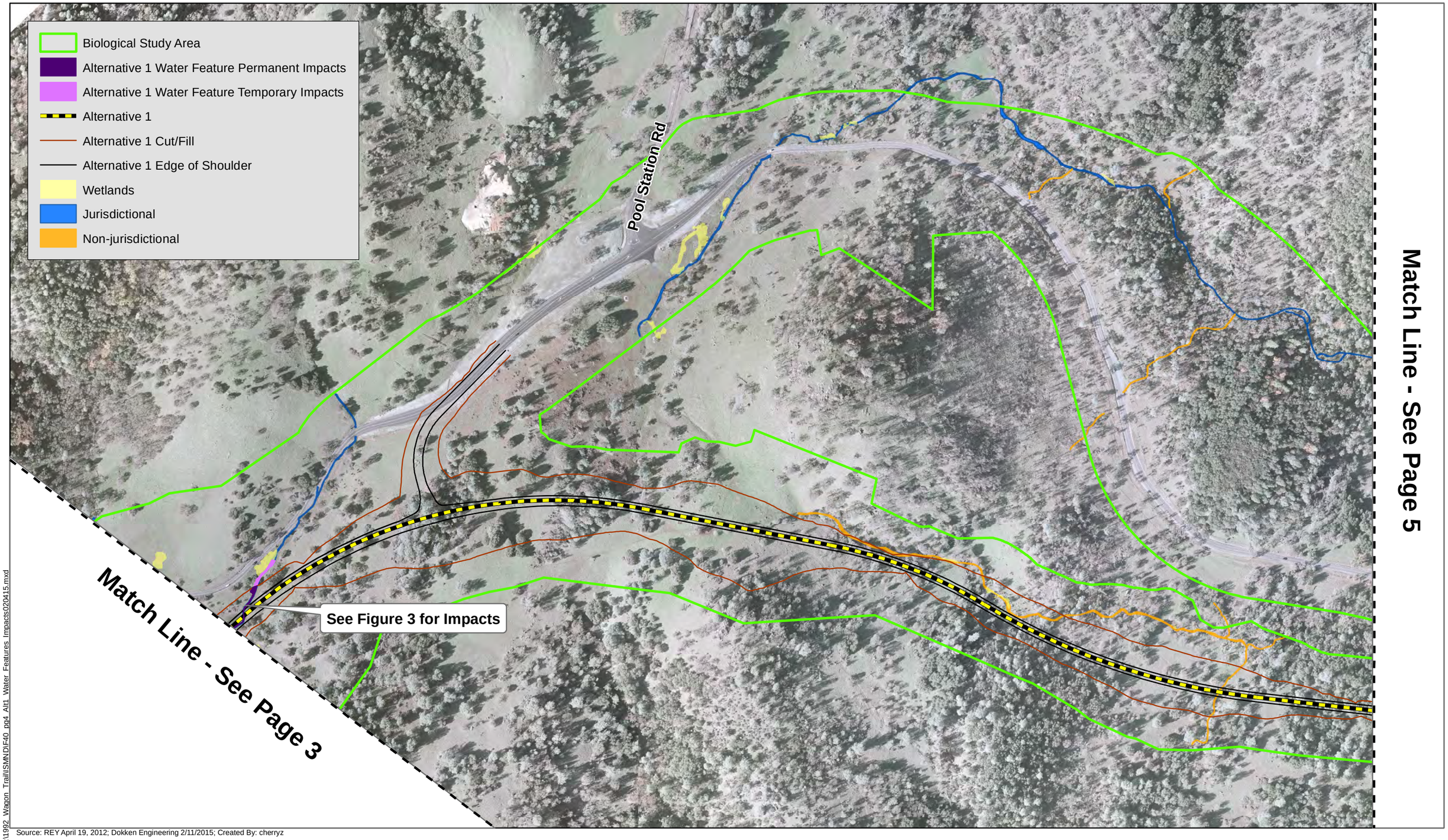
0 500 1,000 1,500 2,000 Feet

FIGURE 40
Page 3 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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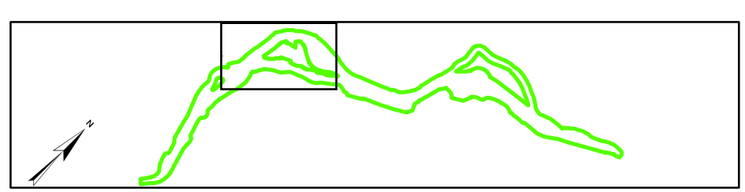
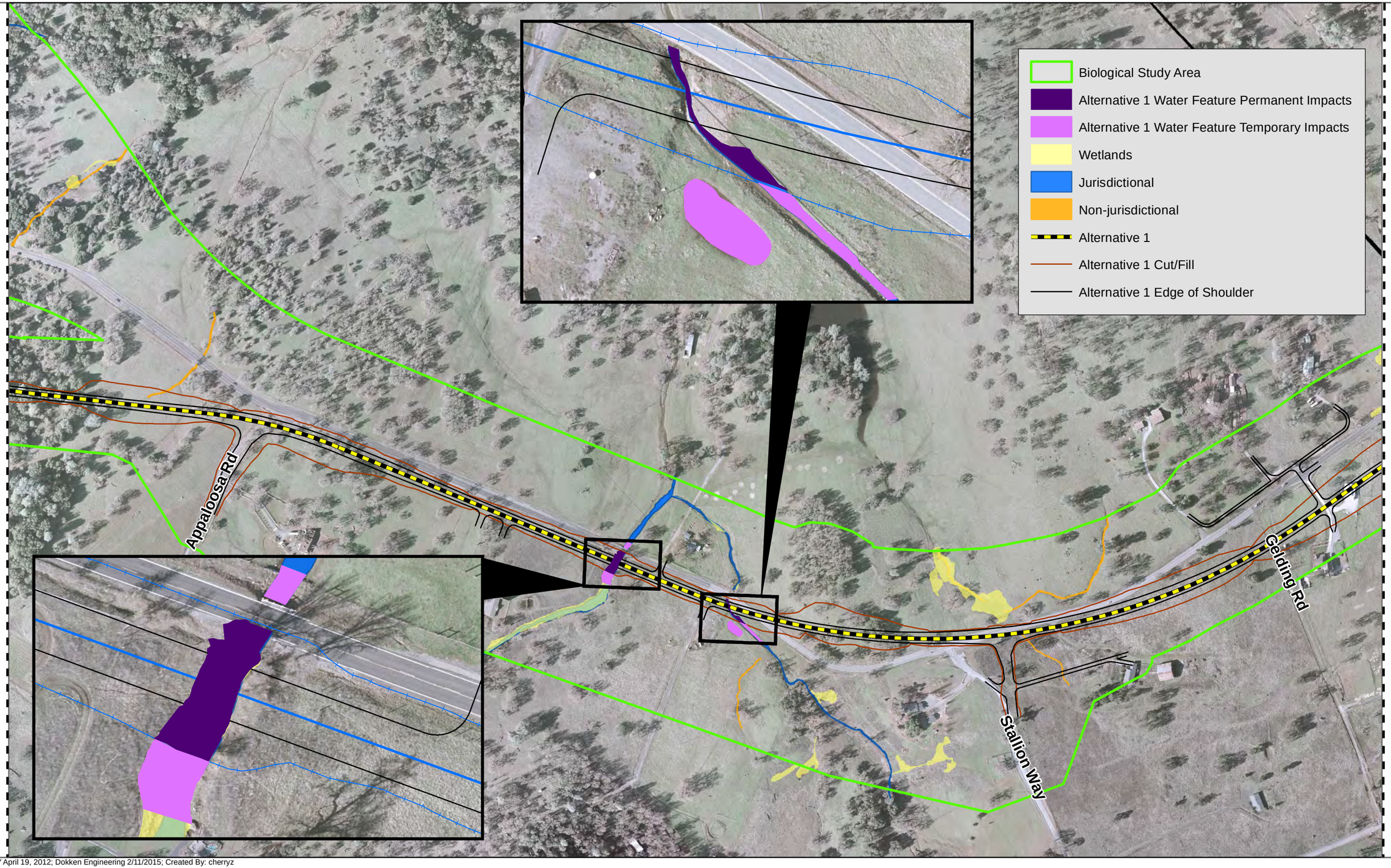


FIGURE 40
Page 4 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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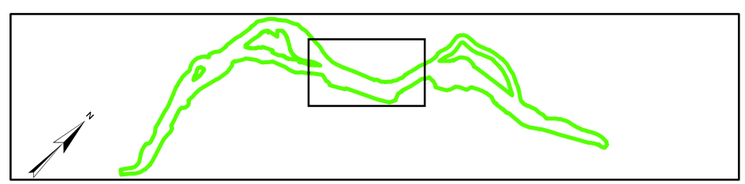
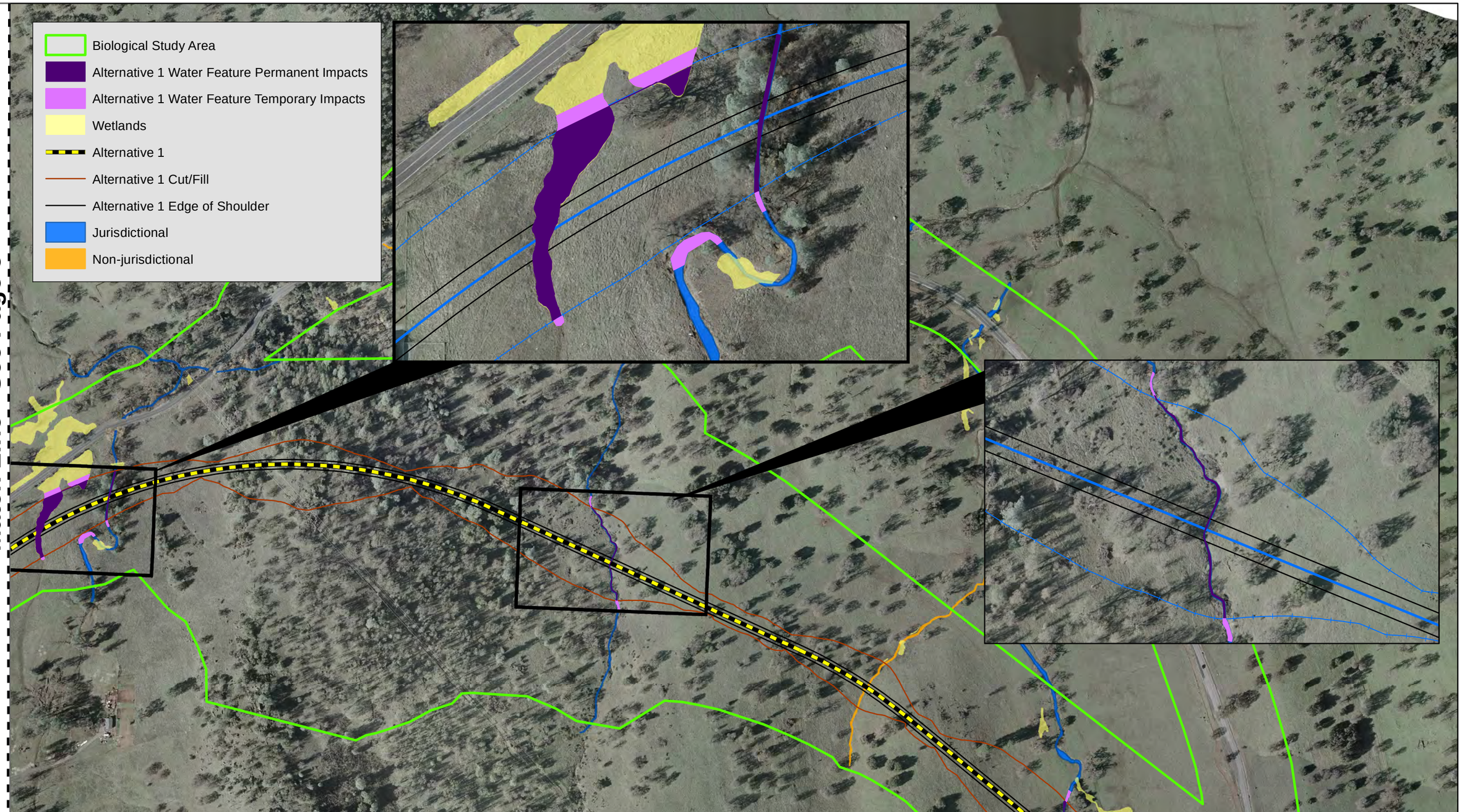


FIGURE 40
Page 5 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



Match Line - See Page 5

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V:\1992_Wagon_Trail\SMND\F40_pg6_Alt1_Water_Features_Impacts020415.mxd

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0 500 1,000 1,500 2,000 Feet

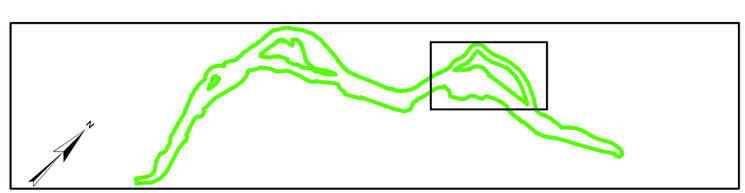

FIGURE 40
Page 6 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Match Line - See Page 6

Biological Study Area
Alternative 1 Water Feature Permanent Impacts
Alternative 1 Water Feature Temporary Impacts
Wetlands
Alternative 1
Alternative 1 Cut/Fill
Alternative 1 Edge of Shoulder
Jurisdictional
Non-jurisdictional

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Source: REY April 19, 2012; Dokken Engineering 2/11/2015; Created By: cherryz

0 500 1,000 1,500 2,000 Feet

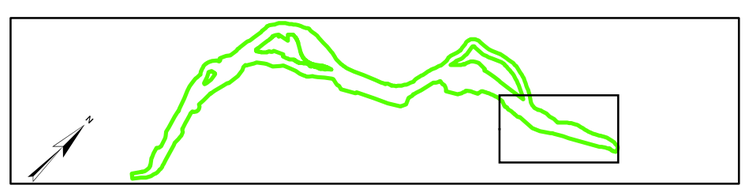
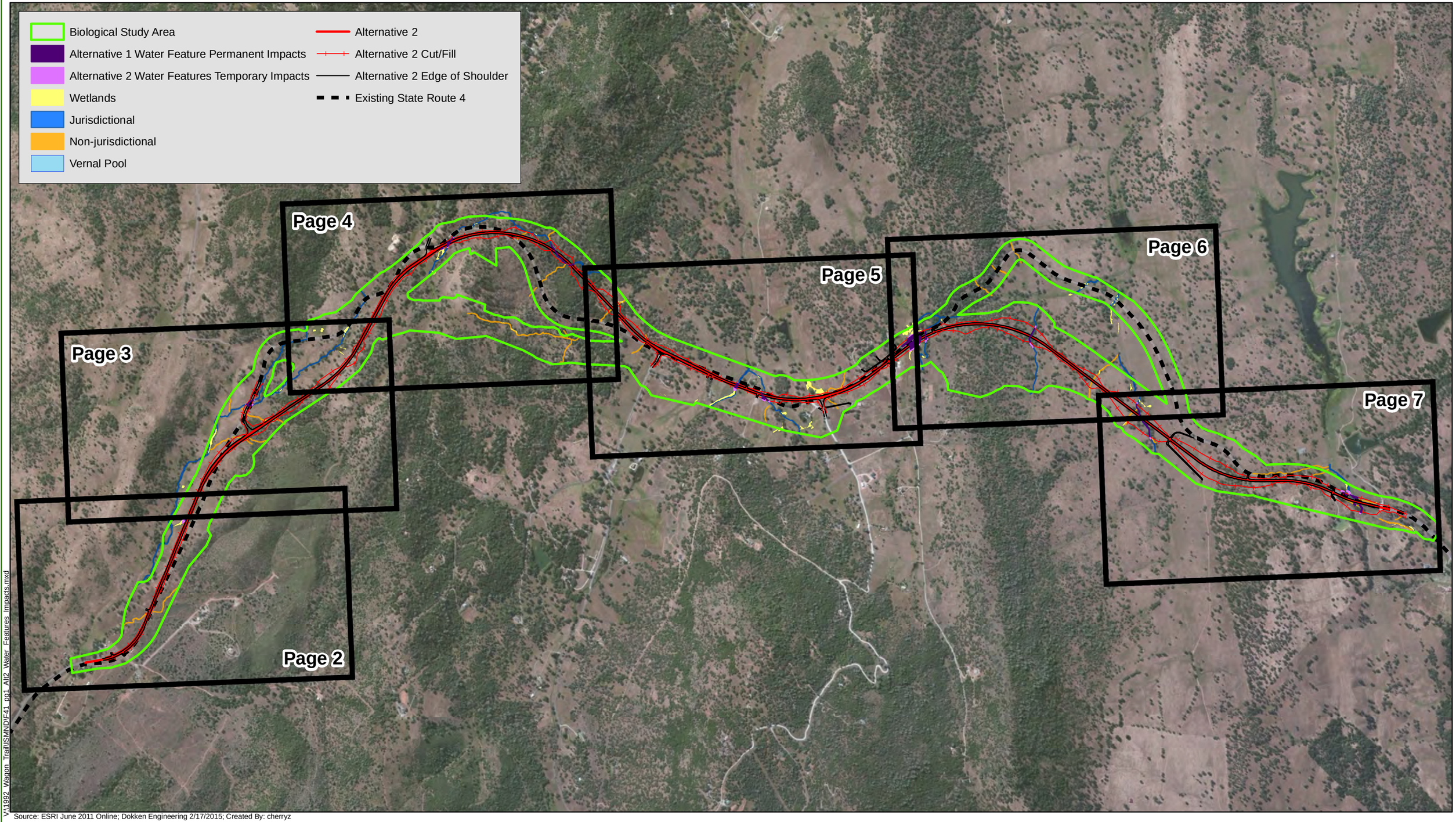


FIGURE 40
Page 7 of 7
Water Features Impacts Alternative 1

EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



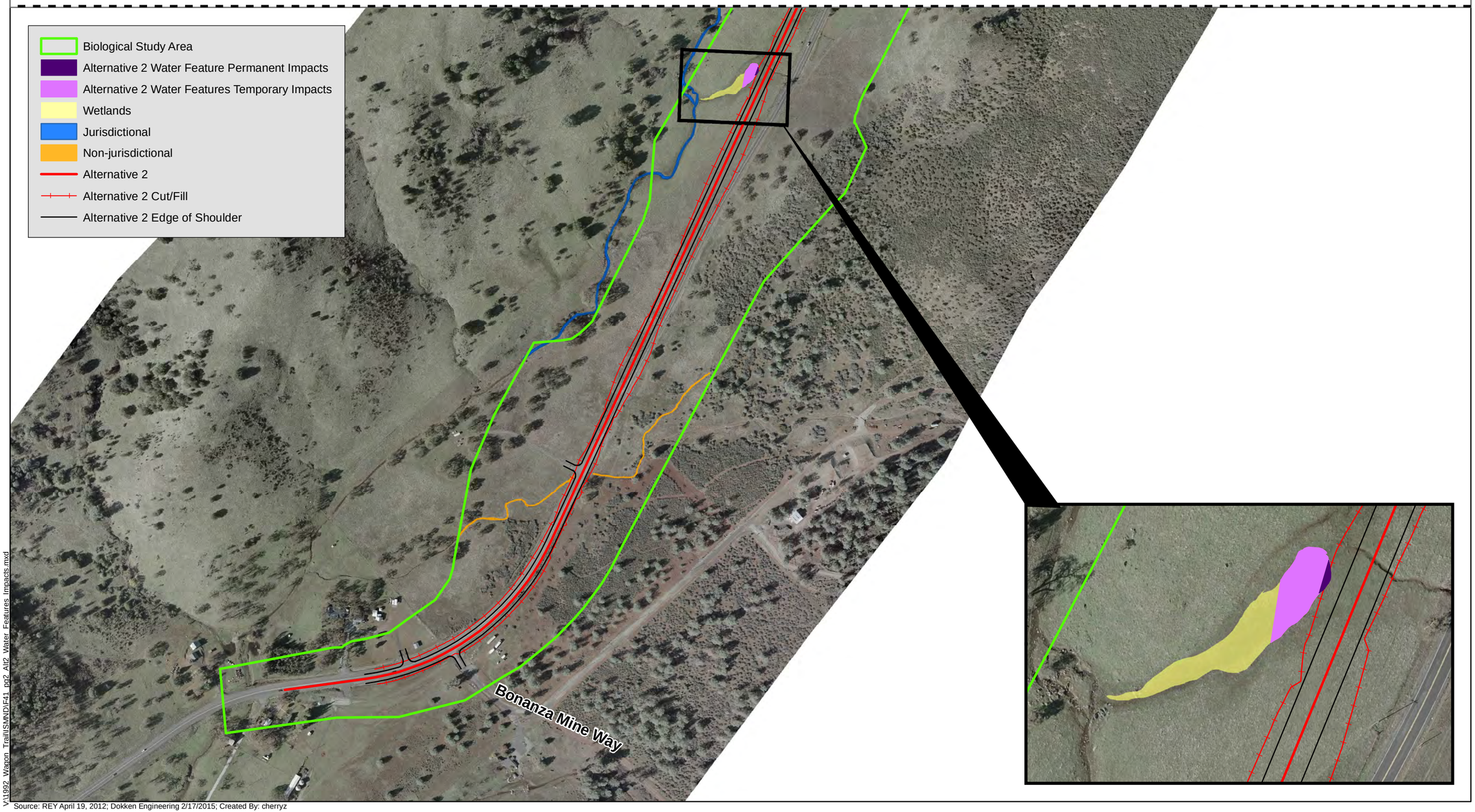
V:\1992 Wagon Trail\SMNDIF41 pg1 Alt2 Water Features Impacts.mxd

Source: ESRI June 2011 Online; Dokken Engineering 2/17/2015; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 41
Page 1 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Match Line - See Page 3



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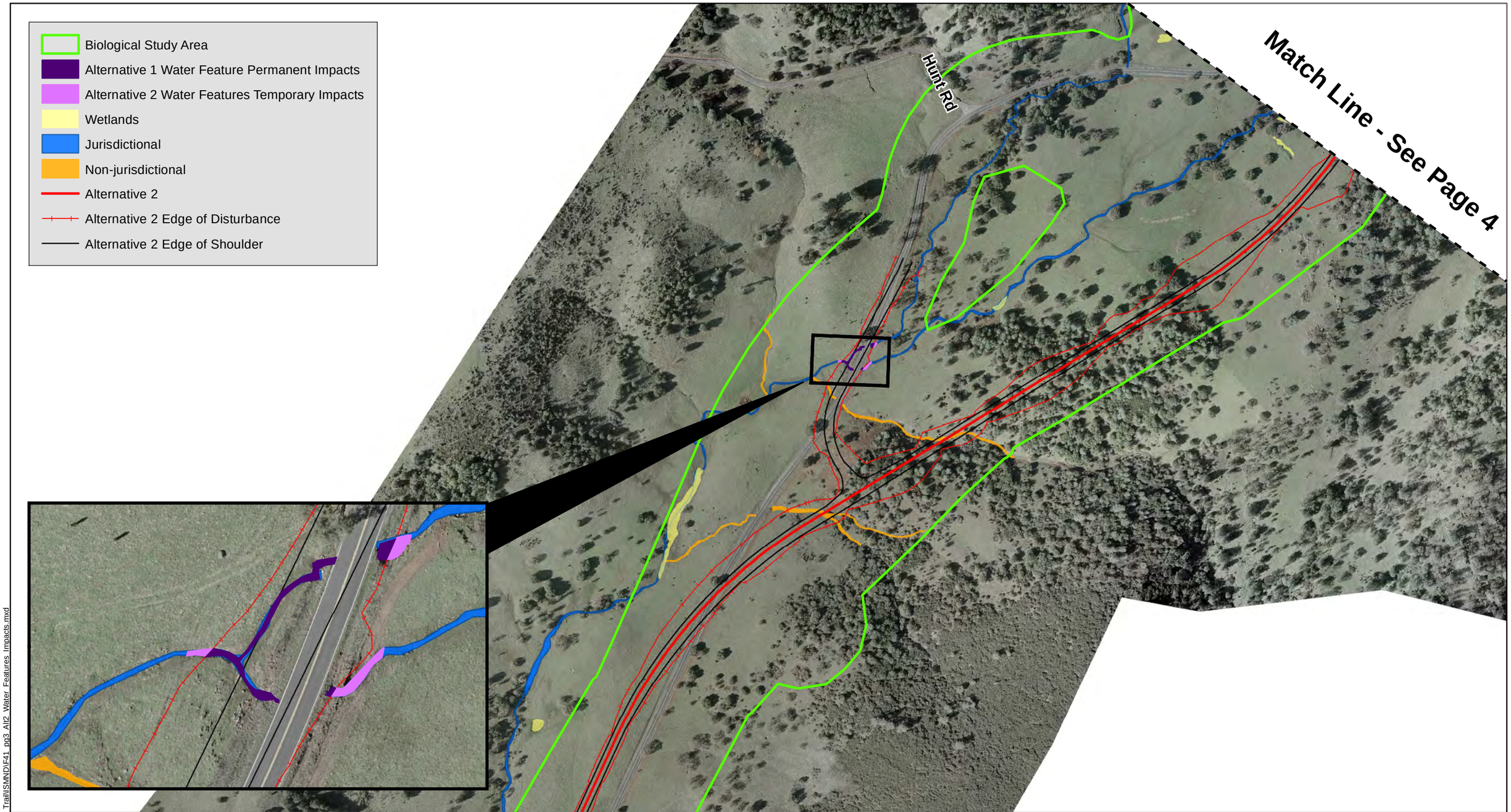
Source: REY April 19, 2012; Dokken Engineering 2/17/2015; Created By: cherryz

0 500 1,000 1,500 2,000 Feet

FIGURE 41
Page 2 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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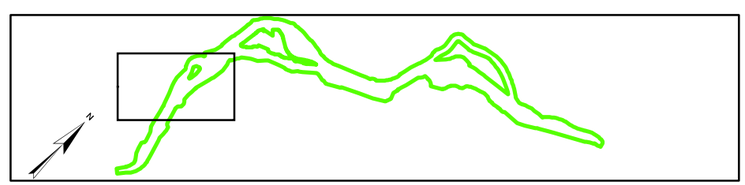
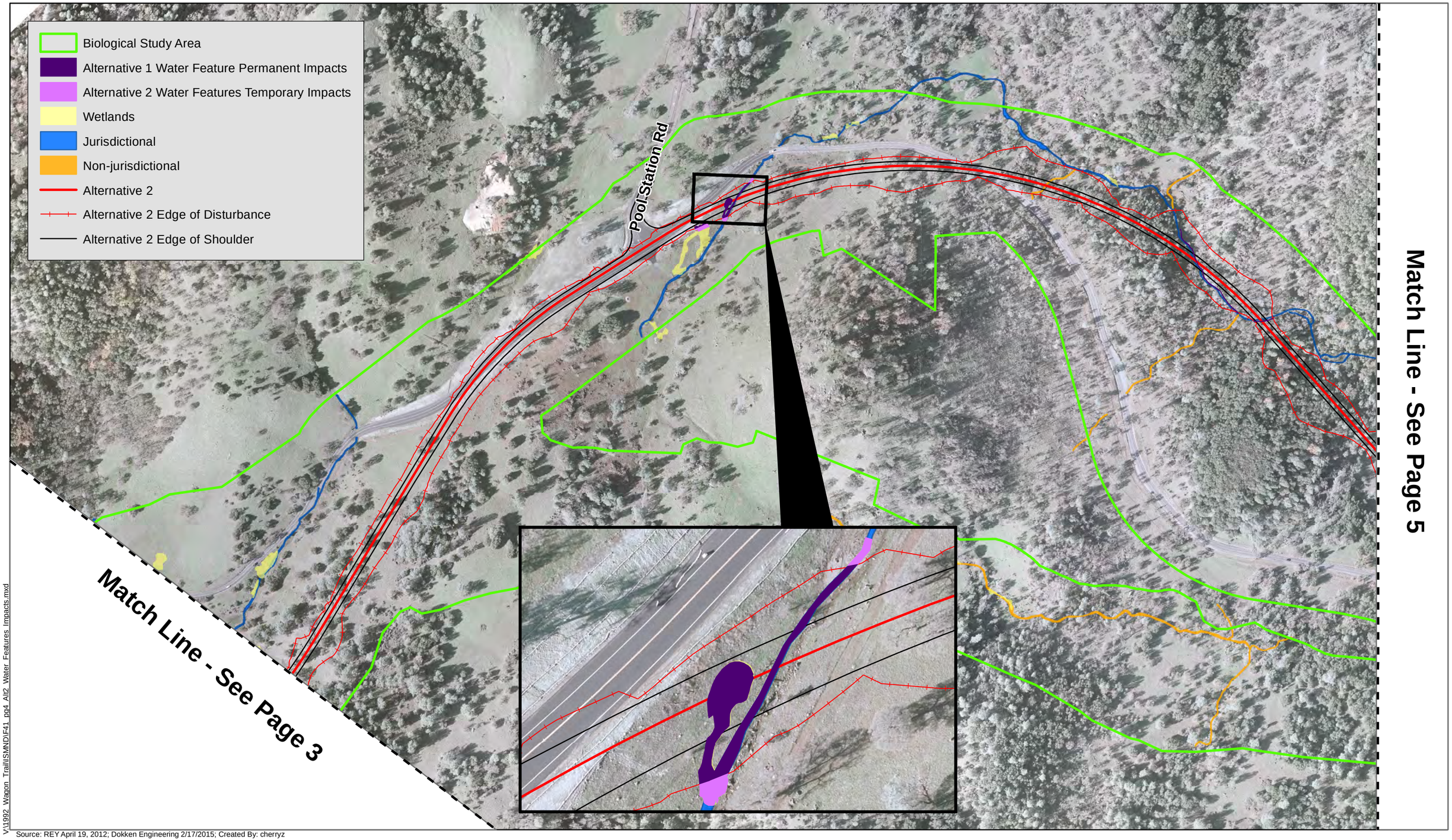


FIGURE 41
Page 3 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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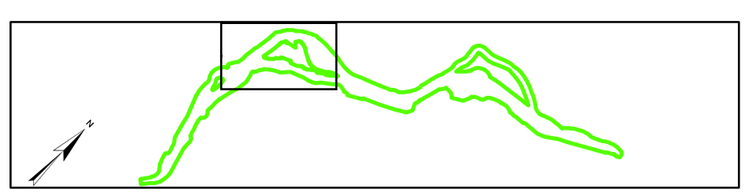
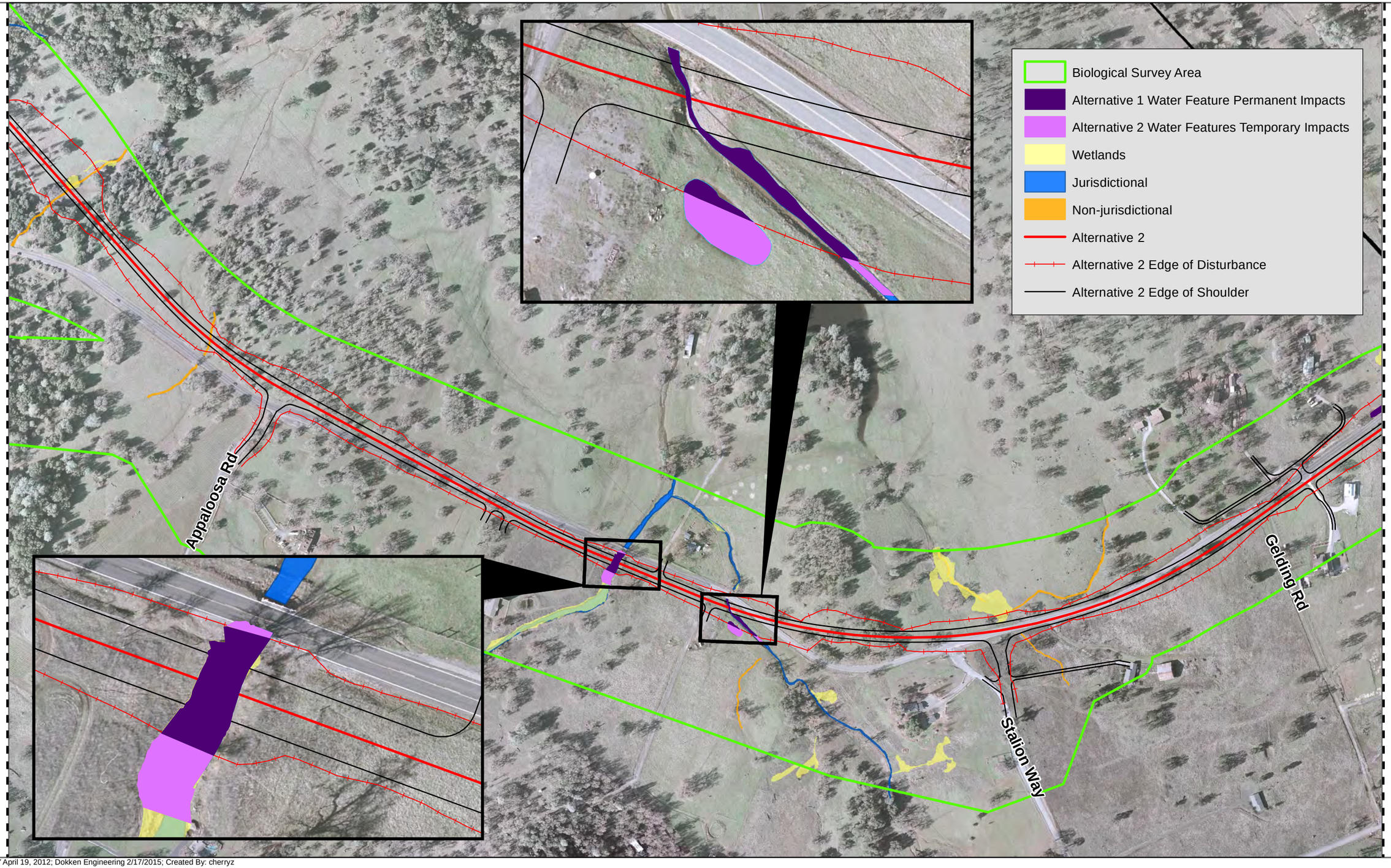


FIGURE 41
Page 4 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



Match Line - See Page 4

Match Line - See Page 6

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0 500 1,000 1,500 2,000 Feet

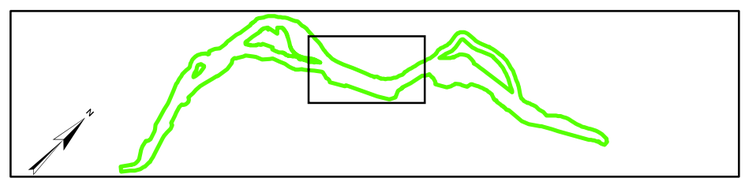
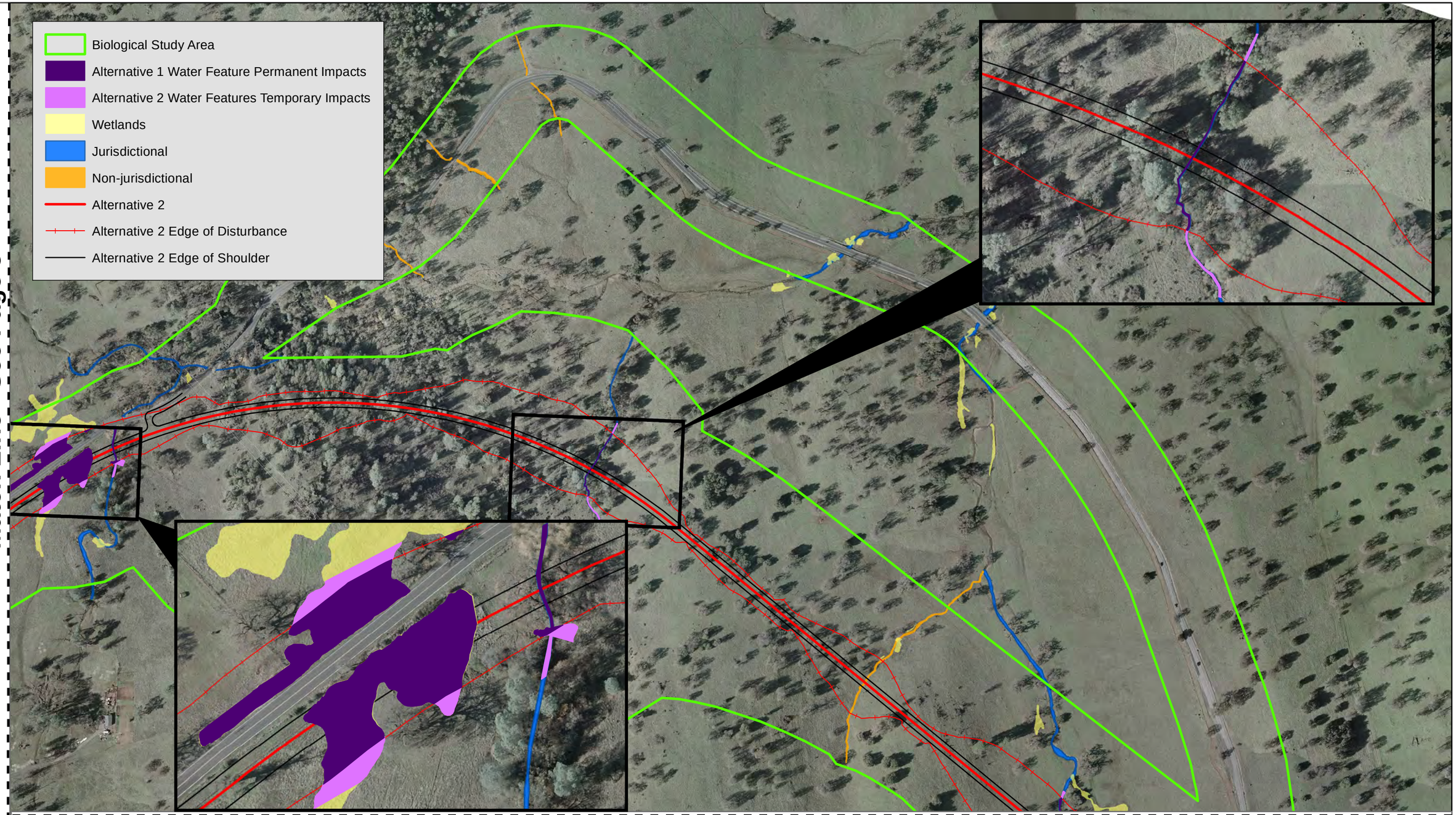


FIGURE 41
Page 5 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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V:\1992_Wagon_Trail\SMND\F41_pg6_Alt2_Water_Features_Impacts.mxd

Source: REY April 19, 2012; Dokken Engineering 2/17/2015; Created By: cherryz

0 500 1,000 1,500 2,000 Feet

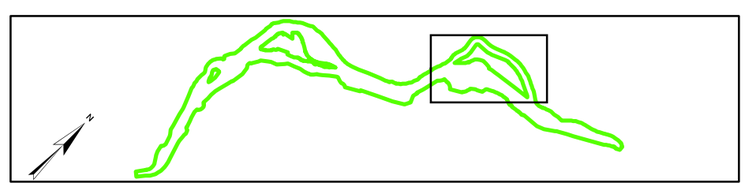
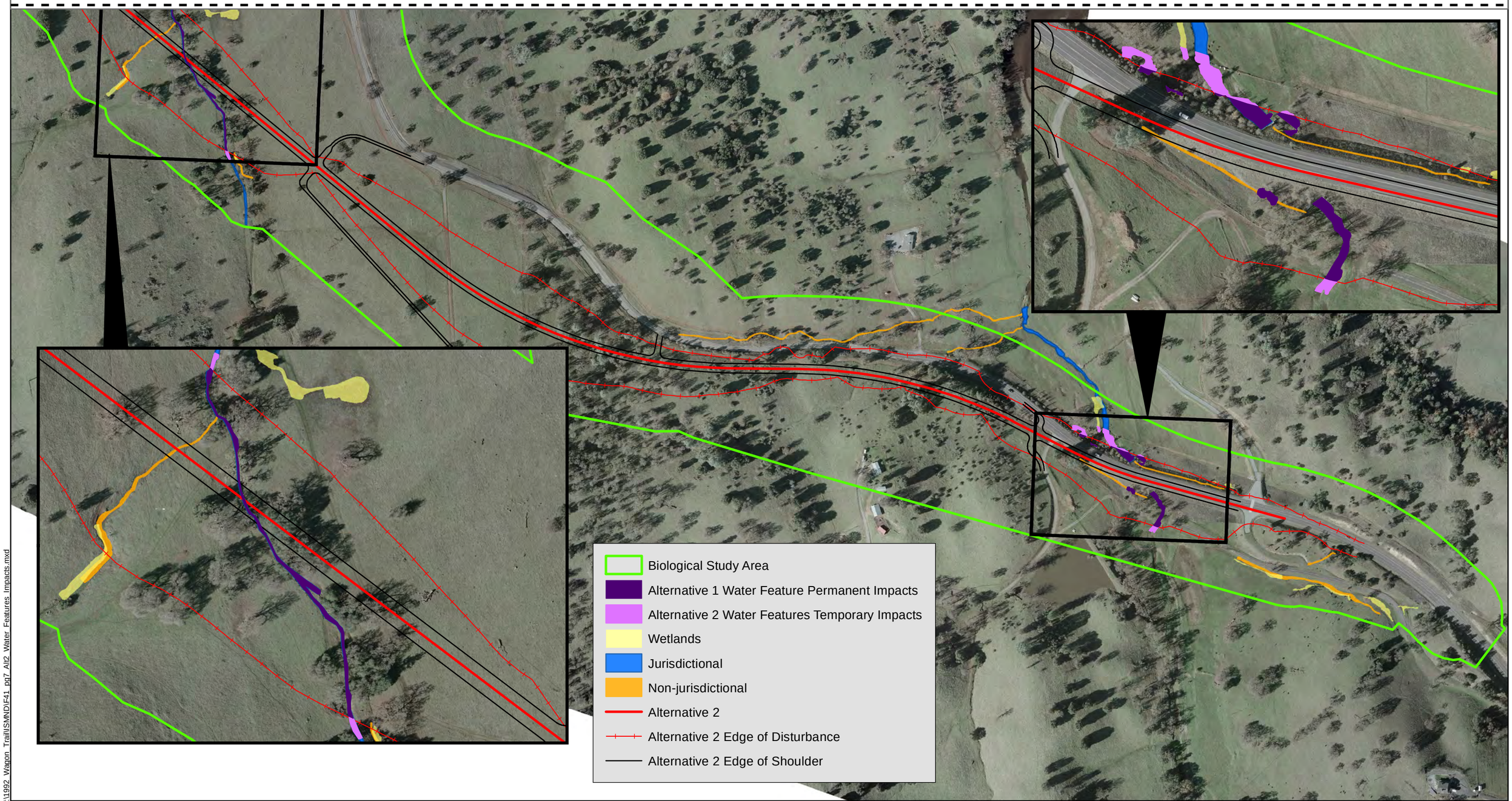


FIGURE 41
Page 6 of 7
Water Features Impacts Alternative 2
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Match Line - See Page 6



V:\1992_Wagon_Trail\SMND\F41_pg7_Alt2_Water_Features_Impacts.mxd

Source: REY April 19, 2012; Dokken Engineering 2/17/2015; Created By: cherryz

0 500 1,000 1,500 2,000 Feet

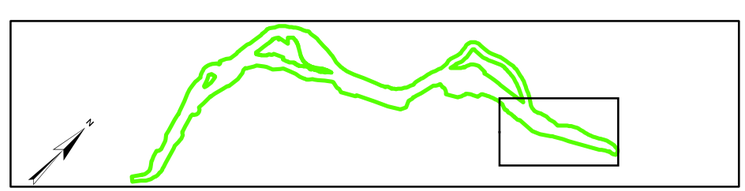


FIGURE 41
Page 7 of 7
Water Features Impacts Alternative 2
EA 0E530; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Forty-seven of these wetlands were associated with jurisdictional features and presented the required wetland vegetation, hydric soils, and inundation qualifications. Approximately 4.5 acres of jurisdictional wetlands are within the project area.

Environmental Consequences

Both Build Alternatives would result in permanent and temporary impacts to Waters of the U.S. and Waters of the State due to cut/fill limits and new pavement. Alternative 1 would temporarily impact 0.50 acre and permanently impact 1.23 acres of Waters of the U.S. Alternative 1 would temporarily impact 0.84 acre and 1.98 acres of Waters of the State. Alternative 2 would temporarily impact 0.84 acre and permanently impact 0.93 acre of Waters of the U.S. Alternative 2 would temporarily impact 1.20 acre and permanently impact 3.42 acres of Waters of the State.

Impacts to potentially jurisdictional waters that cross either alternative would include permanent culverts to allow unrestricted flow of the features. Tables 33 through 34 summarize the anticipated temporary and permanent impacts to potential Waters of the U.S.

Alternatives 1 and 2 have been designed to minimize temporary and permanent impacts to potential jurisdictional waters to the maximum extent practicable. Before any water features would be impacted, regulatory permits would be obtained from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board. Project measures and Best Management Practices (BMPs) incorporated into the design would minimize construction impacts to potentially jurisdictional water within the Biological Study Area. Measure BIO-5 would be implemented with the project.

Alternative 1 would have 0.22 acre of temporary impacts and 0.43 acre of permanent impacts on creeks that are Waters of the U.S. Alternative 1 would have 0.61 acre of temporary impacts and 1.18 acres of permanent impacts on creeks that are Waters of the State (see Table 32).

Alternative 1 would have 0.28 acre of temporary impacts and 0.80 acre of impacts on wetlands that are Waters of the U.S. Alternative 1 would have 0.28 acre of temporary impacts and 0.80 acre of impacts on Waters of the State (see Table 33).

Table 32. Anticipated Alternative 1 Impacts to Creeks

Feature	Waters of the U.S.		**Waters of the State	
	Temporary Impacts (acres)	*Permanent Impacts (acres)*	*Temporary Impacts (acres)*	*Permanent Impacts (acres)*
Black Creek and Tributaries	0.10	0.15	0.10	0.15
Nassau Creek and Tributaries	0.03	0.07	0.03	0.07
Waterman Creek and Tributaries	0.06	0.13	0.22	0.86
Cherokee Creek and Tributaries	0.03	0.08	0.26	0.10
Total	**0.22**	**0.43**	**0.61**	**1.18**
****Waters of the State include Waters of the U.S. impacts plus any additional impacts to foothill riparian features.**				
Source: Natural Environment Study, 2014				

Table 33. Anticipated Alternative 1 Impacts to Wetland Features

Water Features	Waters of the U.S.		**Waters of the State	
	Temporary Impacts (acres)	*Permanent Impacts (acres)*	*Temporary Impacts (acres)*	*Permanent Impacts (acres)*
Wetlands associated with Black Creek	0.01	0.02	0.01	0.02
Wetlands associated with Nassau Creek	0.10	0.03	0.10	0.03
Wetlands associated with Waterman Creek	0.14	0.69	0.14	0.69
Wetlands associated with Cherokee Creek	0.03	0.06	0.03	0.06
Total	**0.28**	**0.80**	**0.28**	**0.80**
****Waters of the State include Waters of the U.S. impacts plus any additional impacts to foothill riparian features.**				
Source: Natural Environment Study, 2014				

Alternative 2 would have 0.20 acre of temporary impacts and 0.33 permanent impacts on creeks that are Waters of the U.S. Alternative 2 would have 0.56 acre of temporary impacts and 2.82 acres of impacts on Waters of the State (see Table 34).

Alternative 2 would have 0.64 acre of temporary impacts and 0.60 acre of permanent impacts on wetlands that are Waters of the U.S. Alternative 2 would have 0.64 acre of temporary impacts and 0.60 acre of permanent impacts on wetlands that are Waters of the State (see Table 35).

Table 34. Anticipated Alternative 2 Impacts to Creeks

Creek Features	Waters of the U.S.		**Waters of the State	
	Temporary Impacts (acres)	*Permanent Impacts (acres)*	*Temporary Impacts (acres)*	*Permanent Impacts (acres)*
Black Creek and Tributaries	0.02	0.02	0.02	0.02
Nassau Creek and Tributaries	0.12	0.14	0.29	0.90
Waterman Creek and Tributaries	0.03	0.09	0.15	1.64
Cherokee Creek and Tributaries	0.03	0.08	0.10	0.26
Total	**0.20**	**0.33**	**0.56**	**2.82**
****Waters of the State include Waters of the U.S. impacts plus any additional impacts to foothill riparian features.**				
Natural Environment Study, 2014				

Table 35. Anticipated Alternative 2 Impacts to Wetland Features

Creek Features	Waters of the U.S.		**Waters of the State	
	Temporary Impacts (acres)	*Permanent Impacts (acres)*	*Temporary Impacts (acres)*	*Permanent Impacts (acres)*
Wetlands associated with Black Creek	0.11	0.02	0.11	0.02
Wetlands associated with Nassau Creek	0.12	0.06	0.12	0.06
Wetlands associated with Waterman Creek	0.37	0.48	0.37	0.48
Wetlands associated with Cherokee Creek	0.04	0.04	0.04	0.04
Total	**0.64**	**0.60**	**0.64**	**0.60**
****Waters of the State include Waters of the U.S. impacts plus any additional impacts to foothill riparian features.**				
Natural Environment Study, 2014				

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Avoidance, Minimization, and/or Mitigation Measures

Minimization and Avoidance Measure BIO-4: The project limits in proximity to Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek and associated tributaries and wetlands would be marked with highly visible Environmentally Sensitive Area fencing to ensure construction would not further encroach into water features.

Mitigation Measure BIO-5: Impacts to jurisdictional waters will be mitigated at a 1:1 ratio for temporary impacts and a 2:1 ratio for permanent impacts or as determined appropriate by permitting agencies. Exact mitigation ratios and locations will be consistent with permit

requirements. Impacts will be mitigated at an on- or off-site agency-approved location or a combination of both.

As part of the SWPPP, the following measures would be included for waters and wetlands.

Mitigation Measure BIO-6: Erosion Control Measures must be implemented during construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion-control and sediment-control measures will be included in the Storm Water Pollution Prevention Plan (SWPPP) based on standard Caltrans measures and standard dust-reduction measures:

- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

Mitigation Measure BIO-7: To minimize the mobilization of sediment to adjacent water features, the following erosion-control and sediment-control measures will be included in the SWPPP. To conform to water quality requirements, the SWPPP will include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from riparian or aquatic habitats. Any necessary equipment washing shall occur where the water cannot flow into Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries or wetlands. The project proponent will prepare a spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries and wetlands;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries and wetlands; Equipment used in and around Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries or wetlands must be in good working order and free of dripping or leaking engine fluids; and,
- Any surplus concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

2.3.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have 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 and/or the California Endangered Species Act. Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The regulatory requirements for the Federal Endangered Species Act can be found at U. S. Code 16, Section 1531, et seq. See also 50 Code of Federal Regulations (Code of Federal Regulations) Part 402. The regulatory requirements for California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and CEQA, CA Public Resources Code, Sections 2100-21177.

Affected Environment

The Natural Environment Study for this project, approved in August 2014, provides the basis for the following discussion. Prior to field surveys, research was compiled from the U.S. Fish and Wildlife Service, California Natural Diversity Database, Jepson Herbarium manual, California Native Plant Society, Calflora, and other references for a comprehensive floral inventory of the Biological Study Area (see Appendix C). The following five sensitive plant species were found to have the potential to occur, and/or were found to occur, within the project area: Tuolumne button-celery (*Eryngium pinnatisectum*), Red Hills soaproot (*Chlorogalum grandiflorum*), Mariposa cryptantha (*Cryptantha mariposae*), forked hare-leaf (*Lagophylla dichotoma*), and Congdon's lomatium (*Lomatium congdonii*).

A rare plant focused survey was conducted during blooming season from May 9to 14, 2013 by walking transects throughout all areas of the Biological Study Area where access was granted. Plant surveys were consistent with the California Department of Fish and Wildlife's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Additional focused botanical surveys would be conducted prior to construction during the blooming season for the areas that were not previously surveyed. Further details on the sensitive plants species found, or that have the potential to occur in the project area, include the following:

Tuolumne button-celery

The Tuolumne button-celery is listed under the California Native Plant Society Inventory of Rare and Endangered Plants as a 1B.2 species of concern. A 1B.2 species of concern is a plant that is fairly endangered in California, and between 20-80% of occurrences are threatened. This annual/perennial herb prefers vernal pools, swales, intermittent streams, cismontane woodlands and lower montane coniferous forests. It is typically found between 230 and 3,002 feet above mean sea level and blooms June to August. Two healthy populations of Tuolumne button-celery were observed within the Biological Study Area near Waterman Creek and its tributaries, and are estimated to consist of a total of approximately 748 individuals (see Figures 44 and 45). The first population (approximately 682 individuals) within 1.4 acres was observed within and adjacent to a wetland feature and a Waterman Creek tributary, approximately 140 feet east of the existing State Route 4. The second population (approximately 66 individuals) within 0.08 acres was observed adjacent to and within Waterman Creek, approximately 55 feet south of the existing State Route 4.

Red Hills soaproot

The Red Hills soaproot is listed under the California Native Plant Society Inventory of Rare and Endangered Plants as a 1B.2 species of concern. This perennial bulbiferous herb prefers serpentinite, gabbroic soils within chaparral, cismontane woodlands, and lower montane coniferous forest. It is typically found between elevations of 800and 4,067 feet above mean sea level and blooms May to June.

While focused plant surveys did not observe the Red Hills soaproot, the project site does contain chaparral and mixed oak woodland. The closest recorded occurrences have been located approximately 0.3 mile east of the project. Due to right-of-entry restrictions, a pre-construction Red Hills soaproot survey would be conducted on un-surveyed parcels before construction.

Mariposa cryptantha

The Mariposa cryptantha is listed under the California Native Plant Society Inventory of Rare and Endangered Plants as a 1B.3 species of concern. This annual herb prefers serpentinite ridges, slopes and rocky soils within chaparral communities. It is typically found between elevations of 656 and 2,132 feet above mean sea level and blooms from April until June.

While focused plant surveys did not result in observations of Mariposa cryptantha, the project site contains a small acreage of mixed chaparral habitat that could not be surveyed. The closest occurrences have been found about 0.30 mile east of the project area. While impacts to Mariposa cryptantha are not expected, due to right- of- entry restrictions a pre-construction Mariposa cryptantha survey would be conducted on un-surveyed parcels with potential chaparral habitat.

Forked hare-leaf

The forked hare-leaf is listed under the California Native Plant Society Inventory of Rare and Endangered Plants as a 1B.2 species of concern. This annual herb is occasionally found on clay soils within cismontane woodlands and valley foothill grassland communities. It is typically found between elevations of 164 and 2,493 feet above mean sea level of the Sierra Nevada foothills, eastern San Joaquin Valley, and inner south Coast Ranges. The blooming season typically extends from April to September.

While focused plant surveys did not result in observations of forked hare-leaf, the project site contains large acreages of valley foothill grassland habitat and mixed oak woodlands. The closest recorded occurrences have been found along the Black Creek approximately 6 miles south of the project area. While impacts to forked hare-leaf are not expected, due to right-of-entry restrictions a pre-construction forked hare-leaf survey would be conducted on un-surveyed parcels.

Congdon's lomatium

Congdon's lomatium is listed under the California Native Plant Society as a 1B.2 species of concern. This perennial herb strictly favors serpentine soils within chaparral and cismontane woodland communities. It is confined to two Sierra Nevada foothill counties-- Tuolumne and Mariposa-- at elevations ranging from 983to 3,937 feet above mean sea level. The typical blooming period is from March to June.

While focused plant surveys did not result in observations of Congdon's lomatium, the project site contains cismontane woodlands and small acreages of chaparral habitat. The closest recorded occurrences are found about 0.1 mile east of the project area within mixed chaparral habitat at the western end of the project. While no impacts to Congdon's lomatium are expected, due to right-of-entry restrictions a pre-construction Congdon's lomatium survey would be conducted on un-surveyed parcels.

Environmental Consequences

Tuolumne button-celery

Alternative 1 would impact the Tuolumne button-celery Population 1. One specimen would be directly affected and about 0.74 acre of potential habitat would be permanently impacted by Alternative 1, as shown on Figure 44. Alternative 2 would permanently impact about 0.23 acre of population 1 potential habitat, but no specimens would be impacted.

Both alternatives would avoid Tuolumne button-celery Population 2 because the realignment moves the roadway away from the population.

Although the project has the potential to impact Tuolumne button-celery habitat, the project effects to Tuolumne button-celery specimen would be avoided to the greatest extent

practicable with the implementation of minimization and avoidance measures BIO-8 through BIO-12. Compensatory mitigation for impacts to Tuolumne button-celery is not required or proposed for this project.

The proposed project has been designed to minimize all direct and indirect impacts to the maximum extent practicable through the use of Best Management Practices, implementation of minimization and avoidance measures BIO-8 through BIO-12, and the installation of Environmentally Sensitive Area fencing; therefore, no cumulative impacts are anticipated.

Red Hills soaproot

Although no sign of Red Hills soaproot was observed, the species could occur in the project area. Potential Red Hills soaproot habitat, consisting of approximately 1.47 acres of mixed chaparral and approximately 66.99 acres of mixed oak woodland, would be permanently impacted with Alternative 1. With Alternative 2, approximately 43.99 acres of potential habitat, consisting of mixed oak woodland would be permanently impacted. With the implementation of minimization and avoidance measures BIO-13 and BIO-14, and the use of Caltrans Standard Best Management Practices, the project would not impact the viability of the overall population of or have cumulative effects to Red Hills soaproot.

Mariposa cryptantha

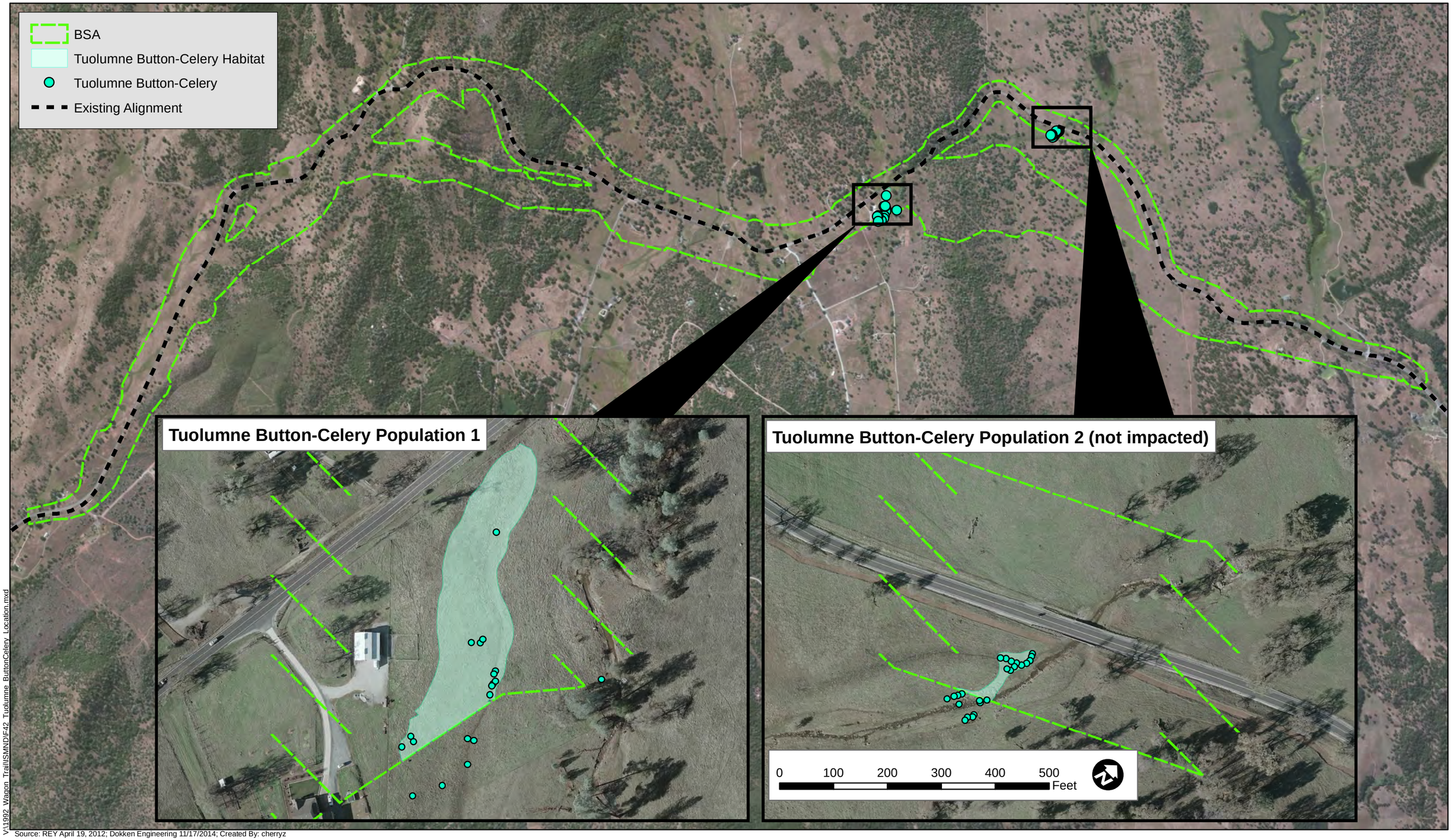
While no sign of Mariposa cryptantha was observed, Alternative 1 would permanently impact approximately 1.47 acres of potential habitat consisting of mixed chaparral. Alternative 2 is not expected to have permanent impacts to mixed chaparral. Considering the implementation of minimization and avoidance measures BIO-13 and BIO-14, and the use of Caltrans Standard Best Management Practices, the project would not impact the viability of the overall population of or have cumulative effects to Mariposa cryptantha.

Forked hare-leaf

While no sign of forked hare-leaf was observed, the species could occur in the project area. Potential fork hare-leaf habitat, consisting of 56.74 acres of grassland, would be permanently impacted with Alternative 1, and approximately 49.50 acres would be permanently impacted with Alternative 2. With the implementation of minimization and avoidance measures BIO-13 and BIO-14, and the use of Caltrans Standard Best Management Practices, the project would not impact the viability of the overall population of or have cumulative effects on forked hare-leaf.

Congdon's lomatium

While no sign of Congdon's lomatium was observed, Alternative 1 would permanently impact approximately 1.47 acres of mixed chaparral and 66.99 acres of mixed oak woodlands, both of which are potential Congdon's lomatium habitat.

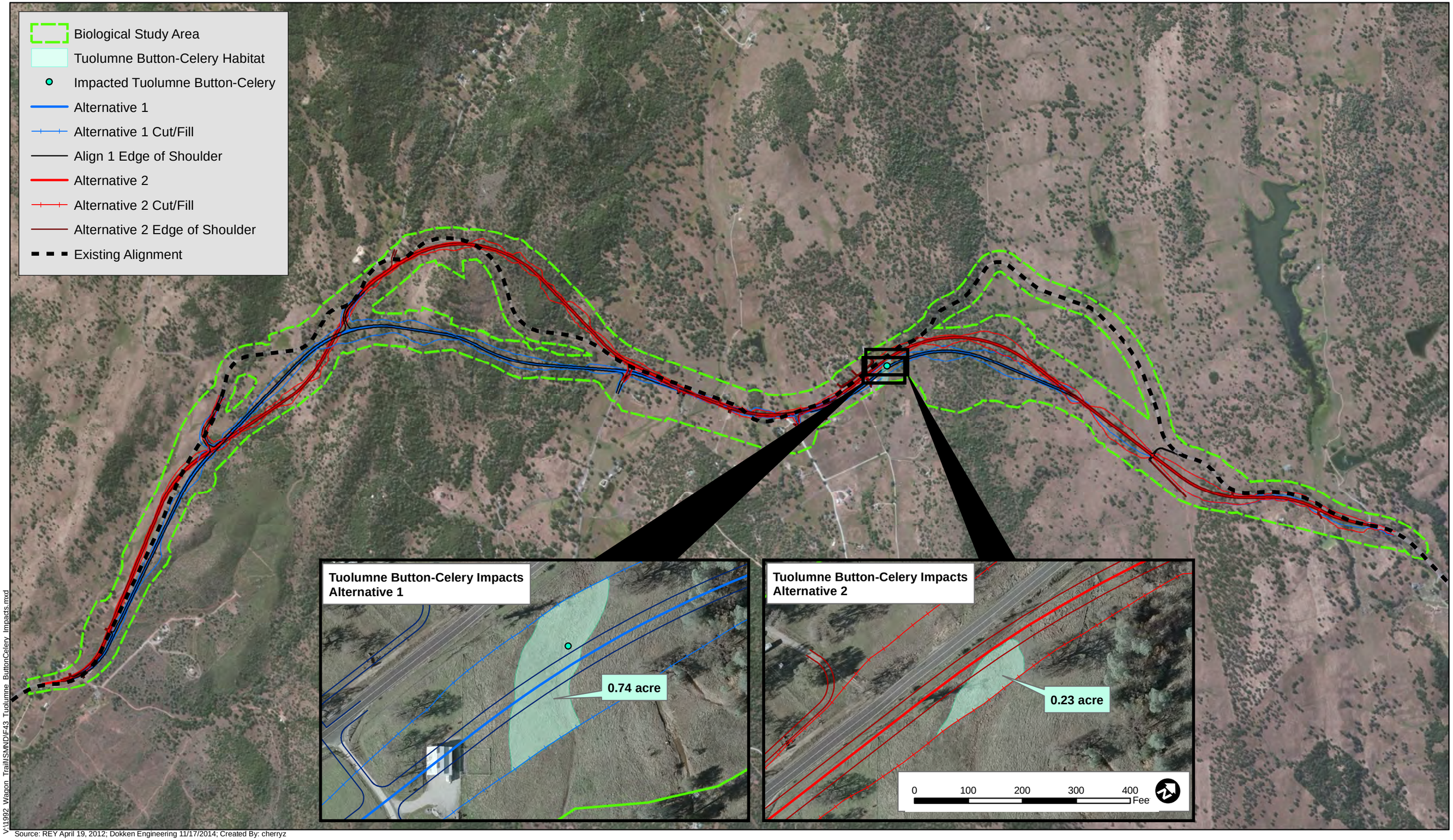


V:\1992 Wagon Trail\SMN\DF42 Tuolumne ButtonCelery Location.mxd

Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5
Miles

FIGURE 42
Tuolumne Button-Celery Locations
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



V:\1992 Wagon Trail\SM\DF43 Tuolumne ButtonCelery Impacts.mxd

Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 43
Tuolumne Button-Celery Impacts
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

Alternative 2 would permanently impact 43.99 acres of mixed oak woodlands With the implementation of minimization and avoidance measures BIO-13 and BIO-14, and the use of Caltrans Standard Best Management Practices, the project would not impact the viability of the overall population of or have cumulative effects to Congdon's lomatium.

Avoidance, Minimization, and/or Mitigation Measures

Tuolumne button-celery

Minimization and Avoidance Measure BIO-8: Prior to initiating construction where feasible, Environmentally Sensitive Area fence shall be installed at the edge of the project limits where Tuolumne button-celery populations exist. The project biologist shall be present during the installation of the Tuolumne button-celery Environmentally Sensitive Area fencing (see Figure 44).

Minimization and Avoidance Measure BIO-9: Prior to construction in areas within 100-feet of existing Tuolumne button-celery populations, a focused survey shall be done to calculate the project's impacts on the existing population. The survey shall be done during the blooming season (May 1- August 31) in the season immediately preceding construction. Surveys would be completed by a qualified biologist. Results of this pre-construction survey shall be submitted to the California Department of Fish and Wildlife.

Minimization and Avoidance Measure BIO-10: All construction personnel shall attend an environmental awareness training. During the environmental awareness training, construction personnel would be briefed on the project's sensitive status plant and animal species including the Tuolumne button-celery, valley elderberry longhorn beetle, foothill yellow-legged frog, and western pond turtle.

Minimization and Avoidance Measure BIO-11: Those Tuolumne button-celery individuals that are impacted would be relocated to suitable habitats including swales, vernal pools, or wetlands within the project area or off-site. Relocation sites shall be approved by the California Department of Fish and Wildlife.

Minimization and Avoidance Measure BIO-12: Should relocation of Tuolumne button-celery plants be necessary, the relocation would be done by a licensed landscape contractor, under the supervision of a qualified biologist, during the winter dormant season.

Red Hills soaproot, Mariposa cryptantha, Forked hare-leaf, and Congdon's lomatium

Avoidance Measure BIO-13: Prior to initial ground-disturbance activities, pre-construction blooming surveys for Red Hills soaproot (May 1-June 30), Mariposa cryptantha (April 1-June 30), Forked hare-leaf (April 1 through May 31), and Congdon's lomatium (April 1-May 31) (in designated areas in Figure 39) would be conducted on un-surveyed parcels by a qualified biologist.

Avoidance Measure BIO-14: Should a Red Hills soaproot, Mariposa cryptantha, Forked hare-leaf, or Congdon's lomatium be found during pre-construction surveys, Environmentally Sensitive Area fencing would be erected to avoid the sensitive plant or the specimens would be relocated to appropriate environments. Relocation strategies and locations shall be approved by the California Department of Fish and Wildlife.

2.3.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration's National Marine Fisheries Service and California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals 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 2.3.5. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

The *Natural Environment Study* for this project, approved in August 2014, provides the basis for the following discussion. Biological surveys of the Biological Study Area were conducted between March–June 2013. While no special-status species were observed during the biological survey, potentially suitable habitat for the Valley elderberry longhorn beetle, foothill yellow-legged frog, western pond turtle, and western red bat occurs within the Biological Study Area. After a habitat assessment for California red-legged frog, California tiger salamander, vernal pool tadpole shrimp and vernal pool fairy shrimp was conducted, it was confirmed the Biological Study Area contains potentially suitable habitat for these species as well and protocol surveys were conducted. Even though some of these species are presumed absent, they are addressed here.

Migratory Birds

Native birds, which are protected under the Migratory Bird Treaty Act and similar provisions under the California Department of Fish and Game code, currently nest or have the potential to nest within the Biological Study Area and the project impact area. During the 2013 biological survey, habitat was determined to be favorable to canopy, cavity, and structural nesting birds. Evidence of cliff swallow (*Petrochelidon pyrrhonota*) nesting was present in the Cherokee Creek culverts and Nassau Creek culverts under State Route 4.

Foothill yellow-legged frog

The foothill yellow-legged frog is a California Department of Fish and Wildlife Species of Special Concern. The foothill yellow-legged frog can be found in partly shaded, shallow streams and rocky riffles in a variety of habitats, including valley-foothill hardwood, valley-foothill riparian, mixed conifer, coastal scrub, and mixed chaparral. The species requires some cobble-sized substrate for egg-laying and a water source persisting for at least 15 weeks for larval metamorphosis. The foothill yellow-legged frog occurs from elevations near sea level to 6,370 feet above mean sea level with the association of a breeding water source within approximately 33 feet. The main predators for the foothill yellow-legged frog are invasive non-native species (garter snakes, bullfrogs, and centrarchid fish), which were introduced into Sierra Nevada foothill streams. During the biological surveys conducted between March and June 2013, no sign the of foothill yellow-legged frog was observed. Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek all contain sections of partly shaded, shallow water with rocky substrate and water presence more than 15 weeks, which are the ideal habitats for the foothill yellow-legged frog. The closest recorded occurrence of the foothill yellow-legged frog is about 6 miles southeast of the project. There is a low/moderate potential for occurrence of the foothill yellow-legged frog within the project vicinity.

Western pond turtle

The western pond turtle is a California Department of Fish and Wildlife Species of Special Concern. The western pond turtle is a semi-aquatic turtle, which inhabits ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. The species requires suitable basking sites such as logs, rocks and exposed banks and associated upland habitat consisting of grassy open fields for reproduction. The species is omnivorous and eats aquatic wildlife and vegetation. The western pond turtle is known to hibernate underwater beneath a muddy bottom in colder climates; it reproduces from March to August.

No occurrence of the species has been documented in or near the project area, and biological surveys found no sign of the western pond turtle within the Biological Study Area. Although no sign of the western pond turtle was observed, Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek all contain sections of suitable basking sites with logs, rocks and associated upland habitat of grassy open fields, which is the ideal upland habitat for the western pond turtle. There are also several suitable stock ponds in the vicinity of the project,

one about 350 feet south of the project area near Cherokee Creek, that contain ideal aquatic habitat for the western pond turtle. With habitats adjacent to the project, there is a low/moderate potential for occurrence within the project vicinity.

Western red bat

The western red bat is a California Department of Fish and Wildlife Species of Special Concern. The western red bat typically roosts in forests and woodlands in proximity to foraging habitats, which include grasslands, shrub lands, open woodlands and croplands. The species is mostly an insectivore, consuming moths, crickets, beetles, and cicadas. The western red bat is known to migrate between summer and winter to lowlands and coastal regions for breeding, which typically occurs in low elevation cottonwood/sycamore and oak-dominated riparian habitats.

No signs of the western red bat were observed during biological surveys. The project site contains mature mixed oak and conifer forest habitat next to open grassland habitat, potentially suitable for the western red bat's foraging and roosting needs. The closest recorded occurrence of the western red bat is greater than 5 miles south of the project area. There is a low/moderate chance for the species to occur within the project area.

Environmental Consequences

Migratory Birds

Potential impacts to migratory birds would be avoided, minimized, or mitigated through the implementation of measures BIO-15, BIO-16, and BIO-17. If vegetation removal cannot avoid the nesting season, a pre-construction nesting survey would be conducted. Active nests would be given a buffer to avoid impacts. Migratory swallows would be avoided through exclusion devices or removal or partially constructed nests. Active occupied nests would not be removed until after the young have fledged.

Foothill yellow-legged frog

While no foothill yellow-legged frog or signs of foothill yellow-legged frog were observed during surveys, construction activities would have a permanent and temporary impact on Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek and associated tributaries and wetlands (see Table 32 through 35), which are potential foothill yellow-legged frog habitat. Direct impacts include vegetation disruption to creeks and wetlands as potential habitat for the foothill yellow-legged frog. Construction will proceed with noise, lights, silt increase, turbidity and other human activities that could disturb should they occur in the project vicinity.

With implementation of avoidance/minimization measures, the proposed project is not expected to cause direct impacts, and will reduce potential for indirect impacts, to individual foothill yellow-legged frogs. While potentially suitable breeding and dispersal habitat exists within the Biological Study Area, minimization measures BIO-18 through BIO-21 and the

use of Best Management Practices would be implemented to reduce the potential for negative impacts. The project would not reduce the viability of the overall population, and cumulative effects are not expected.

Western pond turtle

While no sign of the western pond turtle was observed in the Biological Study Area during surveys, the project does contain ideal upland habitat for the turtle. The project is not expected to contain suitable aquatic habitat for the turtle. Because the stock ponds in Biological Study Are dry up annually, they do not have suitable fish/aquatic prey for western pond turtles. While the proposed project is not expected to cause direct impacts to individual western pond turtles, the project would disturb potentially suitable dispersal habitat. Approximately 56.74 acres of grasslands would be permanently impacted by Alternative 1, and approximately 49.50 acres of grasslands would be permanently impacted by Alternative 2. Indirect impacts due to construction activities would occur. Construction would proceed with noise, lights, silt increase, turbidity and other human activities that could disturb western pond turtle should they occur in the project vicinity. Minimization measures BIO-18 through 21 and the use of Best Management Practices would be implemented and maintained during construction where dispersal habitat may be disturbed to reduce the potential for negative direct and indirect impacts to western pond turtles.

Western red bat

While no western red bats or signs of western red bat were observed during surveys, potential foraging habitat consisting of oak woodlands would be impacted with Alternatives 1 and 2. Alternative 1 would permanently impact approximately 50.31 acres of mixed oak woodlands, and Alternative 2 would permanently impact approximately 41.46 acres. The proposed project is not expected to cause direct impacts to individual western red bat. With minimization measures BIO-1, BIO-22, and the use of Best Management Practices, the potential for negative impacts to western red bat would be reduced. The project would not impact the viability of the overall population and no cumulative impacts are expected.

Avoidance, Minimization, and/or Mitigation Measures

Migratory Birds

Minimization and Avoidance Measure BIO-15: To the greatest extent practicable, all vegetation removal would occur during the non-nesting season (September 1–February 15). If vegetation removal is to take place during the nesting season (February 15–September 1), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal by a qualified biologist (familiar with avian biology, nesting bird ecology, and standard survey techniques). Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist must be removed by the contractor.

A minimum 100-foot no-disturbance buffer would be established around any active nest of migratory birds and a minimum of 300-foot no-disturbance buffer would be established

around any nesting raptor species to limit the impacts of construction activities. The contractor must immediately stop work in the nesting area until the appropriate buffers are established and are prohibited from conducting work that could disturb the birds (as determined by the project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged.

Avoidance Measure BIO-16: If demolition/rehabilitation of existing culverts or bridges are planned to occur during the nesting season, measures shall be taken to avoid impacts to migratory swallows. To protect migratory swallows, unoccupied nests would be removed from existing bridge/culvert structures prior to the nesting season (February 15 – September 1). During the nesting season, bridge/culvert structures shall be maintained either through use of exclusionary devices and/or the active removal of partially constructed nests. After a nest is completed, it can no longer be removed until nesting season is over.

Avoidance Measure BIO-17: If construction is to occur during the swallow nesting season, a qualified biologist would survey the existing bridge structures to determine the presence of nesting swallows. If active and occupied nests are discovered, disruptive work in proximity to active nest would stop. Nests would not be removed until after young have fledged.

<u>Foothill yellow-legged frog and Western pond turtle</u>

Also see BIO-10.

Avoidance Measure BIO-18: Prior to vegetation removal in Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek, a pre-construction survey for foothill yellow-legged frog would be conducted by a Caltrans -and California Department of Fish and Wildlife-approved biologist.

Avoidance Measure BIO-19: In areas adjacent to Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek where low lying shrubs/vegetation are present, vegetation would be removed within 33 feet of the top of the water features by hand.

Avoidance Measure BIO-20: If any wildlife is encountered during the course of construction, said wildlife would be allowed to leave the construction area unharmed.

Minimization Measure BIO-21: All trash must be kept in wildlife-proof receptacles, and any non-natural food and water sources would not be left unattended for the duration of the project construction.

<u>Western red bat</u>

To minimize potential impacts to western red bat, measure BIO-1 protecting mixed oak habitat and with the addition of the following have been included into the project design:

Minimization Measure BIO-22: Prior to tree removal, pre-construction tree surveys for the western red bat would be conducted by an appropriate wildlife biologist.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations 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 Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. 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 the Federal Endangered Species Act 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, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act 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. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. 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." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority

beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

The *Natural Environment Study* for this project was approved in August 2014 and it provides the basis for the following discussion. As part of the background research for the project, a list of potential threatened and endangered species was obtained from the U.S. Fish and Wildlife Service and it is included in Appendix C of this Initial Study.

Chinese Camp brodiaea

The Chinese Camp brodiaea is a federally threatened and state endangered species that is also listed under California Native Plant Society as a 1B.1 species of concern. This perennial bulbiferous plant prefers serpentinite soils within wetland riparian communities or vernal streambeds, but occasionally can be found in valley foothill grasslands and cismontane woodlands. The plant is commonly found between elevations 525 and1,280 feet above mean sea level. It has a relatively short blooming season of May to June in the Sierra Nevada foothills.

While focused plant surveys did not result in observations of Chinese Camp brodiaea, the project site contains potential habitat composed of wetlands, grasslands and cismontane woodland communities. The closest recorded occurrences have been located about 4 miles away along Black Creek at the confluence with New Melones Lake south of the project area. Due to right-of-entry restrictions, a pre-construction Chinese Camp brodiaea survey would be conducted on un-surveyed parcels.

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle is currently listed as a federally threatened species. Critical habitat was designated by the U.S. Fish and Wildlife Service on August 8, 1980 (45 Federal Register 52803). Elderberry shrubs are obligate hosts for valley elderberry longhorn beetle larvae. Elderberry shrubs are often associated with cottonwood, willow ash (*Fraxinus* sp.), oak and walnut species common to the riparian forests and adjacent uplands in the Central Valley and foothills. The valley elderberry longhorn beetle's range has been reduced and greatly fragmented due to a loss of elderberry-inhabited communities, especially riparian habitat loss. Habitat loss comes from agricultural development, urbanization, and levee maintenance and pesticide drift where aerial application or fogging of crops occurs near riparian habitats. Adult valley elderberry longhorn beetles feed on elderberry foliage and are present from March through early June. Elderberry stems with emergence holes indicate current and/or previous valley elderberry longhorn beetle presence.

During the biological surveys, 42 elderberry shrubs with stems greater than 1 inch were observed within the Biological Study Area (see Figures 46, 47, and 48). All elderberry shrubs were observed in good health condition in mixed oak woodland and annual grassland communities, occasionally in proximity to a water feature. No recent occurrences of valley

elderberry longhorn beetle have been documented within 10 miles of the project area, but potential emergence holes were seen on a single shrub. Additional elderberry shrubs were observed and/or are known to be present on parcels that could not be surveyed due to access restrictions. As result, there are more elderberry shrubs present than are shown or discussed. Due to limited access to parcels, a pre-construction elderberry survey would be conducted on un-surveyed parcels.

California red-legged frog

The California red-legged frog is federally listed as threatened and is a California Department of Fish and Wildlife Species of Special Concern. Habitat for California red-legged frogs consists of a combination of specific aquatic and riparian components. California red-legged frogs resides in permanent and semi-permanent aquatic habitats, such as creeks and cold water ponds with emergent and submergent vegetation. Adult California red-legged frogs breed from November through April and use dense, shrubby, or emergent riparian vegetation near to still or slow-moving water including pools and backwaters within streams, creeks, ponds, marshes, springs, sag ponds, dune ponds, lagoons, and artificial impoundments). Upland areas next to riparian zones provide estivation and dispersal habitats; California red-legged frogs are typically found within 98 feet of a water source).

A literature review of California red-legged frog historic and known occurrences within 5miles of the project found that while the location of the project is not within the current range of the California red-legged frog, it is within the frog's historic range with the closest recorded occurrence located 8.0 mile southeast of the project area (California Natural Diversity Database 2013). Upland and aquatic habitat assessments and reconnaissance-level surveys were conducted based on aerial maps, and seven aquatic features were identified within a 1-mile radius of the project footprint to be potentially suitable California red-legged frog habitat. Nassau Creek, Waterman Creek, Cherokee Creek and four ponds were surveyed through walking and driving transects to observe aquatic vegetation and potential predators. Many predators (bullfrogs, crayfish and fish species) were observed in potential aquatic habitats, thus decreasing the likelihood of California red-legged frog presence.

A formal Habitat Assessment was conducted to assess the project site's suitability for California red-legged frog within a 1-mile radius of the Biological Study Area. The formal Habitat Assessment was conducted in accordance with the U.S. Fish and Wildlife Service's *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (U.S. Fish and Wildlife Service, 2005).

A literature review of the California red-legged frog historic and known occurrences within 5-miles of the project was completed and concluded the location of the project is not within the current range of the California red-legged frog, however it is in the historic range with the closest occurrence located 8.0 miles southeast of the project area (CNDDB 2013). During protocol surveys, the California red-legged frog was not observed. Throughout the protocol surveys, dispersal habitat for the California red-legged frog was observed, therefore the California red-legged frog has a low potential to occur within the project area in the future.

California tiger salamander

The California tiger salamander is a federal and state listed threatened species. The project lies approximately 11.5 miles east of California tiger salamander critical habitat. Habitat for the species consists of a combination of specific aquatic and upland grassland and oak woodland components. Upland areas next to breeding ponds provide estivation and dispersal habitats. California tiger salamanders reside in rodent burrows throughout the summer, about 3,300 feet, from a breeding water feature.

Based on the results of the habitat assessment, protocol surveys were initiated on March 15, 2013. California tiger salamander aquatic protocol surveys were completed, but upland protocol surveys were not initiated. Aquatic surveys found a low level of suitability for California tiger salamander because the water features are stocked with predatory species such as largemouth bass, sunfish, bullfrogs and crayfish. Before the the upland survey, subsequent coordination with the California Department of Fish and Game determined that the nearest occurrence of a California tiger salamander was much farther away than originally thought. The project sits just outside the species elevation range and about 11.5 miles east of the nearest occurrence (California Natural Diversity Database, 2013). As a result, the project is not within the current range of the California tiger salamander. Based on the survey results and the new information that became available, Caltrans made the decision that no additional protocol surveys were necessary. Caltrans notified the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife of this decision and of its "no effect" determination. The California Department of Fish and Wildlife concurred that no additional protocol surveys were necessary, and the U.S. Fish and Wildlife Service did not object.

Vernal pool tadpole shrimp

The vernal pool tadpole shrimp is a federally endangered listed species. Distribution of the vernal pool tadpole shrimp is patchy from Shasta County to Tulare County. The vernal pool tadpole shrimp is a freshwater crustacean inhabiting mostly vernal pools but can also be found in ephemeral drainages, stock ponds, reservoirs, and ditches. The species requires a seasonal vernal pool and aquatic vegetation for reproduction. Tadpole shrimp eggs are known to remain dormant on top of or within vernal pool soils until pools are ideal for emergence, which could be up to 10 years. The species is omnivorous, consuming vernal pool and pond debris, vegetation, and other aquatic living organisms. The main threat to tadpole shrimp is the loss of vernal pools due to development or landform modifications.

A formal Habitat Assessment assessed the site's suitability for vernal pool tadpole shrimp within the Biological Study Area. A single depressional feature was found next to the project area footprint (about 80 feet from the existing State Route 4) (see Figure 42 page 5, and Figure 43, page 5). The depressional feature is about 75 feet by 40 feet (0.05 acre) at capacity. Sign of common invertebrates (i.e., Ostracoda) was noted in the damp pool bottom during the Habitat Assessment.

Protocol surveys (dry and wet seasons) were conducted in 2013-2014. Dry season protocol surveys were conducted July 2, 2013; results were negative. Wet season surveys were conducted on December 19, 2013, and February 20, March 6, March 20, April 3, and April 17, 2014; results were negative. The depressional feature was documented to lack vernal pool vegetation and adequate inundation for the species. It was subsequently concluded that the feature was not a true vernal pool, so it was classified as a seasonal wetland.

Vernal pool fairy shrimp

The vernal pool fairy shrimp is a federally threatened listed species. Distribution of the known 32 populations of vernal pool fairy shrimp are from Shasta County to Tulare County and along the Central Coast range from Solano County to San Benito County (U.S. Fish and Wildlife Service, 2002c). The vernal pool fairy shrimp is a freshwater crustacean inhabiting ephemeral freshwater habitats including vernal pools. The species requires a seasonal vernal pool for reproduction. Fairy shrimp eggs are drought-resistant and can survive the hot dry summers and cold wet winters. When pooling habitat is ideal, the eggs will hatch and thrive until the pond is dry. The species feeds on algae, bacteria, protozoa, rotifers, and bits of pond debris. The main threat to fairy shrimp is the loss of vernal pools due to development or modifications to pools (U.S. Fish and Wildlife Service, 2002c).

A formal Habitat Assessment was conducted to assess the site's suitability for vernal pool fairy shrimp within the Biological Study Area. A single depressional feature was found next to the project area footprint (about 80 feet from the existing State Route 4) (see Figure 42, page 5 and Figure 43, page 5). The depressional feature is approximately 75 feet by 40 feet (0.05 acre) at capacity. Sign of common invertebrates (i.e., Ostracoda) was noted in the damp pool bottom during the Habitat Assessment.

Protocol surveys (dry and wet seasons) were conducted in 2013-2014. Dry season protocol surveys were conducted July 2, 2013; results were negative. Wet season surveys were conducted on December 19, 2013, and February 20, March 6, March 20, April 3, and April 17, 2014; results were negative. The depressional feature was documented to lack vernal pool vegetation and adequate inundation for the species. It was subsequently concluded that the feature was not a true vernal pool, so it was classified as a seasonal wetland.

Environmental Consequences

Chinese Camp Brodiaea

While no sign of the Chinese Camp brodiaea was observed, the species could occur in the project vicinity. Approximately 56.74 acres of grasslands and 66.99 acres of mixed oak woodlands, potential habitat for the Chinese camp brodiaea, would be permanently impacted with Alternative 1 and approximately 49.50 acres of grasslands and 43.99 acres of mixed oak woodlands would be impacted with Alternative 2. A pre-construction survey would be conducted. With the implementation of measures BIO-23 and BIO-24 and the use of Caltrans Standard BMPs, the project would have no effect on the Chinese Camp brodiaea, nor would the project impact the viability of the overall population or have a cumulative effect.

Valley elderberry longhorn beetle

Based on the shrubs that could be accessed, the project would require the removal of 1 shrub within Alternative 1 and 13 shrubs within Alternative 2 (see Figure 45). No emergence holes were found on documented shrubs required for removal. In compliance with U.S. Fish and Wildlife Service 1999 guidelines, elderberry shrubs within the permanent impact limits shall be transplanted where practicable. The project is well outside valley elderberry longhorn beetle designated Critical Habitat and the valley elderberry longhorn beetle has not been documented within 10 miles of the project area. A shrub with potential emergence holes lies outside of all direct affected areas; as a result, the project is not expected to have direct impacts to any individual valley elderberry longhorn beetles.

The project would have indirect effects to 6 shrubs with Alternative 1 and 3 shrubs with Alternative 2 (identified in Figures 46 and 47). These impacts would be limited to dust accumulation and the additional disturbances to mixed oak woodland and annual grassland communities within 100 feet from the action areas. In addition, 3 of the 6 indirectly affected elderberry shrubs for Alternative 1 and 2 of the 3 shrubs in Alternative 2 would require setbacks closer than 20 feet from their driplines. Shrub ID#6, 9 and 33 for Alternative 1 and shrub ID#29 and 33 for Alternative 2 would receive an altered Environmentally Sensitive Area fencing ranging from 6 to15 feet from their existing driplines. The health and vigor of the elderberry shrubs are expected to remain unchanged, and implementation of avoidance, minimization and mitigation measures requiring worker trainings, minimum setbacks, and dust control have been incorporated into the project design to offset potential indirect effects to the valley elderberry longhorn beetle.

Section 7 consultation with the U.S. Fish and Wildlife Service would be conducted after a preferred alternative is selected; consultation is expected to find that the project may affect, and is likely to adversely affect valley elderberry longhorn beetle habitat. The purchase of credits at a U.S. Fish and Wildlife Service-approved valley elderberry longhorn beetle mitigation bank, such as the French Camp Conservation Bank and the River Ranch Conservation Bank, is proposed at this time. It is anticipated that Alternative 1 would require purchase of 1 credit and Alternative 2 would require purchase of 7 credits.

Note that shrubs were observed on parcels that could not be surveyed; because no data could be gathered on the shrubs, they are not included in the impact calculations at this time. Access to all properties was not available during the elderberry survey efforts. It is anticipated that additional mitigation would be necessary once pre-construction surveys have been conducted. If the project's effect changes, Section 7 consultation would be amended.

No cumulative impacts to valley elderberry longhorn beetle are expected with Section 7 consultation and implementation of measures BIO-25 through BIO-33.

California red-legged frog

A formal Habitat Assessment was conducted to assess the project site's suitability for California red-legged frog within a 1-mile radius of the Biological Study Area. The formal Habitat Assessment was conducted in accordance with the U.S. Fish and Wildlife Service's Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog (U.S. Fish and Wildlife Service, 2005).

Upland and aquatic habitat assessments and reconnaissance-level surveys were conducted based on aerial maps, and seven aquatic features were identified within a 1-mile radius of the project footprint to be potentially suitable California red-legged frog habitat. Nassau Creek, Waterman Creek, Cherokee Creek and four ponds were surveyed through walking and driving transects to observe aquatic vegetation and potential predators. Many predators (bullfrogs, crayfish and fish species) were observed in potential aquatic habitats, thus decreasing the likelihood of California red-legged frog presence.

No California red-legged frogs were observed in the Biological Study Area during surveys. While no California red-legged frog was observed, the species has potential to use the project area as dispersal habitat in the future. Additionally, potential construction-related indirect effects to the California red-legged frog include the removal of rangeland, which is potential dispersal habitat. The project may affect, but is not likely to adversely affect California red-legged frog dispersal habitat. With the implementation of measures BIO-22 through BIO-25, effects to California red-legged frog dispersal habitat would be minimized. Once an alternative is selected, Section 7 consultation with U.S. Fish and Wildlife Service would be conducted to request concurrence with this determination.

California tiger salamander

A formal Habitat Assessment assessed the site's suitability for the California tiger salamander within a 1.24- mile radius of the project area. The formal Habitat Assessment was conducted in accordance with the *U.S. Fish and Wildlife Service Revised Guidance on Site Assessments and Field Surveys for the California tiger salamander* (USFWS 2005b). Upland and aquatic habitat assessments were conducted based on aerial maps, and seven aquatic features were identified within a 1.24-mile radius of the project footprint as potentially suitable for California tiger salamander habitat.

The project is not expected to impact the California tiger salamander because the project lies well outside the salamander's critical habitat and habitat assessments and aquatic protocol surveys concluded that much of the potential aquatic breeding habitat is either unsuitable or has a very low level of suitability. Although the physical characteristics of upland habitat could potentially support California tiger salamander dispersal and estivation habitat, the species is more likely to occur in the valley rather than in the Calaveras foothills. No California tiger salamanders were seen during field surveys, habitat assessments, or the 2013 aquatic protocol surveys. The project would have no effect on California tiger salamanders. Measures BIO-34 and BIO-18 through BIO-20 would be implemented to further minimize impacts.

Vernal pool tadpole shrimp

No impacts to the vernal pool tadpole shrimp are expected since dry-season and wet-season protocol survey results were negative and the feature on-site is not categorized as a true vernal pool. As a result, it is expected that the project would have no effect on the vernal pool tadpole shrimp.

Vernal pool fairy shrimp

No impacts to the vernal pool fairy shrimp are expected because dry-season and wet-season protocol survey results were negative and because the feature on-site is not categorized as a true vernal pool. As a result, it is expected that the project would have no effect on the vernal pool fairy shrimp.

Avoidance, Minimization, and/or Mitigation Measures

Chinese Camp brodiaea

Avoidance Measure BIO-23: Prior to initial ground-disturbing activities, pre-construction blooming plant surveys (May 1-June 30) would be conducted on un-surveyed parcels for Chinese Camp brodiaea by a qualified biologist during the blooming season.

Minimization and Avoidance Measure BIO-24: Should a Chinese Camp brodiaea be found during pre-construction surveys, Environmentally Sensitive Area fencing would be erected to avoid the sensitive plant or the specimens would be relocated to appropriate environments. Relocation strategies and locations shall be approved by the California Department of Fish and Wildlife.

Valley elderberry longhorn beetle

Avoidance Measure BIO-25: Prior to initiating construction, Environmentally Sensitive Area fencing would be installed. The Environmentally Sensitive Area would be positioned as far from elderberry shrubs as practicable and shall be installed under the direction of the project biologist (see Figure 46 of the Initial Study).

Avoidance Measure BIO-26: Signs shall be installed along the edge of the Environmentally Sensitive Area (every 300 feet) within elderberry shrub vicinities and shall read as follows: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

Avoidance Measure BIO-27: Prior to construction (when property access is secured), elderberry shrub surveys would be updated. If new elderberry impacts are identified, the

project's Section 7 consultation shall be amended. If the species is de-listed prior to construction, the additional surveys and consultation would not be required.

Minimization Measure BIO-28: To prevent fugitive dust from drifting into adjacent habitat, all clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, demolition activities or other dust-generating activities shall be effectively controlled for fugitive dust emissions using application of water or by presoaking.

Avoidance Measure BIO-29: No mowing of grasses/ground cover would occur within 5 feet of elderberry plant stems.

Avoidance Measure BIO-30: No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level.

Mitigation Measure BIO-31: When feasible, all elderberry shrubs requiring removal would be relocated/transplanted either on-site or at a U.S. Fish and Wildlife Service-approved suitable off-site location following the U.S. Fish and Wildlife Service 1999 guidelines. All transplants shall occur between November and early February, when elderberry shrubs are dormant.

Avoidance Measure BIO-32: After construction, all temporarily affected areas within 100 feet of elderberry shrubs would be returned to pre-project conditions. Temporarily disturbed areas would be re-seeded with native grasses and forbs.

Mitigation Measure BIO-33:

Table 36. Proposed Elderberry Mitigation for Alternative 1

Elderberry shrub	Amount Affected Stems	Amount Elderberry Seedlings to be planted	Amount Associated Native Plants to be planted
Stem diameter 1"-3"	0	0	0
Stem diameter 3"-5"	1	2	2
Stem diameter >5"	0	0	0
Total	**1**	**2**	**2**

Table 37. Proposed Elderberry Mitigation for Alternative 2

Elderberry shrub	Amount Affected Stems	Amount Elderberry Seedlings to be planted	Amount Associated Native Plants to be planted
Stem diameter 1"-3"	9	9	9
Stem diameter 3"-5"	8	16	16
Stem diameter >5"	2	6	6
Total	**19**	**31**	**31**

The project proposes to purchase VELB credits (1 credit for Alternative 1 or 7 credits for Alternative 2) at a USFWS-approved VELB mitigation bank (e.g. French Camp

Conservation Bank or River Ranch Conservation Bank). After an alternative is selected, Section 7 consultation will be completed.

California red-legged frog

See BIO-18 through BIO-21

California tiger salamander

See BIO-18 through BIO-21.

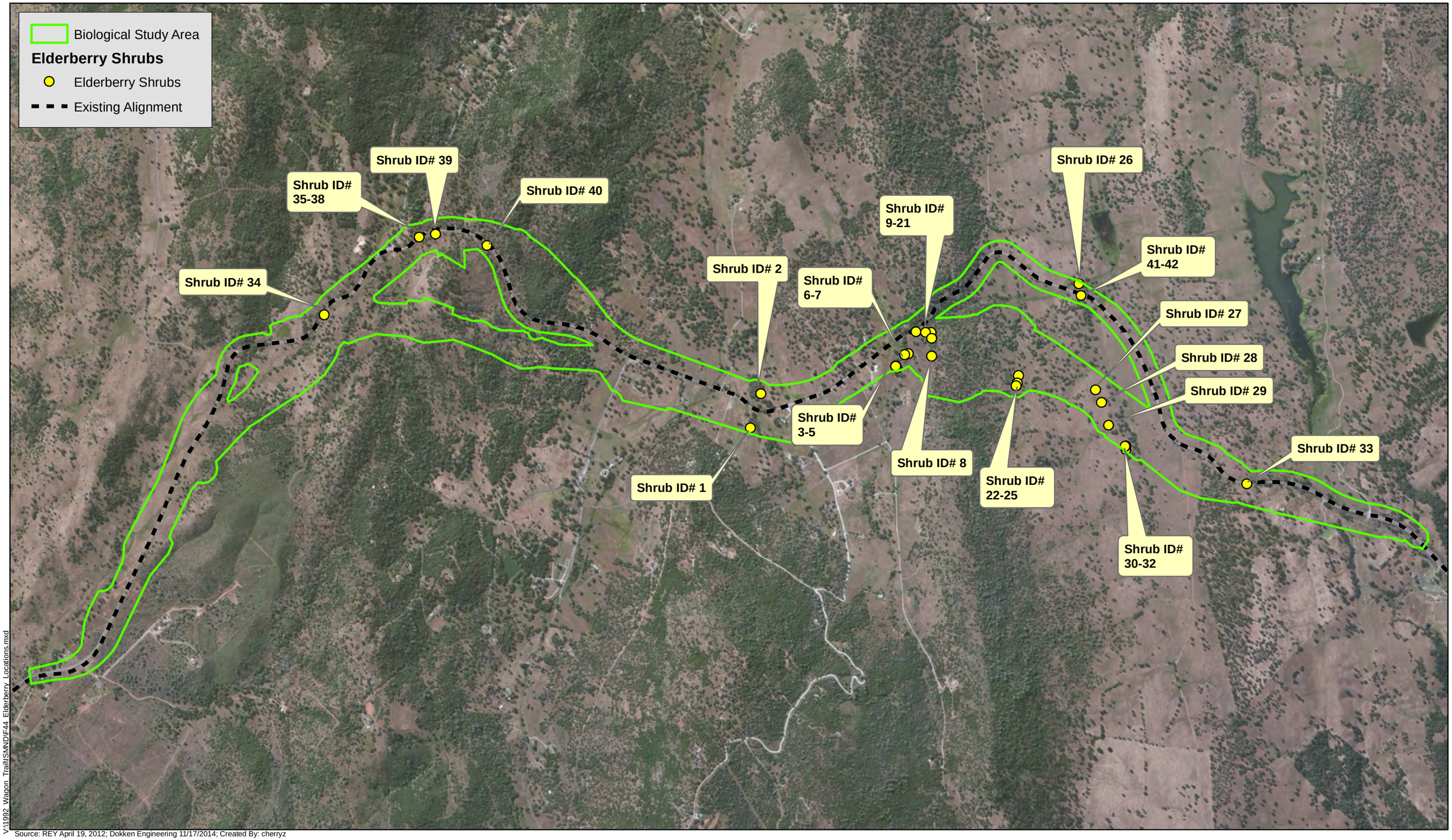
Avoidance Measure BIO-34: Plastic mono-filament netting would not be used for erosion control or other purposes at the proposed project site. The California tiger salamander may become entangled in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding.

Vernal pool tadpole shrimp

No avoidance, minimization, or mitigation would be needed for this species.

Vernal pool fairy shrimp

No avoidance, minimization, or mitigation would be needed for this species.

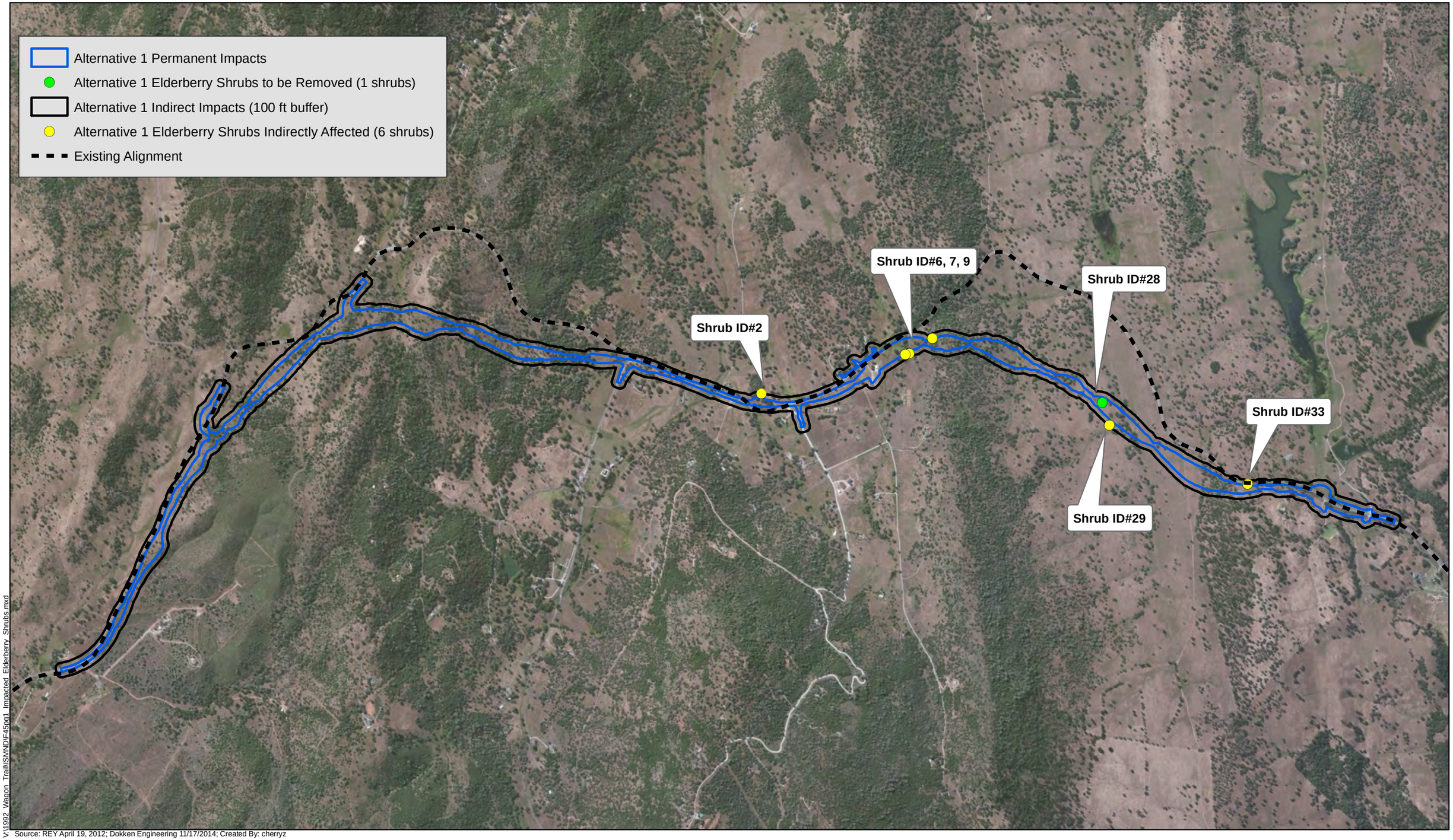


V:\1992 Wagon Trail\SM\NDF44 Elderberry Locations.mxd

Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 44
Elderberry Shrub Locations
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



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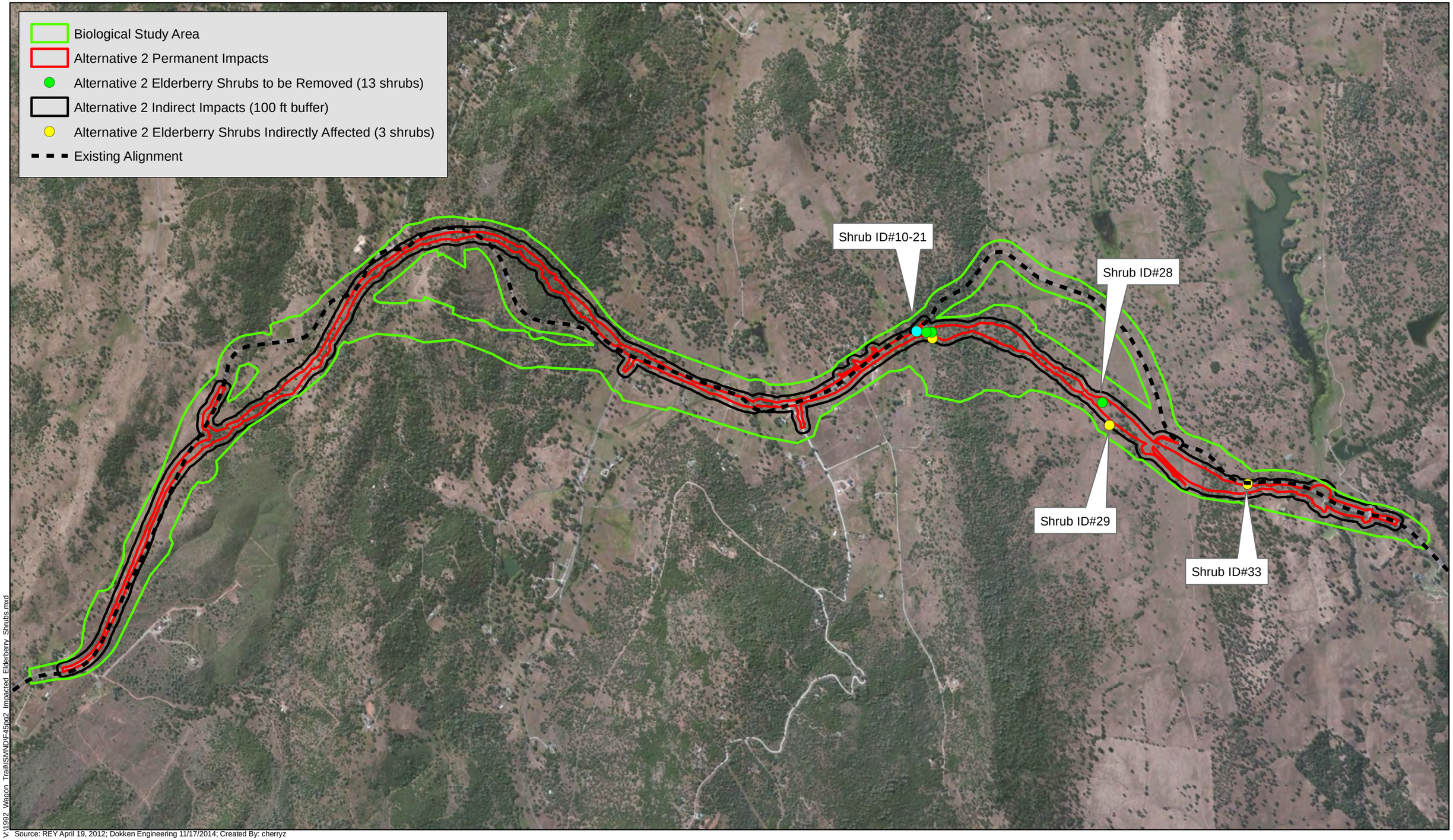
Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 45
Page 1 of 2
Elderberry Shrub Impacts Alternative 1
EA 0E5300; Post Mile R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California



V:\1992 Wagon Trail\SMND\F45pg2 Impacted Elderberry Shrubs.mxd

Source: REY April 19, 2012; Dokken Engineering 11/17/2014; Created By: cherryz

0 0.5 1 1.5 Miles

FIGURE 45
Page 2 of 2
Elderberry Shrub Impacts Alternative 2
EA 0E5300; PM R10.3/R16.4
State Route 4 Wagon Trail Realignment Project
Calaveras County, California

2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President Bill Clinton signed Executive Order 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 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.

Affected Environment

The Natural Environment Study for the project, approved in 2014, provided the information for this section.

Non-native and invasive species were observed within the Biological Study Area during botanical surveys conducted on August 12 and August 28, 2008 and on May 10, May 13, and May 14, 2013. Invasive plant species included field mustard (*Brassica rapa*), italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), foxtail barley (*Hordeum murinum*), curly dock (*Rumex crispus*), rose clover (*Trifolium hirtum*), little rattlesnake grass (*Briza minor*), cutleaf geranium (*Geranium dissectum*), waxy mannagrass (*Glyceria declinata*), hyssop loosestrife (*Lythrum hyssopifolia*), pennyroyal (*Mentha pulegium*), English plantain (*Plantago lanceolata*), and woolly mullein (*Verbascum thapsus*), Barbed goatgrass (*Aegilops triuncialis*), medusa head (*Elymus caput-medusae*), and redstem stork's bill (*Erodium cicutarium*). No invasive animals were observed within the Biological Study Area.

Environmental Consequences

Due to disturbance of the ground during construction, there is potential to spread invasive species.

With the implementation of measures BIO-35 and BIO-36, the spread of invasive species would be prevented and no significant impact is anticipated. Furthermore, none of the species on the California list of invasive species are used by Caltrans for erosion control or landscaping.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance Measure BIO-35: The Resident Engineer of the project would ensure that prior to arrival at the project site and prior to departure from the project site, construction equipment

that may contain invasive plants and/or seeds would be cleaned to reduce the spread of noxious weeds.

Minimization Measure BIO-36: All hydroseed and plant mixes must consist of a biologist-approved plant palette seed mix from native, locally adapted species.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect 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 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 necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality Regulations.

Affected Environment

The cumulative impact analysis included in this section is based on known projects that are currently proposed, approved, or under construction within a two-mile radius of the project area. No projects are planned within a two-mile radius of the project area.

Resource areas for which the project could cause direct or indirect impacts are evaluated for potential cumulative impacts. These resource areas are listed below:

- Agricultural/Grazing land – Grazing lands within the project area are actively grazed by cattle, no land is formally designated as prime, unique, or important farmlands.

- Visual/Aesthetics – The projects area's visual landscape is characterized by hilly terrain, mixed oak woodlands, grasslands, mixed chaparral, and riparian vegetation adjacent to State Route 4.
- Wetlands and Other Waters – A total of approximately 4 miles and 2.9 acres of proposed jurisdictional creeks/tributaries are within the Biological Study Area including: Black Creek, Nassau Creek, Waterman Creek and Cherokee Creek, along with six associated relatively permanent tributaries.
- Natural Communities, Plant and Animal Species – The project area is make up of native mixed oak woodland. The following five sensitive plant species were found to have the potential to occur, and/or were found to occur, within the project area: Tuolumne button-celery (*Eryngium pinnatisectum*), Red Hills soaproot (*Chlorogalum grandiflorum*), Mariposa cryptantha (*Cryptantha mariposae*), forked hare-leaf (*Lagophylla dichotoma*), and Congdon's lomatium (*Lomatium congdonii*). No special status animal species were observed during field surveys.
- Threatened and Endangered Species – The project has the potential for Chinese Camp brodiaea, Valley Elderberry longhorn beetle and California red-legged frog to occur.

Environmental Consequences

Transportation projects and other actions requiring federal approval are generally subject to laws and permit processes requiring consideration of and mitigation for impacts to special-status species and their habitats, wetlands/water of the U.S., water quality, cultural resources, and parklands. These laws and requirements assure that impacts of such undertakings would be fully mitigated. Minimization and mitigation for these projects ensure that they have no contribution to cumulative impacts.

As a result of the planned development and the State Route 4 Wagon Trail Realignment Project, there are several environmental resources that could be subject to cumulative impacts. Only environmental resources that have potential to incur project-specific impacts are discussed below.

Agricultural/Grazing Land

<u>Resource Study Area</u>

The resource study area for project-related grazing land impacts includes the project site and land immediately adjacent.

<u>Direct Impacts to Resources of Concern</u>

The proposed project, in combination with other development projects in the area, would contribute to the overall removal of grazing land. Approximately 100 acres of land are proposed to be converted from grazing land into public right of way. However, due to the amount of grazing land present within the County and surrounding areas, direct impacts to grazing land would not be cumulative.

Indirect Impacts to Resources of Concern

Indirect impacts to grazing land could occur due to temporary construction activities obstructing the grazing potential, however construction would not have a cumulatively considerable contribution to the decline of grazing land in the region. Consequently, there would not be a cumulative impact on grazing land.

Cumulative Impacts

The project does not have the potential to substantially change grazing land in the project area. The project would necessitate the removal of some grazing land but would not substantially degrade or change the overall land use throughout the project area. As a result, there is no potential for cumulative impacts to agricultural/grazing lands.

Visual/Aesthetics

Resource Study Area

The resource study area for project-related visual/aesthetic impacts includes the project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

The proposed project, in combination with other development projects in the area, would contribute to the overall removal of riparian and woodland habitat. While a large number of oak trees within the project area would be removed, they would be removed from a large area and many oak trees would still remain viewable in the project area.

Indirect Impacts to Resources of Concern

Indirect impacts to visual/aesthetic resources could occur due to temporary construction activities obstructing the normal view, however construction would not have a cumulatively considerable contribution to the decline of visual/aesthetic resources in the region. Consequently, there would not be a cumulative impact on visual/aesthetic resources.

Cumulative Impacts

The project does not have the potential to substantially change visual resources in the project area. The project would necessitate the removal of some riparian and woodland habitat but would not substantially degrade or change the visual character in the project area. As a result, there is no potential for cumulative impacts to visual resources.

Wetlands and Other Waters

Resource Study Area

The resource study area for project-related wetland and other waters impacts includes the project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

Both Build Alternatives would result in permanent and temporary impacts to Waters of the U.S. and Waters of the State due to cut/fill limits and new pavement. Alternative 1 would temporarily impact 0.50 acre and permanently impact 1.23 acres of Waters of the U.S. Alternative 1 would temporarily impact 0.84 acre and 1.98 acres of Waters of the State. Alternative 2 would temporarily impact 0.84 acre and permanently impact 0.93 acre of Waters of the U.S. Alternative 2 would temporarily impact 1.20 acre and permanently impact 3.42 acres of Waters of the State.

Indirect Impacts to Resources of Concern

There will be no indirect impacts to wetlands and other waters as a result of this project.

Cumulative Impacts

No cumulative significant impacts to wetlands and other waters are expected because the project would implement mitigation measures per USACE Section 404 permit requirements, therefore no cumulative impacts would result.

Animal Species

Resource Study Area

The resource study area for project-related animal species impacts includes the project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

Implementation of the project would result in a minor loss of Foothill yellow legged frog, Western pond turtle and Western red bat habitat in both Alternatives 1 and 2. No cumulative impacts to natural communities, plant and animal species are expected to occur.

Indirect Impacts to Resources of Concern

Indirect impacts to foothill yellow legged frog, western pond turtle, and western red bat habitat could result from loss of habitat and construction related disturbance, however, activities would be confined to as small an area as possible. Environmentally Sensitive Area fencing would be used to protect sensitive habitat wherever possible. Vegetation would be trimmed, rather than removed, where possible. Construction would not have a cumulatively

considerable contribution to the decline of sensitive habitats in the region. Other projects in the region would also be required (by USFWS, USACE, CDFW, and local jurisdictions) to avoid, minimize, and/or mitigate for construction impacts on habitats that are potentially suitable for protected species. Consequently, there would not be a cumulative impact on sensitive habitats.

Cumulative Impacts

No foothill yellow-legged frog, western pond turtle, or western red bats were observed during biological surveys. With measures implemented to minimize, avoid, and mitigate potential impacts to these species and migratory birds, no cumulatively considerable impacts are expected.

Threatened and Endangered Species

Resource Study Area

The resource study area for project-related threatened and endangered species impacts includes the project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

As part of the Natural Environment Study, a habitat assessment for California red-legged frog (CRLF), and valley elderberry longhorn beetle was prepared for the project in 2014. This assessment determined that there is suitable dispersal habitat for the California red-legged frog, but no suitable breeding habitat in the project area. There is a low potential for encountering the California red-legged frog during construction, however a biological opinion will be obtained prior to final design. Mitigation credit purchase is anticipated for valley elderberry longhorn beetle habitat (the project is anticipated to result in a "may affect, likely to adversely affect". By avoiding and minimizing direct impacts to the species, no cumulative direct impacts are expected to occur.

A focused rare plant survey was conducted in May 2013 for Chinese Camp brodiaea. While no sign of the Chinese Camp brodiaea was observed, the species could occur in the project vicinity. Permanent impacts to grasslands and mixed oak woodlands would result from the project. Approximately 56.74 acres of grasslands and 66.99 acres of mixed oak woodlands, potential. Therefore, a pre-construction survey would be conducted. With the implementation of measures and the use of Caltrans Standard Best Management Practices, the project would not impact the viability of the overall population and would not have a cumulative effect on the Chinese Camp brodiaea.

Indirect Impacts to Resources of Concern

Indirect impacts to Chinese Camp brodiaea, the California red-legged frog, and the valley elderberry longhorn beetle could result from loss of habitat and construction related disturbance. Habitat would be restored after completion of construction which would minimize the effects of habitat loss. The measures proposed would also greatly lessen the potential for construction impacts to threatened and endangered species should they be present in the project vicinity.

Cumulative Impacts

Pre-construction surveys would be conducted for Chinese Camp brodiaea and California red-legged frog; mitigation credit purchase is expected for valley elderberry longhorn beetle habitat (the project is expected to result in a "may affect, likely to adversely affect" finding). With implementation of biological measures discussed under the Threatened and Endangered Species section of this report, no cumulatively considerable impacts are expected.

Minimization, Avoidance, and/or Mitigation Measures

Please refer to each resource area discussion for measures.

2.5 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 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 by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas 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 greenhouse gas-emitting sources. The dominant greenhouse gas emitted is CO_2, 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 greenhouse gas emissions to reduce 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)[3].

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

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change.

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

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

Assembly Bill 32, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency 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 order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

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

Senate Bill 97 Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research to develop recommended amendments to CEQA Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

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

Senate Bill 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 Assembly Bill 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis.[5] The Federal Highway Administration 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 would assist in decision-making and improve efficiency at the program level, and would 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 the Federal Highway Administration 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 also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

[5] To date, no national standards have been established regarding mobile source greenhouse gasses, nor has the U.S. EPA established any ambient standards, criteria or thresholds for greenhouse gases resulting from mobile sources.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

The U.S. Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. Environmental Protection Agency* (2007). The Supreme Court ruled that greenhouse gases 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, the U.S. Environmental Protection Agency 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 the U.S. Environmental Protection Agency's assessment of the scientific evidence that form the basis for Environmental Protection Agency's regulatory actions. The U.S. Environmental Protection Agency in conjunction with National Highway Traffic Safety Administration issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010. [6]

The U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, the U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards, this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational

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

vehicles (including buses and refuse or utility trucks). Together, these standards would cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards would reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy- duty vehicles.

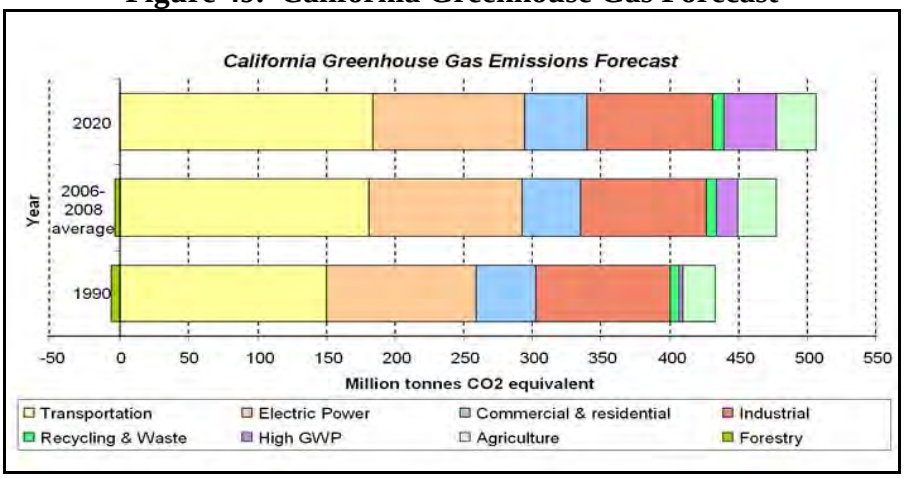
Project Analysis

An individual project does not generate enough greenhouse gas 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 greenhouse gas.[7] 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 Assembly Bill 32 Scoping Plan mandated by Assembly Bill 32 includes the main strategies California would use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board released the greenhouse gas 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 (see Figure 49). The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.

[7] 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 U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Figure 49. California Greenhouse Gas Forecast



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

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. [8]

Quantitative Analysis

Modeling using CT-EMFAC 2011 indicates the Build Alternatives (Alternatives 1 and 2) and No-Build Alternative would have similar CO_2 emissions in the Design Year, 2040. CO_2 emissions for the alternatives are summarized in Table 38.

Table 38. Estimated CO2 Emissions

	Existing/Baseline	No-Build Alternative	Build Alternatives (Alternative 1 and 2)
CO_2 Emissions	16.97 tons/year	42.60 tons/year	42.24 tons/year
Source: CT-EMFAC 2011 and traffic data from Traffic Operations Analysis (2014)			

These CO_2 emissions estimates are only useful for comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO_2 emissions would be because CO_2 emissions are dependent on other factors that are not part of the model such as the fuel mix (EMFAC model emission rates are only for direct engine-out CO_2 emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

[8] 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

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by on-site 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 better traffic management during construction phases.

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

CEQA Conclusion

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 greenhouse gas 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 CC-1 and CC-2.

Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 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 greenhouse gas 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 50: Mobility Pyramid.

Figure 50. Mobility Pyramid

Caltrans 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. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing 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. Environmental Protection Agency and the California Air Resources Board.

Caltrans 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 375 (Steinberg 2008), Senate Bill 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.
The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The California Transportation Plan 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 California Transportation Plan is to provide a common policy framework that would guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 would identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the State's transportation needs.

Table 39. Climate Change/CO2 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	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State Intelligent Transportation System; Congestion Management Plan	0.07	2.17
Mainstream Energy & Greenhouse Gas 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, California Environmental Protection Agency, California Air Resources Board, California Energy Commission		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	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
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 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal Environmental Protection Agency, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18
Climate Action Program, 2006						

Table 39 summarizes Caltrans and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

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

Caltrans Activities to Address Climate Change (April 2013) [9] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measure would also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

CC-1: According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations for air quality restrictions.

CC-2: According to the Department's Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans 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 would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. 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 White House Council on Environmental Quality, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration, released its interagency task force progress report on October 28, 2011[10], 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

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

[10] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

biodiversity through planning and conservation. The results of these efforts would help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This executive order 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) [11], 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 Executive Order S-13-08 that specifically asked the California Natural 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 would be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[12] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included the following:

- 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.
- 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.

[11] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF
[12] *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.

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team as well as Caltrans as a method to initiate action and discussion of potential risks to the state's infrastructure due to projected sea level rise. Subsequently, the Coastal Ocean Climate Action Team updated the Sea Level Rise guidance to include information presented in the National Academy's 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.

All projects that have filed a Notice of Preparation as of the date of Executive Order S-13-08, and/or are programmed for construction funding from 2008 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. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans 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, Caltrans 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, Caltrans would 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 increasing precipitation and flooding; increasing frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and identify potential impacts and avoidance, minimization and/or 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 meetings, interagency coordination meetings, and public outreach. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Table 40 shows the public meetings and workshops that have been held:

Table 40. Public Meetings and Workshops Held

Outreach	Date	Goal	Results
Workshop #1	November 19, 2009 from 6:00 p.m. to 8:00 p.m.	Discuss potential corridors; identify project issues; explore opportunities; document community values; discuss project constraints.	Attended by approximately 40 community members. Presented goal topics.
Workshop #2	May 25, 2010 from 6:00 p.m. to 8:00 p.m., Bret Harte High School Theater	Review refined project alternatives; back-check with community values; discuss new community concerns.	Attended by approximately 40 community members. Comments included: avoid impacts to residential property; avoid impacts to natural features and areas; involve the property owners so that all impacts may be reviewed; focus on safety; keep speeds low; look at alternative routes.
Workshop #3	September 9, 2010 from 6:00 p.m. to 8:00 p.m., Bret Harte High School Multi-Purpose Room	Review draft project alternatives; back-check community values; discuss alignments that would be carried forward through the environmental approval process.	Attended by approximately 53 community members. Comments included: avoid impacts to residential property; avoid impacts to open space and wildlife corridors; involve the property owners so that all impacts may be reviewed; focus on safety; keep speeds low; look at alternative routes.

(Table 40, continued)

Outreach	Date	Goal	Results
Property Owner Meeting	May 26, 2011 from 6:00 p.m. to 8:00 p.m., Copperopolis Armory	Introduce new Calaveras Council of Governments Executive Director; answer questions related to the project; answer questions related to the request by Caltrans and Calaveras Council of Governments to secure right-of-entry onto property.	Question and answer session regarding the new Board members and concern about level of County involvement. Concerns about level of access to the new highway was addressed as well.
Project Update Meeting	December 15, 2011	Project feasibility analysis and two identified alternatives.	Slide presentation, question and answer session regarding road realignment and parcel acquisition.
Workshop #4	April 10, 2013 at Copperopolis Armory	Provided summary of project status, history of computer modeling that identified proposed alignments, project schedule, anticipated future communications and schedule of environmental document.	Attended by approximately 46 community members. Presented final roadway alignments.
Workshop #5	October 24, 2013 (Bret Harte High School)	A presentation and summary of the project's status was given. Attendees were invited to review project exhibits on display and provide input and discuss concerns with project team members.	Attended by approximately 40 community members. Community input was collected in the form of comment cards and oral conversations. In response to the feedback received, the design team worked to refine the proposed alignments to minimize the impacts to property owners and the environment while at the same time meeting Caltrans design requirements.

Meetings/discussions with 15 property owners took place from August 2013 through January 2014 to obtain input and discuss any project questions or concerns. Key topics brought up by the owners included the following:

- Not disturbing existing wells.
- New Pool Station Road intersection should be used.
- Farmland impacts should be reduced.
- Concern of being surrounded by highway and losing the rural character of the area.
- Encroachment of alignment to parcel-specific structures and features.
- Driveway access.
- Drainage concerns.
- Concerns regarding left-turn pockets and turn-outs in front of property.
- Noise concerns.
- Lack of privacy with raised profiles.

- Property acquisition should not be just for construction staging. Construction staging locations should consider leaving areas preserved for harvesting row crops.

As a result of the discussions, several refinements were made to the proposed project. The designs were updated to shift the beginning of the project to reduce impacts to properties and to reduce impacts to farmlands to the extent feasible. Driveway access input was welcomed and will be finalized during right-of-way discussions. Input from local residents was taken into account when designing drainage features and basins. Noise concerns were looked at in the technical studies, and soundwalls were not found necessary. The roadway profile was also adjusted to avoid and reduce impacts. The proposed staging plan is not expected to use private property solely for staging, and the project will stage on areas that are already being acquired for the ultimate project roadway. Impacts to existing wells were also avoided.

Based on the public meetings, the alignment for Alternative 2 was found to be preferred by the public.

Consultation and Coordination with Public Agencies

U.S. Army Corps of Engineers

- Caltrans coordinated with the U.S. Army Corps of Engineers to obtain approval of the Jurisdictional Delineation. A field review meeting was held on September 22 2014. Approval on July 31, 2015.

U.S. Fish and Wildlife Service

- On January 7, 2013 an official species list was obtained from U.S. Fish and Wildlife Service of federal endangered and threatened species that could occur in the vicinity of the proposed project. On August 5, 2014, an updated species list was obtained from U.S. Fish and Wildlife Service. On July 7, 2015, an updated species list was obtained from U.S. Fish and Wildlife Service.
- On February 28, 2013 the California red-legged Frog/California Tiger Salamander Habitat Assessment prepared for the project was sent to the U.S. Fish and Wildlife Service biologist, Jen Schofield.
  On March 6, 2013, Jeff Alvarez's resume was sent to the U.S. Fish and Wildlife Service for approval to conduct branchiopod, California red-legged frog and California tiger salamander surveys.
  On December 2, 2013 Caltrans notified the U.S. Fish and Wildlife Service (Ryan Olah) that no additional protocol surveys for the California tiger salamander are required and a No Effect determination had been established for the species.
- On October 29, 2014 LSA biologist Laura Belt's resume was sent to U.S. Fish and Wildlife Service for approval to conduct branchiopod wet season surveys.

California Department of Fish and Wildlife
On January 7, 2013, a nine-quadrangle (Copperopolis, Angels Camp, Salt Spring Valley, Columbia, New Melones Dam, Murphys, San Andreas, Calaveritas and Sonora) list of sensitive species potentially occurring in the project vicinity was obtained from the California Department of Fish and Wildlife's California Natural Diversity Database. On August 5, 2014, an updated species list was obtained from the California's Department of Fish and Wildlife's California Natural Diversity Database.

On February 28, 2013, the California red-legged frog/California tiger salamander Habitat Assessment prepared for the project was sent to the California Department of Fish and Wildlife biologist, Tim Nosal.

On October 17, 2013, the California Department of Fish and Wildlife biologist Tim Nosal concluded sufficient evidence to declare a negative finding for the California tiger salamander within the project area and no additional surveys would be required for the species.

Native American Coordination
Caltrans consulted with the following Native American groups as part of the National Historic Preservation Act Section 106 compliance:

- Native American Heritage Commission
- Buena Vista Rancheria
- Buena Vista Rancheria Me-Wuk Indians
- Calaveras Band of Mi-wuk Indians
- Calaveras County Mountain MiWok Indian Council
- California Valley Miwok Tribe
- Ione Band of the Miwok Indians
- Nototomne/Northern Valley Yokuts Tribe
- Washoe Tribe of Nevada and California
- Wilton Rancheria

Each contact provided on the lists by the Native American Heritage Commission was sent an initial consultation project letter with maps on March 15, 2013 which provided a summary of the proposed project and requested information regarding comments or concerns the Native American community might have about the project. Phone calls were placed on March 22, 2013, July 18, 2013, and July 23, 2013 to those individuals that did not respond to the letter. A second letter summarizing field survey results was sent on February 13, 2014 to all the contacts. Of the Native American groups consulted, representatives from the Calaveras Band of Mi-Wuk Indians, Buena Vista Rancheria Me-Wuk Indians, California Valley Miwok Tribe, and the Ione Bank of Miwok Indians requested to be kept informed about the project. The Nototomne/Northern Valley Yokuts Tribe also requested Native American monitoring of the project area to be conducted at an undetermined date.

Chapter 4 List of Preparers

This document was prepared by the following Caltrans Central Region staff and consultants:

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Entech Consulting Group

Michelle Jones, Principal Engineer. B.S. in Civil Engineering, University of Washington; over 20 years of experience in noise analysis. Contribution: Noise Study Report.

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Appendix A CEQA Checklist

CEQA Environmental Checklist

10-CAL-4	R10.3/R16.4 (12.66/19.10)	0E5300
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Appendix B 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 C Biological Species Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Angels Camp (3812015) or Calaveritas (3812025) or Columbia (3812014) or Copperopolis (3712086) or Murphys (3812024) or New Melones Dam (3712085) or Salt Spring Valley (3812016) or San Andreas (3812026) or Sonora (3712084))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Agrostis hendersonii Henderson's bent grass	PMPOA040K0	None	None	G2Q	S2	3.2
Allium jepsonii Jepson's onion	PMLIL022V0	None	None	G1	S1	1B.2
Allium tuolumnense Rawhide Hill onion	PMLIL022W0	None	None	G2	S2	1B.2
Ammonitella yatesii tight coin (=Yates' snail)	IMGASB0010	None	None	G1	S1	
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aphrastochthonius grubbsi Grubbs' Cave pseudoscorpion	ILARA37010	None	None	G1G2	S1S2	
Arctostaphylos myrtifolia Ione manzanita	PDERI04240	Threatened	None	G2	S2	1B.2
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Banksula martinorum Martins' cave harvestman	ILARA14070	None	None	G1	S1	
Banksula melones Melones Cave harvestman	ILARA14010	None	None	G1	S1	
Banksula tutankhamen King Tut Cave harvestman	ILARA14200	None	None	G1	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
Brodiaea pallida Chinese Camp brodiaea	PMLIL0C0C0	Threatened	Endangered	G1	S1	1B.1
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G2	S2	1B.2
Clarkia biloba ssp. australis Mariposa clarkia	PDONA05051	None	None	G4G5T2T3	S2S3	1B.2
Clarkia rostrata beaked clarkia	PDONA050Y0	None	None	G2G3	S2S3	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Crocanthemum suffrutescens Bisbee Peak rush-rose	PDCIS020F0	None	None	G2Q	S2	3.2
Cryptantha mariposae Mariposa cryptantha	PDBOR0A1Q0	None	None	G3	S3	1B.3
Cryptantha spithamea Red Hills cryptantha	PDBOR0A2M2	None	None	G2	S2	1B.3
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eryngium pinnatisectum Tuolumne button-celery	PDAPI0Z0P0	None	None	G2	S2	1B.2
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1Q	S1	1B.1
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Erythronium tuolumnense Tuolumne fawn lily	PMLIL0U0H0	None	None	G2G3	S2S3	1B.2
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Ione Chaparral Ione Chaparral	CTT37D00CA	None	None	G1	S1.1	
Lagophylla dichotoma forked hare-leaf	PDAST5J070	None	None	G1	S1	1B.1
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lavinia symmetricus ssp. 1 San Joaquin roach	AFCJB19021	None	None	G4T3Q	S3	SSC
Lavinia symmetricus ssp. 3 Red Hills roach	AFCJB19028	None	None	G4T1	S1	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lomatium congdonii Congdon's lomatium	PDAPI1B0B0	None	None	G2	S2	1B.2
Lupinus spectabilis shaggyhair lupine	PDFAB2B3P0	None	None	G2	S2	1B.2
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
Mimulus pulchellus yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2G3	S2S3	1B.2
Mimulus whipplei Whipple's monkeyflower	PDSCR1B2U0	None	None	GXQ	SX	1A
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1	
Monadenia mormonum hirsuta hirsute Sierra sideband	IMGASC7072	None	None	G2T1	S1	
Monardella venosa veiny monardella	PDLAM18082	None	None	G1	S1	1B.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Punctum hannai Trinity Spot	IMGAS47080	None	None	G1G2	S1S2	
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Scopelophila cataractae tongue-leaf copper moss	NBMUS6U010	None	None	G3	S1	2B.2
Stygobromus gradyi Grady's Cave amphipod	ICMAL05460	None	None	G1	S1	
Verbena californica Red Hills vervain	PDVER0N050	Threatened	Threatened	G2	S2	1B.1

Record Count: 58

CNPS California Native Plant Rare and Endangered Plant Inventory

Plant List

38 matches found. *Click on scientific name for details*

Search Criteria

Found in 9 Quads around 38120A5

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Agrostis hendersonii	Henderson's bent grass	Poaceae	annual herb	3.2	S2	G2Q
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	1B.2	S1	G1
Allium sanbornii var. congdonii	Congdon's onion	Alliaceae	perennial bulbiferous herb	4.3	S3	G3T3
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	4.2	S4?	G3T4?
Allium tuolumnense	Rawhide Hill onion	Alliaceae	perennial bulbiferous herb	1B.2	S2	G2
Arctostaphylos myrtifolia	Ione manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G2
Arctostaphylos nissenana	Nissenan manzanita	Ericaceae	perennial evergreen shrub	1B.2	S1	G1
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
Brodiaea pallida	Chinese Camp brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S1	G1
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	1B.2	S2	G2
Clarkia biloba ssp. australis	Mariposa clarkia	Onagraceae	annual herb	1B.2	S2S3	G4G5T2T3
Clarkia rostrata	beaked clarkia	Onagraceae	annual herb	1B.3	S2S3	G2G3
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	4.2	S3	G5T3
Crocanthemum suffrutescens	Bisbee Peak rush-rose	Cistaceae	perennial evergreen shrub	3.2	S2	G2Q
Cryptantha mariposae	Mariposa cryptantha	Boraginaceae	annual herb	1B.3	S3	G3
Cryptantha spithamaea	Red Hills cryptantha	Boraginaceae	annual herb	1B.3	S2	G2
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S4	G4
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	4.2	S3	G4T3
Eryngium pinnatisectum		Apiaceae		1B.2	S2	G2

	Tuolumne button-celery		annual / perennial herb			
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	1B.1	S1	G1Q
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Erythronium tuolumnense	Tuolumne fawn lily	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
Githopsis pulchella ssp. serpentinicola	serpentine bluecup	Campanulaceae	annual herb	4.3	S3	G4T3
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	1B.2	S2	G2
Iris hartwegii ssp. columbiana	Tuolumne iris	Iridaceae	perennial rhizomatous herb	1B.2	S1	G4T1
Jepsonia heterandra	foothill jepsonia	Saxifragaceae	perennial herb	4.3	S4	G4
Lagophylla dichotoma	forked hare-leaf	Asteraceae	annual herb	1B.1	S1	G1
Lomatium congdonii	Congdon's lomatium	Apiaceae	perennial herb	1B.2	S2	G2
Lupinus spectabilis	shaggyhair lupine	Fabaceae	annual herb	1B.2	S2	G2
Mimulus pulchellus	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	1B.2	S2S3	G2G3
Mimulus whipplei	Whipple's monkeyflower	Phrymaceae	annual herb	1A	SX	GXQ
Monardella venosa	veiny monardella	Lamiaceae	annual herb	1B.1	S1	G1
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	4.2	S3	G3
Scopelophila cataractae	tongue-leaf copper-moss	Pottiaceae	moss	2B.2	S1	G3
Trichostema rubisepalum	Hernandez bluecurls	Lamiaceae	annual herb	4.3	S4	G4
Verbena californica	Red Hills vervain	Verbenaceae	perennial herb	1B.1	S2	G2

Suggested Citation

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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: 08ESMF00-2015-SLI-0943 July 27, 2015
Event Code: 08ESMF00-2015-E-02891
Project Name: State Route 4 Wagon Trail Realignment 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.

The table below outlines lead FWS field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project, and send any documentation regarding your project to that corresponding office. Therefore, the lead FWS field office may not be the office listed above in the letterhead. Please visit our office's website (http://www.fws.gov/sacramento) to view a map of office jurisdictions.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO
Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO

El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)

Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO
Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO

San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO

Shasta	Caltrans	By jurisdiction	SFWO/AFWO
Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)
Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
	Shasta Trinity National Forest		

Tehama	except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO
***Office Leads:**			
AFWO=Arcata Fish and Wildlife Office			
BDFWO=Bay Delta Fish and Wildlife Office			
KFWO=Klamath Falls Fish and Wildlife Office			
RFWO=Reno Fish and Wildlife Office			
YFWO=Yreka Fish and Wildlife Office			

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: State Route 4 Wagon Trail Realignment 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

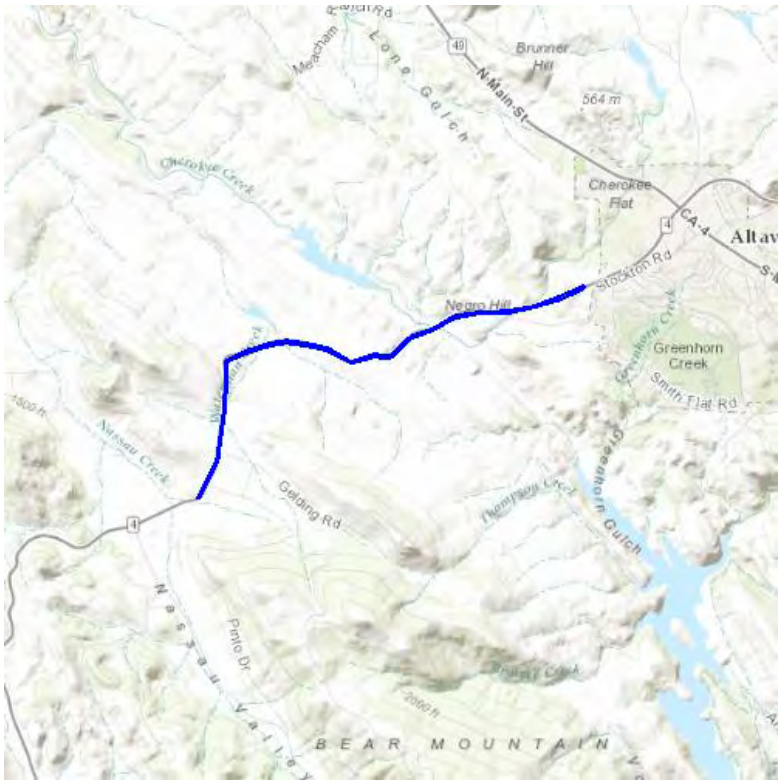
Consultation Code: 08ESMF00-2015-SLI-0943
Event Code: 08ESMF00-2015-E-02891

Project Type: TRANSPORTATION

Project Name: State Route 4 Wagon Trail Realignment Project
Project Description: Caltrans, in cooperation with Calaveras County, proposes to improve a segment of State Route 4 from Bonanza Mine Way to Stockton Road from 2.6 miles east of Copperopolis to approximately 1.6 miles west of the State Route 4/49 junction in Altaville (Angels Camp), Post Mile 10.3/16.4. The project proposes to construct a new alignment with two standard width lanes and paved shoulders. The project would improve sight distance by increasing curve radii to enhance safety.

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.

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Calaveras, CA

Endangered Species Act Species List

There are a total of 5 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
steelhead *(Oncorhynchus (=salmo) mykiss)* Population: Northern California DPS	Threatened	Final designated	
Insects			
Valley Elderberry Longhorn beetle *(Desmocerus californicus dimorphus)* Population: Entire	Threatened	Final designated	

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix D State Historic Preservation Officer Letter

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

In Reply Refer To: **FHWA_2014_1114_001**

December 17, 2014

Scott Guidi, Environmental Branch Chief
California Department of Transportation, District 10
1976 E. Charter Way
Stockton, CA 95205

Re: Comments on the Historic Property Survey Report and Determination of Eligibility for the SR-4/Wagon Trail Realignment Project, Calaveras County, CA

Dear Mr. Guidi:

Thank you for submitting your letter of 12 November 2014 and supporting documentation for the above noted undertaking on behalf of the Federal Highway Administration (FHWA). Pursuant to 36 CFR 800 (as amended 8-05-04), the regulations implementing Section 106 of the National Historic Preservation Act, the California Department of Transportation (Caltrans) is currently requesting my concurrence on their determination of eligibility for listing on the National Register of Historic Places (NRHP) for three of the 31 cultural resources that were identified within the Area of Potential Effect (APE) for this undertaking.

In conjunction with the FHWA and Caltrans, Calaveras County is proposing to realign a section of SR-4/Wagon Trail between Angels Camp and Copperopolis in Calaveras County, California. Project work involves improving SR-4 to incorporate standard lane and shoulder widths, reduce the number of curves, increase sight distances, and reduce the number of access points. Two build alternatives are currently being considered and both alternatives are included in the APE. These alternatives and the APE are described in greater detail in the following report documenting archival research and field survey.

- *State Route 4 Wagon Trail Realignment Project, Draft Cultural Resources Study Vol I of II, Historic Properties Survey Report and Historical Resources Evaluation Report* (Foothill Resources, Ltd. and Dokken Engineering 2014).
- *State Route 4 Wagon Trail Realignment Project, Draft Cultural Resources Study Vol II of II, Archaeological Survey Report;, Mitigation, Avoidance, and Minimization Measures; and Bridge inventory for the SR-4/Wagon Trail Realignment Project, Calaveras County, California* (Dokken Engineering 2014).

These documents indicate that the background research, records search, and survey efforts resulted in the identification of 31 cultural resources within the horizontal APE for the undertaking. Six of these resources will be evaluated in a phased effort upon selecting a build alternative. Three of these resources have been previously determined eligible for the NRHP and two have been previously determined as not eligible for listing on the NRHP. 13 resources are currently assumed eligible for the purposes of this project only and will be avoided or protected through the establishment of Environmentally Sensitive Areas (ESA's). Four resources were exempt from review or evaluation pursuant to Attachment 4 of the PA. Three of the resources have been evaluated and determined not eligible for listing on the NRHP. These three resources include:

- P-05-3088: Concrete trough
- P-05-3090: Keystone School
- P-05-3091: Prospect pit

Based on a review of your submitted materials, I **concur** with your determination that P-05-3088, P-05-3090, and P-053091 are not eligible for listing on the NRHP under any criteria. I advise Caltrans to consult with my office regarding their determinations of eligibility on the remaining sites to be evaluated and on their finding of effect for the undertaking once a build alternative is selected and access to the remaining resources is granted. Thank you for including historic properties and my comments in your project planning. Please direct questions to Jessica Tudor of my staff at (916) 445-7016 or jessica.tudor@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

Appendix E Avoidance, Minimization, and/or Mitigation Summary

This Appendix summarizes the avoidance, minimization and/or mitigation measures for the project. Table E.1 list avoidance and minimization measures that are typically followed during project construction and Table E.2 lists mitigation measures that are above and beyond standard construction contract requirements. Mitigation measures are provided for each significant impact.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
Section 2.1.3 Farmland	CIA-1: Final design efforts will be made to minimize right-of-way for the selected alternative.
Section 2.1.4.4 Utilities and Emergency Services	CIA-4: To minimize interruptions of service to utility customers, a series of coordination letters shall be sent to all impacted utility companies to identify utilities within the proposed project. Letters would indicate where utility relocations are to be performed and the required time to relocate them. Design plans would be sent to involved utility owners during the project development phase. Meetings would be arranged with utility companies as necessary to discuss impacts and relocation plans prior to construction. CIA-5: Emergency public services, local law enforcement agencies, and local businesses would be notified of the proposed project and of any temporary lane closures before construction begins.
Section 2.1.4.5 Traffic and Transportation	TRA-1: A Traffic Management Plan shall be implemented during construction of the project to allow traffic access to State Route 4.
Section 2.1.4.6 Visual/Aesthetics	VIS-1: Where feasible, Build Alternatives would use the existing highway right – of- way corridor. VIS-2: Per Caltrans standards regarding erosion control, exposed slopes would be re-vegetated. VIS-3: Aesthetic elements incorporated during Final Design, would be designed and implemented with coordination between local agencies and Caltrans. VIS-4: Vegetation clearing would only occur within the delineated project boundaries in an effort to minimize the impacts. Oak trees located in areas along the edge of the construction zone would be trimmed whenever possible and only those oak trees that lie within the active construction areas would be removed.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
Section 2.1.4.7 Cultural Resources	CR-1: Conduct a verification pedestrian survey of areas previously surveyed prior to the 2013 efforts once right-of-way is acquired. Should cultural resources be encountered, they shall be documented in a supplemental Historic Property Survey Report.
Section 2.2.1 Hydrology and Floodplain	HYD-1: A Storm Water Pollution Prevention Plan (SWPPP) would be implemented during construction to provide adequate erosion and water quality control. HYD-3: Longitudinal encroachments will be avoided through localized realignment of water features. HYD-4: Culverts and basins would be sized and designed to accommodate storm water per Caltrans design standards.
Section 2.2.2 Water Quality and Storm Water Runoff	WQ-1: A Section 401 Water Quality Certification will be obtained from the State Water Resources Control Board. WQ-2: A Section 404 Permit will be obtained from the U.S. Army Corps of Engineers. WQ-3: A National Pollutant Discharge Elimination System Construction General Permit for Discharges of storm water associated with construction activities (CGP 2009-009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ (National Pollutant Discharge Elimination System No. CAS000002) will be obtained through the State Water Resources Control Board. HYD-4: Culverts and basins would be sized and designed to accommodate storm water per Caltrans design standards. WQ-5: A spill prevention and countermeasure plan will be incorporated into the Stormwater Pollution Prevention Plan.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	WQ-6: A Section 1602 Streambed Alteration Agreement will be obtained through the California Department of Fish and Wildlife to ensure protection from impacts to the streambed or associated riparian habitat.
2.2.4 Paleontology	PAL-1: If unanticipated paleontological resources are observed during project construction, work would be suspended in the immediate vicinity of the find until it can be evaluated by a qualified paleontologist.
2.2.5 Hazardous Waste and Materials	HAZ-1: Excavation/earthwork activities in the western one-third of the site should be observed and documented by a Professional Geologist experienced in the recognition of NOA. HAZ-2: Soil/rock excavated from such areas, specifically at Pool Station Road, should be placed as deep fill elsewhere within the segment at a location where it is unlikely to be disturbed by future excavation/construction activities. HAZ-3: Contractors working in areas identified as containing or likely to contain naturally occurring asbestos will consult CAL-OSHA to establish the appropriate regulatory protocol and actions necessary for excavation and/or disturbance of asbestos-containing soils. HAZ-4: Prior to construction activities, the contractor(s) shall prepare and implement an Asbestos Dust Mitigation Plan (ADMP) that describes measures that will be taken to control the potential release of NOA-containing dust from the soil/rock as a result of construction excavation activities. Asbestos dust control and soil management activities to be implemented shall be in compliance with applicable state, federal, and local laws. Special provisions will be included in the construction contract. HAZ-5: Prior to beginning construction activities, the contractor(s) must prepare

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	and implement a Lead and Asbestos Compliance-Health and Safety Plan. Special provisions will be included in the construction contract. HAZ-6: Contractors that would be conducting renovation or related activities in areas or on structures shall be notified of the presence of asbestos in their work areas (i.e., the contractor[s] shall be provided a copy of the Site Investigation and bridge survey data and a list of asbestos removed during subsequent activities). Contractors not trained for asbestos work shall be instructed not to disturb asbestos during their activities. HAZ-7: National Emissions Standards for Hazardous Air Pollutants (NESHAP) notification will be made to the Calaveras County Air Pollution Control District 10 days prior to bridge demolition or renovation activities whether asbestos is present or not. HAZ-8: All paints at the project location (signage, graffiti, graffiti abatement, etc.) shall be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during maintenance, renovation, and demolition activities. In accordance with Title 8, CCR, §1532.1(p), written notification to the nearest Cal/OSHA district office is required and shall be conducted at least 24 hours prior to certain lead-related work. Contractors are responsible for segregating and characterizing waste streams prior to disposal. Special provisions will be included in the construction contract. HAZ-9: Following the completion of private parcel right-of-way acquisition for the selected alternative alignment, additional site investigation may be necessary to address potential impacts associated with aboveground fuel/oil tanks or other identified potential contamination sources, including the active vineyard next to Appaloosa Road.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	HAZ-10: Sampling may be required to obtain a discharge permit for disposal of any extracted groundwater generated during bridge demolition/construction activities. HAZ-11: Due to the potential for elevated lead and chromium levels associated with yellow striping paint, centerline paint removed during planned roadway improvement activities may require sampling, analytical testing, and/or special handling and disposal requirements unless combined with sufficient asphalt grindings. Special Provisions will be included in the construction contract. HAZ-12: Asbestos-containing pipe may be encountered during construction of the planned highway and bridge improvements. Any encountered asbestos-containing pipe would require proper handling and disposal in accordance with regulatory requirements. HAZ-13: If present or encountered within the new right-of-way, undocumented Underground Storage tanks, septic systems, and unused domestic agricultural wells or cisterns should be properly removed or abandoned in accordance with Calaveras County requirements.
2.2.6 Air Quality	AQ-1: To control exposure to potentially naturally occurring asbestos-containing dust, engineering controls will be implemented, such as wetting of materials disturbed. AQ-2: According to the Department's Standard Specifications, the contractor must comply with all local Air Pollution Control District (APCD) rules, ordinances, and regulations for air quality restrictions. AQ-3. The applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	AQ-4. All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage. AQ-5. All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions. AQ-6. All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads. AQ-7. All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph. AQ-8. All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved non-toxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance. AQ-9. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of six (6) inches of freeboard in the bed of the transport vehicle. AQ-10. Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud that may have resulted

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	from activities at the project site. AQ-11: Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.
2.2.7 Noise	NOI-1: To minimize the construction-generated noise, abatement measures in Standard Specification 14-8.02, "Noise Control" and Standard Special Provision (SSP) 14-8.02 must be followed: • Do not exceed 86 decibel at 50 feet from the job site activities from 9 p.m. to 6 a.m. • Equip an internal combustion engine with the manufacturer recommended muffler. • Do not operate an internal combustion engine on the job site without the appropriate muffler.
2.3.1 Natural Communities	BIO-1: Environmentally Sensitive Area fencing would be established at the driplines of oak trees that would be avoided within or adjacent to construction to ensure no further encroachment on the trees. BIO-2: Vegetation clearing would only occur within the delineated project boundaries in an effort to minimize the impacts. Oak trees located in areas along the edge of the construction zone would be trimmed whenever possible, and only those oak trees that lie within the active construction areas would be removed.
2.3.2 Wetlands and Other Waters	BIO-4: The project limits in proximity to Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek and associated tributaries and wetlands would be marked with highly visible Environmentally Sensitive Area fencing to

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	ensure construction would not further encroach into water features. BIO-5: Impacts to jurisdictional waters will be mitigated at a 1:1 ratio for temporary impacts and a 2:1 ratio for permanent impacts or as determined appropriate by permitting agencies. Exact mitigation ratios and locations will be consistent with permit requirements. Impacts will be mitigated at an on- or off-site agency-approved location or a combination of both.
2.3.3 Plant Species	BIO-8: Prior to initiating construction where feasible, Environmentally Sensitive Area fence shall be installed at the edge of the project limits where Tuolumne button-celery populations exist. The project biologist shall be present during the installation of the Tuolumne button-celery Environmentally Sensitive Area fencing (see Figure 44). BIO-9: Prior to construction in areas within 100-feet of existing Tuolumne button-celery populations, a focused survey shall be done to calculate the project's impacts on the existing population. The survey shall be done during the blooming season (May 1- August 31) in the season immediately preceding construction. Surveys would be completed by a qualified biologist. Results of this pre-construction survey shall be submitted to the California Department of Fish and Wildlife. BIO-10: All construction personnel shall attend an environmental awareness training. During the environmental awareness training, construction personnel would be briefed on the project's sensitive status plant and animal species including the Tuolumne button-celery, valley elderberry longhorn beetle, foothill yellow-legged frog, and western pond turtle. BIO-11: Those Tuolumne button-celery individuals that are impacted would be relocated to suitable habitats including swales, vernal pools, or wetlands within the project area or off-site. Relocation sites shall be approved by

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	the California Department of Fish and Wildlife. BIO-12: Should relocation of Tuolumne button-celery plants be necessary, the relocation would be done by a licensed landscape contractor, under the supervision of a qualified biologist, during the winter dormant season. BIO-13: Prior to initial ground-disturbance activities, pre-construction blooming surveys for Red Hills soaproot (May 1-June 30), Mariposa cryptantha (April 1-June 30), Forked hare-leaf (April 1 through May 31), and Congdon's lomatium (April 1-May 31) (in designated areas in Figure 39) would be conducted on un-surveyed parcels by a qualified biologist. BIO-14: Should a Red Hills soaproot, Mariposa cryptantha, Forked hare-leaf, or Congdon's lomatium be found during pre-construction surveys, Environmentally Sensitive Area fencing would be erected to avoid the sensitive plant or the specimens would be relocated to appropriate environments. Relocation strategies and locations shall be approved by the California Department of Fish and Wildlife.
2.3.4 Animal Species	BIO-15: To the greatest extent practicable, all vegetation removal would occur during the non-nesting season (September 1–February 15). If vegetation removal is to take place during the nesting season (February 15–September 1), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal by a qualified biologist (familiar with avian biology, nesting bird ecology, and standard survey techniques). Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist must be removed by the contractor. BIO-16: If demolition/rehabilitation of existing culverts or bridges are planned to occur during the nesting season, measures shall be taken to avoid impacts to migratory swallows. To protect migratory swallows, unoccupied nests would be removed from existing bridge/culvert

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	structures prior to the nesting season (February 15 – September 1). During the nesting season, bridge/culvert structures shall be maintained either through use of exclusionary devices and/or the active removal of partially constructed nests. After a nest is completed, it can no longer be removed until nesting season is over. BIO-17: If construction is to occur during the swallow nesting season, a qualified biologist would survey the existing bridge structures to determine the presence of nesting swallows. If active and occupied nests are discovered, disruptive work in proximity to active nest would stop. Nests would not be removed until after young have fledged. BIO-18: Prior to vegetation removal in Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek, a pre-construction survey for foothill yellow-legged frog would be conducted by a Caltrans -and California Department of Fish and Wildlife- approved biologist. BIO-19: In areas adjacent to Black Creek, Nassau Creek, Waterman Creek, and Cherokee Creek where low lying shrubs/vegetation are present, vegetation would be removed within 33 feet of the top of the water features by hand. BIO-20: If any wildlife is encountered during the course of construction, said wildlife would be allowed to leave the construction area unharmed. BIO-21: All trash must be kept in wildlife-proof receptacles, and any non-natural food and water sources would not be left unattended for the duration of the project construction. BIO-22: Prior to tree removal, pre-construction tree surveys for the western red bat would be conducted by an appropriate wildlife biologist.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
2.3.5 Threatened and Endangered Species	BIO-23: Prior to initial ground-disturbing activities, pre-construction blooming plant surveys (May 1-June 30) would be conducted on un-surveyed parcels for Chinese Camp brodiaea by a qualified biologist during the blooming season. BIO-24: Should a Chinese Camp brodiaea be found during pre-construction surveys, Environmentally Sensitive Area fencing would be erected to avoid the sensitive plant or the specimens would be relocated to appropriate environments. Relocation strategies and locations shall be approved by the California Department of Fish and Wildlife. BIO-25: Prior to initiating construction, Environmentally Sensitive Area fencing would be installed. The Environmentally Sensitive Area would be positioned as far from elderberry shrubs as practicable and shall be installed under the direction of the project biologist (see Figure 46 of the Initial Study). BIO-26: Signs shall be installed along the edge of the Environmentally Sensitive Area (every 300 feet) within elderberry shrub vicinities and shall read as follows: “This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction. BIO-27: Prior to construction (when property access is secured), elderberry shrub surveys would be updated. If new elderberry impacts are identified, the project’s Section 7 consultation shall be amended. If the species is de-listed prior to construction, the additional surveys and consultation would not be required.

Table E.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures
	BIO-28: To prevent fugitive dust from drifting into adjacent habitat, all clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, demolition activities or other dust-generating activities shall be effectively controlled for fugitive dust emissions using application of water or by presoaking. BIO-29: No mowing of grasses/ground cover would occur within 5 feet of elderberry plant stems. BIO-30: No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level. BIO-34: Plastic mono-filament netting would not be used for erosion control or other purposes at the proposed project site. The California tiger salamander may become entangled in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding.
2.3.6 Invasive Species	BIO-35: The Resident Engineer of the project would ensure that prior to arrival at the project site and prior to departure from the project site, construction equipment that may contain invasive plants and/or seeds would be cleaned to reduce the spread of noxious weeds. BIO-36: All hydroseed and plant mixes must consist of a biologist- approved plant palette seed mix from native, locally adapted species.
2.5 Climate Change	CC-1: According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations for air quality restrictions.

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
2.1.3 Farmland	CIA-2: Property owners will be treated fairly and in compliance with the California Department of Transportation Relocation Assistance program and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.
2.1.4.2 Relocations and Real Property Acquisitions	CIA-3: Where acquisition and relocation are unavoidable, the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the 1987 Amendments, as implemented by the Uniform Relocation Assistance and Real Property Acquisition regulations for Federal and Federally Assisted Programs adopted by the U.S. Department of Transportation (March 2, 1989) shall be followed. Relocation advisory assistance shall be provided to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use.
2.1.4.6 Visual/Aesthetics	VIS-5: Oak tree mitigation would occur on-site or at a California Department of Fish and Wildlife approved off-site location.
2.1.4.7 Cultural Resources	CR-2: Conduct pre-construction pedestrian survey of those areas where previously recorded resources were not relocated. Should cultural resources be encountered, they shall be documented in a supplemental Historic Property Survey Report. CR-3: Conduct Extended Phase I identification efforts at potential resources detailed in the final 2014-2015 cultural studies for this project. Based on the results of these efforts, either ESA fencing shall be implemented to protect the resource, or, should it be determined that the site would be impacted by the proposed project, Phase II testing shall be conducted to verify NRHP eligibility. Phase I identification and Phase II testing as needed. CR-4: Assess NRHP eligibility for all sites currently “Presumed Eligible” that would be impacted by proposed construction activities. These evaluations

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	would be documented in a supplemental Historic Property Survey Report/Historic Resources Evaluation Report. CR-5: Assess adverse effect for all NRHP-eligible properties in a Finding of Effect report, should any be present after additional evaluation efforts are concluded. Should the Finding of Effect reach a determination of adverse effect, a mitigation program must be designed and implemented. The Finding of Effect shall be submitted for review and approval by the State Historic Preservation Officer. CR-6: Implementation of Environmentally Sensitive Area fencing and archaeological monitoring shall be used at potential resources detailed in the final 2014-2015 cultural technical studies for this project. CR-7: Implementation of Environmentally Sensitive Area fencing and archaeological monitoring shall occur at the National Register of Historic Places-eligible resources detailed in the final 2014-2015 cultural technical studies for this project. Environmentally Sensitive Area fencing and archaeological monitoring shall occur to avoid potential damage to any previously undisturbed portions of the site that may remain. CR-8: Conduct Extended Phase I identification efforts for resources with high sensitivity for buried archaeological deposits detailed in the final 2014-2015 cultural studies for this project. Should any cultural resources be identified, the results shall be documented in a supplemental Historic Property Survey Report and Phase II testing and/or Phase III data recovery would be necessary. CR-9: Conduct Phase II testing for previously non-evaluated resources detailed in the final 2014-2015 cultural technical studies for this project. CR-10: Prepare a Finding of Effect for those resources determined to be historic

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	properties. CR-11: Following an adverse Finding of Effect determination, conduct Phase III Data Recovery on all historic properties adversely impacted by the proposed alternative. CR-12: Implementation of Environmentally Sensitive Area fencing to avoid project impacts shall occur for the resources detailed in the final 2014-2015 cultural technical studies for this project. An Environmentally Sensitive Area Action Plan should be drafted, reviewed, approved and implemented prior to construction. Archaeological/Native American monitoring shall take place during construction activities near all Environmentally Sensitive Area fencing. CR-13: Conduct archaeological/Native American monitoring during project ground- disturbing activities adjacent to Environmentally Sensitive Area fencing for the resources detailed in the final 2014-2015 cultural technical studies for this project. CR-14: If previously unidentified cultural materials are unearthed during maintenance activities, work shall be halted in that area until an archaeologist meeting the Secretary of the Interiors Professional Qualification Standards in Archaeology can assess the significance of the discovery and develop a plan for documentation and removal of resources, if necessary. CR-15: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which will then

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	notify the Most Likely Descendent. Further provisions of PRC 5097.98 are to be followed as applicable. CR-16: Conduct XPI identification efforts for resources detailed in the final 2014-2015 cultural technical studies for this project. The XPI efforts would involve a mixed methodology and shall be conducted in tandem with geotechnical investigations in an effort to 1) supplement the original Geoarchaeological Investigation results (to provide a larger sample volume) and to 2) coordinate right-of-entry. The mixed methodology would include archaeological/Native American monitoring of geotechnical trenches and bore holes and archaeological excavation of standard test units and/or shovel test pits to determine presence/absence. Should any cultural resources be identified, such results shall be documented in a supplemental Historic Property Survey Report and Phase II testing and/or Phase III data recovery would be necessary. CR-17: Conduct Phase II testing for previously non-evaluated resources as detailed in the final 2014-2015 cultural technical studies for this project. CR-18: Prepare a Finding of Effect for those resources determined to be historic properties. The Finding of Effect shall be submitted for review and approval by the State Historic Preservation Officer. CR-19: Following an adverse Finding of Effect determination, conduct Phase III Data Recovery on all historic properties adversely impacted by the proposed alternative. CR-20: Implementation of Environmentally Sensitive Area fencing to avoid project impacts shall occur for the applicable resources detailed in the final 2014-2015 cultural technical studies for this project. An Environmentally Sensitive Area Action Plan should be drafted, reviewed, approved, and implemented prior to construction. Archaeological /Native American

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	monitoring shall take place during construction activities near all Environmentally Sensitive Area fencing. CR-21: Conduct archaeological/Native American monitoring during project ground disturbing activities adjacent to Environmentally Sensitive Area fencing and within applicable resources detailed in the final 2014-2015 cultural technical studies for this project. CR-22: If previously unidentified cultural materials are unearthed during maintenance activities, work shall be halted in that area until an archaeologist meeting the Secretary of the Interiors Professional Qualification Standards in Archaeology can assess the significance of the discovery and develop a plan for documentation and removal of resources, if necessary. CR-23: Environmentally Sensitive Areas will be established for known resources in or near project construction.
2.3.1 Natural Communities	BIO-3: An oak woodland mitigation plan will be established with the California Department of Fish and Wildlife. Caltrans will permanently preserve mixed oak woodland habitat at a minimum acreage ratio of 1.5:1, will plant oaks at a ratio described below, or will mitigate through a combination of both methods. Diameter at Breast Height (in inches) — Mitigation Ratio 5-15 — 1:1 16-30 — 2:1 31+ — 3:1 Source: Natural Environment Study, August 2014 If oak planting is to occur, the following requirements will be followed: • Native oak planting will come from local stock and can use acorns or

Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	potted plants. • Native oak planting will begin at the onset of the rainy season. • Browse protection from wildlife and livestock will be installed around newly planted native oaks and will remain maintained for 7 years. Planted oak trees will be monitored and replanted (if necessary) for a minimum of three years.
2.3.2 Wetlands and Other Waters	BIO-5: Impacts to jurisdictional waters will be mitigated at a 1:1 ratio for temporary impacts and a 2:1 ratio for permanent impacts or as determined appropriate by permitting agencies. Exact mitigation ratios and locations will be consistent with permit requirements. Impacts will be mitigated at an on- or off-site agency-approved location or a combination of both. BIO-6: Erosion Control Measures must be implemented during construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion-control and sediment-control measures will be included in the Storm Water Pollution Prevention Plan (SWPPP) based on standard Caltrans measures and standard dust-reduction measures: • Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures; • The contractor must conduct periodic maintenance of erosion- and sediment-control measures. BIO-7: To minimize the mobilization of sediment to adjacent water features, the following erosion-control and sediment-control measures will be included in the SWPPP. To conform to water quality requirements, the SWPPP will include the following: • Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from riparian or aquatic habitats. Any necessary equipment washing shall occur where the water cannot

Table E.2. Mitigation and Abatement Measures

<table>
<tr><th>Section Number Reference and Resource</th><th>Mitigation Measures</th></tr>
<tr><td></td><td>flow into Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries or wetlands. The project proponent will prepare a spill prevention and clean-up plan;
• Construction equipment will not be operated in flowing water;
• Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries and wetlands;
• Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries and wetlands; Equipment used in and around Black Creek, Nassau Creek, Waterman Creek, Cherokee Creek, associated tributaries or wetlands must be in good working order and free of dripping or leaking engine fluids; and,
• Any surplus concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.
•</td></tr>
<tr><td>2.3.5
Threatened and Endangered Species</td><td>BIO-31: When feasible, all elderberry shrubs requiring removal would be relocated/transplanted either on-site or at a U.S. Fish and Wildlife Service-approved suitable off-site location following the U.S. Fish and Wildlife Service 1999 guidelines. All transplants shall occur between November and early February, when elderberry shrubs are dormant.

BIO-33:
Proposed Elderberry Mitigation for Alternative 1
<table>
<tr><th>Elderberry Shrub</th><th>Amount Affected Stems</th><th>Amount Elderberry Seedlings to be planted</th><th>Amount Associated Native Plants to be Planted</th></tr>
<tr><td>Stem diameter 1”-3”</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Stem diameter 3”-5”</td><td>1</td><td>2</td><td>2</td></tr>
<tr><td>Stem diameter >5”</td><td>0</td><td>0</td><td>0</td></tr>
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Table E.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	Total **1** **2** **2** **Proposed Elderberry Mitigation for Alternative 1** Elderberry Shrub — Amount Affected Stems — Amount Elderberry Seedlings to be planted — Amount Associated Native Plants to be Planted Stem diameter 1”-3” — 9 — 9 — 9 Stem diameter 3”-5” — 8 — 16 — 16 Stem diameter >5” — 2 — 6 — 6 **Total** — **19** — **31** — **31** The project proposes to purchase VELB credits (1 credit for Alternative 1 or 7 credits for Alternative 2) at a USFWS-approved VELB mitigation bank (e.g. French Camp Conservation Bank or River Ranch Conservation Bank). After an alternative is selected, Section 7 consultation will be completed.

List of Technical Studies

Air Quality Report (2015)

Noise Study Report (2015)

Water Quality Report (2015)

Natural Environment Study (2015)

Location Hydraulic Study (2015)

Historical Property Survey Report (2015)

- Historic Resource Evaluation Report
- Archaeological Survey Report

Aerial Deposited Lead, Metals and Naturally Occurring Asbestos Site Investigations Report (2015)

Initial Site Assessment (2015)

Visual Impact Assessment (2015)

Paleontological Identification Report (2015)

Traffic Operations Analysis Report (2014)

Jurisdictional Delineation Report (2015)

Community Impact Assessment (2015)