Llano Road Intersection Improvement

SONOMA COUNTY, CALIFORNIA
CALTRANS DISTRICT 4
STATE ROUTE 116 – SON PM # 30.9/31.4
EA 04-4G380; Project ID # 0412000463

Initial Study with
Proposed Mitigated Negative
Declaration

Prepared by the
California Department of Transportation

September 2017
General Information About This Document

What’s in this document:
The California Department of Transportation (Caltrans) has prepared this Initial Study with Proposed Mitigated Negative Declaration, which examines the potential environmental impacts of the proposed State Route (SR) 116 and Llano Road intersection improvement (the project), located in Sonoma County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document describes why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the proposed project, and the proposed avoidance and minimization measures.

What you should do:
• Please read this document.
• Additional copies of this document are available for review at:
  California Department of Transportation, District 4
  111 Grand Avenue
  Oakland, CA 94612
  Sebastopol Regional Library
  7140 Bodega Avenue
  Sebastopol, CA 95472

• This document can be accessed electronically at the following website:
  http://www.dot.ca.gov/dist4/envdocs.htm

• Send questions or comments via postal mail to:
  Eric DeNardo, Branch Chief
  California Department of Transportation, District 4
  Office of Environmental Analysis
  111 Grand Avenue
  Oakland, CA 94612

• Send comments via email to: Eric.DeNardo@dot.ca.gov.
• Be sure to send comments by the deadline: November 2nd, 2017

What happens next:
Per CEQA Section 15073, Caltrans will circulate the Initial Study with Proposed Mitigated Negative Declaration for review for 30 days. During the 30-day public review period, the general public and responsible and trustee agencies can submit
comments on this document to Caltrans. Caltrans will consider the comments and may respond to the comments after the 30-day public review period.

After comments are received, Caltrans may: (1) give environmental approval to the proposed project, (2) conduct additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the proposed 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 California Department of Transportation, Attn: Eric DeNardo, Branch Chief, Office of Environmental Analysis, 111 Grand Avenue, MS 8-B, Oakland, CA 94612; (510) 286-5645 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.
# Initial Study With Proposed Mitigated Negative Declaration

| 04-SON-116 | 30.9 – 31.4 | 4G380 |
| Dist. – Co. – Rte. | PM – PM | E.A. |

- **Project title:** SR 116 and Llano Road Intersection Improvement
- **Lead agency name and address:** California Department of Transportation
  111 Grand Avenue, Oakland, CA 94612
- **Contact person and phone number:** Eric DeNardo, Branch Chief
  (510) 286-5645
- **Project location:** Unincorporated Sonoma County, CA
- **General plan description:** Highway
- **Zoning:** Transportation/Riparian Corridor
- **Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreements); CEQA Responsible Agencies are denoted with an *:** Change list of agencies as applicable
  - Biological Opinion from the United States Fish and Wildlife Service
  - Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife*
  - Clean Water Act 404 Nationwide Permit from the U.S. Army Corps of Engineers
  - Clean Water Act 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board*
  - California State Lands Commission*
  - California Transportation Commission*

Additional copies of this document, as well as technical studies this document relies on, are available for review at the Caltrans District 4 office, 111 Grand Avenue, Oakland, CA 94612, or online at [http://www.dot.ca.gov/d4/envdocs.htm](http://www.dot.ca.gov/d4/envdocs.htm).

[Signature]
9/30/2017

Stefan Galvez, Abadia
Chief, Office of Environmental Analysis
Caltrans, District 4

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<td>Assembly Bill</td>
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<td>AB3</td>
<td>Aggregate Base, type 3</td>
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<tr>
<td>AMM</td>
<td>Avoidance and Minimization Measure</td>
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<td>APE</td>
<td>Area of Potential Effects</td>
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<td>ARB</td>
<td>California Air Resources Board</td>
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<tr>
<td>BAU</td>
<td>Business-As-Usual</td>
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<tr>
<td>BMP</td>
<td>Best Management Practice</td>
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<tr>
<td>BO</td>
<td>Biological Opinion</td>
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<td>BSA</td>
<td>Biological Study Area</td>
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<tr>
<td>CAFE</td>
<td>Corporate Average Fuel Economy</td>
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<td>California Environmental Protection Agency</td>
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<td>CALFIRE</td>
<td>California Department of Forestry and Fire Protection</td>
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<td>CASGEM</td>
<td>California Statewide Groundwater Elevation Monitoring</td>
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<td>CCCS</td>
<td>Central California Coast Steelhead</td>
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<td>California Department of Fish and Wildlife</td>
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<td>California Environmental Quality Act</td>
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<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
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<td>Methane</td>
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<td>CO-CAT</td>
<td>Coastal Ocean Climate Action Team</td>
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<td>CO2</td>
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<td>California Red-Legged Frog</td>
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<td>California Transportation Plan</td>
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<td>California Tiger Salamander</td>
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<td>Clean Water Act</td>
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<td>DI</td>
<td>Drainage Inlet</td>
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<tr>
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<td>Description</td>
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<tr>
<td>DOT</td>
<td>U.S. Department of Transportation</td>
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<tr>
<td>DP</td>
<td>Director’s Policy</td>
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<tr>
<td>DPS</td>
<td>Distinct Population Segment</td>
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<tr>
<td>DTSC</td>
<td>California Department of Toxic Substances Control</td>
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<tr>
<td>EFH</td>
<td>Essential Fish Habitat</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<tr>
<td>EO</td>
<td>Executive Order</td>
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<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>ESA</td>
<td>Environmentally Sensitive Area</td>
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<tr>
<td>ESU</td>
<td>Evolutionarily Significant Unit</td>
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<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<td>Federal Highway Administration</td>
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<td>Federated Indians of Graton Rancheria</td>
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<td>FIRM</td>
<td>Flood Insurance Rate Map</td>
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<td>greenhouse gas</td>
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<td>HFC-23</td>
<td>Fluoroform</td>
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<tr>
<td>HFC-134a</td>
<td>s, s, s, 2-tetrafluoroethane</td>
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<tr>
<td>HFC-152a</td>
<td>Difluoroethane</td>
</tr>
<tr>
<td>HPSR</td>
<td>Historic Property Survey Report</td>
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<tr>
<td>IPCC</td>
<td>International Panel on Climate Change</td>
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<tr>
<td>IS</td>
<td>Initial Study</td>
</tr>
<tr>
<td>LCFS</td>
<td>Low Carbon Fuel Standard</td>
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<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
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<tr>
<td>MMTCO2e</td>
<td>Million Metric Tons of Carbon Dioxide Equivalent</td>
</tr>
<tr>
<td>MND</td>
<td>Mitigated Negative Declaration</td>
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<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
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<tr>
<td>N2O</td>
<td>Nitrous Oxide</td>
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<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<tr>
<td>NES</td>
<td>Natural Environment Study</td>
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<td>NHTSA</td>
<td>National Highway Traffic Safety Administration</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>NMFS</td>
<td>National Marine Fisheries Service</td>
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<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
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<tr>
<td>NPDES</td>
<td>National Pollution Discharge Elimination System</td>
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<tr>
<td>OPR</td>
<td>Office of Planning and Research</td>
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<tr>
<td>PBO</td>
<td>Programmatic Biological Opinion</td>
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<tr>
<td>PC/PS</td>
<td>Pre-Cast/Pre-Stressed</td>
</tr>
<tr>
<td>PM</td>
<td>Post Mile</td>
</tr>
<tr>
<td>PSSA</td>
<td>Palustrine Shrub-Scrub Temporarily Flooded</td>
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<tr>
<td>RCB</td>
<td>Reinforced Concrete Box culvert</td>
</tr>
<tr>
<td>RD</td>
<td>Roadside Ditch</td>
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<tr>
<td>RW</td>
<td>Retaining Wall</td>
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<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
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<tr>
<td>SB</td>
<td>Senate Bill</td>
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<td>SF6</td>
<td>Sulfur Hexafluoride</td>
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<tr>
<td>SHOPP</td>
<td>State Highway Operation and Protection Program</td>
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<tr>
<td>SLR</td>
<td>Sea-Level Rise</td>
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<tr>
<td>SR</td>
<td>State Route</td>
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<tr>
<td>SRPCS</td>
<td>Santa Rosa Plain Conservation Strategy</td>
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<tr>
<td>SWPPP</td>
<td>Stormwater Pollution Prevention Plan</td>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<tr>
<td>TCE</td>
<td>Temporary Construction Easement</td>
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<tr>
<td>USACE</td>
<td>U.S. Army Corps of Engineers</td>
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<tr>
<td>USC</td>
<td>United States Code</td>
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<td>USFWS</td>
<td>U.S. Fish and Wildlife Service</td>
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<td>WEF</td>
<td>Wildlife Exclusion Fencing</td>
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Chapter 1  Project Goal, Purpose, and Need

1.1  Project Location

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA) for the Llano Road Intersection Improvement project (proposed project), which consists of improvements to State Route (SR) 116 and replacement of a concrete double-box culvert with a bridge in Sonoma County, California. The proposed project is located from Post Mile (PM) 30.9 to 31.4 (approximately 2,300 feet), just south of the City of Sebastopol (see Figure 1, Regional Vicinity and Figure 2, Project Area). The surrounding land uses are rural with low-density residential, and the project site is adjacent to a historical site, Llano House Antiques. The project footprint, also referred to as the project area, is the area where work or construction would take place for the proposed project, and comprises all project components, including temporary work areas (e.g., staging and traffic control) (see Figure 2).

1.2  Project Goal

The project would improve traffic safety at the SR 116 and Llano Road intersection in six ways: (1) widening SR 116 to accommodate a left-turn pocket onto northbound Llano Road, (2) widening shoulders to standard 8-foot widths, (3) installing traffic signals, (4) replacing the existing reinforced concrete box culvert with a bridge at an unnamed creek (also referred to as unnamed tributary), (5) constructing retaining walls to accommodate drainage, and (6) repairing or resurfacing the existing roadways, as needed.

1.3  Purpose and Need

The purpose of this project is to reduce the potential for accidents related to left turns and vehicle crossings for traffic moving from eastbound SR 116 to northbound Llano Road.

The need for this project is to improve safety at the intersection related to left-hand turns. Safety needs were determined by a Caltrans safety investigation that found accident rates totaled 1.10 accidents per million vehicle miles, which is higher than the average accident rate of 0.20 for similar facilities statewide. Twenty-three accidents occurred from January 1, 2007, to December 31, 2009 (Caltrans 2016a). The investigation concluded that the number of left-turn-related accidents warranted...
installation of a left-turn lane and traffic signals from eastbound SR 116 to northbound Llano Road.

1.4 Project Funding

The State Highway Operation and Protection Program (SHOPP 201.010) is funding the project with additional moneys from Sonoma County. The estimated project cost is approximately $6.4 million.
FIGURE 1
Regional Vicinity
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 2
Project Area

SON 116 Llano Road Intersection Widening Project

EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
Chapter 2   Project Description

2.1   Proposed Project

SR 116 is a two-way route that passes through several towns of Sonoma County, and intersects with Hwy 101 in Cotati, CA. Proposed improvements to SR 116 include widening the road to accommodate a left-turn pocket onto northbound Llano Road, widening shoulders to standard 8-foot width, installing traffic signals at the SR 116 and Llano Road intersection, replacing the existing reinforced concrete box culverts over an unnamed creek with a bridge, constructing a retaining wall along the south side of SR 116 to accommodate drainage, repairing or resurfacing the existing roadways as needed, and install electrical conduits and flashing beacons. The project would occur in two phases: the first phase for SR 116 road widening and replacement of the southern half of the existing culvert and the second phase for resurfacing the northern lanes of SR 116 and replacement of the northern half of the existing culvert. Additional project details are shown in preliminary project layouts in Appendix A.

2.1.1 Phase 1

During phase 1, the project would widen the southern lane of SR 116 and replace the southern half of the existing double-box culvert with a bridge. Figure 3 shows the proposed project elements for phase 1. A temporary construction easement (TCE) would be required on the southern side of the roadway from the edge of the pavement to 50 feet downstream into the creek. The following sections describe specific elements of phase 1 in more detail:

ROADWAY IMPROVEMENTS AND TRAFFIC LIGHT INSTALLATION

At this location, SR 116 is a two-lane undivided highway traversing in a northwest to southeast direction, with 12-foot through lanes in both directions. The existing shoulder width is approximately 6 feet. The posted speed limit at the intersection is 50 miles per hour. There are no existing sidewalks or crosswalks at this intersection.

The southern side of SR 116 would be widened for approximately 2,300 linear feet, from PM 30.93 to PM 31.31, as shown on Figure 3. The roadway widening would vary from 12 to 22 feet. Cut and fill would be completed as necessary to create the correct surface elevations.

A left-turn pocket would be added to the southern lane from SR 116 onto Llano Road. After road improvements are completed and the roadway is repaved, travel lanes and shoulders on SR 116 will be restriped.
A signal post would be installed on the southeastern corner with luminaires on two mast arms at diagonal locations. One signal structure would be in the southeastern area of the intersection. Loop detector units would be saw cut into each of the three sections of the t-intersection. Warning flashing beacons would be placed on SR 116 before the signal on all three approaches of the t-intersection, to warn oncoming traffic that there is a traffic signal at the intersection of Llano Road and SR 116. The beacon on Llano Road will replace an existing sign, the beacon will be a breakaway beacon in the case that it is hit by a vehicle. The beacon located from the west bound direction on SR 116 would be placed behind an existing midwest guardrail system to protect the beacon. The beacon located on east bound SR 116, would be placed behind the proposed retaining wall with railing for protection. Three electrical conduits are proposed to supply power to the flashing beacons. One conduit would run from Llano road to the southeast, approximately 480 feet from the centerline. There are two additional conduit chases that would run from the Llano Rd. intersection, one east, down SR 116, 550 feet, and one from SR 116 north, up Llano Road, 500 feet. Each conduit would require trenching 3 inches from the edge of pavement and a 2-foot diameter and 6-foot-deep footing would be required for the beacon.

Two pull boxes would be installed along each conduit’s alignment, approximately 200 feet apart. An electrical cabinet, with a concrete slab foundation would be located at the northeast corner of the intersection, just outside the paved shoulder. The foundation would be 5 feet wide by 10 feet long. The flashing beacons, cement slab and pull boxes would be permanent, but the trenching would be considered temporary.

**CULVERT REPLACEMENT**

First, to divert water, a temporary diversion pipe would be placed through one of the existing culverts. The southern end of the double 6-foot-wide by 6-foot-high reinforced concrete box culvert (RCB) conveying the unnamed creek would be demolished and replaced with the southern portion of the concrete single-span bridge, which would be 40 feet long. The demolition material from the top and sides of the box culvert would be collected to protect the temporary diversion pipe and preserve the creek bed. Only the southern portion of the bridge would be built in this phase, with the northern side remaining open to traffic. Two lanes of traffic would be kept.

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1 Loop detector units detect passing vehicles or vehicles arriving at the intersection.
open and K-rails would be used to route traffic during daytime construction. There may be occasional night closures during the site preparation phase.

Existing roadway embankment would be removed to regrade the creek channel under the bridge. Fill would be added to the roadway embankment on the southern side of SR 116 as part of the widening project, which would improve flows past the bridge structure. Increased impervious surface can minimally increase surface runoff because of the small added area. In addition, construction equipment may be in and around the creek bed of the unnamed creek during the period from demolition of the existing culvert to backfilling and grading.

This method would be repeated for construction of the northern side of the bridge after traffic is shifted to the new bridge.

**RETAINING WALLS AND DRAINAGE**

Two retaining walls, approximately 490 feet long and 4 feet deep (total length for both walls), would be constructed along the southern side of the widened roadway of SR 116. An ST-70 bridge rail would be constructed on top of the wall. ST-70 railing is considered see-through, meaning it uses horizontal rails with spacing between each so that it can be seen through. A drainage system would be constructed on the southern side of the wall to accommodate drainage from both the roadway and the area south of the retaining wall.

Ground improvements would be required to support the retaining walls to mitigate liquefaction during a seismic event. Improvements include a cement compaction grouting technique (consisting of the injection of low slump, low mobility grout into loose/medium dense soils) used at select locations of each retaining wall. Additional support for the footing of the retaining walls would include (1) excavating 2 feet (minimum) below the bottom elevation of each footing segment, with an additional minimum foot width on each side, and (2) backfilling of bedding underneath the roadway using aggregate base, type 3 (AB3) materials with relative compaction to at least 95 percent.

Retaining wall 1 (RW1) is near PM 31.1 and retaining wall 2 (RW2) is located near PM 31.2. The proposed areas of compaction grouting are about 236 feet long and 10 feet wide for RW1 and 60 feet long and 10 feet wide for RW2. Grouting for RW1 would start from elevation 68 feet (approximately) at 2-foot intervals until about 3 to 4 feet below the proposed bottom of footing. The estimated grouting used for RW 1 is 4,115 cubic feet. For each grouting hole at RW2, the grouting point would start from
Chapter 2 Project Description

elevation 80 feet (approximately) at 2-foot intervals until about 3 to 4 feet below the proposed bottom of footing elevation. The estimated grouting used for RW 2 is 300 cubic feet.

2.1.2 Phase 2
During phase 2, the northern lane of SR 116 would be resurfaced and the northern half of the existing double-box culvert would be replaced with a bridge. A TCE from the edge of pavement 100 feet downstream into the unnamed creek would be required for bridge construction and for channel regrading, which would occur under the entire bridge to provide appropriate flows past the bridge structure. Figure 4 shows the phase 2 project elements, with more details provided as follows.

ROADWAY IMPROVEMENTS AND TRAFFIC LIGHT INSTALLATION
Resurfacing the northern side of SR 116 would employ the same traffic control as phase 1. Two lanes of traffic would be kept open, and temporary traffic signals and K-rails would be used to route traffic.

Several roadway sections would require resurfacing due to cracking and raveling. The existing roadway would be dug out or milled and the debris hauled to an approved landfill. The milled roadbed would be resurfaced with asphalt concrete; pavement delineation would be installed.

CULVERT REPLACEMENT AND BRIDGE CONSTRUCTION
During phase 2, the northern part of the existing RCB would be replaced. Construction details are provided in Section 2.1.1. After completion of phase 2, the new bridge would be 40 feet long and would be approximately 64 to 71 feet, 5 inches wide, to accommodate the newly widened SR 116. Channel grading may take place along the entire length of the bridge.

2.2 Construction Methodology
Construction activities would include site preparation, road improvements and traffic light installation, culvert (bridge) replacement, retaining wall installation, drainage construction, and post-construction site restoration.

Caltrans would prepare a Traffic Management Plan consistent with the California Manual on Uniform Traffic Control Devices, 2014 edition guidelines. The Traffic Management Plan would be implemented to address vehicular and pedestrian access during the construction phases. The plan would identify a detour route for
accessibility through or around the project area for vehicles associated with essential services

2.2.1 Site Preparation
Sensitive resources adjacent to the project vicinity would be fenced off and existing utilities relocated. An access ramp at the northeastern area of the proposed new bridge would be constructed so that bridge construction equipment can access the site. It is estimated that the access ramp would require approximately 60 cubic yard of fill. That added material would be removed upon completion of the project. Prior to work in the vicinity of the unnamed creek, water would be temporarily diverted with the use of cofferdams, gravel bags, and a flexible diversion pipe (see Section 2.2.3 for additional water diversion detail). A temporary staging area, as shown on Figure 3 and Figure 4, would be used to store equipment and materials and would allow for equipment maintenance during construction, and is estimated to be approximately 0.23 acres in size. The staging area would be adjacent to the project site approximately 400 feet south of the Llano Road and SR 116 intersection (Figure 2, Figure 4 maps 4 and 5). A small wooden fence north of and parallel to SR 116 would be removed to allow use of this area for staging. High-visibility environmentally sensitive area (ESA) fencing and cultural fencing would be installed around the staging area, to prevent wildlife from entering the site and to protect Llano Roadhouse Antiques. Equipment, fuels, lubricants, and solvents would be stored at least 50 feet from the stream channel. Caltrans Standard Specifications best management practices (BMPs) would be implemented to prevent accidental spills into the unnamed creek.

It is anticipated that 17 utilities may be relocated within the Caltrans right-of-way. Potential utilities to be relocated are: 6 gas lines, 2 electrical lines, 3 TV lines, 1 light pole, and 4 utility boxes.

Potential nighttime work during site preparation would require closure of one lane.

2.2.2 Road Improvements and Traffic Light Installation
During roadway widening, two lanes of traffic would be kept open on SR 116 and temporary traffic signals and K-rails would be used to route traffic through the project area.
FIGURE 3
Map 1 of 5
Phase 1
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 3
Map 2 of 5
Phase 1
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 3
Map 3 of 5
Phase 1
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California

LEGEND
- Project Footprint/Action Area (3.44 acres)
- Cut and Fill (0.21 acre)
- New Bridge (0.03 acre)
- Road Widening (0.64 acre)
- Resurface Pavement (0.69 acre)
- Temporary Construction Easement (0.33 acre)
- Alignment
- National Hydrography Dataset (NHD) Flowline
FIGURE 3
Map 4 of 5
Phase 1
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 3
Map 5 of 5
Phase 1
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 4
Map 1 of 5
Phase 2
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 4
Map 2 of 5
Phase 2
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 4
Map 3 of 5
Phase 2
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 4
Map 4 of 5
Phase 2
SON 116 Llano Road Intersection Widening
Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
FIGURE 4
Map 5 of 5
Phase 2
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
Construction activities for road improvements would include saw cutting parallel to the K-rails, removing the existing pavement shoulder and adjacent soil, and removing debris. An approximately 3-foot depth of existing pavement and soil would be excavated for the new pavement section. That depth of excavation would occur over the estimated 2,300 feet of widening. Excavated material would be transported offsite to an approved disposal location.

The approximate 3 feet of new roadway would consist of a subbase, base, hot-mixed asphalt, and bond course. A compactor would be used to compact the layers of soil fill. Dump trucks would transport borrow and aggregate material, which would be deposited to create a subbase for the new roadway and shoulder. Asphalt concrete material would be hauled to the site in trucks and would be placed, compacted, and rolled.

For installation of the traffic signals, a concrete saw and/or a jackhammer would be used to expose areas for excavation within existing pavement. A backhoe or excavator would be used to dig trenches at non-paved areas. Conduits would be installed in trenches approximately 2.5 to 3 feet deep and 1.5 to 2 feet wide. Foundations for the four signal poles could require a cast-in-drilled hole (CIDH) pile excavation depth of up to 12 feet. Excavated material would be transported offsite to an approved disposal location. Loop detector units would be saw cut into each of the intersection’s three legs; the loops on the bridge structure would be pre-formed.

Warning flashing beacons would be placed on SR 116 approximately 550 feet before the signal on all three approaches of the t-intersection, to warn oncoming traffic that there is a traffic signal at the intersection of Llano Road and SR 116. The beacons would be protected by a midwest guardrail system installed in front of the poles. There would be two midwest guardrail systems installed: one from the east bound direction on SR 116 and one on Llano Road. The beacon located from the west bound direction on SR 116 would be placed behind an existing guardrail system. The midwest guardrail system would be 150 feet long, metal railing would be bolted on 6 inch by 8-inch wood posts (post 6 feet apart from each other), with posts driven 3.5 feet into the ground.

Three proposed electrical conduits are proposed. One conduit would run from Llano road east 550 feet from the centerline. There are two additional conduit chases that would run from the Llano Rd. intersection, one east, down SR 116, 550 feet, and one from SR 116 north, up Llano Road, 500 feet. Each conduit would require trenching 3
inches from the edge of pavement and a 2-foot diameter and 6 foot deep footing would be required for the beacon.

Two pull boxes would be installed along each conduit’s alignment, approximately 200 feet apart. An electrical cabinet, with a concrete slab foundation would be located at the northeast corner of the intersection, just outside the paved shoulder. The foundation would be 5 feet wide by 10 feet long. The flashing beacons, cement slab and pull boxes would be permanent, but the trenching would be considered temporary.

2.2.3 Water Diversion
Water would be diverted from the construction area in the creek bed of the unnamed creek through a flexible diversion pipe and cofferdams. The cofferdams would consist of gravel bag berms wrapped in plastic sheets; bags would be up to 5 feet tall and placed upstream and downstream of the culvert and streambank work to make them impervious. A cutoff wall beneath the berm may be needed to reduce infiltration beneath the berm. A minimum of twelve feet would be required from the edge of work (including grading of the banks), plus the berm base width (2:1 side slope with a top width of 3 feet), plus 20 feet (for rock slope protection at the downstream end) or 2 feet (at the downstream end, if no rock slope protection is required). A flexible pipe, up to 3 feet in diameter, would convey stream runoff between the two berms, while creating a dry environment in the unnamed creek. The flexible pipe would allow for shifting the pipe to either side to allow the concrete base to be demolished, while keeping the creek diversion channel operational. In order for the creek to be restored to its natural setting, construction would consist of removal of the culvert and backfilling around it; this work would take place when the water is diverted and the creek is dry. The diversion would be installed and removed manually if water is present in the unnamed creek.

2.2.4 Culvert Replacement
After diversion of water in the unnamed creek, culvert demolition and replacement would begin. For culvert demolition and removal, asphalt concrete and soil on top of the existing culvert would be contained (to preserve the diversion pipe below) and removed; the southern end of the culvert would be saw cut; the culvert would be demolished and debris hauled away; and soil would be excavated where needed. The remaining pieces of the double culvert would be demolished and removed during phase 2, when traffic shifts to the newly built bridge.
Once the demolition and debris removal of the southern side of the culvert is finished, the excavation for the abutments and wingwalls of the bridge would begin (See Appendix A). The excavation depth would vary from 11 to 14 feet because the abutment height varies from edge of deck to edge of deck. There would be 14 24-inch CIDH concrete piles installed at each abutment. A drill rig with 24-inch-diameter drill auger would drill into the soil to a depth of approximately 60 feet below the surface of the roadway. After the CIDH concrete piles are installed, the forming for the abutments and wingwalls would begin. The wingwalls would be the same height as the abutments and approximately 10 to 12 feet long. After the concrete for the abutments and wingwalls are poured and cured, the backfilling and the grading would begin. Next, the pre-cast/pre-stressed (PC/PS) voided concrete slabs would be placed, after which forming, placing rebar, and pouring concrete for the cast-in-place concrete deck would begin. The bridge rail would be installed after the bridge deck cures. Both sides of the bridge would be composed of CA ST-70 bridge rail. The same barrier rail would be constructed atop the retaining wall (on the southern side of Hwy 116). The metal rails of the ST-70 barrier would be color-treated.

A 12-foot-wide flow channel with 1.5:1 to 2:1 bank slopes would be graded in place of the old culvert through the southern section of the channel during phase 1 and the northern section of the channel during phase 2. The clearance between the top of the slope and the soffit of the bridge would be three feet and would taper off along the transition to the existing upstream and downstream channel sections. The grading would extend 30 feet to the north and to the south from the edge of the bridge deck to taper grading into the unnamed creek to provide a smooth transition in creek-bed geometry.

### 2.2.5 Drainage Construction

A longitudinal ditch would be graded at the foot of the proposed retaining wall on both sides of the creek to maintain the existing drainage pattern from the adjacent properties to the creek.

The project would construct three drainage systems along SR 116. The first drainage system starts at approximately PM 30.9. At this location, a drainage inlet (DI) would be placed in the existing roadside ditch to capture runoff within the ditch. This DI would drain to another DI placed in the same area within the shoulder. The second DI acts as a junction structure; draining into another DI, near the intersection of Daywalt Road and Son 116. In addition to the two DIs mentioned, there would be two additional DIs placed along the pipe before the DI located on the western side of the
intersection of SR 116 and Daywalt Road. There would be 5 DIs located west of Daywalt Road. All pipes used in this area would be 24-inch pipes.

At the intersection of Daywalt Road and SR 116, two pipes would be removed; the existing corrugated steel pipe cross-culvert under Daywalt Road and an existing 12-inch reinforced concrete longitudinal pipe between PM 31.0 and 31.1.

The DIs west of Daywalt Road drain to a manhole on the eastern side of Daywalt Road. Feeder pipes would be placed in the existing ditches on both sides of Daywalt Road that would drain to the drainage structures at the intersection. The manhole would outlet to the proposed ditch at the foot of the proposed retaining wall through a 100-foot-long 24-inch pipe near PM 31.1.

The second drainage system is at the sag\(^2\) on SR 116. This would consist of an inlet placed at the sag, with two flanking inlets placed 20 feet from the sag inlet. The flanking inlets would be connected to the sag inlet with 18-inch pipe. The sag inlet would outlet through the wall to the proposed ditch via an 18-inch pipe.

The third drainage system is located at a sag point at approximately PM 31.2. This system is similar to the drainage system described above.

The total length of pipe being placed is approximately 540 feet. Excavation for the pipe would likely be 4 feet or greater in depth, with a width of 2 feet to either side of the pipe. Excavation for each DI would be approximately 6 feet wide, 6 feet long and at least 5 feet deep. For the sag inlets, the depth of excavation would be approximately 1 foot deep.

### 2.2.6 Post-construction Site Restoration

All temporarily disturbed areas would be revegetated with appropriate native plant species and contoured to conform to the surrounding landscape. Permanent erosion control such as soil stabilization measures (e.g., hydroseeding, coir netting, addition of compost, or non-filament mesh) would be applied to affected post-construction areas. All invasive plants, non-native plants, and excavated material containing invasive plant material would be cleared from the project area and transported to an appropriate landfill.

---

\(^2\) A sag is a dip along the vertical curve of the roadway.
2.3 Construction Schedule

Vegetation and tree removal would occur between September 1 and October 15 in the year prior to construction. All work within the creek bed and banks of the unnamed creek, as well as any drainage improvements, would occur during the dry season, from June 1 to October 15, to avoid protected wildlife during active nesting season; this timeframe would also reduce the likelihood of impacts on sensitive areas downstream. Construction activities associated with significant noise levels would be restricted to daytime hours because of nearby residential homes.

Bridge construction would require approximately 122 working days over one construction season. Night work would be required for up to 10 days. Night work would include site preparation and vibratory pile driving. Lighting would be used during nighttime construction work.

2.4 Construction Equipment

Backhoes, excavators, and concrete cutters would be used for clearing, grubbing, demolishing culverts, and excavating at abutments. A front loader would load debris into trucks for onsite disposal. After clearing and grubbing, a temporary access ramp would be constructed by the edge of the bridge limit at one or both abutments (within the TCE areas) to allow the drill rig to be moved into the creek bed. The drill auger on the drill rig would be used to remove soil, to install the piles. Cranes would set rebar cages for piles, move construction equipment to and from the creek bed, deliver materials, and set (erect) PC/PS concrete slabs. Concrete mixer trucks and pump trucks would pump concrete for all cast-in-place structures. Man lifts, pavers, hoes, rams, jackhammers, and compaction equipment could also be used.

2.5 Construction Right-of-way

Three TCEs would be required: north of the new bridge, south of the new bridge, and at the Daywalt intersection. The two TCEs adjacent to the new bridge would be required for bridge construction and for channel regrading. The width of each of these TCEs would be approximately 50 feet from the edge. The TCE at Daywalt Road would be needed to reconstruct the existing drainage system. The staging area would be within the existing designated operating right-of-way, as shown in Figure 2, and is estimated to be 0.23 acres in size. Inspection and permanent maintenance of the new bridge would occur within Caltrans right-of-way. Table 1 summarizes the ROW permit requirements for the project.
### Table 1  ROW Requirements

<table>
<thead>
<tr>
<th>Parcel No.</th>
<th>Type of Grant</th>
<th>Grantor</th>
<th>Area (Square Feet)</th>
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</thead>
<tbody>
<tr>
<td>63467-1</td>
<td>Permit to enter and construct</td>
<td>County of Sonoma</td>
<td>1650</td>
</tr>
<tr>
<td>63468-1</td>
<td>Temporary construction easement</td>
<td>Private</td>
<td>234</td>
</tr>
<tr>
<td>63469-1</td>
<td>Temporary construction easement</td>
<td>Private</td>
<td>3404</td>
</tr>
<tr>
<td>63469-2</td>
<td>Permanent easement</td>
<td>Private</td>
<td>6</td>
</tr>
<tr>
<td>63470-1</td>
<td>Permit to enter and construct</td>
<td>County of Sonoma</td>
<td>1499</td>
</tr>
<tr>
<td>63470-2</td>
<td>Permanent easement</td>
<td>County of Sonoma</td>
<td>182</td>
</tr>
<tr>
<td>63471-1</td>
<td>Temporary construction easement</td>
<td>Private</td>
<td>4921</td>
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<tr>
<td>63471-1</td>
<td>Permanent easement</td>
<td>Private</td>
<td>247</td>
</tr>
</tbody>
</table>

### 2.6  Required Permits

Table 2 summarizes the permits required for the proposed project.

### Table 2  Required Permits

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit</th>
<th>Permit Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Fish and Wildlife Service</td>
<td>Biological Opinion</td>
<td>Received 6/21/17</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Section 404 Permit</td>
<td>Anticipated submittal 7/28/17</td>
</tr>
<tr>
<td>North Coast Regional Water Quality Control Board</td>
<td>Section 401 Water Quality Certification</td>
<td>Anticipated submittal 10/1/17</td>
</tr>
<tr>
<td>California Department of Fish and Wildlife</td>
<td>Section 1602 Lake and Streambed Alteration Agreement</td>
<td>1600 Submitted 6/23/17</td>
</tr>
<tr>
<td></td>
<td>Section 2081 Incidental Take Permit</td>
<td>Incidental Take Permit Submitted 6/23/17</td>
</tr>
</tbody>
</table>
Chapter 3  Proposed Mitigated Negative Declaration and CEQA Environmental Checklist

A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project.

<table>
<thead>
<tr>
<th>☒ Aesthetics</th>
<th>☐ Agriculture and Forestry</th>
<th>☐ Air Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Biological Resources</td>
<td>☐ Cultural Resources</td>
<td>☐ Geology/Soils</td>
</tr>
<tr>
<td>☒ Greenhouse Gas Emissions</td>
<td>☐ Hazards and Hazardous Materials</td>
<td>☐ Hydrology/Water Quality</td>
</tr>
<tr>
<td>☐ Land Use/Planning</td>
<td>☐ Mineral Resources</td>
<td>☐ Noise</td>
</tr>
<tr>
<td>☐ Population/Housing</td>
<td>☐ Public Services</td>
<td>☐ Recreation</td>
</tr>
<tr>
<td>☒ Transportation/Traffic</td>
<td>☐ Utilities/Service Systems</td>
<td>☐ Mandatory Findings of Significance</td>
</tr>
<tr>
<td>☐ Tribal Cultural Resources</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: ___________________________ Date: 11/21/12
Printed Name: Stephen Lilly, AICP
For: Liano Road Intersection Improvement
Initial Study with Proposed Mitigated Negative Declaration
Proposed Mitigated Negative Declaration

Project Description

The proposed project is an intersection improvement on SR 116. The proposed improvements, which would occur in two phases, consist of the following:

1) Widening the road to accommodate a left-turn pocket onto northbound Llano Road

2) Widening shoulders to standard 8-foot width, installing traffic signals at the SR 116 and Llano Road intersection

3) Replacing the existing reinforced concrete box culverts over an unnamed creek with a bridge

4) Constructing a retaining wall along the southern side of SR 116 to accommodate drainage

5) Repairing or resurfacing the existing roadways, as needed

Determination

This Proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that Caltrans intends to adopt a Mitigated Negative Declaration for this project. This Mitigated Negative Declaration is subject to change based on comments received by 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 impact on Recreation, Agriculture and Forestry, Geology and Soils, Air Quality, Population and Housing, Tribal Cultural Resources, Land Use and Planning, and Mineral Resources.

In addition, the proposed project would have less than significant impacts to Aesthetics, Public Services, Transportation and Traffic, Cultural Resources, Noise, Hazards and Hazardous Materials, Greenhouse Gas Emissions, Hydrology and Water Quality, and Utilities.
With the following mitigation measures incorporated, the proposed project would have less than significant effects to Biological Resources:

- Impacts to California Freshwater Shrimp (CFS) and CFS habitat will be mitigated by the restoration of aquatic habitat resulting from the removal of the existing double-box culvert.

Melanie Brent  
Deputy District Director, Environmental Planning and Engineering  
District 4-California Department of Transportation
CEQA Environmental Checklist

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. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

<table>
<thead>
<tr>
<th>I. AESTHETICS: Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Have a substantial adverse effect on a scenic vista</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>c) Substantially degrade the existing visual character or quality of the site and its surroundings?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
</tr>
</tbody>
</table>

Caltrans prepared a Visual Impact Analysis (Caltrans 2016b) for the proposed project. The findings of this analysis are presented herein.

The project site is located in a rural area with light residential use, located just to the south of the Town of Sebastopol in Sonoma County. The project area (Figure 2) consists of a left-turn pocket at the intersection of SR 116 and Llano Road, at PM 31.15. The project spans from PM 30.9 to 31.4. The local landscape is characterized by natural vegetation along the roadside, including large trees at the edge of the road and open fields (see Figures AES-1 through AES-4).
The visual character of the proposed project would be compatible with the existing highway corridor. The proposed new bridge would widen SR 116 and the bridge profile and would require removal of approximately 43 trees. The most apparent components of the project would be the traffic signal, bridge rails, and metal beam guardrails, with which motorists are familiar.

Figure AES-1. View looking west on SR 116 towards Llano Road.

Figure AES-2. View looking west on SR 116 past Llano Road.
Figure AES-3 View looking south from Llano Road to SR 116.

Figure AES-4. View looking east on SR 116 toward Llano Road.

a) The proposed project is not within a scenic vista. There would be no impact.

b) The proposed project is not located within a State Scenic Highway. There would be no impact.
c) The proposed project would not disrupt or interfere with views from the highway or other locations. The proposed project would not substantially alter the visual character of the area. Therefore, the impact would be less than significant.

Temporary impacts during construction would be related to the presence of construction workers, materials, and equipment for the duration of the construction phases. Once construction is complete, the visual character of the project site would be compatible with the existing project setting. The proposed project would not diminish the visual quality of the site and surrounding area and existing visual character would be maintained; therefore, the impact to the existing visual character or quality of the site and its surroundings would be less than significant.

d) Lighting would be used for a short-term period during construction. As required by Caltrans Standard Specification 48, Temporary Structures, truck-mounted lights may be used, and lighting would be directed to avoid glare onto oncoming traffic. The new signal would be noticeable but would not be a unique of unfamiliar element within the corridor. Therefore, the proposed project would not result in a new source of light or glare and impacts would be less than significant.

**AMMs (Avoidance and Minimization Measures):**

The following AMMs would further minimize visual effects that could result from implementation of the proposed project (see Appendix B for a complete listing of measures):

AMM AES-1: Seeding all disturbed areas with native vegetation.

AMM AES-2: Replanting trees adjacent to the bridge in all temporarily disturbed areas.
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?

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?

The project is in an area designated as Urban and Built-Up Land, and Other Land by the California Department of Conservation, Division of Land Resources Protection-Farmland Mapping and Monitoring Program (California Department of Conservation 2016).

a-e) The project would not convert farmland or forest to non-agricultural uses or be in conflict with existing timberland zoning. Therefore, there would be no impact to farmlands, forest, or timberlands.
Chapter 3. Proposed Mitigated Negative Declaration and CEQA Environmental Checklist

### 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:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b)</td>
<td>Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c)</td>
<td>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)?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d)</td>
<td>Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e)</td>
<td>Create objectionable odors affecting a substantial number of people?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**a-e)** The project is considered a safety improvement and is exempt from air quality conformity determination under 40 Code of Federal Regulations (CFR) 93.126. An air quality study is not required. The project would be required to comply with Caltrans Standard Specification 14-9, Air Quality, which requires compliance with air-pollution control rules, regulations, ordinances, and statues that apply in the project area. Other construction air pollutants are expected to be minimal to negligible. There would be no impact.
IV. BIOLOGICAL RESOURCES:
Would the project:

<table>
<thead>
<tr>
<th>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 Wildlife or U.S. Fish and Wildlife Service?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 Wildlife or U.S. Fish and Wildlife Service?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>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?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>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?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>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?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
</tbody>
</table>

Caltrans prepared a Natural Environment Study (NES) for the SR 116 at Llano Road Left-turn Lane Project (Caltrans 2017a). A summary of the findings of this analysis are presented herein.

**Methodology and Field Surveys**
The biological study area (BSA) is the area used to evaluate natural resources that could be impacted by the proposed project. The BSA consists of 9.97 acres and encompasses the project footprint plus a buffer of varying size depending on the habitats adjacent to the project boundary.

Biological field studies of the BSA were conducted from 2015 to 2017. Wetland delineation surveys were conducted on February 23, 2016, and March 3 and April 5,
2017. A special-status plant species survey was conducted on June 15, 2015, to
determine if conditions in the project area had changed since surveys had been
completed in 2005 and 2006 for a larger SR 116 Roadway Rehabilitation Project
(Caltrans EA 131571), and again on March 3, 2017. Tree species were surveyed on
pacific*ica*) habitat assessments were conducted in March, April, and May 2016.

No federally or state-listed plant species or any species of special concern were
identified during the 2005 and 2006 surveys of the larger project area, or within the
BSA during the surveys in 2015 and 2017.

Wetland delineations were conducted for all waters of the United States (U.S.),
including wetlands, occurring within the BSA.

A literature review was conducted to investigate the potential presence of special-
status species and critical habitat(s) within the BSA and vicinity. A regional list of
special-status wildlife and plant species was developed by querying databases, and
each species was then evaluated to determine its potential to occur within the BSA
(see Appendix D to the NES for the species lists). Data were obtained from the U.S.
Fish and Wildlife Service (USFWS) (2017a), National Marine Fisheries Service
(NMFS) (2016), California Native Plant Society (CNPS) (2016), California Natural
Diversity Database (CNDDDB) (California Department of Fish and Wildlife [CDFW]
2017), and National Wetlands Inventory (USFWS 2016a) databases (Caltrans 2017a).
These lists were updated on June 30, 2017, but no new species with potential to occur
on the project site were identified. The NES includes a table of special-status plant
species, as well as a table of special-status animals with potential to occur within the
BSA (Caltrans 2017a).

The project is on the southwestern edge of the Santa Rosa Plain Conservation
Strategy (SRPCS) area. The SRPCS was designed as a habitat conservation strategy
to address management of the region’s seasonal wetland resources, including habitat
for the federally-listed California tiger salamander (*Ambystoma californiense*) (CTS)
and four federally endangered plant species: Sonoma sunshine (*Blennosperma
bakeri*), Burke’s goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes
vinculans*), and many-flowered navarretia (*Navarretia leucocephala ssp. plieantha*).

The SRPCS provided guidance for this project because it was within the boundary of
the SRPCS study area. Along with USFWS collaboration, Caltrans used survey
methodology and impact assessment guidelines within the SRPCS to assess impacts to resources.

**Existing Conditions**
The BSA consists of a currently active highway road prism, developed bare ground, landscaped areas, arroyo willows surrounding an unnamed creek, coast live oaks, and a small area of mixed woodland. The BSA is located in the Coastal Hills–Santa Rosa Plain subsection of the Northern California Coast Section (Miles and Goudey 1997). The region is characterized by a broad northwest-southeast aligned valley containing the Santa Rosa Plain and rolling hills on the western side of the valley. Elevations in the survey area range from approximately 90 to 130 feet above sea level.

The land uses in and around the project area consist primarily of low-density rural residential, farms, and pastureland.

The unnamed creek traverses beneath SR 116 from north to south through an existing 6-foot concrete double-box culvert, and joins with the main stem of Laguna de Santa Rosa approximately 1 mile downstream.

**Vegetation**
Natural vegetation in the region consists of wetland and upland vegetation associated with the Santa Rosa Plain and the Laguna de Santa Rosa. The region is characterized by vernal pools, seasonal wetlands, and associated grassland habitat that support, among other flora and fauna, the threatened CRLF, endangered CTS and CFS, and four endangered plant species: Burke’s goldfields, Sonoma sunshine, Sebastopol meadowfoam, and many-flowered navarretia (USFWS 2005).

With the exception of the riparian corridor associated with the unnamed creek to the Laguna de Santa Rosa, characterized by arroyo willow with a dense understory of Himalayan blackberry (*Rubus armeniacus*), natural vegetation is generally absent from the project area. Ruderal vegetation along the road shoulders consists of naturalized annual grasses and forbs such as wild oat (*Avena barbata, A. fatua*), rip-gut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), and fennel (*Foeniculum vulgare*). Common trees include blackwood acacia (*Acacia melanoxylon*), coast live oak, Monterey pine (*Pinus radiata*) and California redwood (*Sequoia sempervirens*).
The vegetation types found within the BSA include three types reflecting human disturbance (Developed Bare Ground, Developed Roadway, and Landscaped), as well as three natural vegetation types represented by areas of arroyo willows (*Salix lasiolepis*) surrounding the unnamed creek, a patch of coast live oaks (*Quercus agrifolia*), and a small area of mixed woodland.

Two coast live oak trees are located on the northwestern corner of the Llano Road and SR 116 intersection. One of the trees has a single 18-inch-diameter trunk and the other has multiple stems that collectively equal 32 inches in diameter. Understory vegetation consists of annual grasses and forbs.

Arroyo willow is the dominant tree/shrub occurring along the unnamed creek on the western side of Llano Road.

**SPECIAL-STATUS PLANTS**
Special-status plant species with potential to occur within the BSA were either eliminated from further consideration based on the absence of suitable habitat characteristics within the project limits, were not found during plant surveys, or both (CH2M 2017).

No rare or special-status plants were observed within the area where construction activities would occur.

**SPECIAL-STATUS ANIMALS**
Of the special-status wildlife species known to occur in the region, four species were determined to have a potential to occur within the BSA—the California red-legged frog (CRLF) (*Rana draytonii*), CTS, CFS, and the Central California Coast Steelhead (CCCS) Distinct Population Segment (DPS)—based on suitable habitat occurring within the BSA and known populations identified within 1 to 2 miles of the project area.

**California Red-legged Frog**
The CRLF is a federally listed threatened species and state species of special concern distributed throughout 26 counties in California, and is most abundant in the San Francisco Bay Area.

No protocol-level CRLF surveys were conducted for this project. There are seven CRLF CNDDDB records within 5 miles of the project site, including four known breeding ponds (CDFW 2017). In 2015, two adult CRLF were observed...
approximately 1.25 miles upstream of the project within the unnamed creek (personal communication Cleckler 2017; CDFW 2017).

Appropriate aquatic (potential breeding) and upland dispersal habitat is present within the project area and BSA for CRLF (Caltrans 2017). Two adult frogs were observed in 2015 within 1.5 miles upstream within the unnamed creek, increasing the probability that frogs could be present within the project area (personal communication Cleckler 2017). Therefore, CRLF may be present within the project area during construction.

**California Tiger Salamander**

The CTS, a federally endangered and state threatened species, inhabits grasslands and open oak woodlands in central and northern California. CTS requires two major habitat components: aquatic breeding sites and nearby terrestrial refuge sites.

The proposed project is located on the southern border of the SRPCS (which is also designated critical habitat for CTS in Sonoma), with the area designated as having “Potential for presence of CTS and listed plants” to the northeast and “Presence of CTS is not likely and there are no listed plants in the area” to the southwest (Figure BIO-1). The proposed project limits do not extend into the area of “Potential for presence of CTS and listed plants” to the northeast.

A CTS Habitat Assessment was conducted as part of the larger SR 116 Roadway Rehabilitation Project in 2006 (Caltrans 2007). CTS occurrence records from 2006 listed in the CNDDB, aerial photographs of the entire project’s BSA, and maps from the SRPCS Plan showing areas of potential CTS habitat were used to preliminarily identify potential CTS habitat within the BSA. In addition, Caltrans worked with the USFWS to determine where potential CTS habitat was located throughout the larger previous project. It was determined that the current project does not intersect with any of the areas deemed to have potential for occurrence of CTS or its associated habitat.

No protocol-level surveys were conducted for CTS within the BSA. The nearest documented CTS occurrences are 1.3 miles north of the project and 1.4 miles east of the project. No breeding or estivation habitat is present in the project area.
**California Freshwater Shrimp**

The CFS, a federal and state endangered species, is a small 10-legged crustacean of the family Atyidae and is believed to be the only extant species of the genus.

CFS is found in low-elevation (generally less than 380 feet), low-gradient (generally less than 1 percent), freshwater perennial streams in Marin, Napa, and Sonoma counties. During the winter, CFS habitat includes shallow margins of stream pools containing undercut banks and exposed living fine-root material that provides shelter and refuge from high water velocities associated with winter storm events. During the summer months, CFS are often associated with submerged leafy branches. It is believed both winter and summer habitat components need to be found in proximity for this species to persist for prolonged periods (USFWS and NMFS 1998).

There is a single record of CFS located within 5 miles of the project area, approximately 1 mile west of the unnamed creek and the project area in Blucher Creek (CDFW 2017; Serpa 2006). The 2005 CFS habitat assessment (Serpa 2006) reports capturing additional freshwater shrimp in Blucher Creek where it intersects with SR 116. Blucher Creek and the unnamed creek both drain into Laguna de Santa Rosa, but CFS are considered unlikely to survive in Laguna de Santa Rosa because of the presence of non-native fish and other potential predators (USFWS 1998; Serpa 2006). Serpa (2006) found that the unnamed creek exhibited mainly poor quality habitat for CFS, with some patches of habitat considered fair quality, and because of the primarily low quality habitat found in this stream, determined it unlikely that the project would have impacts on the species. The USFWS concurred with this assessment of this creek in their 2009 Biological Opinion (USFWS 2009).

In 2015, water levels in the creek were higher than what was previously noted in Serpa’s 2006 report. In March, April, and May 2016, biologists from LSA Associates, Inc. conducted field surveys for CFS. Pools found in the creek provided suitable habitat for CFS characterized by year-round ponded water, roots, woody debris, failed bank protection and other retreat habitat.
Santa Rosa Plain Conservation Strategy Designations

Presence of California tiger salamander (CTS) is not likely and there are no listed plants in this area.

Presence of CTS is not likely but mitigation for listed plants may be required.

Potential for presence of CTS and listed plants.

Mitigation Banks

Desmond Mitigation Bank

Legend

Project Limits/Project Area

Parcels

Santa Rosa Plain Conservation Strategy Designations

Presence of California tiger salamander (CTS) is not likely and there are no listed plants in this area.

Presence of CTS is not likely but mitigation for listed plants may be required.

Potential for presence of CTS and listed plants.

Mitigation Banks

Desmond Mitigation Bank

Imagery Source: Sonoma County 2013

Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, LRCCP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, Imagery Corp.
Despite that no CFS were observed during the five assessment-level surveys and five assessment/monitoring visits in 2016, the presence of CFS in the unnamed creek cannot be ruled out given the suitable habitat features observed in 2016.

**Central California Coast Steelhead Distinct Population Segment**

The CCCS DPS is an anadromous form of rainbow trout that migrates upstream from the ocean to spawn in late fall or early winter, when flows are sufficient to allow it to reach suitable habitat in far upstream areas.

NMFS listed the CCCS as threatened under FESA. Critical habitat was designated in 2005 (NMFS 2005). Although NMFS has designated the Laguna de Santa Rosa watershed as suitable potential habitat for steelhead, it is excluded from a critical habitat designation (NMFS 2005). Steelhead have been observed migrating upstream and downstream through the Laguna de Santa Rosa as they move into Santa Rosa Creek and Mark West Creek (Caltrans 2007).

The Laguna de Santa Rosa has a low-grade channel and flows can become low very early in the year. This is especially true in dry years, when flows are too low for outmigration and steelhead smolts remain in the tributaries; for this reason, in 2006 NMFS determined that steelhead smolts along with steelhead juveniles would be expected within the unnamed creek.

In 2005, a CCCS habitat assessment survey was conducted by Caltrans for the SR 116 Roadway Rehabilitation Project (CH2M 2005); a limited amount of refuge/rearing habitat occurs within this creek. Because of the creek’s connectivity with known occupied steelhead habitat in the Laguna de Santa Rosa, Caltrans and NMFS concluded that the unnamed creek may support individuals of the species (Caltrans 2007).

The unnamed creek did not display suitable substrates or habitat type to provide for steelhead spawning during the 2005 survey. Overhanging vegetation and deep pools that persist through the summer provide a limited extent of juvenile steelhead refuge habitat, on the southern side of SR 116. Temperature measurements taken within these areas during the field visit on July 25, 2005, showed that the water temperatures would be suitable for juvenile steelhead, should they be present during summer months (CH2M 2005).

Unless there are barriers either upstream or downstream within the creek, the unnamed creek could potentially be used by steelhead during their migrations, if
sufficient flows are available during December through June. However, the quality and extent of the habitat available for spawning upstream of the creek is unknown. Within the BSA, there is little potential that the unnamed creek provides anything more than a limited extent of steelhead rearing or refuge habitat.

Although presence/absence surveys and long-term water temperature monitoring for steelhead have not been conducted within the watershed, Caltrans concluded that the unnamed creek to Laguna de Santa Rosa within the project area may support steelhead rearing habitat (Cox 2000; Caltrans 2007).

**Critical Habitat**

The BSA is located within designated critical habitat for the federally endangered Central California Coast coho salmon. Coho salmon critical habitat is defined as waterways, substrate, and adjacent riparian zones in an evolutionarily significant unit (ESU) below longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) (NMFS 1999).

The Russian River, Mark West Creek, and the Laguna de Santa Rosa and its tributaries are designated as critical habitat for coho salmon (NMFS 1999). Historically, populations of coho salmon occupied the Laguna de Santa Rosa and its tributaries; however, more recent surveys have not found coho salmon in most of this area, likely due to the low numbers remaining in the Russian River watershed and the degraded habitat conditions now found in the Laguna de Santa Rosa and its tributaries (levees and urbanization, for example) (Caltrans 2007). Because of the lack of any recent coho salmon observations in this area, NMFS did not include coho salmon in the consultation conducted for the larger SR 116 Roadway Rehabilitation Project conducted in 2007. NMFS did, however, still consider the project effects to designated critical habitat for coho salmon for the larger project in 2009. In the NMFS Biological Opinion (BO) for the larger SR 116 Roadway Rehabilitation Project, NMFS determined that that project would not adversely modify or destroy coho salmon critical habitat (NMFS 2009), reconfirmed in 2016 (Darren Howe, NMFS, phone conversation April 28, 2016). In addition, as noted previously, Mr. Howe stated in an email dated May 13, 2016, that NMFS has determined that the project fits within the existing NMFS Programmatic Biological Opinion (PBO) issued October 18, 2013 (NMFS 2013) for Caltrans Routine Maintenance and Repair Activities in Districts 1, 2, 3, and 4. The PBO covers several fish species, including coho salmon, steelhead, green sturgeon (*Acipenser medirostris*), and eulachon (*Thaleichthys pacificus*), as well as critical habitat for three steelhead DPS and one
coho salmon ESU and salmon essential fish habitat (EFH); avoidance and minimization measures are included in the PBO for these species for use in projects such as this.

**Essential Fish Habitat**

EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (72 Federal Register 19862). Although NMFS has not determined that the project area specifically contains EFH, NMFS has concurred that measures described in the PBO would also protect EFH and that the proposed PBO contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH in freshwater habitats (NMFS 2013).

**Migratory Birds**

Migratory birds such as perching birds and ducks are expected to nest within the BSA. Under the Migratory Bird Treaty Act (MBTA) migratory birds and any of their parts, eggs, and nests are protected from activities including hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. Regulations governing migratory bird permits can be found in 50 CFR 13, General Permit Procedures; and 50 CFR 21, Migratory Bird Permits. While no permits are issued for species protected under codes, coordination with USFWS is required.

**Wetlands and Waters**

A wetland delineation was initially performed in February 2016 and completed in April 2017.

Water features identified within the survey area included the unnamed creek to Laguna de Santa Rosa, and three roadside ditches/swales (Figure BIO-2). Except for a few individuals of water plantain (*Alisma plantago-aquatica*), the streambed is devoid of vegetation. Concrete lining extends approximately 9 feet upstream and downstream of the box culvert; the remainder of the channel substrate within the survey area consists of soil/sediment with a small amount of gravel and some chunks of asphalt riprap\(^3\) placed immediately downstream of the cement lining at the culvert outfall.

The unnamed creek (0.073 acre [239 linear feet]), and three roadside ditches/swales (0.046 acre [441 linear feet]) identified in the wetland survey area were considered potential waters of the U.S. (Table BIO-1). The roadside ditches appear to convey

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\(^3\) Riprap consists of: 6 to 12 inch chunks of asphalt
flows directly into the unnamed creek. No potential wetlands were identified within the survey area during the site visit.

Table BIO-1 Potential Waters of the U.S., State Route 116 and Llano Road Intersection, Sonoma, County, California

<table>
<thead>
<tr>
<th>Resource ID</th>
<th>Type</th>
<th>Classification¹</th>
<th>Extent Within Study Area</th>
<th>Coordinates²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnamed Creek CK-01</td>
<td>Intermittent Stream</td>
<td>R4SB5</td>
<td>0.034 acre (109 linear feet)</td>
<td>38.35844 -122.76973</td>
</tr>
<tr>
<td>Unnamed Creek CK-02</td>
<td>Intermittent Stream</td>
<td>R4SB5</td>
<td>0.039 acre (130 linear feet)</td>
<td>38.35787 -122.76996</td>
</tr>
<tr>
<td>RD-01 Roadside Ditch</td>
<td>PSSA</td>
<td>0.042 acre (366 linear feet)</td>
<td>38.35825 -122.77010</td>
<td></td>
</tr>
<tr>
<td>RD-02 Roadside Ditch</td>
<td>N/A</td>
<td>0.002 acre (42 linear feet)</td>
<td>38.35871 -122.77127</td>
<td></td>
</tr>
<tr>
<td>RD-03 Roadside Swale</td>
<td>N/A</td>
<td>0.002 acre (23 linear feet)</td>
<td>38.35871 -122.77137</td>
<td></td>
</tr>
</tbody>
</table>

¹Classification (Cowardin et al 1979):
R4SB5 – Riverine Intermittent Streambed Mud
PSSA– Palustrine Shrub-Scrub Temporarily Flooded
²Coordinates: North American Datum 1983

Impacts to Biological Resources

a) During construction, the project would temporarily impact up to 0.073 acre of aquatic habitat (potential waters of the U.S. as well as the habitat for listed CRLF, CFS, and salmonid species) within the unnamed creek and ditches. The temporary impact would occur from placing the isolation casings below ordinary high water during the existing pile removal and new pile installation, as well as during installation of the creek diversion according to the requirements of the NMFS PBO and temporary impacts to the creek’s bed and banks during construction. These temporary impacts would be avoided, minimized or mitigated through the implementation of AMMs and BMPs (AMM BIO-1), specific species protection measures (AMM BIO-2 to AMM BIO-15), and habitat restoration, resulting in less than significant impacts, as discussed in the following sections.
FIGURE BIO-2
Impacts to Potential Waters of U.S.
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California
**California Red-legged Frog**

Because of their potential presence within the project area, construction activities could result in disruption, injury, or mortality to juvenile or adult CRLF.

Impacts to CRLF habitat would result from construction of the new bridge and roadway improvements, as shown in Table BIO-2 and on Figure BIO-3. Approximately 0.118 acre of potential CRLF aquatic habitat (creek and drainage ditches) would be temporarily impacted during construction (Figure BIO-3). There would be an additional 0.017 acre of aquatic habitat restored once the single-span bridge is built following the removal of the box culvert and restoration of a natural creek bottom (Figure BIO-3). Replacement of the existing box culvert with a single-span bridge may result in long-term benefits to the species because of the natural, unobstructed substrate that would replace the box culvert and result in an increased potential for connectivity and dispersal of the species to downstream areas that may support suitable habitat for the species.

Approximately 3.184 acres of upland habitat would be impacted during dewatering activities, road widening, drainage improvements, building of retaining wall, and grading of creek (0.634 acre of permanent impacts and 2.550 acres of temporary impacts) (Figure BIO-3). The trimming and removal of riparian trees and shrubs would result in the reduction of shade and a potential increase in stream temperatures. Based on the limited size of the aquatic habitat directly affected by these activities, the change in light and temperature would be slight and would not be expected to significantly affect habitat suitability for CRLF. The canopy would be reestablished as tree branches grow in to fill in the space and stump sprouting and replanting efforts reclaim the area.

<table>
<thead>
<tr>
<th>CRLF Habitat</th>
<th>Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Habitat</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>--</td>
</tr>
<tr>
<td>Temporary (during creek flow diversion)</td>
<td>-0.118</td>
</tr>
<tr>
<td>Additional Restored Habitat (stream bottom)</td>
<td>+0.017</td>
</tr>
<tr>
<td>Upland Habitat</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>-0.634</td>
</tr>
<tr>
<td>Temporary (would be restored after construction)</td>
<td>-2.549</td>
</tr>
</tbody>
</table>

Note: a minus (-) sign indicates a loss of habitat. A plus (+) sign indicates a gain of habitat area.
Removing the culvert would change the hydrology of the creek. Current suitable habitat within the unnamed creek could be negatively impacted after the culvert is removed and the hydrology changes. However, restoring the creek to more natural conditions would improve its ecology and would benefit endemic species, such as CRLF, that use the system. Therefore, potential negative impacts to CRLF habitat from removing the culvert would be offset by restoring the system to conditions similar to its original natural state.

Impacts to suitable upland dispersal and aquatic habitat during and immediately after construction are not expected to affect CRLF individuals or populations, nor the habitat’s long-term suitability to support CRLF should they occur in the project area in the future.

In summary, the proposed project would have short-term impacts to CRLF habitat and could result in loss of small numbers of CRLF, if they were to be present during construction. The impacts to CRLF will be less than significant; AMMs BIO-2 to BIO-7 will further reduce impact. In addition, the USFWS BO provides coverage under FESA in case a CRLF is incidentally injured, killed, or needs to be relocated outside of the project area. The project would provide a permanent enhancement to CRLF habitat by removing the culvert, which would improve CRLF dispersal within the drainage area.
FIGURE 3 BIO-3
Map 1 of 5
Potential Impacts to Suitable California Red-legged Frog Habitat
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California

Biological Study Area (9.97 acres)
Project Limits/Project Area (3.33 acres)
CRLF Upland Habitat
Impacts to CRLF Upland Habitat
Permanent (-0.634 acre)
Temporary (-2.549 acres)
FIGURE BIO-3
Map 2 of 5
Potential Impacts to Suitable California Red-legged Frog Habitat
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California
FIGURE BIO-3

Map 3 of 5

Potential Impacts to Suitable California Red-legged Frog Habitat

State Route 116 at Llano Road Left-turn Lane Project

EA 4G380, SON-116 Post Mile 30.9 / 31.4

Sonoma County, California
FIGURE BIO-3
Map 4 of 5
Potential Impacts to Suitable California Red-legged Frog Habitat
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California

LEGEND
- Biological Study Area (9.97 acres)
- Project Limits/Project Area (3.33 acres)
- CRLF Aquatic Habitat
- CRLF Upland Habitat
- Impacts to CRLF Upland Habitat
  - Permanent (-0.634 acre)
  - Temporary (-2.549 acres)
FIGURE BIO-3
Map 5 of 5
Potential Impacts to Suitable California Red-legged Frog Habitat
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California

LEGEND
- Biological Study Area (9.97 acres)
- Project Limits/Project Area (3.33 acres)
- CRLF Upland Habitat
- Impacts to CRLF Upland Habitat
- Permanent (-0.634 acre)
- Temporary (-2.549 acres)
\textbf{California Tiger Salamander} \\
It is not likely that CTS would be present in the project area, based on the lack of wetland breeding and upland aestivation habitat.\textsuperscript{4} In addition, the project area is outside of areas within the SRPCS that have potential for CTS and listed plants. Because project impacts would be located outside of the SRPCS Plan Areas that have potential for CTS and listed plants (Figure BIO-1), it can be concluded that the project would have no impact on CTS or its associated habitat (Cleckler 2015 and USFWS 2009).

\textbf{California Freshwater Shrimp} \\
The project has the potential to impact CFS and their habitat due to removal of riparian vegetation, placement of the isolation casings during the existing pile removal and new pile installation, dewatering of stream reaches, creek diversion, removal of box culvert, streambed reconstruction, increased sediment mobilization, and water quality degradation.

Impacts to CFS during in-water work, including dewatering and removal of the box culvert would be minimized by implementation of CFS-specific measures described below and required under the USFWS BO (USFWS 2017b), which include the capture and relocation of CFS individuals prior to these activities.

Replacement of the existing box culvert with a single-span bridge may result in long-term benefits to the species because of the natural, unobstructed substrate that would replace the box culvert and result in an increased potential for connectivity and dispersal of the species to downstream areas that may support suitable habitat for the species.

Impacts to CFS habitat would be of limited extent and mostly temporary as shown in Table BIO-3 and on Figure BIO-4. Approximately 0.073 acre of potential CFS aquatic habitat would be temporarily lost during dewatering activities, but restored once flow is reintroduced. In addition, there would be a net gain of 0.017 acre of aquatic habitat once the single-span bridge is built. Approximately 0.522 acre of riparian woodland habitat would be impacted during dewatering activities (0.123 acre of permanent impacts, and 0.399 acre of temporary impacts including impacts to the riparian section of the roadside ditch) (Figure BIO-4). The trimming and possible removal of riparian trees and shrubs would result in the reduction of shade and a

\textsuperscript{4} Aestivation habitat refers to features used by CTS during the dry season, such as small mammal burrows.
potential increase in stream temperatures, as well as a potential decrease in detritus\(^5\) input associated with the reduced canopy cover. Based on the limited extent of the aquatic habitat directly affected by these activities, the change in light and temperature would be slight and would not be expected to affect habitat suitability for CFS. The canopy would be reestablished as tree branches grow, stumps sprout, and replanting efforts reclaim the area.

In the USFWS BO, the USFWS agreed that the incidental take of CFS individuals, which includes mortality and harassment under the Federal Endangered Species Act (FESA), would be difficult to detect and quantify and estimated that all the CFS located 500 feet up and downstream of the SR 116 bridge would be subject to incidental take. The USFWS BO (USFWS 2017b) provided coverage under FESA for such an event. Caltrans will also apply for an incidental take permit from CDFW to provide equivalent coverage under the California Endangered Species Act.

**Table BIO-3 Approximate Loss/Gain of CFS Habitat Types**

<table>
<thead>
<tr>
<th>CFS Habitat</th>
<th>Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Habitat</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>-</td>
</tr>
<tr>
<td>Temporary (while creek flow is diverted)</td>
<td>-0.073</td>
</tr>
<tr>
<td>Additional Restored Habitat (stream bottom)</td>
<td>+0.017</td>
</tr>
<tr>
<td>Riparian Woodland Habitat</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>-0.123</td>
</tr>
<tr>
<td>Temporary (riparian willows and ditch) (would be restored after construction)</td>
<td>-0.399</td>
</tr>
<tr>
<td><strong>Note:</strong> A minus (-) sign indicates a loss of habitat. A plus (+) sign indicates a gain of habitat.</td>
<td></td>
</tr>
</tbody>
</table>

Removing the culvert would change the hydrology of the creek. Current suitable habitat within the unnamed creek could be temporarily impacted after the culvert is removed and the hydrology changes. However, Caltrans believes that restoring the creek to more natural conditions would be an overall benefit to the hydrologic system, and would be beneficial to species that used the system before the culvert was installed.

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\(^5\) Detritus refers to plant and animal debris and waste that provides the energy base of many freshwater streams through microbiological decomposition.
FIGURE 4
Map 1 of 5
Phase 2
SON 116 Llano Road Intersection Widening Project
EA 04-4G380, State Route 116 Post Mile 30.9 to 31.4
Sonoma County, California
Therefore, potential negative impacts to CFS habitat that occur during removal and replacement of the culvert would be mitigated by restoring the system to a more natural condition. The project would provide some permanent enhancements to CFS habitat by replacing the culvert with a clear span bridge, which would improve water flow and restore a natural bottom to the creek in this area. By removing the culvert, migration of native populations of CFS through the tributary would be facilitated.

In summary, the proposed project would have short-term adverse effects to CFS habitat and could result in loss of small numbers of CFS, if CFS is found to be present during construction. Adverse impacts to CFS habitat would be mitigated by restoring the creek following the culvert removal (Mitigation Measure BIO-1). The loss of CFS during construction would be minimized by implementing AMMs BIO-8 to BIO-12.

The project would have a less than significant impact on CFS with implementation of CFS AMMs and the mitigation measure provided at the end of this section.

**Central California Coast Steelhead Distinct Population Segment**

Project activities that could potentially impact steelhead include: fish relocation, dewatering of stream reaches, increased sediment mobilization, water quality degradation, riparian vegetation removal, and habitat benefits resulting from adding 0.017 acre of natural stream bottom. The potential effects of these activities are presented in detail below.

Long-term beneficial impacts are anticipated because of the re-establishment of the riparian corridor, restoring the fluvial sediment and flow regime, daylighting habitat, and increasing fish passage, potentially resulting in improved migration and therefore gene flow amongst CCCS populations.

If juvenile steelhead are present during construction activities, they would be potentially impacted during the removal of the culvert and construction of the free-span bridge at the unnamed creek. The relocation of fish during dewatering before equipment can operate within the channel would avoid harm to juvenile steelhead present within the construction footprint area.

Table BIO-4 and Figure BIO-5 identify the amount of temporary and permanent impacts to steelhead habitat in the project area.
### Table BIO-4 Impacts to Steelhead Habitat

<table>
<thead>
<tr>
<th>Resource</th>
<th>Temporary Impacts (acres)</th>
<th>Permanent Impacts (acres)</th>
<th>Additional Habitat Added (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steelhead Habitat</td>
<td>0.073</td>
<td>0</td>
<td>0.0017</td>
</tr>
</tbody>
</table>

Riparian vegetation and canopy provides shade, which maintains water temperatures suitable to support steelhead. There is no anticipated loss of permanent riparian habitat, and thus the level of shade that is currently present in the unnamed creek would not be affected.

With the proposed general construction AMMs (AMM BIO-1) and specific species AMMs BIO-13 to BIO-15, the project is not expected to result in significant impacts to CCCS, but could cause some harassment of individual CCCS due to relocation of fish during dewatering or during the installation and removal of the diversion cofferdams.

After construction of the new single-span bridge, sediment is expected to travel more efficiently downstream and, potentially, impact portions of the unnamed creek. This would be a temporary indirect impact. Although sedimentation runoff could indirectly impact steelhead present downstream, overall the impacts to the system would be beneficial by opening the fish passage barrier at the unnamed creek, restoring hydrologic connectivity, and allowing natural redistribution of sediment through the crossing, which improves habitat for salmonids downstream. Overall, the project would have beneficial long term impacts because it would open the fish-passage barrier from the unnamed creek to Laguna de Santa Rosa.

**Migratory Birds**

Potential impacts to migratory birds include destruction or abandonment of active nests during the bird nesting season. The general construction AMMs (AMM BIO-1) include the bird-nesting protection measures described under Vegetation Removal.

b) Trees anticipated to be impacted are shown in Figure BIO-6. Impacts to riparian habitat area are the same as impacts to CFS habitat, described in Table BIO-5 and shown in Figure BIO-4.
FIGURE BIO-5
Potential Impacts to Central California Coast Steelhead Habitat and to Central California Coast Coho Salmon Critical Habitat
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California
Figure B50-6
Potentially Impacted Trees
State Route 116 at Llano Road Left-turn Lane Project
EA 4G380, SON-116 Post Mile 30.9 / 31.4
Sonoma County, California
Approximately 41 live and 2 dead trees would potentially be impacted. Sixteen are native riparian trees (arroyo willow) and four are non-native riparian trees (green acacia). Twenty-one upland trees (fifteen native and six non-native) would potentially be impacted (six live oaks, one arroyo willow, one California buckeye (*Aesculus californica*), one valley oak, six redwoods, three Monterey pines, one green acacia (*Acacia dealbata*), one deodar cedar (*Cedrus deodara*), and one eucalyptus.).

### Table BIO-5 Potential Impacts to Riparian Habitat

<table>
<thead>
<tr>
<th>Habitat Impact</th>
<th>Area (acre)</th>
<th>Linear Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>0.123</td>
<td>-</td>
</tr>
<tr>
<td>Temporary</td>
<td>0.399</td>
<td>-</td>
</tr>
</tbody>
</table>

Attempts to minimize tree removal would include trimming wherever possible. The removal of trees in the required temporary construction easement on both sides of the bridge is necessary to create a clear path for construction equipment, haul trucks, and contour grading to restore the channel around the unnamed creek. The trees to be removed would be cut down to the stumps and removed approximately between September 1 and October 15, 1 year ahead of construction. No grubbing would occur during this period. Removal of non-native trees is considered beneficial to the creek habitat.

Restoration for temporary impacts would be accomplished through onsite revegetation. No compensatory mitigation is proposed because impacts to habitat would be temporary. Further, the implementation of the proposed action would result in a long-term improvement of riparian and special-status species habitat within the unnamed creek. Approximately 0.017 acre of aquatic habitat would be restored by removing the box culvert and restoring the natural creek bottom.

Impacts to riparian habitat are not substantial and therefore would be less-than-significant and further reduced with the restoration of creek banks and adjacent upland areas.

**Coho Salmon Critical Habitat**

Caltrans does not anticipate any adverse modifications to coho salmon critical habitat because of this project. In addition, long-term beneficial impacts are anticipated from removing the box culvert and replacing with a single-span bridge, creating a natural creek bottom. These benefits would occur by re-establishing the riparian corridor,
restoring the fluvial sediment and flow regime, daylighting habitat, and facilitating fish passage.

Caltrans has determined that the proposed project would not impact coho critical habitat and would have no effect to individuals.

c) No wetlands under the U.S. Army Corps of Engineers (USACE) Section 404 jurisdiction are found within the project area, and no impact would occur to those resources.

The proposed project is anticipated to temporarily impact 0.073 acre of potentially jurisdictional other water features under USACE, Regional Water Quality Control Board (RWQCB), and CDFW regulations (Figure BIO-2). Temporary impacts would occur during removal of the culvert. There would be no fill in the creek. Because of the project, approximately 0.017 acre of natural stream channel would be restored (Table BIO-6).

Grading, clearing, and grubbing of upland areas could result in indirect temporary impacts from increased erosion and sedimentation and adversely impact the unnamed creek. These indirect impacts would be avoided during construction, however, through implementation of the Caltrans standard BMPs, such as the use of silt fences or fiber rolls. In addition, implementation of hydrotechnical and planting wetland vegetation following ground-disturbing activities would reduce erosion and sedimentation from the upland areas post construction.

<table>
<thead>
<tr>
<th>Feature Impacted</th>
<th>Temporary Impacts (acres)</th>
<th>Permanent Impacts (acres)</th>
<th>Total Habitat Added (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnamed tributary to Laguna de Santa Rosa</td>
<td>-0.073</td>
<td>0</td>
<td>+0.017</td>
</tr>
<tr>
<td>Drainage ditches</td>
<td>-0.046</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

No compensatory mitigation is proposed because there would be no permanent loss of wetlands or other waters. In addition, implementation of the proposed project would result in a long-term improvement of the flow regime within the unnamed creek by restoring the natural stream channel. With the completion of the project’s restoration
measures and BMPs, the impact on water features and aquatic habitat would be less-than-significant.

d) The installation of a stream diversion structure would allow for unimpeded movement of fish and other wildlife species during construction. Relocation of fish and other aquatic organisms would avoid or minimize potential stranding of animals during dewatering operations. Overall, the project would have beneficial long term impacts on fish migration because it would open the fish-passage barrier from the unnamed creek to Laguna de Santa Rosa.

e, f) The project is on the southwestern edge of the SRPCS area. Caltrans collaborated with SRPCS team members USFWS and CDFW and used survey methodology and impact assessment guidelines within the SRPCS to assess impacts and, therefore, avoided conflicts with the provisions of the SRPCS.

Avoidance and Minimization Measures

**AMM BIO-1: GENERAL CONSTRUCTION AVOIDANCE AND MINIMIZATION MEASURES**

To avoid or minimize potential impacts to sensitive biological resources, Caltrans would incorporate Caltrans standard construction BMPs and AMMs into the project. These measures would be communicated to the contractor using special provisions included in the contract bid solicitation package. These measures include the following:

a) **Seasonal Avoidance.** To the extent practicable, construction will not occur during the wet season. Except for limited vegetation clearing (necessary to minimize effects to nesting birds), work within the creek will be limited to the period from June 1 to October 15.

b) **Worker Environmental Awareness Training.** Before beginning construction activities, a qualified biologist will conduct an education program for all project construction personnel. At a minimum, the training will include a description of CFS, CRLF, CCCS, and other listed species, as well as migratory birds and their habitats; a discussion of the potential occurrence of these species within the project area; an explanation of the status of these species and protection; the description of measures to be implemented to conserve listed species and their habitats as they relate to the work site; and the description of boundaries within which construction may occur. Upon completion of the training program, construction personnel will sign a form stating they attended the program and understand all the avoidance and minimization measures and regulatory
implications. A fact sheet conveying this information will be prepared and distributed to the construction and project personnel entering the project footprint area.

c) **Environmentally Sensitive Area Fencing.** Before starting construction, ESAs (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) will be clearly delineated using temporary high-visibility orange fencing. The ESA fencing will remain in place throughout the project duration and will prevent construction equipment or personnel from entering sensitive habitat areas. The final project plans will depict the locations where ESA fencing will be installed and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs.

d) **Wildlife Exclusion Fencing.** Before starting construction, wildlife exclusion fencing (WEF) will be installed along the project footprint perimeter in the areas where listed wildlife could enter the project site. Locations of the WEF will be determined in coordination with the appropriate regulatory agencies. The final Project plans will depict the locations where WEF fencing will be installed and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable WEF fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the project duration, and will be regularly inspected for stranded animals and fully maintained. At some locations, WEF will be installed during each construction phase and will be removed when that phase is completed.

e) **Dewatering.** Dewatering and discharging activities will be conducted according to standard Caltrans requirements.

   a. The dewatering plan will be submitted to the USFWS for review and approval in advance of its implementation.

   b. The USFWS-approved biologist will be present during dewatering activities to relocated listed species as needed.
c. Upon completion of construction, any barrier to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

f) **Implementation of Best Management Practices.** In accordance with RWQCB requirements, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and erosion control BMPs implemented to minimize wind- or water-related erosion. The Caltrans BMP Guidance Handbook provides guidance for the inclusion of provisions in all construction contracts to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include:

a. Disallowing discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses.

b. Keeping vehicle and equipment fueling and maintenance operations at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility.

c. Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts, located at least 50 feet from watercourses.

d. Maintaining spill containment kits onsite at all times during construction operations and/or staging or fueling of equipment.

e. Using water trucks and dust palliatives to control dust in unvegetated areas and covering of temporary stockpiles when weather conditions require.

f. Installing coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.

g. Protecting graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (jute or coir) as appropriate on sloped areas.

h. Establishing permanent erosion control measures such as bio-filtration strips and swales to receive stormwater discharges from the highway or other impervious surfaces to the maximum extent practicable.
g) **Construction Site Management Practices.** The following site restrictions will be implemented to avoid or minimize potential effects on listed species and their habitats:

a. Enforcing a speed limit of 15 miles per hour in the project footprint in unpaved and paved areas to reduce dust and excessive soil disturbance.

b. Locating construction access, staging, storage, and parking areas within the project right-of-way outside any designated ESA or outside the right-of-way in areas environmentally cleared and permitted by the contractor. The following areas will be limited to the minimum necessary to construct the proposed project: access routes, staging and storage areas, and contractor parking. Routes and boundaries of roadwork will be clearly marked before initiating construction or grading.

c. Certifying, to the maximum extent practicable, borrow material is nontoxic and weed-free.

d. Enclosing food and food-related trash items in sealed trash containers and removing them from the site at the end of each day.

e. Prohibiting pets from entering the project footprint area during construction.

f. Prohibiting firearms within the project site, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.

g. Maintaining equipment to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents and developing a Spill Response Plan. Hazardous materials such as fuels, oils, solvents, and similar will be stored in sealable containers in a designated location that is at least 50 feet from aquatic habitats.

h. Servicing vehicles and construction equipment including fueling, cleaning, and maintenance at least 50 feet from aquatic habitat unless separated by topographic or drainage barrier.

i. Nighttime work will be avoided for activities that are practicable to be done during the day. For work that needs to be conducted during the night, all lighting will be directed downwards and towards the active construction work area.
h) **Surveys.** Prior to construction, clearance surveys will be performed by a qualified biologist. A biological monitor will be present during floodplain surveys and any work conducted in and immediately adjacent to the creek.

i) **Avoidance of Entrapment.** To prevent inadvertent entrapment of animals during construction, excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day using plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Replacement pipes, culverts, or similar structures stored in the project area overnight will be inspected before they are subsequently moved, capped, and/or buried.

j) **Vegetation Removal.** Vegetation that is within the cut and fill line or growing in locations where permanent structures will be placed (e.g., road alignment, shoulder widening, or bridge abutments) will be cleared. Vegetation will be cleared only where necessary and will be cut above soil level except in areas that will be excavated. This will allow plants that reproduce vegetatively to resprout after construction. Clearing and grubbing of woody vegetation will occur by hand or using construction equipment such as mowers, backhoes and excavators. If clearing and grubbing occurs between February 1 and September 30, a qualified biologist will survey for nesting birds within the areas to be disturbed including a perimeter buffer of 50 feet for passerines and 300 feet for raptors, before clearing activities begin. All nest avoidance requirements of the MBTA and California Fish and Game Code will be observed (e.g., establishing appropriate protection buffers around active nests until young have fledged). Cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site.

k) **Replant, Reseed, and Restore Disturbed Areas.** Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition.

l) **Reduce Spread of Invasive Species.** Caltrans will comply with Executive Order 13112 to reduce the spread of invasive species. The contractor will be required to contain the plant material associated with noxious weeds and dispose of it in a
manner that will not promote the spread of the species. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the project area will be covered to the extent practicable with heavy black plastic solarization material until the end of the project.

**CRLF AMMs**

**AMM BIO-2: Proper Use of Erosion Control Devices.** To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic monofilament netting (i.e., erosion control matting) or similar material will not be used within the project area. Acceptable substitutes would include coconut coir matting or tackifier hydroseeding compounds.

**AMM BIO-3: Preconstruction Surveys.** A USFWS-approved biologist will conduct preconstruction CRLF surveys no more than 20 calendar days prior to any initial ground disturbance and immediately prior to ground disturbance. Suitable aquatic and upland habitat within the project footprint (Figure BIO-3), including refugia habitat such as under shrubs, downed logs, small woody debris, or mammal burrows will be thoroughly inspected. If a CRLF is observed, the individual will be evaluated and relocated in accordance with the following observation and handling protocol. If safe, the biologist will investigate areas of disturbed soil for signs of CRLF within 30 minutes of initial disturbance.

**AMM BIO-4: Biological Monitoring.** The USFWS-approved biologist will be present during construction activities where harm to a listed species could occur. Through communication with the resident engineer or his/her designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly.

**AMM BIO-5: Protocol for Species Observation.** If CRLF are encountered in the project footprint, work within 50 feet of the animal will cease immediately until the animal leaves the construction zone or is removed by the USFWS-approved biologist. The Resident Engineer and the USFWS-approved biologist will be notified immediately of CRLF discoveries and will then notify the USFWS. Based on the professional judgment of the approved biologist, if project activities can be conducted without harming or injuring the animal(s), they may be left at the location of discovery and monitored by the approved biologist. Project personnel will be notified of the finding, and at no time shall work occur within 50 feet of the animal without a
biological monitor present. The USFWS approved biologist will release captured CRLF within appropriate habitat within the riparian corridor but outside of the construction zone.

**AMM BIO-6: Cover Boards.** The USFWS-approved biologist will place cover boards in strategic locations throughout the project footprint during the pre-construction surveys. These cover boards will be checked daily during construction for CRLF when the USFWS-approved biologist is onsite.

**AMM BIO-7: Intake Protection.** If dewatering system requires pumping, all intakes will be completely screened with wire mesh not larger than 5 millimeters to prevent CRLF from entering pump system.

The USFWS issued a BO on June 21, 2017 (USFWS 2017b) that included all measures described above.

**CFS AMMs**
As required under FESA, Caltrans will implement reasonable and prudent measures to minimize and avoid impacts (take) to CFS. Because of the suitable habitat present and documented occurrences of the CFS within 1 mile of the project area, Caltrans will implement both the general AMMs listed above and the following species-specific measures for CFS:

**AMM BIO-8: Work Window.** Caltrans will complete work activities within the bed and bank of the unnamed creek between June 1 and October 15 to minimize work in ponded areas that may provide habitat for CFS.

**AMM BIO-9: Preconstruction Surveys.** A USFWS-approved biologist will survey for CFS in the project area within 2 weeks before the onset of construction activities, including any temporary dewatering and/or coffer dam installation. The survey will include investigating likely habitat 100 feet upstream and 100 feet downstream of the proposed bridge. If CFS are found, the approved biologist will capture and relocate them to suitable habitat in the same drainage. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of CFS. Following installation of any water diversion structures, and before the placement of fill, a USFWS-approved biologist will perform surveys for and relocate any CFS (and other species) trapped in the project area. Aquatic non-native invasive species found will be disposed of properly and will not be placed back into the stream where work is being conducted or any other drainages, creeks, or streams.
AMM BIO-10: Biological Monitoring. At least 30 days before the onset of activities, the names and credentials of biologists who will conduct CFS-relocation activities will be submitted to USFWS for approval. No project activities will begin until Caltrans has received written approval from USFWS that the biologist is approved to conduct CFS relocations. A USFWS-approved biologist will be present onsite during the construction of any erosion control fencing or cofferdams, and before and during the dewatering of the creek, to monitor for CFS. The USFWS-approved biologist will be present during construction activities where take (which includes mortality and harassment under FESA) of a listed species could occur. Through communication with the resident engineer or his/her designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly.

AMM BIO-11: Limit Removal of Willows and Blackberry from Streambank. The project will avoid removal of willows and blackberry located along the side of the creek, to the maximum extent practicable, as the overhanging vegetation may provide limited cover to CFS.

AMM BIO-12: Protocol for Species Relocation. If CFS are encountered in the immediate work area the following procedures will be followed:

a) Suitable habitat will be identified before capturing CFS to minimize holding time. Suitable habitat is defined as creek sections that will remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation.

b) CFS will be captured by hand-held nets (e.g., heavy-duty aquatic dip nets [12-inch D-frame net] or small minnow dip nets) and relocated out of the work area in the net or placed in buckets containing stream water and then moved directly to the nearest suitable habitat in the same branch of the creek. CFS will not be placed in buckets containing other aquatic species.

c) CFS will be relocated upstream a minimum of 100 feet from project footprint to an area of suitable habitat as defined above.

d) Once the USFWS-approved biologist has determined that all CFS have been effectively relocated, barrier seines or exclusion fencing will be installed to prevent shrimp from moving back in, as appropriate.
STEELHEAD AMMS

AMM BIO-13: A NMFS-approved biologist will conduct a preconstruction visual survey (i.e., bank observations). When listed species are present and it is determined that they could be injured or killed by construction activities, a qualified project biologist will identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected.

AMM BIO-14: Construction in the creek is scheduled during the summer and fall, when the creek will be dry to mostly dry (July 1 and ending on October 15). Conducting work within the proposed in-water work window will minimize the likelihood of potential mortality.

AMM BIO-15: Prior to dewatering within a coffer dam or sheet piling installation, fish and other aquatic vertebrates within the area to be dewatered shall be removed and relocated to appropriate areas out of the construction area. An approved fish removal and relocation plan shall be developed and approved by the CDFW and NMFS prior to fish recovery operations per the PBO. After completion of the proposed project, all materials used to maintain flow and divert water from the work area during the construction period, including any cofferdams, pipe, filter fabric, and gravel will be removed from the streambed. All excess soil will be disposed of at an approved upland site.

Mitigation Measure

Mitigation Measure BIO-1: Impacts to CFS and CFS habitat will be mitigated by the restoration of aquatic habitat resulting from the removal of the existing double box culvert. The culvert removal will restore the natural flow of the creek, allow CFS to pass more freely underneath the bridge, and improve CFS dispersal across the highway. In addition, onsite revegetation efforts will restore impacts to the riparian vegetation after project completion.

All temporarily disturbed areas would be revegetated with appropriate native plant species and contoured to conform to the surrounding landscape. Permanent erosion control such as soil stabilization measures (e.g., hydroseeding, coir netting, addition of compost, or non-filament mesh) would be applied to affected post-construction areas. All invasive plants, non-native plants, and excavated material containing invasive plant material would be cleared from the project area and transported to an appropriate landfill.
Chapter 3. Proposed Mitigated Negative Declaration and CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>V. CULTURAL RESOURCES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?</td>
<td>☐</td>
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</tr>
<tr>
<td>c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</td>
<td>☐</td>
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<td>☐</td>
</tr>
<tr>
<td>d) Disturb any human remains, including those interred outside of formal cemeteries?</td>
<td>☐</td>
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</tr>
</tbody>
</table>

Caltrans prepared a memorandum titled, *Cultural Resources Compliance for the Route 116 Road Intersection Widening Project, in Sonoma County, California* (Caltrans 2016c). A summary of the findings of this review is presented herein.

The Architectural and Archeological areas of potential effects (APEs) (Figure CULT-1) were established as the entire Caltrans right-of-way along SR 116 from PM 30.9 to 31.4, including the TCEs, staging area, and permanent easements. The APEs include the resource study areas for cultural resources considered in this analysis.

**a-b)** A Historic Property Survey Report (HPSR) and ESA Action Plan were prepared for the proposed project (Caltrans 2016d, c). The HPSR and ESA Action Plan documented efforts to identify cultural resources within the architectural and archaeological APEs, respectively, using research methods, survey, and consultation with local tribes and historic societies.

The Llano Roadhouse Building Complex and a previously recorded archaeological site associated with the Llano Roadhouse property were identified within the APE. The Office of Cultural Resource Studies’ reviewed Caltrans’ Cultural Resource Database (the database includes GIS locations of recorded cultural resources, records and reports) for historical resources, and letters were sent to those that were listed as interested parties from the Native American Heritage Commission in the project area. Tribal Historic Preservation Officer for the Federated Indians of Graton Rancheria
(FIGR), responded on behalf of the Chairperson and requested the completed Archaeological Survey Report, which was transmitted as requested. The determination based on the available documentation was a finding of No Adverse Effect with Standard Conditions- Environmentally Sensitive Area. There would be no work that would disturb the historic property; therefore, there would be no impact.

c) The project site’s underlying Pleistocene Alluvium has high paleontological sensitivity. However, because the excavation would take place within the unnamed creek and would be relatively shallow, no sensitive units are likely to be disturbed. Thus, these impacts would be less than significant.

d) Discovery of unknown cultural resources could occur during excavation. In the unlikely event that cultural resources are discovered during construction, all earth-moving activity within and around the immediate discovery area would cease until a Caltrans qualified archaeologist assesses the nature and significance of the find.

Ownership and title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission per Public Resources Code Section 6313. The final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the State Lands Commission must be approved by the Commission.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner would be contacted. Pursuant to California Public Resources Code Section 5070.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. Therefore, the impact would be less than significant.

**AMMs:**

**AMM CULT-1:** Temporary fencing around the Llano Roadhouse property will be used to protect the historic property from construction activities and the adjacent staging area.

**AMM CULT-2:** During excavation if remains are discovered, the County Coroner will be contacted and further ground disturbance activities will cease.
Figure CULT-1. Area of Potential Effects
<table>
<thead>
<tr>
<th>VI. GEOLOGY AND SOILS:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>ii) Strong seismic ground shaking?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>iii) Seismic-related ground failure, including liquefaction?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>iv) Landslides?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>b) Result in substantial soil erosion or the loss of topsoil?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
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<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>

### Geologic Setting

Caltrans investigated the proposed project, and responded via email in response to geotechnical findings (Risden 2012). The findings of this analysis are presented herein.

The project is underlain by Pleistocene Alluvium, which is paleontologically sensitive. However, because the excavation would take place in the creek, and would be relatively shallow, no sensitive units would be disturbed due to the fact that modern stream gravels and sediments are found in the stream. Therefore, no further paleontological studies are necessary.
Discussion

a) i, ii, iii). The project area is not within a delineated Alquist-Priolo Earthquake Fault Rupture area (California Department of Conservation 2015). Therefore, there would be no impact.

iv). The project area is relatively flat, and thus, the potential for a seismic induced landslide is low. There would be no impact.

b) Earth-moving activities have the potential to cause soil erosion or loss of topsoil. Permanent erosion control such as hydroseeding, coir netting, addition of compost and non-filament mesh would be applied to affected areas. Therefore, there would be no impact.

c,d) Borings were taken at the site and soil examined. It is proposed to implement soil improvements to reduce liquefaction potential. However, there are no construction activities that could create unstable soils, and the project would be constructed to meet Caltrans seismic and safety standards, which would reduce the risk from unstable soils to people and structures. Therefore, there would be no impact. (Caltrans 2017c).

e) The project would not use a septic tank or alternative waste water disposal system. Therefore, there would be no impact.
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? | Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of GHG emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans’ determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project’s direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows the CEQA checklist and related discussions. |
| b) | Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | |

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

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

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation (EPA 2016). In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions (Cal/EPA, 2017) The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: (1) greenhouse gas mitigation and (2) adaptation. Greenhouse gas mitigation is a term for reducing GHG emissions to reduce or mitigate the impacts of climate change.
change. Adaptation refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

**REGULATORY SETTING**

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

**Federal**

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

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

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (U.S. DOT 2017) This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability (U.S. DOT 2017a) Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors 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.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

**The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR):** With this act, Congress set goals, created mandates, and amended utility laws to increase
Chapter 3. Proposed Mitigated Negative Declaration and CEQA Environmental Checklist

clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.


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

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

Executive Order 13693, Planning for Federal Sustainability in the Next Decade, 80 Federal Register 15869 (March 2015): This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in
previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

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

EPA, in conjunction with the National Highway Traffic Safety Administration (NHTSA), issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010 (Center for Climate and Energy Solutions 2017) and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule, which increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rule’s long timeframe, a mid-term evaluation is included in the rule. The mid-term evaluation is the overarching process by which NHTSA, EPA, and the California Air Resources Board (ARB) would decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for these model years. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target (National Archives and Records Administration 2017) (NBC News 2017).

NHTSA and EPA issued a Final Rule for Phase 2 for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards would save up to 2 billion barrels of oil and reduce CO₂ emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

**State**

With the passage of legislation including State Senate bills (SBs) and Assembly bills (ABs) and EOs, California has been innovative and proactive in addressing GHG emissions and climate change.

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

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

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

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

**Executive Order S-01-07 (January 18, 2007):** This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went
into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

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

**Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection:** This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a Sustainable Communities Strategy that integrates transportation, land-use, and housing policies to plan how it would achieve the emissions target for its region.

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

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

**Executive Order B-30-15 (April 2015):** This EO establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO$_2$e). Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, *Safeguarding California*, every three years, and to ensure that its provisions are fully implemented.
Senate Bill 32, (SB 32) Chapter 249, 2016: This codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

ENVIRONMENTAL SETTING
In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a scoping plan that describes the approach California would take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The scoping plan was first approved by ARB in 2008 and must be updated every five years. ARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. ARB is moving forward with a discussion draft of an updated scoping plan that would reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 scoping plan and the subsequent updates contain the main strategies California would use to reduce GHG emissions. As part of its supporting documentation for the draft scoping plan, ARB released the GHG inventory for California (Cal/EPA 2017) ARB is responsible for maintaining and updating California's GHG inventory per California Health and Safety Code Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the scoping plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure GHG-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO2e (IPCC 2007). The 2016 edition of the GHG emissions inventory (released June 2016) found total California emissions of 441.5 MMTCO2e, showing progress towards meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (ARB 2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated
from Pavley I and the Renewable Electricity Standard (30 MMTCO₂e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO₂e.

**Figure GHG-1. 2020 Business-as-usual Emissions Projection 2014 Edition**

![Figure GHG-1](image)

**Project Analysis**

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations.

**Operational Emissions**

The purpose of the proposed Llano Road Intersection Improvement project is to reduce the potential for accidents related to left turns and vehicle crossings for traffic moving from eastbound SR 116 to northbound Llano Road. For more information on the project purpose and need, refer to Chapter 1. The improvements would not lead to increased traffic, or induce growth in the vicinity to increase local GHG emissions.

**Construction Emissions**

Construction GHG emissions would result from material processing, onsite construction equipment, and 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.
According to Sonoma County’s GHG emissions inventory for 2000, transportation accounted for 42 percent of emissions, and solid waste accounted for a 2 percent increase (compared to 1990 GHG emission inventory) (Climate Protection Campaign, 2005). Construction-generated GHG includes emissions resulting from material processing by onsite construction equipment, workers commuting to and from the project site, and traffic delays due to construction. Construction-related CO2 emissions were calculated using the Road Construction Emissions Model (RCEM), version 8.1.2, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for construction duration of 8.5 months the total amount of CO2 produced due to Intersection Improvement would be 1,948.49 tons. Additional construction emissions include: 0.25 tons of methane, 0.04 tons of nitrous oxide, or a project total in carbon dioxide equivalent (CO2e) of 1,967.24 tons.

All work is required to be performed in accordance with Caltrans Standard Specification 7-1.02C, Emission Reduction. In accordance with this Caltrans standard specification, the contractor, upon award of the construction contract, acknowledges awareness of the emissions reduction regulations mandated by the ARB and is required to comply with such regulations before commencing the performance of the work and to maintain compliance throughout the duration of this contract.

**CEQA Conclusion**

While the project would result in a slight increase in GHG emissions during construction, it is anticipated that the project may not result in any increase in operational GHG emissions. While 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

**Greenhouse Gas Reduction Strategies**

**Statewide Efforts**

In an effort to further the vision of California’s GHG reduction targets outlined in AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts) (Figure GHG-2). These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today’s petroleum use in cars and
trucks by up to 50 percent, (2) increasing from one-third to 50 percent our electricity derived from renewable sources, (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner, (4) reducing the release of methane, black carbon, and other short-lived climate pollutants, (5) managing farm and rangelands, forests, and wetlands so they can store carbon, and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

**Figure GHG-2. The Governor’s Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals**

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove CO₂ from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.
Caltrans Activities
Caltrans continues to be involved on the Governor’s Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)
The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Assembly Committee on Transportation 2009) requires the CTP to meet California’s climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state’s transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan
The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that would help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled per capita
- Reducing Caltrans’ internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs
In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe...
Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (Caltrans 2013c).

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

*Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

**Project-level GHG Reduction Strategies**

The following measures would also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

**AMMs:**

**CLIMATE CHANGE-1:** According to Caltrans’ Standard Specifications, the contractor must comply with all of the Bay Area Air Management District rules, ordinances, and regulations regarding air quality restrictions.

**CLIMATE CHANGE-2:** Compliance with Title 13, California Code of Regulations – Adopted by the Air Resources Board on June 15, 2008, this regulation would restrict idling of construction vehicles to no longer than 5 consecutive minutes. The contractor must comply with this regulation in order to reduce harmful emissions from diesel-powered construction vehicles.

**CLIMATE CHANGE-3:** To the extent that it is feasible for the project, reclaimed water may be used to reduce GHG emissions produced during construction. Currently, 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.

**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 or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and the
frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

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

The federal Department of Transportation (DOT) issued *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions.” (U.S. DOT 2011).

To further the DOT Policy Statement, on December 15, 2014, FHWA issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*) (FHWA 2014). This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation’s transportation systems.

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels (U.S. DOT 2017b).
State Efforts
On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California’s vulnerability to sea-level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea-level rise and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, 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, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, Sea-Level Rise for the Coasts of California, Oregon, and Washington (Sea-Level Rise Assessment Report) (National Academy of Science 2012) was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided 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; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed The California Climate Adaptation Strategy (State of California 2009), which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as Safeguarding California: Reducing Climate Risk (Safeguarding California Plan) (ARB 2014).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how state agencies are implementing EO B-30-15 were
added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided “guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California,” specifically, “information and recommendations to enhance consistency across agencies in their development of approaches to SLR.” The March 2013 update finalizes the SLR Guidance by incorporating findings of the National Academy’s 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation, and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in in working towards identifying these risks throughout the state and would work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

The proposed Llano Road Intersection Improvement Project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.
### VIII. HAZARDS AND HAZARDOUS MATERIALS:
Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c)</td>
<td>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>e)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f)</td>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>g)</td>
<td>Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>h)</td>
<td>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?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

A Phase 1 Initial Site Assessment report was not prepared for this project. Contaminated sites in the vicinity of the project were identified using the State Water Resources Control Board’s (SWRCB’s) GeoTracker database and the California Department of Toxic Substances Control’s (DTSC’s) EnviroStor database. There are no listed hazardous sites on the project site (SWRCB 2017, DTSC 2017).

There are no nearby schools and airports. The Sebastopol Fire Department and Sebastopol Police Department serve the project area. The project area is not designated as a very high fire hazard severity zone (CALFIRE 2017).
a, b) Equipment, fuels, lubricants, and solvents would be stored at least 50 feet from the stream channel. Caltrans Standard Specifications BMPs would be implemented to prevent accidental spills into the unnamed creek. Therefore, there would be no impact.

c) There are no schools in the project vicinity. Handling of hazardous materials would be in compliance with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, which outlines handling, storing and disposing of hazardous waste. Therefore, there would be no impact.

d) The project site is not included on a list of hazardous materials sites. There would be no impact to the public or environment. Therefore, there would be no impact.

e, f) The project is not within the vicinity of a private airstrip or within two miles of a public airport. The project would not result in a safety hazard for people residing or working in the project area. Therefore, there would be no impact.

g) During construction, two lanes of traffic would be kept open, and k-rails and temporary signals would be used to route traffic. The City and public would be notified prior to commencement of construction activities. Therefore, the impact would be less than significant.

h) The project area was not designated to be a fire hazard zone. Therefore, there would be no impact.

AMMs:

**AMM HAZ-1:** Caltrans Standard Specifications BMPs would be implemented to prevent accidental spills into the unnamed creek.

**AMM HAZ-2:** Handling of hazardous materials would be in compliance with Caltrans Standard Specifications 14-11, Hazardous Waste and Contamination, which outlines handling, storing and disposing of hazardous waste.
Chapter 3. Proposed Mitigated Negative Declaration and CEQA Environmental Checklist

<table>
<thead>
<tr>
<th>IX. HYDROLOGY AND WATER QUALITY:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td>❌</td>
<td>✗</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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)?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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 offsite?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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 offsite?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>f) Otherwise substantially degrade water quality?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>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?</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
<tr>
<td>j) Inundation by seiche, tsunami, or mudflow</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
<td>✗</td>
</tr>
</tbody>
</table>

Caltrans prepared a Location Hydraulic Study (Caltrans 2017d) and Water Quality Study (Caltrans 2016e) for the SR 116 Widening at Intersection with Llano Road, along the unnamed creek. A summary of the findings of this analysis are presented herein.
a, f) Runoff from the project site would discharge directly into a creek connected to Laguna de Santa Rosa. The creek is 2012 Clean Water Act (CWA) Section 303(d) listed for indicator bacteria, dissolved oxygen, sedimentation/siltation, and temperature.

Potential temporary impacts to existing water quality would result from staging and active construction areas, which could result in the release of fluids, concrete material, construction debris, sediment, and litter beyond the perimeter of the site.

Sediment from construction would be minimized by the use of Caltrans’ construction BMPs for stormwater, including silt fence, fiber roll, check dam, DI protection, concrete wash-out, and street sweeping.

Because the intended acreage of disturbed soil area is suspected to be more than 1 acre, an SWPPP would be completed to minimize pollution and stormwater runoff during construction. An SWPPP would be prepared by the contractor and approved by Caltrans, pursuant to Department 2015 Standard Specification 13-3. The SWPPP would address potential temporary impacts via implementation of appropriate BMPs. Therefore, impacts to water quality would be less than significant.

b) The project site is located within the Santa Rosa Valley: Santa Rosa Plain Sub-Basin and its location has been designated as “Medium” priority under the California Statewide Groundwater Elevation Monitoring (CASGEM) program, with a “Low to Medium” estimation for potential subsidence. The widening of SR 116 is expected to add new impervious surface of approximately 0.45 acre. Construction and operation however would not deplete groundwater supplies or interfere substantially with groundwater recharge. Therefore, impacts to water quality would be less than significant.

c) The proposed project would not substantially alter the drainage pattern of the site in a manner that would result in increased erosion and siltation. A 40-foot-long clear-span bridge is proposed to replace the existing RCB culvert. Existing roadway embankment would be removed to regrade the creek channel under the bridge and fill would be added to the roadway embankment on the southern side of SR 116 as part of the widening project. The impact would be less than significant.

d) The proposed project would not substantially alter the drainage pattern of the site in a manner that would result in increased flooding. A 40-foot-long clear-span bridge is proposed to replace the existing RCB culvert. Existing roadway embankment
would be removed to regrade the creek channel under the bridge and fill would be added to the roadway embankment on the southern side of SR 116 as part of the widening project. All the cut and fill within the floodplain would be balanced. Ultimately, the proposed bridge would improve flow conveyance under the roadway by having a larger flow area. The project would reduce the extent of the upstream floodplain and downstream there would be a slight increase in base flood elevation downstream from the crossing. This increase would be contained within the creek channel and is not expected to cause any flooding.

The current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) confirms that the project is outside the limits of FEMA’s study area, which ends roughly 0.6 mile downstream from the project site. The new bridge replacing the existing RCB would have a larger flow area, which would improve flow conveyance under the roadway. This increase of flow downstream, however, would be contained within the creek channel and is not expected to cause any flooding. The project would result in an increase in impervious area that would lead to increased surface runoff. However, added impervious area would be approximately 0.45 acre, which would lead to insignificant increased runoff. Therefore, the project would have a less than significant impact on the existing drainage pattern.

e) This project would treat all runoff from new and reworked pavement. The project would comply with Caltrans’ Clean Water Act Section 402 National Pollution Discharge Elimination System (NPDES) general permit. Additional treatment for increased runoff from this new impervious area would be provided by BMPs such as bioretention. Bioretention systems use infiltration into soil media to treat stormwater runoff by filtering out sediment and contaminants before it flows into a waterbody. The bioretention facility may be designed as either a basin or swale configuration. Soil may need to be imported for the bioretention system. Groundwater levels are anticipated to be high; therefore, the proposed bioretention system would incorporate an impermeable liner. If right-of-way is not adequate to site the preferred treatment BMPs, offsite treatment may be required. The statewide Construction General Permit (2009-0009-DWQ, CAS000002, as amended by 2010-0014-DWQ and 2012-0006-DWQ) shall apply to construction activities. A SWPPP would be required to mitigate any stormwater pollution and runoff. Therefore, impacts from additional stormwater runoff would be less than significant.

g) The proposed project would not place housing within a flood hazard area. There would be no impact.
h) The proposed project is outside the limits of FEMA’s study area and would improve flow conveyance under the roadway by having a larger flow area. The project would reduce the extent of the upstream floodplain and there would be a slight increase in base flood elevation downstream from the crossing. This increase, however, would be contained within the creek channel and is not expected to cause any flooding. There would be no impact.

i) There are no levees or dams in the immediate vicinity of the project area. Therefore, the project would not expose people or structures to a significant risk from failure of a levee or dam. There would be no impact.

j) The project is not in an area that could be inundated by seiche, tsunami, or mudflow. There would be no impact.

AMMs:

Avoidance and minimization measures can lessen impacts to water quality that could result with implementation of the project. The supplemental Water Quality Study has proposed the following avoidance and minimization measures:

**AMM HYDRO-1:** Temporary construction site BMPs, which include such items as silt fence, fiber roll, check dams, DI protection, concrete wash-out, and street sweeping, will be deployed for sediment control and material management.

**Permanent Impacts**

**AMM HYDRO-2:** To treat stormwater runoff from increased impervious surfaces, treatment BMPs, such as bioretention, swale or basin would be implemented.

**AMM HYDRO-3:** Treatment of the new impervious area in accordance with the Statewide NPDES General Permit.

**Stormwater Management Program**

**AMM HYDRO-4:** An SWPPP must be prepared by the contractor and approved by Caltrans, pursuant to Department 2015 Standard Specification 13-3.

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6 A seiche is a temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water, especially one caused by changes in atmospheric pressure.
X. LAND USE AND PLANNING:
Would the project:

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Physically divide an established community?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c) Conflict with any applicable habitat conservation plan or natural community conservation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

a-b) The proposed project complies with the stated goals of the Sonoma County General Plan (Sonoma County 2008), including goals for transportation and pedestrian access and safety. The proposed project supports the following goals by providing safe access for pedestrians and motorized vehicles on the new bridge and at the left-turn lane at Llano Road. Therefore, there would be no impacts:

- Highway 116 west of Cotati is expected to experience significant travel demand during peak weekday periods (during the morning and afternoon commute) in 2020. Road improvements to Highway 116 would improve the safety of the road during peak traffic hours.

- Objective CT-4.7: “Prioritize planned capacity improvements on Highways 101, 12, and 116 in recognition of the primary role that these highways play in providing mobility between communities. Prioritize capacity improvements to arterials over those for collector and local roads.” Road improvements would assist in meeting this objective.

c) There are two conservation plans in effect in the area adjacent to the project.

1. Open Space and Resource Conservation Program 8: Scenic Highway 116 Program:

- Prepare local development guidelines for land areas in the general corridor identified as SR 116 Scenic Highway Corridor Study.
2. USFWS Santa Rosa Plain Conservation Plan:

- The Santa Rosa Plain is 20 miles wide and 6 miles long. This area contains species that are federally protected under the FESA. Landowners are assisted by the USFWS to comply with FESA requirements by implementing conservation banks and using a programmatic biological opinion to simplify the process of consulting with USFWS (USFWS 2016b).

Because of their close proximity of their subject areas, there is a potential for the proposed project to conflict with these two conservation plans. Avoidance and minimization measures are proposed below to address this potential impact.

**AMMs:**

**AMM LAND-1:** A USFWS-approved biological monitor will be present during site preparation activities prior to the start of construction, including vegetation removal, installation of environmentally sensitive area fencing, and wildlife exclusion fencing (WEF).
a-b) There are no documented mineral resources within the project limits. No impacts on mineral resources would result from the proposed project (California Department of Conservation, 2017).
XII. NOISE:
Would the project result in:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>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?</td>
<td>□</td>
<td>□</td>
<td>☒</td>
</tr>
<tr>
<td>b)</td>
<td>Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c)</td>
<td>A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d)</td>
<td>A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e)</td>
<td>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?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f)</td>
<td>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?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

**a,d)** Night time pile driving would temporarily increase ambient noise levels slightly beyond Caltrans noise specifications, by 4 decibels at a distance of 50 feet, at which construction noise will dissipate over distance. The nearest residence is 0.03 mile to the west of the project site. Therefore, impacts would be less than significant.

**b,c)** The project would be required to comply with Caltrans Standard Specification 14-8.02, which states noise would be controlled and monitored for work activities and noise should not exceed 86 decibels (maximum) at 50 feet from the job site between the hours of 9 p.m. and 6 a.m. In addition, an internal combustion engine will be equipped with the manufacturer-recommended muffler and will not be operated on the job site without the appropriate muffler.

Operation of the project would not introduce new noise or increase ambient noise levels because it does not add capacity or change the potential speed of the roadway. As such, it does not qualify as type 1 under 23 CFR 772 and the Caltrans Traffic
Noise Analysis Protocol. Construction noise would occur in an urbanized setting, and would be temporary. Therefore, there will be no impact.

e,f) The project is not within the vicinity of a private airstrip or within 2 miles of a public airport. The proposed project would not expose people to excessive noise levels from a public or private airport. There would be no impact.

**AMMs:**

**AMM NOISE-1:** The project would follow Caltrans Standard Specification 14-8, Noise and Vibration, which includes specifications for controlling noise and vibration.
### XIII. POPULATION AND HOUSING:
Would the project:

<table>
<thead>
<tr>
<th></th>
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<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b)</td>
<td>☐</td>
<td>☐</td>
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<td>☒</td>
</tr>
<tr>
<td>c)</td>
<td>☐</td>
<td>☐</td>
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<td>☒</td>
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</tbody>
</table>

**a-c)** The proposed roadway safety improvements would not induce population growth directly or indirectly, displace existing housing, or displace people necessitating the construction of replacement housing elsewhere. The proposed project would replace the roadway structure in-kind, with a seismically stable bridge. There would be no impact.
### Table PUB-1 Emergency Service Providers in the Project Area

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Address</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sebastopol Fire Department</td>
<td>7425 Bodega Avenue, Sebastopol, CA 95472</td>
<td><a href="http://ci.sebastopol.ca.us/City-Government/Departments-Services/Fire">http://ci.sebastopol.ca.us/City-Government/Departments-Services/Fire</a></td>
</tr>
<tr>
<td>Sonoma County Fire and Emergency Services Department</td>
<td>2300 County Center Drive, 220 B, Santa Rosa, CA 95403</td>
<td><a href="http://sonomacounty.ca.gov/Fire-and-Emergency-Services/">http://sonomacounty.ca.gov/Fire-and-Emergency-Services/</a></td>
</tr>
<tr>
<td>Sonoma County Sheriff's Office</td>
<td>2796 Ventura Avenue, Santa Rosa, CA 95403</td>
<td><a href="https://www.sonomasheriff.org/">https://www.sonomasheriff.org/</a></td>
</tr>
<tr>
<td>Sonoma County Office of Education</td>
<td>5340 Skylane Boulevard, Santa Rosa, CA 95403</td>
<td><a href="https://www.scoe.org/pub/htdocs/aboutschools.html">https://www.scoe.org/pub/htdocs/aboutschools.html</a></td>
</tr>
</tbody>
</table>
Table PUB-1  Emergency Service Providers in the Project Area

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Address</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonoma County Regional Parks</td>
<td>2300 County Center Drive, #120A, Santa Rosa, CA 95403</td>
<td><a href="http://parks.sonomacounty.ca.gov/">http://parks.sonomacounty.ca.gov/</a></td>
</tr>
</tbody>
</table>

There is a potential for an impact (such as increased delays or inadequate response times) on emergency services in the area during nighttime construction. Caltrans would prepare a Traffic Management Plan consistent with the California Manual on Uniform Traffic Control Devices, 2014 edition guidelines. The Traffic Management Plan would be implemented to address vehicular and pedestrian access during the construction phases. The plan would identify a detour route for accessibility through or around the project area for emergency and medical vehicles associated with essential services, and a less than significant impact would occur. No other project impacts would affect public services.

**AMMs:**

**AMM PUB SERVICES-1:** A Traffic Management Plan will be prepared in advance of construction that will provide detour routes and notification to emergency and medical providers in the project location of alternate access routes during nighttime lane closures.
<table>
<thead>
<tr>
<th>XV. RECREATION:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>

**a-b)** There are no recreational facilities in the project area (Sonoma County Regional Parks 2017; City of Sebastopol 2017). There would be no impact.
### XVI. TRANSPORTATION/TRAFFIC:

Would the project:

<table>
<thead>
<tr>
<th>Item</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>e) Result in inadequate emergency access?</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
</tr>
<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>

**a, b, c, d, f)** The proposed project would improve existing facilities. The project does not interfere with city or county plans, air traffic and would not impede emergency access. Therefore, there are no impacts.

**e)** The proposed project would have the potential to interfere or reduce emergency response times during nighttime construction. Therefore, impacts would be less than significant.

**AMMs:**

**AMM TRAFFIC-1:** A Traffic Management Plan will be prepared in advance of construction that will provide detour routes and notification to emergency and medical providers in the project location of alternate access routes during nighttime lane closures.
<table>
<thead>
<tr>
<th>XVII. TRIBAL CULTURAL RESOURCES:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would the project:</td>
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</tr>
<tr>
<td>a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</td>
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</tr>
<tr>
<td>b) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</td>
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<tr>
<td>c) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</td>
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</table>

a-c) In 2016, an ESA Action Plan and HPSR were prepared. An APE (see Figure CULT-1) was established as the entire Caltrans right-of-way along SR 116 between PM 30.9 and 31.4. A search of Sacred Land Files was performed, and interested parties listed on the Native American Heritage Commission were contacted. Two sites were identified as historic properties: Llano Roadhouse building complex (a National Register-listed property) and a previously recorded archaeological site associated with the Llano Roadhouse property. The study found that there would be no adverse effect on tribal cultural resources with implementation of standard conditions to the environmentally sensitive area. An action plan would be included in the Environmental Commitments Record (Caltrans 2016f).

AMMs:

AMM TRIBE-1: An action plan would be included in the Environmental Commitments Record in the event of discovering a cultural resource.
### XVIII. UTILITIES AND SERVICE SYSTEMS:

Would the project:

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>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?</td>
<td>☐</td>
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<tr>
<td>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?</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
<td>☐</td>
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<tr>
<td>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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
<td>☐</td>
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<tr>
<td>g) Comply with federal, state, and local statutes and regulations related to solid waste?</td>
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</table>

**a, b, d, e)** The proposed project would not generate a demand for potable water, nor would it trigger the need for services of a wastewater treatment facility. Therefore, the project would not contribute to the exceedance of treatment requirements or require construction of new water or wastewater treatment facilities. There would be no impact.

**e)** Two existing box culverts would be replaced with a bridge, coupled with a retaining wall and drainage system. On the southern lanes, an approximately 4-foot-deep retaining wall would run along the newly widened portion of SR 116 for an estimated 550 feet.

A longitudinal ditch would be graded at the foot of the proposed retaining wall on both sides of the creek to maintain the existing drainage pattern from the adjacent properties to the creek. Excavation for each DI would be approximately 6 feet wide,
6 feet long, and at least 5 feet deep. For the sag inlets, the depth of excavation would be approximately 10 feet deep. Runoff from adjacent properties would be conveyed to the unnamed creek.

Widening of the road and replacing the bridge would increase impervious surfaces. The added new impervious surfaces would be approximately 0.45 acre.

Therefore, the impact would be less than significant.

f) Construction activities would generate solid waste. The contractor would coordinate with the Republic Services of Sonoma County, Inc., Central Landfill in the City of Petaluma, approximately 5.3 miles to the south of the project site. Republic Services of Sonoma County collects 100 million tons of waste and recycling per year from construction and demolition sites.

It is anticipated that construction waste would be minimal and a one-time event. Prior to disposal at the landfill, the contractor would confirm landfill capacity is available for the construction solid waste. Therefore, the impact would be less than significant.

g) As discussed in Section VIII, Hazards and Hazardous Materials, disposal of hazardous waste would be in compliance with the Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste. Disposal of solid waste would be in compliance with the requirements of Republic Services of Sonoma County, Inc., Central Landfill. Operation of the proposed project would not generate solid waste. Construction activities would comply with solid waste statutes, and there would be no impact.

AMMs:

AMM UTIL-1: Construction wastes would be hauled to an approved facility for disposal in compliance with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, and the facility to which the waste is hauled.
### XIX. MANDATORY FINDINGS OF SIGNIFICANCE

<table>
<thead>
<tr>
<th>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?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<table>
<thead>
<tr>
<th>b) Does the project have impacts that are individually limited, but cumulatively considerable? (&quot;Cumulatively considerable&quot; 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)?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</table>

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<thead>
<tr>
<th>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</table>

Removal of existing culverts to install a bridge will improve creek flows for wildlife and result in beneficial effects in the long term. Further, the incorporation of AMMs (as listed in Appendix B) into the project would result in no residual impacts from this project that can contribute to cumulative impacts. Therefore, the project would not contribute to cumulative impacts.
Chapter 4 References

Assembly Committee on Transportation. 2009. SB 391 Liu. Online:  


California Department of Conservation. 2015. Geologic Mapping. Online:  
http://www.conservation.ca.gov/cgs/information/geologic_mapping


__________. 2017. Mineral Lands Classification. Online:  

California Department of Finance. 2016. Annual Estimate of Resident Population-Sonoma County. Online:  

California Department of Fish and Wildlife (CDFW). 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.

Chapter 4 References


California Department of Transportation (Caltrans). 2006. Climate Action Program at Caltrans.

__________. 2007. State Route 116 Roadway Rehabilitation Project. Final Natural Environmental Study. 04-SON-116 PM 27.8-34.5. EA 131571.


__________.2013b. Caltrans Activities to Address Climate Change. April.


Chapter 4 References


______. 2016c. Cultural Resources Compliance for the Route 116 Road Intersection Widening Project, in Sonoma County, California. District 4 Office of Cultural Resources Studies, Oakland, CA.

______. 2016d. Historic Property Survey Report for the State Route 116 at Llano Road Left-turn Lane Project.

______. 2016e. Water Quality Study for the State Route 116 at Llano Road Left-turn Lane Project.

______. 2016f. Environmental Commitments Record.


______. 2017d. Location Hydraulic Study for the State Route 116 at Llano Road Left-turn Lane Project.

______. 2017e. Caltrans District 4 Environmental Documents by County webpage-Sonoma. Available online at: http://www.dot.ca.gov/d4/envdocs.htm

Chapter 4 References

Llano Road Intersection Improvement

4-4 Initial Study with Proposed Mitigated Negative Declaration


Cleckler, J. 2015. Email communication from John Cleckler/USFWS to Rachel Cotroneo/CH2M biologist on December 3, 2015.


______. 2016b. Email communication from Darren Howe/NMFS. May 13, 2016.


_____. 2005. *FINAL RULE: Endangered and Threatened Species; Listing of Seven Evolutionarily Significant Units (ESUs) of Pacific Salmon and Steelhead.* Available online at http://swr.ucsd.edu/salmon.htm).


_____. 2013. *Biological Opinion. Caltrans Routine Maintenance and Repair Activities in Districts 1, 2 and 4, and individual Corps permits for these activities.* October 18, 2013.


Risden, C. 2012. Email communication from Christopher Risden/Caltrans to Leahnora Romaya/Caltrans generalist on May 4, 2016.


Chapter 4 References


Federal Register Notices

Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. Federal Register 64: 86 (May 5, 1999) p. 24049.


Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California, Final Rule. Federal Register 70: 170 (September 2, 2005) p. 52488.

Chapter 5  List of Preparers

The primary persons responsible for contributing to, preparing and reviewing this report are listed in Table 3.

Table 3  List of Preparers and Reviewers

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel Cotroneo, CH2M</td>
<td>Biologist</td>
</tr>
<tr>
<td>Natalie Escoffier, CH2M</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Lynne Hosley, CH2M</td>
<td>Senior Project Manager</td>
</tr>
<tr>
<td>Tony Jones, WRECO</td>
<td>Senior Environmental Scientist/Project Manager</td>
</tr>
<tr>
<td>Rene Langis, CH2M</td>
<td>Biologist</td>
</tr>
<tr>
<td>Jasmin Mejia, CH2M</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Loretta Meyer, CH2M</td>
<td>Environmental Planner</td>
</tr>
<tr>
<td>Caroline Vurlumis, WRECO</td>
<td>Environmental Scientist</td>
</tr>
<tr>
<td>Melanie Hunt, Caltrans</td>
<td></td>
</tr>
<tr>
<td>Eric DeNardo, Caltrans</td>
<td>Branch Chief, Office of Environmental Analysis</td>
</tr>
</tbody>
</table>
NOTES:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

SEBASTOPOL

DRAINAGE PLAN
SCALE 1" = 50'
NOTES:
1. Dimensions of the pavement structures (structural sections) are subject to tolerances specified in the standard specifications.
2. Superelevations are shown on the superelevation diagram.
3. For limits of concrete barriers, use handrail, ac confirms, and hig site, see layout and summary of structure sheets.

ABBREVIATION:
FORM-G MODIFIED HOT MIX ASPHALT (GAP GRADES)

TYPICAL PAVEMENT STRUCTURE SECTIONS
1. 0.60' FHWA-G
2. 0.60' FHWA-G
3. 0.35' MIX (TYPE A)
4. 0.20' CI 3 4 D
  0.60' AC
5. 0.20' FHWA-G
  0.35' MIX (TYPE A)
  0.20' CI 3 4 D

TYPICAL CROSS SECTIONS
ROUTE 116

"G" 114+50 TO 117+38
"G" 118+19 TO 120+00

"G" 103+00 TO 114+50
"G" 120+00 TO 132+00

NO SCALE
Appendix B  Avoidance and Minimization Measures

Caltrans has incorporated numerous avoidance and minimization measures (AMMs) into the proposed project to avoid and minimize the impacts of this project. The regulatory agencies may require conditional measures not listed below because they are unknown at this time. The list below is categorized by resource type and includes a general overview of the most important and applicable measures.

<table>
<thead>
<tr>
<th>Protected or Regulated Resource</th>
<th>Proposed Avoidance and Minimization Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>AMM AES-1: Seeding all disturbed areas with native vegetation. AMM AES-2: Replanting trees adjacent to the bridge in all temporarily disturbed areas.</td>
</tr>
<tr>
<td>Agriculture and Forest Resources</td>
<td>No AMMs required</td>
</tr>
<tr>
<td>Air Quality</td>
<td>No AMMs required</td>
</tr>
</tbody>
</table>
| Biological Resources            | AMM BIO-1: General Construction Avoidance and Minimization Measures  
                                  a) To avoid or minimize potential impacts to sensitive biological resources, Caltrans would incorporate Caltrans standard construction BMPs and AMMs into the project. These measures would be communicated to the contractor using special provisions included in the contract bid solicitation package. These measures include the following: Seasonal Avoidance. To the extent practicable, construction will not occur during the wet season. Except for limited vegetation clearing (necessary to minimize effects to nesting birds), work within the creek will be limited to the period from June 1 to October 15. 
                                  b) Worker Environmental Awareness Training. Before beginning construction activities, a qualified biologist will conduct an education program for all project construction personnel. At a minimum, the training will include a description of CFS, CRLF, CCCS, and other listed species, as well as migratory birds and their habitats; a discussion of the potential occurrence of these species within the Project project area; an explanation of the status of these species and protection; the description of measures to be implemented to conserve listed species and their habitats as they relate to the work site; and the description of boundaries within which construction may occur. Upon completion of the training program, construction personnel will sign a form stating they attended the program and understand all the avoidance and minimization measures and regulatory implications. A fact sheet conveying this information will be prepared and distributed to the construction and project personnel entering the project footprint area. 
                                  c) Environmentally Sensitive Area Fencing. Before starting construction, ESAs (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) will be clearly delineated using temporary high-visibility orange fencing. The ESA fencing will remain in place throughout the Project project duration and will prevent construction equipment or personnel from entering sensitive habitat areas. The final Project project plans will depict the locations where ESA fencing will be
<table>
<thead>
<tr>
<th>Protected or Regulated Resource</th>
<th>Proposed Avoidance and Minimization Measures</th>
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<tbody>
<tr>
<td></td>
<td><strong>Appendix B Avoidance and Minimization Measures</strong></td>
</tr>
<tr>
<td>Installed and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs.</td>
<td></td>
</tr>
<tr>
<td>d) Wildlife Exclusion Fencing. Before starting construction, wildlife exclusion fencing (WEF) will be installed along the Project project footprint perimeter in the areas where listed wildlife could enter the project site. Locations of the WEF will be determined in coordination with the appropriate regulatory agencies. The final Project plans will depict the locations where WEF fencing will be installed and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable WEF fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the Project project duration, and will be regularly inspected for stranded animals and fully maintained. At some locations, WEF will be installed during each construction phase and will be removed when that phase is completed.</td>
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<tr>
<td>e) Dewatering. Dewatering and discharging activities will be conducted according to standard Caltrans requirements.</td>
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<tr>
<td>a. The dewatering plan will be submitted to the USFWS for review and approval in advance of its implementation.</td>
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<tr>
<td>b. The USFWS-approved biologist will be present during dewatering activities to relocated listed species as needed.</td>
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<tr>
<td>c. Upon completion of construction, any barrier to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.</td>
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<tr>
<td>f) Implementation of Best Management Practices. In accordance with RWQCB requirements, a Stormwater Management Program (SWPPP) will be developed and erosion control BMPs implemented to minimize wind- or water-related erosion. The Caltrans BMP Guidance Handbook provides guidance for the inclusion of provisions in all construction contracts to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include:</td>
<td></td>
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<tr>
<td>a. Disallowing discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses.</td>
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<tr>
<td>b. Keeping vehicle and equipment fueling and maintenance operations at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility.</td>
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<tr>
<td>c. Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts, located at least 50 feet from watercourses.</td>
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<tr>
<td>d. Maintaining spill containment kits onsite at all times during construction operations and/or staging or fueling of equipment.</td>
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<tr>
<td>e. Using water trucks and dust palliatives to control dust in unvegetated areas and covering of temporary stockpiles when weather conditions require.</td>
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<tr>
<td>f. Installing coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.</td>
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<tr>
<td>g. Protecting graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (jute or coir) as appropriate on sloped areas.</td>
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</tbody>
</table>
h) Establishing permanent erosion control measures such as biofiltration strips and swales to receive stormwater discharges from the highway or other impervious surfaces to the maximum extent practicable.

g) Construction Site Management Practices. The following site restrictions will be implemented to avoid or minimize potential effects on listed species and their habitats:

a. Enforcing a speed limit of 15 miles per hour in the project footprint in unpaved and paved areas to reduce dust and excessive soil disturbance.

b. Locating construction access, staging, storage, and parking areas within the project right-of-way outside any designated ESA or outside the right-of-way in areas environmentally cleared and permitted by the contractor. The following areas will be limited to the minimum necessary to construct the proposed project: access routes, staging and storage areas, and contractor parking. Routes and boundaries of roadwork will be clearly marked before initiating construction or grading.

c. Certifying, to the maximum extent practicable, borrow material is nontoxic and weed-free.

d. Enclosing food and food-related trash items in sealed trash containers and removing them from the site at the end of each day.

e. Prohibiting pets from entering the project footprint area during construction.

f. Prohibiting firearms within the project site, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.

g. Maintaining equipment to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents and developing a Spill Response Plan. Hazardous materials such as fuels, oils, solvents, and similar will be stored in sealable containers in a designated location that is at least 50 feet from aquatic habitats.

h. Servicing vehicles and construction equipment including fueling, cleaning, and maintenance at least 50 feet from aquatic habitat unless separated by topographic or drainage barrier.

i. Nighttime work will be avoided for activities that are practicable to be done during the day. For work that needs to be conducted during the night, all lighting will be directed downwards and towards the active construction work area.

h) Surveys. Prior to construction, clearance surveys will be performed by a qualified biologist. A biological monitor will be present during floodplain surveys and any work conducted in and immediately adjacent to the creek.

i) Avoidance of Entrapment. To prevent inadvertent entrapment of animals during construction, excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day using plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Replacement pipes, culverts, or similar structures stored in the project area overnight will be inspected before they are subsequently moved, capped, and/or buried.

j) Vegetation Removal. Vegetation that is within the cut and fill line or growing in locations where permanent structures will be placed (e.g.,
### Proposed Avoidance and Minimization Measures

<table>
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<th>Protected or Regulated Resource</th>
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<td>road alignment, shoulder widening, or bridge abutments) will be cleared. Vegetation will be cleared only where necessary and will be cut above soil level except in areas that will be excavated. This will allow plants that reproduce vegetatively to resprout after construction. Clearing and grubbing of woody vegetation will occur by hand or using construction equipment such as mowers, backhoes and excavators. If clearing and grubbing occurs between February 15 and September 1, a qualified biologist will survey for nesting birds within the areas to be disturbed including a perimeter buffer of 50 feet for passerines and 300 feet for raptors, before clearing activities begin. All nest avoidance requirements of the MBTA and California Fish and Game Code will be observed (e.g., establishing appropriate protection buffers around active nests until young have fledged). Cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site. k) Replant, Reseed, and Restore Disturbed Areas. Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition. l) Reduce Spread of Invasive Species. Caltrans will comply with Executive Order 13112 to reduce the spread of invasive species. The contractor will be required to contain the plant material associated with noxious weeds and dispose of it in a manner that will not promote the spread of the species. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the project area will be covered to the extent practicable with heavy black plastic solarization material until the end of the project.</td>
<td></td>
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</table>

### CRLF AMMs:

**AMM BIO-2: Proper Use of Erosion Control Devices.** To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic monofilament netting (i.e., erosion control matting) or similar material will not be used within the project area. Acceptable substitutes would include coconut coir matting or tackifier hydroseeding compounds.

**AMM BIO-3: Preconstruction Surveys.** A USFWS-approved biologist will conduct preconstruction CRLF surveys no more than 20 calendar days prior to any initial ground disturbance and immediately prior to ground disturbance. Suitable aquatic and upland habitat within the project footprint (Figure BIO-3), including refugia habitat such as under shrubs, downed logs, small woody debris, or mammal burrows will be thoroughly inspected. If a CRLF is observed, the individual will be evaluated and relocated in accordance with the following observation and handling protocol. If safe, the biologist will investigate areas of disturbed soil for signs of CRLF within 30 minutes of initial disturbance.

**AMM BIO-4: Biological Monitoring.** The USFWS-approved biologist will be present during construction activities where harm to a listed species could occur. Through communication with the resident engineer or his/her designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly.

**AMM BIO-5: Protocol for Species Observation.** If CRLF are encountered in the project footprint, work within 50 feet of the animal will cease immediately until the animal leaves the construction zone or is removed by the USFWS-approved biologist. The Resident Engineer and the USFWS-
protected resource will be notified immediately of CRLF discoveries and will then notify the USFWS. Based on the professional judgment of the approved biologist, if project activities can be conducted without harming or injuring the animal(s), they may be left at the location of discovery and monitored by the approved biologist. Project personnel will be notified of the finding, and at no time shall work occur within 50 feet of the animal without a biological monitor present. The USFWS-approved biologist will release captured CRLF within appropriate habitat within the riparian corridor but outside of the construction zone.

**AMM BIO-6: Cover Boards.** The USFWS-approved biologist will place cover boards in strategic locations throughout the project footprint during the pre-construction surveys. These cover boards will be checked daily during construction for CRLF when the USFWS-approved biologist is onsite.

**AMM BIO-7: Intake Protection.** If dewatering system requires pumping, all intakes will be completely screened with wire mesh not larger than 5 millimeters to prevent CRLF from entering pump system.

**CFS AMMs:**

**AMM BIO-8: Work Window.** Caltrans will complete work activities within the bed and bank of the unnamed creek between June 1 and October 15 to minimize work in ponded areas that may provide habitat for CFS.

**AMM BIO-9: Preconstruction Surveys.** A USFWS-approved biologist will survey for CFS in the project area within 2 weeks before the onset of construction activities, including any temporary dewatering and/or cofferdam installation. The survey will include investigating likely habitat 100 feet upstream and 100 feet downstream of the proposed bridge. If CFS are found, the approved biologist will capture and relocate them to suitable habitat in the same drainage. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of CFS. Following installation of any water diversion structures, and before the placement of fill, the USFWS-approved biologist will perform surveys for and relocate any CFS (and other species) trapped in the project area. Aquatic non-native invasive species found will be disposed of properly and will not be placed back into the stream where work is being conducted or any other drainages, creeks, or streams.

**AMM BIO-10: Biological Monitoring.** At least 30 days before the onset of activities, the names and credentials of biologists who will conduct CFS-relocation activities will be submitted to USFWS for approval. No project activities will begin until Caltrans has received written approval from USFWS that the biologist is approved to conduct CFS relocations. A USFWS-approved biologist will be present onsite during the construction of any erosion control fencing or cofferdams, and before and during the dewatering of the creek, to monitor for CFS. The USFWS-approved biologist will be present during construction activities where take (which includes mortality and harassment under FESA) of a listed species could occur. Through communication with the resident engineer or his/her designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly.

**AMM BIO-11: Limit Removal of Willows and Blackberry from Streambank.** The project will avoid removal of willows and blackberry located along the side of the creek, to the maximum extent practicable, as the overhanging vegetation may provide limited cover to CFS.

**AMM BIO-12: Protocol for Species Relocation.** If CFS are encountered in the immediate work area the following procedures will be followed:
### Appendix B Avoidance and Minimization Measures

<table>
<thead>
<tr>
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<tr>
<td>a)</td>
<td>Suitable habitat will be identified before capturing CFS to minimize holding time. Suitable habitat is defined as creek sections that will remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation.</td>
</tr>
<tr>
<td>b)</td>
<td>CFS will be captured by hand-held nets (e.g., heavy-duty aquatic dip nets [12-inch D-frame net] or small minnow dip nets) and relocated out of the work area in the net or placed in buckets containing stream water and then moved directly to the nearest suitable habitat in the same branch of the creek. CFS will not be placed in buckets containing other aquatic species.</td>
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<tr>
<td>c)</td>
<td>CFS will be relocated upstream a minimum of 100 feet from project footprint to an area of suitable habitat as defined above.</td>
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<tr>
<td>d)</td>
<td>Once the USFWS-approved biologist has determined that all CFS have been effectively relocated, barrier seines or exclusion fencing will be installed to prevent shrimp from moving back in, as appropriate.</td>
</tr>
</tbody>
</table>

#### Steelhead AMMS

**AMM BIO-13**: A NMFS-approved biologist will conduct a preconstruction visual survey (i.e., bank observations). When listed species are present and it is determined that they could be injured or killed by construction activities, a qualified project biologist will identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected.

**AMM BIO-14**: Construction in the creek is scheduled during the summer and fall, when the creek will be dry to mostly dry (July 1 and ending on October 15). Conducting work within the proposed in-water work window will minimize the likelihood of potential mortality.

**AMM BIO-15**: Prior to dewatering within a coffer dam or sheet piling installation, fish and other aquatic vertebrates within the area to be dewatered shall be removed and relocated to appropriate areas out of the construction area. An approved fish removal and relocation plan shall be developed and approved by the CDFW and NMFS prior to fish recovery operations per the PBO. After completion of the proposed project, all materials used to maintain flow and divert water from the work area during the construction period, including any cofferdams, pipe, filter fabric, and gravel will be removed from the streambed. All excess soil will be disposed of at an approved upland site.

Mitigation Measure BIO-1: Impacts to CFS and CFS habitat will be mitigated by the restoration of aquatic habitat resulting from the removal of the existing double box culvert. The culvert removal will restore the natural flow of the creek, allow CFS to pass more freely underneath the bridge, and improve CFS dispersal across the highway. In addition, onsite revegetation efforts will restore impacts to the riparian vegetation after Project completion.

All temporarily disturbed areas would be revegetated with appropriate native plant species and contoured to conform to the surrounding landscape. Permanent erosion control such as soil stabilization measures (e.g., hydroseeding, coir netting, addition of compost, or non-filament mesh) would be applied to affected post-construction areas. All invasive plants, non-native plants, and excavated material containing invasive plant material would be cleared from the project area and transported to an appropriate landfill.
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| Cultural Resources              | **AMM CULT-1:** Temporary fencing around the Llano Roadhouse property will be used to protect the historic property from construction activities and the adjacent staging area.  
**AMM CULT-2:** During excavation if remains are discovered, the County Coroner will be contacted and further ground disturbance activities will cease. |
| Geology and Soils               | No AMMs required |
| Greenhouse Gases                | **CLIMATE CHANGE-1:** According to Caltrans’ Standard Specifications, the contractor must comply with all of the Bay Area Air Management District rules, ordinances, and regulations regarding air quality restrictions.  
**CLIMATE CHANGE-2:** Compliance with Title 13, California Code of Regulations – Adopted by the Air Resources Board on June 15, 2008, this regulation would restrict idling of construction vehicles to no longer than 5 consecutive minutes. The contractor must comply with this regulation in order to reduce harmful emissions from diesel-powered construction vehicles.  
**CLIMATE CHANGE-3:** To the extent that it is feasible for the project, reclaimed water may be used to reduce GHG emissions produced during construction. Currently, 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production. |
| Hazards and Hazardous Materials | **AMM HAZ-1:** Caltrans Standard Specifications best management practices (BMPs) would be implemented to prevent accidental spills into the unnamed creek.  
**AMM HAZ-2:** Handling of hazardous materials would be in compliance with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, which outlines handling, storing and disposing of hazardous waste. |
| Hydrology and Water Quality     | **AMM HYDRO-1:** Temporary construction site BMPs, which include such items as silt fence, fiber roll, check dams, drainage inlet protection, concrete wash-out, and street sweeping, will be deployed for sediment control and material management.  
**AMM HYDRO-2:** To treat stormwater runoff from increased impervious surfaces, treatment BMPs, such bioretention, swale or basin would be implemented.  
**AMM HYDRO-3:** Treatment of the new impervious area in accordance with the Statewide NPDES General Permit.  
**AMM HYDRO-4:** A SWPPP must be prepared by the contractor and approved by Caltrans, pursuant to Department 2015 Standard Specification 13-3. |
| Land Use and Planning           | **AMM LAND-1:** A USFWS-approved biological monitor will be present during site preparation activities prior to the start of construction, including vegetation removal, installation of environmentally sensitive area fencing, and wildlife exclusion fencing (WEF). |
| Mineral Resources               | No AMMs required |
| Noise                           | **AMM NOISE-1:** The project would follow Caltrans Standard Specification 14-8, Noise and Vibration, which includes specifications for controlling noise and vibration. |
| Population and Housing          | No AMMs required |
## Appendix B Avoidance and Minimization Measures

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<td>Public Services</td>
<td><strong>AMM PUB SERVICES-1:</strong> A Traffic Management Plan will be prepared in advance of construction that will provide detour routes and notification to emergency and medical providers in the project location of alternate access routes during nighttime lane closures.</td>
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<tr>
<td>Recreation</td>
<td>No AMMs required</td>
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<tr>
<td>Transportation/Traffic</td>
<td><strong>AMM TRAFFIC-1:</strong> A Traffic Management Plan will be prepared in advance of construction that will provide detour routes and notification to emergency and medical providers in the project location of alternate access routes during nighttime lane closures.</td>
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<tr>
<td>Tribal Cultural Resources</td>
<td><strong>AMM TRIBE-1:</strong> An action plan would be included in the Environmental Commitments Record in the event of discovering a cultural resource.</td>
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<tr>
<td>Utilities and Service Systems</td>
<td><strong>AMM UTIL-1:</strong> Construction wastes would be hauled to an approved facility for disposal in compliance with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, and the facility to which the waste is hauled.</td>
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