

Mendocino 101 Culverts Project

MENDOCINO COUNTY, CA
01 – MEN – 101 – PM 63.96-R105.88
EA: 48420/EFIS: 0117000019

Initial Study with Proposed Negative Declaration



Prepared by the
State of California, Department of Transportation



August 2019

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of the proposed project located in Mendocino County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this Initial Study.
- Additional copies of this document are available for review at the following locations:
 - Caltrans District 3 Office at 703 B Street, Marysville, CA 95901
 - Willits Library at 390 E Commercial St, Willits, CA 95490
 - Round Valley Public Library at 23925 Howard St, Covelo, CA 95428
 - Humboldt County Library Garberville at 715 Cedar St, Garberville, CA 95542
- Supporting technical studies are available upon request by contacting Derek Salinas, Environmental Planner at (530) 741-4550, or at derek.salinas@dot.ca.gov.
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Send comments via postal mail to:
California Department of Transportation
Environmental Management RM-1 Branch
Attn: Derek Salinas
703 B Street
Marysville, CA 95901
- Send comments via email to: derek.salinas@dot.ca.gov.
- Be sure to send comments by the deadline: September 15, 2019.

What happens next:

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

Alternative Formats:

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 Department of Transportation, Attn: Cori Reed, Public Information Officer, PO Box 3700, Eureka, CA 95502-3700; (707) 441-3700, or use the California Relay Service TTY number, 1 (800) 735-2929.

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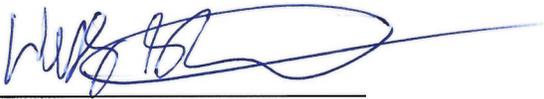
Mendocino 101 Culverts
01-MEN-101-PM 63.96/R105.88
EA: 01-48420/EFIS: 0117000019

INITIAL STUDY with *Proposed Negative Declaration*

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

8/13/19
Date of Approval


Wesley Stroud, Office Chief - Redding
North Region Environmental Management
California Department of Transportation

PROPOSED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes a project along United States (US) Route 101 in Mendocino County between Post Mile (PM) 63.96 to PM R105.88. Work will include removing existing culverts and installing new culvert pipe, lining culverts, abandoning culverts, replacing down drains and inlet/outlet structures, placing rock slope protection (RSP) at inlets and outlets and salvaging one survey monument. Temporary construction easements (TCE) will be required from adjacent landowners.

Determination

This proposed Negative Declaration (ND) is included to give notice to interested agencies and the public, that it is Caltrans' intent to adopt an ND for this project. This does not mean that Caltrans' decision regarding the project is final. This ND 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 effect on agriculture and forest resources, air quality, cultural resources, energy, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, and utilities and service systems.

In addition, the proposed project would have less than significant effects to aesthetics, biological resources, geology and soils, greenhouse gas, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic.

Wesley Stroud, Office Chief - Redding
North Region Environmental Management
California Department of Transportation

Date

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Section 1 Proposed Project

1.1 Project Title

Men 101 Culverts Project

1.2 Lead Agency Name and Address

California Department of Transportation
703 B Street
Marysville, CA 95901

1.3 Contact Person and Phone Number

Derek Salinas
Environmental Management RM-1 Branch
Phone: 530.741.4550
Email: derek.salinas@dot.ca.gov

1.4 Project Location

The project is located on US Route 101 in Mendocino County between Post Mile (PM) 63.96 to PM 105.88, from 5.6 miles south of the town of Laytonville to 1.7 miles south of the Humboldt/Mendocino County line.

1.5 Purpose and Need

The purpose of this project is to improve the operational condition of 11 existing drainage structures along US Route 101. The project is needed because the identified drainage structures have either severely failed inverts or are separated and misaligned. The current condition of these drainage structures is compromising the structural integrity of the roadway and impeding optimal flow conditions for storm water runoff.

1.6 Project Description

Caltrans proposes a Minor A, Drainage System Restoration project, located at eleven (11) locations along US Route 101 in Mendocino County between PM 63.96 to PM R105.88. Two alternatives were considered for the project, build and no build. This project proposes to reconstruct or rehabilitate cross culverts, inlet structures, outlet structures, and down drains. Temporary construction easements (TCEs) will be required from adjacent landowners at three of the eleven locations. The southern-most culvert is located at PM 63.96, about six miles south

of the town of Laytonville and the northern most culvert is located at PM R105.88, about one mile south of Cooks Valley near the Humboldt County line.

This project would replace or rehabilitate these 11 culverts by using either a cut and cover method or lining with a pipeliner. Cut and cover consists of cutting through the roadway, replacing or placing a culvert, and covering the trenched area back up, with 95% compaction minimum within the structural section. Clearing and grubbing of existing vegetation would be performed, as necessary, for personnel and equipment access. Tree removal or directional pruning of branches would be needed at all locations except PM 74.77, 75.33, 78.14 and R84.68. Work at each location is described in detail below:

Location 1: PM 63.96

- Remove existing 42" x 117' corrugated metal pipe (CMP) and install new 42" x 117' corrugated steel pipe (CSP) using a cut and cover method. Remove concrete barrier at inlet and salvage monument. Remove drainage inlet and install a new drainage inlet. No RSP required at this location.

Location 2: PM 71.64

- Line 24" x 165' CMP with 20" high density polyethylene pipeliner (HDPE) plastic pipeliner and remove the flared end section (FES) at the inlet and replace with a new 24" steel FES. This location will require a TCE. No RSP required at this location.

Location 3: PM 74.77

- Remove existing 30" x 71' CMP and install new 30" x 77' CSP using a cut and cover method, remove headwall at inlet and construct new headwall, place RSP at both the inlet (6' x 6') and outlet (14' x 6'). Reconstruct 25' guardrail and remove and replace 20' dike.

Location 4: PM 75.33

- Remove existing 18" x 65' CMP and install new 24" x 65' CSP using a cut and cover method, remove existing downdrain and install new 24" x 58' CSP downdrain, remove drainage inlet and install a new CSP inlet, remove and replace 20' dike, place RSP at both the inlet (6' x 6') and outlet (11' x 6').

Location 5: PM 76.40

- Remove existing 24" x 136' CMP and install a new 24" x 136' CSP using a cut and cover method, remove both existing downdrains and replace with 24" x 100' CSP and 24" x 95' CSP downdrains, install 24" anchor assemblies, remove and replace FES at inlet with new steel FES, place RSP at the inlet (6' x 6'), no RSP at outlet.

Location 6: PM 78.14

- Remove existing 24" x 91' CMP and install a new 30" x 91' CSP using a cut and cover method, install new 30" steel FES, place RSP at both the inlet (7.5' x 7.5') and outlet (17' x 7.5').

Location 7: PM 78.56

- Remove existing 30" x 73' CMP and install a new 30" x 73' CSP using a cut and cover method, install new drainage inlet, place RSP at both the inlet (7.5' x 7.5') and outlet (17' x 7.5').

Location 8: PM R84.68

- Abandon 36" x 362' CMP, install new 36" x 120' CSP, 36" x 163' CSP, and 36" x 90' CSP. Remove 18" x 17' CMP, abandon 18" x 23' CMP, install new 24" x 17' CSP. Remove 12" x 16' CMP, install new 24" x 36' CSP. Remove and replace headwall at inlet, remove and install new drainage inlets, reconstruct 200' guardrail, and remove and replace 200' dike. This location will require a TCE. No RSP required at this location.

Location 9: PM R101.36

- Abandon a 24" x 96' CMP portion of culvert and install a new 24" x 96' CSP using a cut and cover method, remove the other existing 24" x 114' CMP portion of the same culvert and install a new 24" x 114' CSP using a cut and cover method, remove existing headwall and install a new headwall, remove existing drainage inlet and install a new drainage inlet, remove and replace 20' dikes, remove downdrain, tie in slotted culvert to drainage inlets, and place RSP at both the inlet (6' x 6') and outlet (14' x 6').

Location 10: PM R104.04

- Line 30" x 159' CMP portion of culvert with 24" plastic pipeliner and remove other existing 30" x 186' CMP portion of the same culvert and install a new 30" x 186' CSP using a cut and cover method, remove FES at inlet and install new steel FES, remove and replace two existing drainage inlets and 20' dikes, place RSP at both the inlet (7.5' x 7.5') and outlet (15' x 7.5'). This location will require a TCE.

Location 11: PM R105.88

- Abandon a 24" x 194' CMP and install a new 30" x 112' CSP and 30" x 78' CSP using a cut and cover method. Abandon a 24" x 98' CMP and install a new 30" x 74' APC using a cut and cover method. Remove FES at inlet and install a new steel FES, remove and replace drainage inlets and 20' dike, place RSP at both the inlet (7.5' x 7.5') and outlet (26' x 7.5').

During construction, the contractor would implement reversing traffic control on US 101, SR 271, and Rd 422B, lane reduction & intermittent closure traffic control on US 101, and shoulder & ramp closure. The construction activity would result in temporary delays typically lasting 10 to 20 minutes during intermittent closures and reversals. Work should have little to no impact on transportation schedules. Access to businesses, side roads, and residences would be maintained at all times. This section of US 101 is part of the Pacific Coast Bike Route. Bicyclists would be accommodated safely through the work zone. The full width of the traveled way will be open for use by public traffic during specific special events days.

1.1.1 Right-of-Way

Temporary construction easements (TCEs) will be required from adjacent landowners at three of the eleven locations (Locations 2, 8, 10).

1.1.2 Utilities

The utility investigation of the project areas included site visits and review of utility locations from plans obtained from utility owners such as Frontier Communications. Utilities include one fiber optic line and one copper communication line at location 11, PM R105.88. Based on current information, utility relocation is not anticipated, and they will be protected in place during construction.

1.1.3 Construction Equipment

Equipment anticipated to be used throughout construction includes an excavator, concrete mixer, backhoe, diesel plate compactor, rubber tire dump truck, sweeper (self-propelled), air compressor, chainsaw, chipping machine, and light duty truck.

1.1.4 Stage Construction

Stage Construction would not be necessary for this project. A constructability review would be performed, and traffic handling plans would be developed and finalized during the design phase. Culverts will be constructed sequentially to space out lane closures.

1.1.5 Complete Streets

Caltrans' Complete Streets Directive promotes a transportation system that safely accommodates bicyclists, pedestrians and transit users. While the Complete Streets Directive is considered for every Caltrans project, the scope of work within this project pertains to drainage and culvert construction. Pavement subgrade and asphalt replacement road work will be performed at areas of excavation. Pedestrian and cyclist facilities will not be affected. Refer to the project description for traffic management and bicycle accommodation.

1.7 Surrounding Land Uses and Setting

Land use in the vicinity of the proposed project is designated in the Mendocino County General Plan as Agriculture, Rural Lands, and Resource Conservation.

US Route 101 within Mendocino County extends from Sonoma County just north of Cloverdale to Trinity and Humboldt counties, just north of Piercy. The existing roadway within the county ranges from a two-lane conventional roadway to a four-lane freeway facility. US Route 101 serves the major north-south movement in the county for many commuters and recreational trips. The land use adjacent to the project is scattered rural residential, timberland production and forestland. Along US Route 101, the project area crosses through the unincorporated communities of Laytonville, Cummings, Leggett, and Piercy.

Elevations of the project locations range from 550 feet to 1650 feet above sea level. This project is situated in California's outer north coast range which is characterized by very high rainfall, as well as redwood, mixed-evergreen, and mixed-hardwood forests. Many of the project locations are composed of dense mixed-hardwood and conifer forests while others are composed of open grassland with patches of riparian habitat.

1.8 General Plan Designation and Zoning

Zoning within and adjacent to the proposed project location is designated as Upland/Single-Family/Rural/Suburban Residential, Agricultural Land, Inland Limited Industrial, Rural Community, Public Facility, Rangeland, Timberland Production, Forestland, and Rural Community.

1.9 Native American Consultation

Native American consultation was conducted with several tribes throughout Northern Mendocino County, California. Caltrans sent a request for consultation on April 11, 2019 to each tribe, but no response was received.

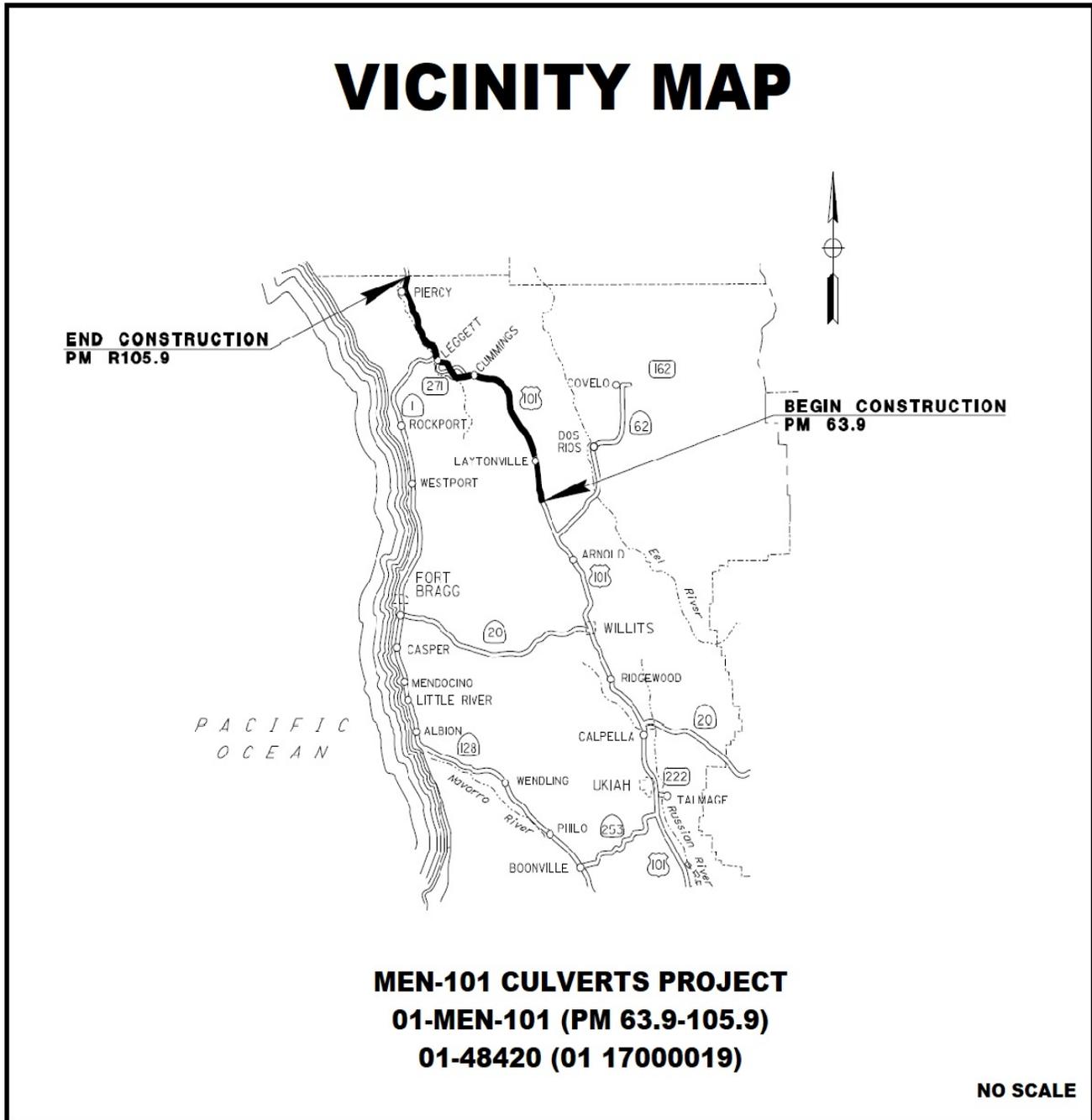
1.10 Permits and Approvals Needed

The proposed project would require the following permits and/or approvals:

- Section 404 Nationwide Permit from the United States Army Corps of Engineers.
- Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board.
- 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife.

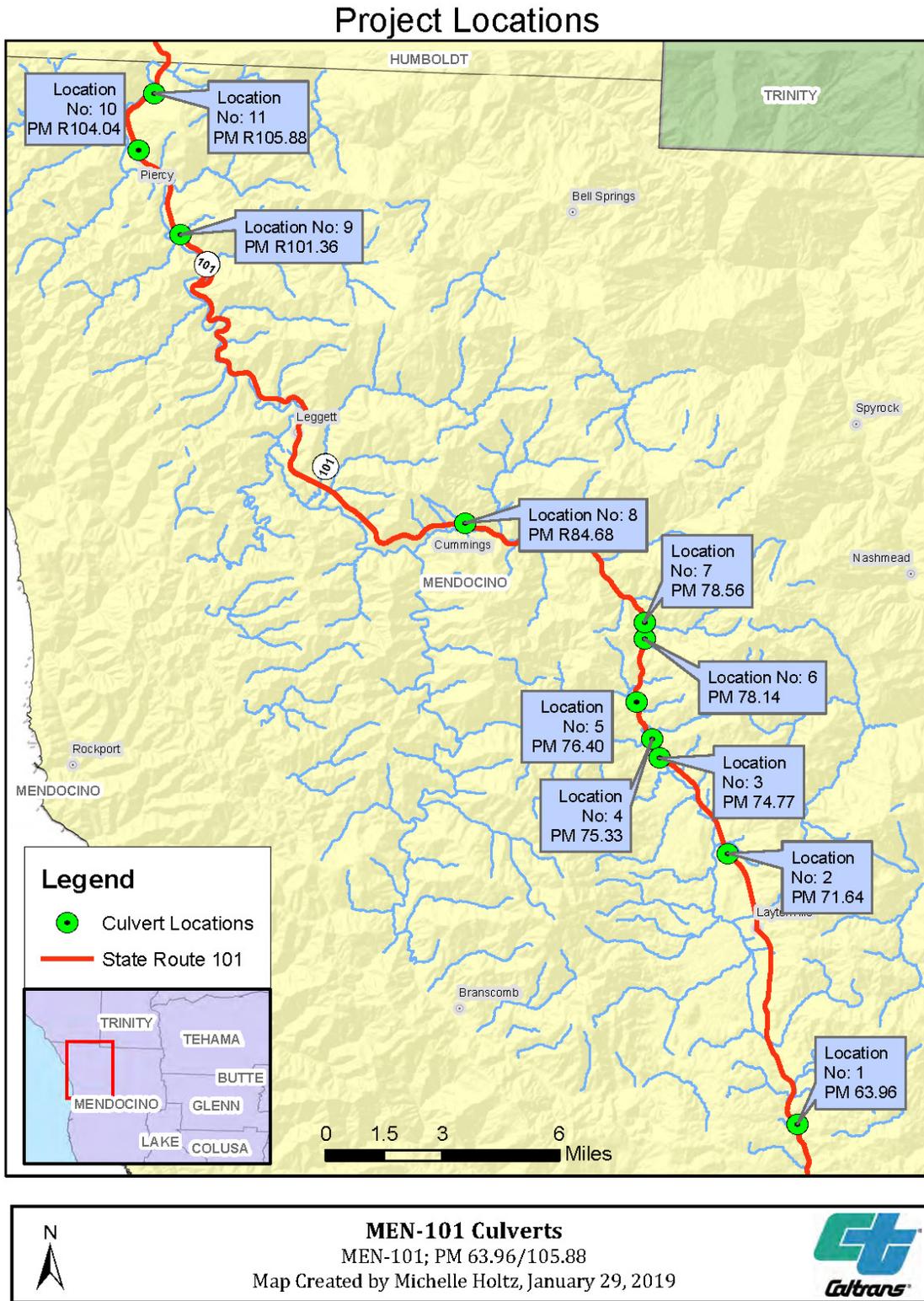
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Figure 1: Project Vicinity



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Figure 2: Project Location



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Section 2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project. See the checklist in Section 4 for additional information.

<input checked="" type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input checked="" type="checkbox"/>	Geology/Soils
<input checked="" type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards and Hazardous Materials	<input checked="" type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input checked="" type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input checked="" type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Tribal Cultural Resources	<input type="checkbox"/>	Utilities/Service Systems
<input checked="" type="checkbox"/>	Mandatory Findings of Significance				

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Section 3 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant with Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 to provide you with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.1 AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Visual Impact Assessment prepared June 7, 2019.

- a) Near post mile 74.11, this section of US Route 101 is a 2-lane highway having more open grass areas interspersed with trees on its northeast edge. On the southwest edge, highway users on the southbound (SB) lane will notice a gentle drop just beyond the metal beam guard rail (MBGR) revealing intermittent views of Tenmile Creek to sweeping vistas of forested, rolling hills in the backdrop. However, Caltrans has not officially designated a scenic vista in the general vicinity of the project area, nor has an informal scenic vista been established and utilized by the public. No scenic vistas would be impacted by the proposed project.
- b) While other sections of US 101 are either designated scenic highways or eligible for classification as such, a portion of this project’s working limits is listed as Eligible State Scenic Highway. The project’s culvert work would require minor earthwork and adjacent vegetation removal, but no significant quantities of unique landscape features would be removed that would potentially affect US Route 101’s listing as an Eligible State Scenic Highway.
- c) Each location for the culvert upgrade work has its own set of existing conditions that identify the different levels of visual quality within the project limits and in the surrounding area. The resulting visual quality in the project limits will be less scenic for highway users, while for neighbors, or recreationists near specific culvert work sites at PM 71.64 and PM 74.77, vegetation removal may diminish the potential for screening views of the highway. However, the on-site riparian habitat restoration is expected at PM 71.64 to reduce permanent visual quality effects by creating new landscape patterns that replicate the existing color, texture, and shape. Additionally, native grasses, ground covers, small and medium shrubs will be planted within disturbed soil area (DSA) as soil cover, for shading purposes and to allow access for future construction and maintenance work. After construction, all grassy areas employed for staging purposes will be considered for rototilling to a depth of nine inches, to loosen compacted soils and encourage seeding with native species. Therefore, the project is expected to generate a less than significant impact on the visual quality of the site.
- d) The proposed project is expected to be completed during normal working daylight hours and not necessitate nighttime illumination. Therefore, no substantial new source of lighting or glare is proposed as part of the project.

3.2 AGRICULTURE AND FOREST RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the California Department of Conservation Farmland Maps and the Natural Resources Conservation Service Soil Survey as well as the description and location of the proposed project.

- a) Land classified as farmland of local importance, and grazing land is located on both sides of U.S. 101 within the project extent. The project would not convert any land currently used for agriculture to non-agricultural use.
- b) There are no parcels under a Williamson Act contract within the project limits.
- c) Forest land and timberland zoned Timberland Production was identified adjacent the project limit, however there are no conflicts with existing zoning as project work exists within the Caltrans Right-of-Way.
- d) The project will not result in the conversion of forest land to non-forest use
- e) There would be no other changes to farmland or forest land.

3.3 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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Air Quality and Noise Analysis prepared May 28, 2019.

- a - c) Mendocino County is categorized as attainment or unclassified for all current National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The proposed project would not result in changes to the traffic volume, fleet mix, vehicle speed, location of the existing facility, or any other factor that would cause an increase in operational emissions.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon monoxide (CO), nitrogen oxides (NOx), volatile organic compounds (VOCs), directly-emitted particulate matter (PM10 and PM2.5), and toxic air contaminants such as diesel exhaust particulate matter. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site. Fugitive dust would be generated during grading and construction operations. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils.

- d) The proposed project may result in the generation of short-term, construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Both fugitive dust and construction equipment exhaust emissions would be temporary and transitory. Caltrans Standard Specifications Section 14-9 “Air Pollution Control”, a required part of all construction contracts, would effectively reduce and control emission impacts during construction.

3.4 BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, U.S. Fish and Wildlife Service, or NOAA Fisheries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Natural Environment Study prepared July 24th, 2019. Refer to Section 4-Biological Environment for additional information on items a, b, c, and d.

- a) This project would not adversely affect any sensitive species either directly or indirectly. With the implementation of avoidance and minimization measures discussed in Section 4, the proposed project would result in a less than significant impact to biological resources.
- b) This project would not substantially adversely affect any riparian habitat or other sensitive natural community. Permanent/temporary impacts are anticipated to 0.05 acres of riparian habitat

consisting of low growing shrubs and trees. Upon completion of project and before rain events, areas of disturbance on streambanks shall be stabilized with a hydroseed mixture of native species and trees providing riparian habitat would be replanted on-site. For further discussion of riparian habitat, please see Section 4.

- c) This project would have a less than significant effect on a federally protected wetland located at location 2 (PM 71.64). The wetland at this location is directly adjacent to the culvert inlet which sits in a concave, highly shaded area. This wetland would be impacted due to the need for access to the inlet and area needed for construction equipment. Approximately 57.1 ft² (0.0013 acre) of wetland would be impacted. It was determined that if the wetland vegetation could be salvaged and replaced within the same area after construction, only temporary impacts would occur to the wetland at Location 2.
- d) This project would not interfere with the movement of any native resident, migratory fish or wildlife species, would not interfere with established native residents or migratory wildlife corridors, and would not impede the use of native wildlife nursery sites. The culverts to be replaced have not been identified as established native residents or migratory wildlife corridors.
- e) This project would not cause conflict with any local policies or ordinances protecting biological resources.
- f) This project is not located within any habitat or community conservation locations; therefore, it would not conflict with provisions of any Habitat or Natural Community Conservation Plans.

3.5 CULTURAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Cultural Resource Compliance Memo prepared May 15, 2019.

- a) The proposed project does not have the potential to affect any archaeological or historic resources due to its limited scope.

- b) No indications of human remains were observed within the project limits. If human remains are identified during the construction activity, they would be treated in accordance with the requirements of California Health and Safety Code section 7050.5 and Public Resources Code section 5097.98. If, pursuant to §7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of §5097.98 (a)-(d) of the California Public Resources Code.
- c) Caltrans shall ensure that, to the extent permitted by applicable law and regulation, the views of the Tribes and the Most Likely Descendent(s) are taken into consideration when decisions are made about the sensitive and dignified treatment and disposition of the Native American human remains and associated burial items. It is the intent of Caltrans that human remains would not be unnecessarily disturbed and would not be disinterred unless absolutely necessary to protect them from damage or destruction.

3.6 Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Energy Assessment prepared May 30, 2019.

- a) Construction related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. Therefore, the project would not result in an inefficient, wasteful, and unnecessary consumption of energy.
- b) The project will not conflict with any state or local plans for renewable energy or energy efficiency.

3.7 GEOLOGY AND SOILS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on California Geological Survey Regulatory Maps, The Department of Conservation/Caltrans Highway Corridor Landslide Hazard Mapping program, and the California Geological Survey (CGS) Earthquake Zones of Required Investigation map.

- a) i: Location 1 of the project is adjacent to but does not lie within the Maacama Fault zone, which ends south of Laytonville. No active faults cross the project site. Therefore, the project would not rupture a known earthquake fault.

ii-iii: Although the project site is not located in an Alquist-Priolo Earthquake Fault Zone, the project area of Location 1 is approximately 500 ft east of the Maacama Fault. The Maacama Fault is considered the northernmost segment of the Hayward Fault subsystem of the San Andreas Fault zone, and the fault is considered capable of producing large earthquakes and could produce strong or very strong ground shaking in the project area.

This adjacent area has not been evaluated for liquefaction hazards, however the general composition of the soils around Location 1 are unconsolidated alluvial sediments and marine/non-marine sedimentary rocks. The proposed project would not expose people to injury or harm. A final foundation report would outline the required design measures to reduce the risks from liquefaction, settlement, and lateral spreading.

iv: Based on information provided by CGS, several segments of U.S. 101 within the project limits have the potential for landslide susceptibility, either directly or indirectly. However, exposure to landslide hazards is less than significant within the project limits.

- b) Considerable earth-moving activities would be necessary to construct the project. This would include the construction of access roads and staging areas, placing of fill into trenches, excavation to remove existing pavement for cut and cover operations, and excavation for culvert replacement and drainage work as well as other activities. Earth-moving activities have the potential to cause soil erosion or loss of topsoil. Temporary construction site BMPs including fiber rolls, silt fences, temporary gravel bag berms, stabilized entrances to access roads, temporary cover for stockpiles, streambed stabilization, and street sweeping among others would be implemented as necessary to reduce the amount of erosion and topsoil loss expected. With the implementation of the pertinent BMPs the impact would be less than significant.
- c - f) The primary scope of the work is directly located on engineered soils consisting of silty sand and gravel material used for pavement subgrade and existing culvert trench backfill. Therefore, the project is not located on unstable or expansive soils. In addition, the project will not include septic or water disposal systems and does not contain any unique paleontological resource or unique geologic feature.

3.8 GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Explanation: “Less Than Significant” determinations in this section are based on information provided in Section 4 – Climate Change.

- a - b) While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. Refer to section 4- Climate Change for additional information

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant” determinations in this section are based on information provided in the Initial Site Assessment prepared May 21, 2018 and the description and location of the proposed project.

- a) This project would not create a significant hazard to the public. Aerially deposited lead, thermoplastic paint, and treated wood waste are present within the project location. Low levels of aerially deposited lead from the historic use of leaded gasoline exist along roadways throughout California. The project would adhere to Caltrans Standard Special Provision Section 7-1.02K(6)(j)(iii) “Earth Material Containing Lead.” Thermoplastic paint may contain lead of varying concentrations depending upon color, type and year of manufacture. Traffic stripes would be removed and disposed of in accordance with Caltrans Standard Special Provision Section 36-4 “Residue Containing Lead from Paint and Thermoplastic”. Treated wood waste comes from old wood that has been treated with chemical preservatives to prevent fungal decay and insect attacks. Potential sources of treated wood waste within the project area are sign posts. If treated

wood waste is generated during this project, it would be disposed of in accordance with Standard Special Provision 14-11.14 "Treated Wood Waste".

- b) No existing or proposed schools are present within one-quarter mile of the project area; therefore, there would be no impact to schools from hazardous emissions or hazardous or acutely hazardous materials.
- c - d) This project is not located on a site which is included on a list of hazardous material sites pursuant to Government Code Section 65962.5.
- e) This project is not located within an airport land use plan, within 2 miles of a public airport, or within the vicinity of a private airstrip.
- f) This project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- g) This project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

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3.10 HYDROLOGY AND WATER QUALITY

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less than Significant Impact” determinations in this section are based on information provided in the Water Quality Assessment Report prepared November 16, 2018 and the Floodplain Evaluation Report Summary prepared October 16, 2018.

- a) This project would not violate any water quality standards or waste discharge requirements. The proposed project would comply with the conditions of the California State Water Resources Control Board Construction General Permit (CGP) (Order 2010-0014-DWQ and 2012-0006-DWQ). The CGP requires that the construction contractor prepare a project specific Storm Water Pollution Prevention Plan, which identifies temporary construction site best management practices (BMPs) to reduce construction impacts on receiving water quality based on potential pollutants and pollutant sources.
- b) Due to construction activities which could potentially require dewatering, temporary impacts to groundwater levels may occur. No permanent impacts are anticipated. Temporary construction BMPs would be implemented that would minimize or completely avoid any potential impacts from

dewatering. Any temporary impacts would be insignificant in comparison to the overall groundwater area and the highly variable nature of the existing groundwater flow paths. Additionally, construction would take place during the summer and fall months when there is not likely to be any water flowing through culverts. No potential impacts would be severe enough to reduce the groundwater table.

- c) i) The proposed project involves placing fill, permanent grading of slopes, increasing the impervious surface area, and altering existing drainage features which could affect natural erosion and sedimentation patterns on- or off-site. Impacts are expected to be avoided or reduced to negligible levels with the implementation of standard erosion control practices.
- ii) The proposed project would increase the amount of impervious surface area, which would increase the amount of runoff water. No permanent impacts are anticipated. Construction would take place during the summer and fall months when there is not likely to be any water flowing through culverts. No potential impacts would be severe enough to substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- iii) The proposed project would increase the amount of impervious surface area, which would increase the amount of runoff water. It is not anticipated that the amount of runoff water created would exceed the capacities of the planned stormwater system. Both the decrease in infiltration to groundwater that seeps into surface waters and the runoff from impervious surfaces that discharges into nearby waters would be addressed by post-construction stormwater treatment controls. The treatment controls would reduce pollutant loads in runoff prior to reaching any downstream receiving waters. Treatment controls would be located and sized in accordance with Caltrans design guidance and the Caltrans Municipal Separate Storm Sewer System Permit. Treatment types that infiltrate, harvest, reuse, and allow the evapotranspiration of stormwater runoff would be prioritized.
- iv) The proposed project would increase the amount of impervious surface area, which would increase the amount of runoff water. The project would not place housing within the flood area and would not place structures in areas that would impede or redirect flood flows
- d) Due to the nature of the proposed project, it would not cause inundation by seiche, tsunami, or mudflow.
- e) The proposed project is not expected to result in long-term impacts to water quality. Potential temporary impacts due to construction would be minimized with regulatory and Caltrans requirements, and will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.11 LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project.

- a) The project is located within a rural setting with very few scattered residences adjacent to the project site. Due to the rural nature of the area and the scope of the project, the project would not physically divide an established community.
- b) The project would not conflict with any applicable land use plan, policy, or regulation.

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12 MINERAL RESOURCES

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project.

- a - b) No mineral resources were identified within the project limits or would be affected by the proposed project.

3.13 NOISE

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Air Quality and Noise Analysis prepared May 28, 2019.

- a) Construction equipment is expected to generate temporary noise levels ranging from 70 to 90 dBA at a distance of 50 ft, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. Construction noise would primarily result from the operation of heavy construction equipment and arrival and departure of heavy-duty trucks.

Construction operation is expected to be temporary and will not be near a receptor for an extended period of time. The project would comply with the Caltrans Standard Specifications Section 14-8.02 “Noise Control” which includes provisions for controlling and monitoring noise resulting from work activities

- b) The project is not expected to generate excessive groundborne vibration or groundborne noise. Vibration levels could be perceptible and cause disturbances near the project areas during operation of heavy equipment. However, these effects would be short-term and intermittent and would cease once construction is completed.
- c) The project is not located within the vicinity of a private, public, or public use airport. There would be no impact from airport noise

3.14 POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project.

- a) The proposed project would not increase capacity or access; therefore, it would not directly or indirectly induce population growth in the area. The project would not add new homes or businesses and would not extend any roads or other infrastructure.
- b) Although some of the areas surrounding the project are rural residential communities, there are no residences within the project area, and no replacement housing would be necessary.

3.15 PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description, location of the proposed project, and plans obtained from utility owners.

- a) Due to the nature of this project, new or physically altered governmental facilities are not required to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: 1) Fire protection, 2) Police protection, 3) Schools, and 4) Parks. Facility maps from Frontier Communications show one fiber optic line and one copper line within the project limits at Location 11, PM R105.88. Equipment used for this project is not expected to impact the utility lines within the project limits. If a disruption in service is anticipated, impacted parties would be notified via letters, fliers, and/or door to door contact.

3.16 RECREATION

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project.

- a) The project would not increase the use of existing neighborhood parks, regional parks, or other recreational facilities. No neighborhood parks, regional parks, or other recreational facilities are present within the project limits.
- b) The project does not include recreational facilities or require the construction or expansion of recreational facilities. No neighborhood parks, regional parks, or other recreational facilities are present within the project limits.

3.17 TRANSPORTATION

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Transportation Management Plan Update prepared September 18, 2018.

- a) The project is not anticipated to conflict with an applicable plan, ordinance, policy or congestion management plan. This section of US Route 101 is part of the Pacific Coast Bike Route Bicyclists. Signage will be used to alert vehicles of the possible presence of bicyclists.
- b) The proposed project is not anticipated to conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- c) The project is a culvert rehab/replacement project that is designed to improve hydrologic stormwater drainage, improving the stability and safety of the surrounding areas of the highway. Therefore, the project is not anticipated to substantially increase hazards due to a design feature or incompatible uses.
- d) The proposed project is not anticipated to result in inadequate emergency access, however temporary road closures are expected to occur during culvert placement. Public traffic may be stopped in both directions for periods not to exceed 5 minutes. Any emergency service agency whose ability to respond to incidents would be affected by any lane closure during construction would be notified prior to that closure.

3.18 TRIBAL CULTURAL RESOURCES

Would the project 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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Cultural Resource Compliance memo, prepared May 15, 2019.

- a - b) Tribal consultation was initiated with the local Native American tribes. No comments have been made by any tribal representatives regarding the project. No tribal cultural resources were identified within the project study limits.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" determinations in this section are based on the description, discussions with the project engineer, and location of the proposed project.

- a) Due to the nature of the project, an increase in service population for any utilities or service systems is not anticipated.
- b) The project would have sufficient water supplies during construction and would not have an effect on water supplies for future developments.
- c-d) The project would not have a demand for wastewater for solid waste treatment.
- a) The project would comply with all statutes and regulations related to the disposal of solid waste generated during construction.

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the CalFire Fire Hazard Severity Map, the description, and location of the proposed project.

- a) The proposed project is in both a state responsibility area of high and very high fire hazard severity. The Mendocino County Operational Area Emergency Operations Plan was approved by the Mendocino County Board of Supervisors in September 2016. The project would not substantially impair this plan since the existing structures and roadway would remain open to two-way traffic during construction.
- b-c) The proposed project work consists of culvert improvement and replacement and would not exacerbate wild fire risk. In addition, the project would not require the installation or maintenance of additional infrastructure that would result in temporary or ongoing impacts to the environment.
- d) The proposed project will be improving the conditions of specific culverts on US Route 101 thus improving the stormwater drainage along the highway and reducing risk of fire related flooding. Since the culvert work will primarily be within the existing road and right of way, it will not expose people to fire related landslides or flooding.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" and "Less Than Significant Impact" determinations in this section are based on the description and location of the proposed project.

- a) The proposed project does not have the potential to degrade the quality of the environment. The project may have minimal impacts to sensitive species known to occur in the vicinity of the project area and may have potential impacts to riparian habitat and wetlands. These impacts have been reduced to "less than significant" with the implementation of project features.
- b) The proposed project would not result in any adverse effects that, when considered in connection with other projects, would be considered cumulatively considerable.
- c) Based on the description of the proposed project and consideration of potential effects, the project would not cause substantial adverse effects on human beings, either directly or indirectly.

Section 4 Affected Environment, Environmental Consequences, and Mitigation Measures

4.1 Biological Environment

NATURAL COMMUNITIES

Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species.

Riparian Habitat

Riparian habitat consists of the vegetation that occurs at the transition zone between land and a river or stream. Vegetation found in riparian habitats includes a variety of species that thrive in moist environments and can tolerate seasonal flooding. Overstory species that commonly occur in riparian habitat in the North Coast of California include, but are not limited to, willow (*Salix spp.*), maple (*acer spp.*), cottonwood (*populus spp.*), alder (*alnus spp.*), and ash (*fraxinus spp.*). Shrub and understory species include, but are not limited to, himalayan blackberry (*rubus armeniacus*), thimbleberry (*rubus parviflorus*), salmonberry (*rubus spectabilis*), dogwood (*cornus spp.*), and various fern species. The riparian zone is ecologically important for many reasons. It helps to stabilize the banks of a channel and acts as a natural filter to prevent excessive sedimentation and accumulation of polluted surface runoff. It provides shade to waterways which regulates water temperatures and humidity levels. It also serves as habitat for numerous terrestrial species including, but not limited to, mammals, birds, and invertebrates.

Affected Environment

Locations 1 - 3 (PM 63.96 - 74.77), 5 (PM 76.4), 7 (PM 78.56), and 9 - 11 (PM R101.36 - R105.88):

Riparian habitat is present within the ESL along the banks of the creeks at each of the locations above. Many of these culvert locations are densely vegetated at the inlets and/or outlets. Riparian vegetation at these locations are predominantly composed of California bay laurel (*Umbellularia californica*), coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), blackberry (*rubus spp.*), sword fern (*Polystichum munitum*), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), willow (*salix spp.*), Douglas fir

(*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), and tanoak (*Notholithocarpus densiflorus*).

Locations 4 (PM 75.33), 6 (PM 78.14), and 8 (PM R84.68):

No riparian habitat is present within the ESL at the locations above.

Environmental Consequences

Locations 1 - 3 (PM 63.96 - 74.77), 5 (PM 76.4), 7 (PM 78.56), and 9 - 11 (PM R101.36 - R105.88):

Riparian vegetation would be removed surrounding the culverts for access and room for construction personnel and equipment. This vegetation consists of low growing shrubs and trees. Clearing and trimming of approximately 0.055 acre (2,421 square feet) of riparian vegetation consisting of California bay laurel, coyote brush, poison oak, blackberry, sword fern, Oregon ash, white alder, willow, Douglas fir, madrone, and tanoak would be needed. This vegetation trimming and removal would not lead to an increase in sedimentation within the creeks and would temporarily lead to an increase in loss of shading.

Locations 4 (PM 75.33), 6 (PM 78.14), and 8 (PM R84.68):

No riparian habitat is present within the ESL at these locations; therefore, no removal of riparian vegetation would occur.

The following project features would be implemented during construction:

- Removal of vegetation would be conducted in the fall and winter (between October 1 to January 31) after fledging of birds and before the initiation of breeding activities.
- If vegetation removal during the non-nesting season is determined unfeasible, then pre-construction bird nest surveys would be performed to determine the location of nest sites within and adjacent to the project limits.
- If no active bird nests are found during pre-construction surveys, then vegetation would be removed within five (5) days.
- Pre-construction surveys would be conducted by a Caltrans biologist or qualified biologist. If active bird nests are found, Caltrans would coordinate with the USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918, and with the CDFW to comply with provisions of the Fish and Game Code of California.
- If a lapse in project related work of 15 days or longer occurs, another survey and, if required, coordination with USFWS and the CDFW would occur before work can be reinitiated.

- Upon completion of project and before rain events, areas of disturbance on streambanks shall be stabilized with a hydroseed mixture of native species and trees providing riparian habitat would be replanted on-site.
- Removal of riparian vegetation shall not exceed the minimum amount necessary for construction activities. If feasible, flagging or staking would be used to delineate the work area.

Mitigation Measures

No mitigation measures are proposed. All trees providing riparian habitat would be replanted on site.

CEQA Significance

The proposed project would result in a less than significant impact to riparian habitat with the implementation of the above project features.

WETLANDS AND OTHER WATERS

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high-water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All 3 parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

The USACE issues 2 types of 404 permits: General and Individual. There are 2 types of General permits: Regional and Nationwide. Regional permits are issued for a general category

of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are 2 types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

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

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

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

Affected Environment

Wetlands

The USACE and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Inlet at Location 2 (PM 71.64):

A wetland delineation was conducted at a potential wetland at the inlet of Location 2 (PM 71.64) on February 19, 2019 using the methodology set forth in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (May 2010). A positive determination for wetlands was made based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. No wetlands were identified at the outlet of this location.

Location 1 (PM 63.96) and Locations 3 - 11 (PM 74.77 - R105.88):

A wetland delineation was also conducted at a potential wetland at Location 8 (PM 84.68) on February 19, 2019 using the methodology set forth in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (May 2010). Location 8 did not contain hydrophytic vegetation or hydric soils and therefore did not key out as a wetland. No wetlands were identified at any other locations.

Other Waters

Other waters of the U.S. (OWUS) include ephemeral, intermittent, and perennial drainages that have an “ordinary high-water mark” (OHWM) but do not meet the criteria to be a wetland, and connect directly or indirectly to a traditional navigable water. The culverts at Locations 1 through 11 convey small streams flowing towards the South Fork Eel River, either directly or through adjacent streams such as Rattlesnake Creek and Ten Mile Creek.

Visual surveys were conducted at all locations between May 2018 and February 2019. Location 2 (PM 71.64) and Locations 8 through 11 (PM 84.68 - R105.88) are perennial drainages that flow throughout the year while Location 1 (PM 63.96) and Locations 3 through 7 (PM 74.77 - 78.56) are intermittent. These perennial and intermittent features are considered potentially jurisdictional OWUS because of their connection to the South Fork Eel River, which is subject to CWA 404 jurisdiction. All OWUS are also considered Waters of the State.

Environmental Consequences

Wetlands

Inlet at Location 2 (PM 71.64):

This project proposes to line the existing 24" x 164' CMP from the inlet and remove and replace the 24" FES. It is estimated that the work at this location would last approximately five (5) working days. The wetland at this location is directly adjacent to the culvert inlet which sits in a concave, highly shaded area. This wetland would be impacted due to the need for access to the inlet and area needed for construction equipment. Approximately 57.1 ft² (0.0013 acre) of wetland would be impacted (Figure 2). During technical assistance with the California Northcoast Regional Water Quality Control Boards (CNRWQCB) on February 20, 2019, it was determined that if the wetland vegetation could be salvaged and replaced within the same area after construction, only temporary impacts would occur to the wetland at Location 2.

Location 1 (PM 63.96) and Locations 3 - 11 (PM 74.77 - R105.88):

No other wetlands were identified; therefore, there would be no impacts to these locations

To avoid permanent impacts to the wetland at Location 2, wetland vegetation would be salvaged and replanted in the same area from which it was removed. The methods for salvaging and replanting this wetland vegetation will be discussed in the Special Provisions with both Standard and Non-Standard Special Provisions and are as follows:

- A Caltrans Biologist, Landscape Architect, or Revegetation Specialist would mark the location of the wetland vegetation to be salvaged in the field, to make the vegetation identifiable to the construction Contractor.
- Seven (7) days prior to, and one (1) day prior to, salvaging of the wetland vegetation, the identified wetland vegetation would be watered, to prevent shock to plant roots and to help retain soil around the root ball.
- Before any work at the inlet of this location begins, including placement of construction equipment, wetland vegetation would be salvaged, with root balls placed in burlap sacks, watered, and maintained according to specifications.
- Before replanting wetland vegetation, soil amendment would be worked into the soil where replanting would occur, according to contract specifications.
- All salvaged wetland vegetation would be replanted in the location from which it was removed.
- The replanted wetland vegetation would be watered until October 31st of the year it was replanted.
- The replanted wetland vegetation would be monitored by a Caltrans Biologist, Landscape Architect, or Revegetation Specialist, approximately one year after replanting, to confirm the replanted vegetation has survived.

Other Waters

This project proposes to replace and/or rehabilitate 11 culverts by cut and cover method (Locations 1, 3 - 9, and 11) or lining with a plastic pipeliner (Locations 2 and 10). Permanent and temporary impacts to approximately 0.05 acre of OWUS would occur due to activities associated with the replacement/rehabilitation of the culverts and the placement of RSP. This estimate does not include the temporary impacts to wetlands at Location 2 (PM 71.64). These impacts will be discussed in the next section.

The following project features would be implemented during construction:

- To avoid direct impacts to water quality, no work would be performed in drainages within the project area until flows are at their seasonal low-flow or have ceased and the streambed is dry.
- Prior to initiating project activities, the contractor would prepare a toxic materials control and spill response plan per Caltrans contract specifications and resource permit requirements.
- Equipment refueling would only occur at staging areas where fuel would not enter the sensitive areas.
- Soils exposed by project operations would be treated to prevent sediment runoff and transport.
- Erosion control measures would include proper installation and maintenance of approved BMPs and may include applications of seed, certified weed-free straw, compost, fiber, stabilizing emulsion and mulch, or a combination thereof.
- All disturbed areas would be revegetated and restored to pre-construction conditions.
- A hydroseed mixture of native plants would be used for revegetation.
- Replanting of trees and riparian habitat would be completed on-site.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in less than significant impacts to wetlands and other waters with the implementation of the above project features.

PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

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

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

Affected Environment

Two Botanical surveys were conducted on May 1, 15-16, 2018 and July 12-13, 2018. Various special status species were evaluated for potential occurrence within the project limits.

Environmental Consequences

No special status plant species were observed within the project limits. Therefore, no impact so special-status plant species is anticipated.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in no impact to special-status plant species.

ANIMAL SPECIES

Regulatory Setting

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

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Foothill Yellow-Legged Frog

The foothill yellow-legged frog (*Rana boylei*) (FYLF) is a state candidate threatened species. The FYLF is a stream-breeding frog typically found in small to mid-sized streams and rivers from the coast to the western slope of the Sierra Nevada (Jennings and Hayes 1994). In California, FYLF were historically found in most Pacific drainages from the Coast Ranges to the western Sierra Nevada and San Gabriel mountain foothills, but the range has contracted considerably, likely due in large part to alteration of seasonal water flows resulting from barriers such as dams (Wheeler et al. 2006). Shallow stream riffles with cobble-sized rocks and slow water flows are necessary components of breeding habitat for the species, while open, sunny banks surrounding breeding locations provide foraging habitat (Fellers 2005). Breeding occurs during the spring in California, typically from April to June, although rainfall during the breeding season can cause females to delay oviposition. Egg masses are anchored to cobbles in the streambed, and hatch within one to four weeks after oviposition.

Affected Environment

As recorded in CNDDDB, FYLF have been observed at multiple locations along US 101 in Mendocino county. The South Fork Eel River is known breeding habitat for FYLF due to the presence of shallow, flowing water, cobble substrate, and open, sunny banks. The water flowing through these culvert locations either directly or indirectly flow into the South Fork Eel River.

Surveys for FYLF were conducted on May 22, 2019. The weather was clear and cool, but rainy in the days before surveys. Surveys were conducted at the inlets and outlets of all 11 locations. No egg masses, tadpoles, or post-metamorphic individuals were encountered at any locations. The rainfall from previous days would have likely impacted any egg masses in mainstem creeks.

Location 6 (PM 78.14) and Location 7 (PM 78.56):

Potential refuge and breeding habitat was observed at the outlets of Locations 6 and 7; however, no egg masses, tadpoles, or post-metamorphic individuals were encountered at these locations. These culvert outlets are perched above Rattlesnake Creek and an unnamed creek that parallels US Route 101 and branches off just south of Rattlesnake Creek. Potential breeding habitat does not occur at the culverts but rather the mainstem creeks they drain into. Potential refuge habitat exists above the OHWM of these mainstem creeks closer to the culvert outlets. Due to a large amount of shading over these creeks and the culvert outlets, there is a low likelihood of presence of FYLF. No refuge or breeding habitat was observed at the culvert inlets.

Locations 1 (PM 63.96), 3 (PM 74.77), 5 (PM 76.4), and 11 (PM R105.88):

Potential refuge habitat was observed at the outlets of Locations 1, 3, 5, and 11; however, no egg masses, tadpoles, or post-metamorphic individuals were encountered at these locations. There is a low likelihood of presence of FYLF during construction due to a large amount of shading and intermittent creeks drying up. No refuge habitat was observed at the culvert inlets.

Locations 2 (PM 71.64), 4 (PM 75.33), and 8 - 10 (PM R84.68 - R104.04):

No egg masses, tadpoles, or post-metamorphic individuals were encountered at these locations. No potential refuge and/or breeding habitat was observed at these locations.

Environmental Consequences

Location 6 (PM 78.14) and Location 7 (PM 78.56):

At Location 6, the culvert would be removed and replaced using a cut/cover method and RSP would be placed at both the inlet and outlet. The culvert is perched above an unnamed creek that branches off Rattlesnake Creek. No RSP would be placed below the OHWM or the unnamed creek. No tree removal would occur at this location. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No "take" of FYLF would occur.

At Location 7, the culvert would be removed and replaced using a cut/cover method and RSP would be placed at both the inlet and outlet. The culvert is perched above Rattlesnake Creek. No RSP would be placed below the OHWM of Rattlesnake Creek. Seven (7) trees providing shade to Rattlesnake Creek would be removed. Tree removal has the potential to decrease the

amount of shade at this location and increase refuge/breeding habitat availability for FYLF. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No “take” of FYLF would occur.

Locations 1 (PM 63.96), 3 (PM 74.77), 5 (PM 76.4), and 11 (PM R105.88):

At Location 1, the culvert would be removed and replaced using a cut/cover method. No RSP would be placed at this location. One tree providing little to no shade to the creek would be removed for culvert installation. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No “take” of FYLF would occur.

At Location 3, the culvert would be removed and replaced using a cut/cover method and RSP would be placed at the inlet and outlet. No tree removal would occur at this location. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No “take” of FYLF would occur.

At Location 5, the culvert would be removed and replaced using a cut/cover method and both existing downdrains would be removed and replaced. RSP would be placed at the both the inlet and outlet. One tree would be removed for culvert installation. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No “take” of FYLF would occur.

At Location 11, the culvert would be abandoned and a new culvert would be installed using a cut/cover method. RSP would be placed at both the inlet and outlet. Eight (8) trees would be removed at the culvert outlet for culvert installation and access. Tree removal has the potential to decrease the amount of shade at this location and increase refuge/breeding habitat availability for FYLF. Impacts are expected to be minimal with the implementation of avoidance and minimization measures. No “take” of FYLF would occur.

Locations 2 (PM 71.64), 4 (PM 75.33), and 8 - 10 (PM R84.68 - R104.04):

These locations do not contain potential refuge and/or breeding habitat due to their locations, high amount of shade, and minimal water throughout the year. There is a very low likelihood of FYLF presence. No impacts are expected for FYLF at these locations. No “take” of FYLF would occur.

The following project features would be implemented during construction:

- A. Conduct a Pre-Construction Survey: Within 3-5 days prior to entering or working at the project sites, a qualified biologist shall examine the project sites, including culverts, to determine the presence/absence of standing or flowing water, and the presence and/or the potential for presence of FYLF adults, juveniles, tadpoles, or egg masses within the project area and 150 feet upstream and downstream. Prior to commencing work, Caltrans shall provide to CDFW for review preconstruction survey notes and observations.

1. If FYLF are found during the pre-construction survey, Caltrans shall:
 - i. Consult CDFW immediately by either telephone or email and provide a short description of observations, including a count of individuals and the life stage(s), conditions at the site, and other aquatic species observed; and
 - ii. Propose site-specific measures that would be utilized to avoid take, including but not limited to exclusionary fencing.
2. If no FYLFs are found during the pre-construction survey and no surface water is present in the project area, work may commence without further surveys.
3. If no FYLFs are found but surface water is present during the pre-construction survey, or if surface water becomes present at any time during the work period, a qualified biologist shall survey the work site each day before commencement of work activities where equipment and/or materials may come in contact with FYLFs, streams, or riparian habitat.
4. If FYLFs are observed at any time during the construction season, work in the immediate area shall be halted, CDFW immediately consulted, and conservation measures developed and agreed to by CDFW prior to recommencing work.

B. Construction would take place while the culverts are dry and utilizing a work window of June 15 to October 15, which is outside of FYLF breeding period, would further minimize the likelihood of encountering FYLF during construction. The proposed project would not result in “take” of FYLF.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to FYLF with the implementation of the above project features during construction.

Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not

undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

MARBLED MURRELET

Marbled murrelet (*Brachyramphus marmoratus*) (MAMU) is a federally threatened and state endangered species. Critical habitat for marbled murrelet was designated by USFWS on May 24, 1996 and revised on October 5, 2011. MAMU is known to inhabit large, contiguous stands of mature coastal coniferous forests, with large limbs for nesting; and coastal waters for foraging. They may be found up to 35 miles inland and use large rivers and streams as migration corridors. MAMU occurs from Alaska south to central California, typically feeding in ocean waters within one mile of shore.

Affected Environment

Inlet at Location 11 (PM 105.88):

Focused surveys were not conducted for MAMU. An assessment for suitable nesting habitat within the project area was conducted through direct observation (stand search), aerial photography, and technical assistance with the USFWS. The inlet at location 11 (PM 105.88) is considered suitable nesting habitat for MAMU but is not designated as critical habitat. The nearest documented occurrence of MAMU is approximately seven (7) miles south of location 11. The outlet at location 11 is not suitable nesting habitat.

Locations 1 – 10 (PM 63.96 - R104.04):

Focused surveys were not conducted. Locations 1 - 10 do not occur within suitable MAMU habitat.

Environmental Consequences

Inlet at Location 11 (PM 105.88):

No tree removal will be required for the culvert inlet at this location. Clearing or trimming of riparian vegetation consisting of poison oak, sword fern, and tanoak would be needed to access the culvert inlet. Such vegetation does not provide habitat for MAMU; thus, MAMU habitat would not be affected.

Auditory and visual disturbance of MAMU is possible. Using the USFWS guidance, *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (July 26, 2006), harassment distance was estimated by comparing the ambient noise levels to the expected action-generated noise levels. Ambient noise levels within the project locations fall within the “High” category outlined in the guidance (81-90 decibels) due to the presence of high-speed highway traffic including RVs, large trucks, buses, and other moderate to large diesel engines. The action-generated noise levels are expected to fall within the “Very High” (91-100dB) category.

To estimate the harassment distance associated with the temporary project noise in relation to the estimated project site ambient noise level, Table 1 of the 2006 USFWS Guidance was used. The ambient noise was estimated by determining current conditions, traffic use, road gradient and time of day for US Route 101.

The work associated with this project would occur for one construction season on US Route 101. Construction noise impacts are expected to be temporary and mobile, traveling to each location, during the construction season. Noise levels associated with the project fall within *Moderate* (~71-80 dB) to *Very High* (~91-100 dB) categories. Thus, harassment distance for MAMU during the breeding season for noise emitted by project construction is estimated to take place at 0 ft for all *Moderate* project actions such as preparation work, and 165 ft for all other project activities rated as *Very High*.

The nearest potentially suitable MAMU habitat occurs within the ESL at the inlet for location 11. Because suitable habitat occurs within 165 feet of the ESL at the inlet for location 11, there is potential for harassment to the MAMU during the nesting season, as per the 2014 PLOC. This project may affect, but is not likely to adversely affect MAMU. An assessment of noise would be re-evaluated if new information on MAMU locations becomes available.

Locations 1 – 10 (PM 63.96 - R104.04):

The proposed project would have no effect on MAMU at these locations. The proposed project would not result in “take” of MAMU.

The following project features would be implemented during construction:

- To avoid adverse effects to MAMU, Caltrans would not perform any construction activities generating noise levels above 90 dB, or 20 dB above ambient noise levels until after August 5, and before March 24. No suitable habitat for MAMU would be removed by the project, however, project-related noise could potentially affect this species if birds are present and noise levels substantially exceed ambient conditions.
- Between August 6th (date when most marbled murrelets have fledged in coastal northern California) and September 15th (end of marbled murrelet nesting season) of any year, project activities, with adjacent suitable nesting habitat, that will generate sound levels ≥ 10 dB above ambient sound levels would observe a daily work window beginning 2 hours post-sunrise and ending 2 hours pre-sunset. However, prep work that does not generate sound levels above ambient sound levels, including street sweeping and manual removal of pavement markers, can occur during all hours. This project would not result in “take” of MAMU per Section 2080 of the California Fish and Game Code.
- No potential MAMU nest trees would be removed during the nesting season (March 24 to September 15). Potential suitable nesting habitat may be removed or altered outside the nesting season (September 16 to March 23).
- Vegetation removal would occur outside the migratory bird breeding season (between September 15 and February 1). If vegetation cannot be cleared outside of the bird breeding season, migratory bird surveys would be conducted by a qualified biologist no earlier than two weeks before construction. If nesting birds (including MAMU) are found during pre-construction surveys, a qualified biologist would coordinate with CDFW, and USFWS if needed, to establish a species-specific buffer around each nest site and monitor the nest during construction.
- All disturbed areas would be revegetated and restored to pre-construction conditions. A hydroseed mixture of native plants would be used for revegetation. No compensatory mitigation is required.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to MAMU with the implementation of the above project features during construction.

NORTHERN SPOTTED OWL

The northern spotted owl (*Strix occidentalis caurina*) (NSO) is a federal and state threatened species. Revisions to the critical habitat for the northern spotted owl were published by USFWS on December 4, 2012. NSO generally have large home ranges and use large tracts of land containing significant acreage of older forest to meet their biological needs. The attributes of superior NSO nesting and roosting habitat typically include a moderate to high canopy closure (60 to 80 percent); a multi-layered, multi-species canopy with large overstory trees; a high incidence of large trees with deformities (large cavities, broken tops, mistletoe infections, and debris accumulations); large accumulations of fallen trees and other debris; and sufficient open space below the canopy for owls to fly.

Affected Environment

Inlet at Location 11 (PM 105.88):

Focused surveys were not conducted for NSO. An assessment for suitable nesting habitat within the project area was conducted through direct observation (stand search), aerial photography, and technical assistance with the United States Fish and Wildlife Service (USFWS). The inlet at location 11 (PM 105.88) is considered suitable nesting habitat for NSO but is not designated as critical habitat. The nearest documented occurrence of NSO is approximately 0.35-mile south and 0.48-mile west of Location 10 (PM 104.04). The outlet at location 11 is not suitable nesting habitat.

Locations 1 - 10 (PM 63.96 - R104.04):

Focused surveys were not conducted. Locations 1-10 do not occur within suitable NSO habitat.

Environmental Consequences

Inlet at Location 11 (PM 105.88):

No tree removal would be required for the culvert inlet at this location. Clearing or trimming of riparian vegetation consisting of poison oak, sword fern, and tanoak would be needed to access the culvert inlet. Such vegetation does not provide habitat for NSO; thus, NSO habitat would not be affected.

Auditory and visual disturbance of NSO is possible. Using the USFWS guidance, *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (July 26, 2006), harassment distance was estimated by comparing the ambient noise levels to the expected action-generated noise levels. Ambient noise levels within the project locations fall within the “High” category outlined in the guidance (81-90 decibels) due to the presence of high-speed highway traffic including RVs, large trucks, buses, and other moderate to large diesel engines. The action-generated noise levels are expected to fall within the “Very High” (91-100dB) category.

To estimate the harassment distance associated with the temporary project noise in relation to the estimated project site ambient noise level, Table 1 of the 2006 USFWS Guidance was used. The ambient noise was estimated by determining current conditions, traffic use, road gradient and time of day for US 101.

The work associated with this project would occur for one construction season on US Route 101. Construction noise impacts are expected to be temporary and mobile, traveling to each location, during the construction season. Noise levels associated with the project fall within *Moderate* (~71-80 dB) to *Very High* (~91-100 dB) categories. Thus, harassment distance for NSO during the breeding season for noise emitted by project construction is estimated to take place at 0 ft for all *Moderate* project actions such as preparation work, and 165 ft for all other project activities rated as *Very High*.

The nearest potentially suitable NSO habitat occurs within the ESL at the inlet for location 11. Because suitable habitat occurs within 165 ft of the ESL at the inlet for location 11, there is potential for harassment to the NSO during the nesting season, as per the 2014 PLOC. This project may affect, but is not likely to adversely affect NSO. An assessment of noise would be re-evaluated if new information on NSO locations becomes available.

Locations 1 – 10 (PM 63.96 - R104.04):

The proposed project would have no effect on NSO at these locations. The proposed project would not result in “take” of NSO.

The following project features would be implemented during construction:

- To avoid adverse effects to NSO Caltrans would not perform any construction activities generating noise levels above 90 dB, or 20 dB above ambient noise levels until after July 9, and before February 1. These above-ambient sound level restrictions would be lifted after July 31; after which the Service considers the above-ambient sound levels as having “no effect” on nesting NSO and dependent young. This project would not result in “take” of NSO per Section 2080 of the California Fish and Game Code. No suitable habitat for NSO would be removed by the project, however, project-related noise could potentially affect this species if birds are present and noise levels substantially exceed ambient conditions.

- No potential NSO nest trees would be removed during the nesting season (1 February to 15 September). Suitable habitat may be removed or altered outside of the nesting season provided “no take” guidelines – as per Attachment B of the 2014 PLOC – are adhered to for all known NSO home ranges within 0.7 mile of the project action area.
- Vegetation removal would occur outside the migratory bird breeding season (between September 15 and February 1). If vegetation cannot be cleared outside of the bird breeding season, migratory bird surveys would be conducted by a qualified biologist no earlier than two weeks before construction. If nesting birds (including NSO) are found during pre-construction surveys, a qualified biologist would coordinate with CDFW, and USFWS if needed, to establish a species-specific buffer around each nest site and monitor the nest during construction.
- All disturbed areas would be revegetated and restored to pre-construction conditions. A hydroseed mixture of native plants would be used for revegetation. No compensatory mitigation is required.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to NSO with the implementation of the above project features during construction.

SOUTHERN OREGON NORTHERN CALIFORNIA COAST COHO

Southern Oregon Northern California Coast (SONCC) coho salmon Evolutionarily Significant Unit (ESU) is a federal and state threatened species. The SONCC coho salmon ESU includes all naturally spawned populations of coho in coastal streams between Cape Blanco, Oregon, and Punta Gorda, California, as well as salmon produced by three artificial propagation programs: the Cole River Hatchery near the Rogue River in Oregon, and the Trinity River and Iron Gate (Klamath River) hatcheries in California (NMFS 2014b). On July 19, 1995, NMFS publicly announced its status finding and intent to propose coho salmon as threatened under the Endangered Species Act (ESA). NMFS published its final decision to list SONCC coho salmon as threatened under the ESA on May 6, 1997 (62 FR 24588), a status that was reaffirmed on August 15, 2011 (76 FR 50447). The listing initiated the development of a recovery plan for the ESU that includes delisting goals. The Final Recovery Plan for the SONCC coho was published by NMFS in 2014.

Coho salmon are semelparous (reproduce once before dying). They spend the first half of their life cycle rearing in streams and small freshwater tributaries. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean before returning to their stream of origin to spawn and die. Adults usually begin their freshwater spawning migration in

late summer and fall and spawn by mid-winter. The timing of salmon entering the river is influenced by many factors, one of which appears to be river flow. Spawning migrations begin after heavy late fall or winter rains. The timing of coho salmon immigration varies between regions, but in general they return earlier in the season in more northern areas and in larger river systems. In the short coastal streams of California, most coho salmon return mid-November through January (Baker and Reynolds 1986).

Spawning adults can measure more than 2 feet in length and weigh an average of 8 pounds. Spawning occurs in clean gravel that ranges in size from that of a pea to that of an orange (Nickelson et al. 1992) and is concentrated in riffles or gravel deposits at the downstream end of pools featuring suitable water depth and velocity (Weitkamp et al. 1995). Eggs incubate in redds (gravel spawning nests) for 1-3 months, depending on the water temperature, before emerging as alevins (larval life stage that depends upon yolk sacs as its food source). Between February and May, alevins emerge from redds as fry after yolk sac absorption and begin actively feeding within the water column, initially congregating in shaded backwaters, side channels, or small streams where the stream velocity is less.

As fry grow, they migrate to habitats with complex cover such as undercut banks, root wads, large woody debris (LWD) and vegetative overhangs. In-stream habitat complexity, including a mixture of pools and riffles, LWD, and well oxygenated cool water (10-15°C/50-59°F) are important habitat components for coho salmon fry (Sandercock 1991; Moyle 2002). The most productive coho salmon nursery habitats tend to be small streams having a larger ratio of slack water to midstream area (Sandercock 1991).

On May 5, 1999, NMFS designated critical habitat for the Southern Oregon Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon. As defined by NMFS, critical habitat for SONCC coho, "Encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon, inclusive... critical habitat includes all waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers." (64 FR 24049, 1999). NMFS defines the "adjacent riparian area...[as] the area adjacent to a stream that provides the following functions: shade, sediment, nutrient, or chemical regulation, streambank stability, and input of large woody debris or organic matter." (64 FR 24055, 1999).

Affected Environment

Location 7 (PM 78.56):

Location 7 outlets directly above Rattlesnake Creek. Rattlesnake Creek, a tributary to the South Fork Eel River, has been designated critical habitat for SONCC coho salmon. The culvert itself at this location is not fish bearing. The culvert outlet is approximately 15 - 20 feet from the ordinary high-water mark (OHWM) of Rattlesnake Creek. At this location, the creek is between 10 - 15 feet wide, and an average of 2 feet deep. It has a small cobble and gravel substrate with sparsely laid out patches of large woody debris and steep slopes on either side. The creek is

bordered by riparian vegetation upstream and downstream. Dominant tree species include Douglas fir, bigleaf maple, California bay laurel, and Pacific madrone. The riparian area directly surrounding the culvert work area is limited to bigleaf maple, California bay laurel, and Douglas fir with a range in diameter at breast height (DBH) of 4 - 17.5 inches. This area of Rattlesnake Creek contains high quality spawning, rearing, and migration habitat due to the presence of shade, slow moving water, pools upstream and downstream of this location, and large woody debris in close proximity. There is no understory vegetation surrounding the culvert work area.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

The culverts at locations 1 - 6 and 8 - 11 drain into tributaries of the South Fork Eel River, such as Long Valley Creek, Ten Mile Creek, Rattlesnake Creek, and Wilson Creek, that are also designated critical habitat for SONCC coho salmon. The culverts themselves at these locations are not fish bearing. Although many of these tributaries are designated critical habitat, the culvert outlets are between 85 - 2,006 feet (0.38 mile) from the OHWM. Many of these culvert locations contain riparian habitat; however, this riparian would not directly or indirectly affect critical habitat for SONCC coho salmon.

Environmental Consequences

Location 7 (PM 78.56):

The culvert at Location 7 would be replaced with a culvert of the same size and RSP would be placed at both the inlet and outlet. RSP at the outlet would not be placed below the OHWM of Rattlesnake Creek. Clearing and/or trimming of approximately 0.009 acre (375 square feet) of riparian vegetation consisting of Douglas fir would occur at this location. The DBH of the trees ranges between 4 - 17.5 inches. Impacts to riparian at this location would be temporary and with implementation of the ABMPs outlined below, impacts are likely to be insignificant or discountable. The proposed project may affect but is not likely to adversely affect SONCC coho salmon and critical habitat at this location.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

Although the work at Locations 1 - 6 and 8 - 11 would remove riparian habitat and drain into fish bearing tributaries, the culvert outlets and riparian habitat are outside the impact area (85 - 2,006 feet) for fish bearing creeks and do not provide shade to SONCC coho critical habitat. There would be no effect to SONCC coho critical habitat at these locations.

The following list of additional best management practices (ABMPs) per the PBO have been considered for this project and are appropriate for existing site conditions and time of year and would be implemented in the proposed project. ABMPs listed here apply to all federally listed fish species and critical habitats discussed in this Environmental Document:

- ABMP-1.3: Equipment would be inspected on a daily basis for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to operating equipment.
- ABMP-1.4: A Spill Prevention, Control, and Countermeasures (SPCC) Plan would be developed for each project that requires the operation of construction equipment and vehicles. The SPCC Plan would be kept on-site during construction and the appropriate materials and equipment would also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel would be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill would be timely.
- ABMP-2.1: Maintenance and construction activities would be avoided at night to the extent practicable.
- ABMP-2.2: When night work cannot be avoided, disturbance of listed species would be avoided and minimized by restricting substantial use of temporary lighting to the least sensitive seasonal and meteorological windows.
- ABMP-2.3: Lights on work areas would be shielded and focused to minimize lighting of listed-species habitat.
- ABMP-3.1: Maintenance and fueling of construction equipment and vehicles would occur at least 15 meters from the OHWM or the edge of sensitive habitats (e.g., wetlands).
- ABMP-5.1: Sediment and debris removed from the roadway will be disposed of off-site, at an approved location, where it cannot enter surface waters.
- ABMP-10.1: Trees as identified in any special contract provisions or as directed by the Project Engineer will be preserved.
- ABMP-10.2: Hazard trees greater than 24-inches diameter at breast height (DBH) would be removed only by direction of the project Engineer.
- ABMP-10.3: Trees would be felled in such a manner as not to injure standing trees and other plants to the extent practicable.
- ABMP-10.4: Environmentally Sensitive Areas would be fenced to prevent encroachment of equipment and personnel into wetlands, riparian areas, stream channels and banks, and other sensitive habitats.
- ABMP-10.5: Vegetation would be mowed to a height greater than 4 inches.
- ABMP-10.6: Soil compaction would be minimized by using equipment that can reach over sensitive areas and that minimizes the pressure exerted on the ground.
- ABMP-10.7: Where soil compaction is unintended, compacted soils would be loosened after heavy construction activities are complete.
- ABMP-10.8: Where vegetation removal is temporary to support construction activities, native species would be re-established that are specific to the project location and that comprise a diverse community of woody and herbaceous plants.

- ABMP-11.1: Storage areas would disturb less than 2.5 acres of vegetated or currently undisturbed area.
- ABMP-11.2: Storage areas would not disturb wetlands or other special status plant communities.
- ABMP-11.4: Construction staging and storage areas would be located a minimum of 150 feet from the OHWL and other sensitive habitats (e.g., wetlands).
- ABMP-13.1: Temporary access and detours would be located a minimum of 50 feet from the OHWL and other sensitive habitats (i.e. wetlands).
- ABMP-14.1; 14.5; and 14.8: With the exception of instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, construction equipment and vehicles would not operate in anadromous waters unless the channel is dewatered or otherwise dry. In rare instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, relocation and exclusion of listed fish from the area would be implemented prior to operating in the wetted channel.
- ABMP-14.2: Existing roadways and stream crossings would be used for temporary access roads whenever reasonable and safe.
- ABMP-14.3: The number of access and egress points and total area affected by vehicle operation would be minimized; disturbed areas would be located to reduce damage to existing native aquatic vegetation, substantial large woody debris, and spawning gravel.
- ABMP-14.4: Cleaning of culverts and bridge abutments and piers, and placement of RSP and other bank protection would be from the top of the bank or bridge.
- ABMP-14.7: Modified or disturbed portions of streams, banks, and riparian areas would be restored as nearly as possible to natural and stable contours (elevations, profile, and gradient).
- ABMP-16.1: Disturbance and removal of aquatic vegetation would be minimized.
- ABMP-16.2: The limits of disturbance would be identified; native vegetation, stream channel substrate, and large woody debris disturbed outside these limits should be replaced if damaged.
- ABMP-16.3: The minimum amount of wood, sediment and gravel, and other natural debris would be removed using hand tools, where feasible, only as necessary to maintain and protect culvert and bridge function, ensure suitable fish passage conditions, and minimize disturbance of the streambed.
- ABMP-16.4: LWD subject to damage or removal would be retained and replaced on site after project completion as long as such action would not jeopardize infrastructure or private property or create a liability for Caltrans. LWD not replaced on-site would be stored or offered to other entities for use in other mitigation/restoration projects where feasible.

- ABMP-16.5: Disturbed areas would be minimized by locating temporary work areas to avoid patches of native aquatic vegetation, substantial LWD, and spawning gravel.
- ABMP-16.6: Where vegetation removal is temporary to support construction activities, native species would be re-established that are specific to the project location and that comprise a diverse community of aquatic plants.
- ABMP-16.8: Excavated material would not be stored or stockpiled in the channel. Any excavated material that would not be placed back in the channel or on the bank after construction would be end-hauled to an approved disposal site.
- ABMP-17.3: All structures and imported materials placed in the stream channel or on the banks during construction that are not designed to withstand high flows would be removed before such flows occur.
- ABMP-21.1: When concrete is poured to construct bridge footing or other infrastructure in the vicinity of flowing water, work must be conducted to prevent contact of wet concrete with water. Concrete or concrete slurry would not come into direct contact with flowing water.
- ABMP-23.3: Scour holes at the base of bridge piers or abutments and culvert inlets and outlets would be repaired by placing no more riprap (RSP) than is necessary to mitigate the scour.
- ABMP-28.1: If individuals of listed species may be present and subjected to potential injury or mortality from construction activities, a qualified biologist would conduct a preconstruction visual survey (i.e., bank observations).
- ABMP-28.2: Caltrans shall retain a qualified biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships and biological monitoring of salmonids. Caltrans shall ensure that all biologists working on a Site-Specific Project would be qualified to conduct fish collections in a manner which minimizes all potential risks to listed salmonids.
- ABMP-28.3: When listed species are present and it is determined that they could be injured or killed by construction activities, a qualified project biologist would identify appropriate methods for capture, handling, exclusion, and relocations of individuals that could be affected.
- ABMP-28.4: Where listed species cannot be captured, handled, excluded, or relocated (e.g., salmonid red), actions that could injure or kill individual organisms would be avoided or delayed until the species leaves the affected area or the organism reaches a stage that can be captured, handled, excluded, or relocated.
- ABMP-28.5: The project biologist would conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities; ensure that sufficient personnel are available for safe and efficient collection of listed species; and ensure that proper training of personnel has been conducted in identification and safe capture and handling of listed species.

- ABMP-28.6: Electrofishing may be utilized when other standard fish capture methods are likely to be ineffective or other methods fail to remove all fish from the site; the project biologist must have appropriate training and experience in electrofishing techniques and all electrofishing must be conducted according to the *NMFS Guidelines for Electrofishing Water Containing Salmonids Listed under the Endangered Species Act*. [Available at: http://swr.nmfs.noaa.gov/sr/Electrofishing_Guideline.pdf].
- ABMP-28.7: Individual organisms would be relocated the shortest distance possible to habitat unaffected by construction activities.
- ABMP-28.8: Within occupied habitat, capture, handling, exclusion, and relocation activities would be completed no earlier than 48 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.
- ABMP-28.11: The project biologist would be present at the work site until all listed species have been removed and relocated.
- ABMP-28.12: The project biologist would maintain detailed records of the species, numbers, life stages, and size classes of listed species observed, collected, relocated, injured, and killed; as well as recording the date and time of each activity or observation.
- ABMP-29.1: The proposed guidance document (described in Caltrans [2010] Programmatic BA) would be followed to ensure compliance with Project permits and authorization, including implementation of the BMPs.
- ABMP-29.2: Before construction activities begin, the project environmental coordinator or biologist would discuss the implementation of the required BMPs with the maintenance crew or construction resident engineer and contractor, and identify and document environmentally sensitive areas and potential occurrence of listed species.
- ABMP-29.3: Before construction activities begin, the project environmental coordinator or biologist would conduct a worker awareness training session for all construction personnel that describes the listed species and their habitat requirements, the specific measures being taken to protect individuals of listed species in the project area, and the boundaries within which project activities would be restricted.
- ABMP-29.4: Caltrans would designate a biological monitor to monitor on-site compliance with all Project BMPs and any unanticipated effects on listed species.
- ABMP-29.5: Non-compliance with BMPs and unanticipated effects on listed species would be reported to the resident engineer or maintenance supervisor immediately.
- ABMP-29.6: When non-compliance is reported, the resident engineer or maintenance supervisor would implement corrective action immediately to meet all BMPs; where unanticipated effects to listed species cannot be immediately resolved, the resident engineer or maintenance supervisor would stop work that is causing the unanticipated effect until the unanticipated effects are resolved.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to SONCCC with the implementation of the above project features during construction.

CALIFORNIA COASTAL CHINOOK SALMON

The California Coastal (CC) Chinook salmon ESU was federally listed as a threatened species on September 16, 1999 (64 FR 50394). Their threatened status was reaffirmed August 15, 2011 (76 FR 50447). The ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River to and including the Russian River, California (64 FR 50394). The ESU also includes fish released from State and Federal propagation programs. NMFS determined that these artificially propagated stocks are no more divergent relative to the local natural population(s) than what would be expected between closely related natural populations within the ESU (70 FR 37160).

CC Chinook salmon are fall-run, ocean-type anadromous fish. They typically return to their natal waters to spawn between September and early November following early large winter storms (Moyle et al. 2008). Entrance into fresh water is often delayed in smaller coastal watersheds where low flow barriers can prevent access until December or even January (Moyle et al. 2008).

Fall-run Chinook salmon typically spawn in the lower reaches of rivers and tributaries. Typically, they enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas and spawn within a few weeks of freshwater entry (Healy 1991). Adults die within a few days after spawning. Fry emerge from the gravel in the late winter or spring and initiate outmigration within a week to months of emergence (Moyle et al. 2008). Fresh water residence, including outmigration, usually ranges from two to four months. After emergence, Chinook salmon fry seek out areas behind fallen trees, back eddies, undercut banks, and other areas of bank cover. As they grow larger, their habitat preferences change (Everest and Chapman 1972). Juveniles move away from stream margins and begin to use deeper water areas with slightly faster water velocities, but continue to use available cover to minimize the risk of predation and reduce energy expenditure.

Estuaries and transitional habitats between river and ocean are important for Chinook salmon survival to changing environments. CC Chinook may reside in estuaries, lagoons, and bays for a few months, gaining in size before leaving these habitats gradually over the summer (Moyle et al. 2008). Once they enter the open ocean, CC Chinook salmon migrate along the California coast, often moving northward.

On September 2, 2005, NMFS designated critical habitat for CC chinook salmon. As defined by NMFS, critical habitat for CC chinook salmon includes, "Stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line" (70 FR 52537). Within these critical habitat areas, "The primary constituent elements (PCEs) essential

for the conservation of CC chinook salmon are those site and habitat components that support one or more life stages, including:

- Freshwater spawning sites with water quantity, quality conditions, and substrate supporting spawning, incubation and larval development.
- Freshwater rearing sites with:
 - Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility.
 - Water quality and forage supporting juvenile development.
 - Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction and excessive predation.” (70 FR 52537).

Affected Environment

Location 7 (PM 78.56):

Focused surveys for CC chinook salmon were not conducted. Location 7 outlets directly above Rattlesnake Creek. Rattlesnake Creek, a tributary to the South Fork Eel River, has been designated critical habitat for CC chinook salmon. The culvert itself at this location is not fish bearing. The culvert outlet is approximately 15 - 20 feet from the ordinary high-water mark (OHWM) of Rattlesnake Creek. At this location, the creek is between 10 - 15 feet wide, and an average of 2 feet deep. It has a small cobble and gravel substrate with sparsely laid out patches of large woody debris and steep slopes on either side. This area of Rattlesnake Creek contains high quality spawning, rearing, and migration habitat due to the presence of shade, slow moving water, pools upstream and downstream of this location, and large woody debris in close proximity. The creek is bordered by riparian vegetation upstream and downstream. Dominant tree species include Douglas fir, bigleaf maple, California bay laurel, and Pacific madrone. The riparian area directly surrounding the culvert work area is limited to bigleaf maple, California bay laurel, and Douglas fir with a range in diameter at breast height (DBH) of 4 - 17.5 inches. There is no understory vegetation surrounding the culvert work area.

CC chinook salmon presence is assumed.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

The culverts at locations 2 - 6 and 8 - 11 drain into tributaries of the South Fork Eel River, such as Ten Mile Creek, Rattlesnake Creek, and Wilson Creek, that are also designated critical habitat for CC chinook salmon. The culverts themselves at these locations are not fish bearing.

The outlet at Location 1 is approximately 175 feet from the OHWM of Long Valley Creek which is not designated critical habitat for CC chinook salmon. Although many of the tributaries designated as critical habitat have characteristics for high quality spawning, rearing, and migration habitat, the culvert outlets are between 85 - 2,006 feet (0.38 mile) from the OHWM. Many of these culvert locations contain riparian habitat; however, this riparian would not directly or indirectly affect critical habitat for CC chinook salmon. The work at these culvert locations would not be in close proximity to CC chinook salmon.

Environmental Consequences

Location 7 (PM 78.56):

The culvert at Location 7 would be replaced with a culvert of the same size and RSP would be placed at both the inlet and outlet. RSP at the outlet would not be placed below the OHWM of Rattlesnake Creek. Clearing and/or trimming of approximately 0.009 acre (375 square feet) of riparian vegetation consisting of Douglas fir would occur at this location. The DBH of the trees ranges between 4 - 17.5 inches. With implementation of the ABMPs outlined in the NMFS PBO, effects to riparian and CC chinook are expected to be insignificant or discountable. The proposed project may affect, but is not likely to adversely affect CC chinook salmon and critical habitat at this location.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

Although the culverts at Locations 1 - 6 and 8 - 11 drain into fish bearing tributaries and would remove riparian habitat, the culvert outlets are outside of the impact area (85 - 2,006 feet) for these fish bearing creeks and would not affect CC Chinook salmon. Location 1 is not designated critical habitat for CC chinook salmon. There would be no effect to CC chinook salmon and critical habitat at these locations.

The ABMPs from the NMFS PBO listed above in the SONCC Coho section would be implemented in the proposed project.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to CC Chinook Salmon with the implementation of the above project features during construction.

NORTHERN CALIFORNIA STEELHEAD

Steelhead possess one of the most complex life history patterns of the Pacific salmonid species. Steelhead typically refers to the anadromous form of rainbow trout. Like other Pacific salmon, steelhead adults spawn in freshwater and spend a part of their life history at sea. Steelhead

exhibit a relatively greater range of life history strategies than other Pacific salmonids and adults may spawn more than once during their life. The typical life history pattern for steelhead is to rear in freshwater streams for two years, followed by up to two or three years of residency in the marine environment before returning to their natal stream to spawn as four or five year old's (61 FR 41542 [August 9, 1996]). However, juvenile steelhead may rear in freshwater from one to four years (Moyle 2002).

Biologically, steelhead can be divided into two basic run types based on the state of sexual maturity at the time of river entry and duration of spawning migration. Summer steelhead, referred to as stream-type salmonids, enter freshwater in the summer and fall and require several months in freshwater to become sexually mature and spawn. The ocean-maturing type, or winter steelhead, enters freshwater with well-developed gonads and spawns shortly after river entry (61 FR 41542 [August 9, 1996]; Barnhart 1986). Variations in migration timing exist between populations. Some river basins have both summer and winter steelhead, while others only have one run type. South of Cape Blanco, Oregon, both summer and winter steelhead are known to occur in the Rogue, Smith, Klamath, Trinity, Mad, and Eel Rivers and in Redwood Creek (Busby et al. 1996). Steelhead require a minimum depth of 7 inches and a maximum velocity of 8 feet per second for active upstream migration (Smith 1973).

Winter steelhead enter freshwater between November and April in the Pacific Northwest (Nickelson et al. 1992; Busby et al. 1996), migrate to spawning areas, and then spawn, generally in April and May (Barnhart 1986). Spawning and initial rearing of juvenile steelhead generally takes place in small, moderate-gradient (generally 3% to 5%) tributary streams. A minimum depth of 7 inches, water velocity of 1 to 3 feet per second (Thompson 1972; Smith 1973), and clean substrate measuring 0.25 to 4 inches (Nickelson et al. 1992) are required for spawning. Cover, in the form of overhanging vegetation, undercut banks, submerged vegetation, submerged objects such as logs and rocks, floating debris, deep water, turbulence, and turbidity (Giger 1973) are required to reduce disturbance and predation during spawning.

Depending on water temperature, steelhead eggs may incubate for 1.5 to 4 months before hatching, generally between February and June (Bell 1991). After 2 to 3 weeks, in late spring, following yolk sac absorption, alevins emerge from the gravel and begin actively feeding. After emerging from the gravel, fry usually inhabit shallow water along banks of perennial streams. As they mature, older fry will move into pools and establish and defend territories. Cover is extremely important in determining distribution -- more cover leads to more fish (Meehan and Bjornn 1991).

Juvenile steelhead occupy a range of habitats featuring moderate to high water velocity and variable depths during their first summer (Bisson et al. 1988). They feed on a wide variety of aquatic and terrestrial insects and older juveniles sometimes prey on emerging fry. Steelhead hold territories close to the substratum where flows are lower and sometimes counter to the main stream. From these areas, they can make forays up into surface currents to take drifting food (Kalleberg 1958). Juveniles rear in freshwater from one to four years (usually two years in the California ESUs), then smolt and migrate to the ocean in March and April (Barnhart 1986). Winter steelhead populations generally smolt after two years in freshwater (Busby et al. 1996).

Smolts are usually six to eight inches in total length when they migrate to the ocean (Meehan and Bjornn 1991).

On September 2, 2005, NMFS designated critical habitat for Northern California (NC) steelhead. As defined by NMFS, critical habitat for NC steelhead includes, “stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line” (70 FR 52537). Within these critical habitat areas, “the primary constituent elements (PCEs) essential for the conservation of NC steelhead are those site and habitat components that support one or more life stages, including:

- Freshwater spawning sites with water quantity, quality conditions, and substrate supporting spawning, incubation and larval development.
- Freshwater rearing sites with:
 - Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility.
 - Water quality and forage supporting juvenile development.
 - Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction and excessive predation.” (70 FR 52537).

Affected Environment

Location 7 (PM 78.56):

Focused surveys for NC steelhead were not conducted. Location 7 outlets directly above Rattlesnake Creek. Rattlesnake Creek, a tributary to the South Fork Eel River, is not designated critical habitat for NC steelhead. The culvert itself at this location is not fish bearing. The culvert outlet is approximately 15 - 20 feet from the ordinary high-water mark (OHWM) of Rattlesnake Creek. At this location, the creek is between 10 - 15 feet wide, and an average of 2 feet deep. It has a small cobble and gravel substrate with sparsely laid out patches of large woody debris and steep slopes on either side. This area of Rattlesnake Creek contains high quality spawning, rearing, and migration habitat due to the presence of shade, slow moving water, pools upstream and downstream of this location, and large woody debris in close proximity. The creek is bordered by riparian vegetation upstream and downstream. Dominant tree species include Douglas fir, bigleaf maple, California bay laurel, and Pacific madrone. The riparian area directly surrounding the culvert work area is limited to bigleaf maple, California bay laurel, and Douglas fir with a range in diameter at breast height (DBH) of 4 - 17.5 inches. There is no understory

vegetation surrounding the culvert work area. Although this area contains high quality habitat for anadromous fish, it is not designated critical habitat for NC steelhead.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

The culverts at locations 1 - 6 and 8 - 11 drain into tributaries of the South Fork Eel River, such as Long Valley Creek, Ten Mile Creek, Rattlesnake Creek, and Wilson Creek. Long Valley Creek and Ten Mile Creek are designated critical habitat for NC steelhead at Locations 1 – 5 and 9 – 11. The culverts themselves at these locations are not fish bearing. The closest tributaries to Locations 6, 7, and 8 are not designated critical habitat for NC steelhead. Although 8 of the 11 culverts drain into tributaries that are designated critical habitat, these culvert outlets are between 175 - 2,006 feet (0.38 mile) from the OHWM of designated critical habitat. The work at these culvert locations would not be in close proximity to NC steelhead. Many of these culvert locations contain riparian habitat; however, this riparian would not directly and indirectly affect critical habitat for NC steelhead.

Environmental Consequences

Location 7 (PM 78.56):

The culvert at Location 7 would be replaced with a culvert of the same size and RSP would be placed at both the inlet and outlet. RSP at the outlet would not be placed below the OHWM of Rattlesnake Creek. Clearing and/or trimming of approximately 0.009 acre (375 square feet) of riparian vegetation consisting of Douglas fir would occur at this location. The DBH of the trees ranges between 4 - 17.5 inches. Although riparian vegetation would be removed at this location and it is high quality habitat for anadromous fish, it is not designated critical habitat for NC steelhead. The proposed project would have no effect to NC steelhead at this location.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

Although the culverts at Locations 1 - 6 and 8 - 11 drain into fish bearing tributaries and would remove riparian habitat, the culvert outlets are outside of the impact area (85 - 2,006 feet) for these fish bearing creeks and would not affect NC steelhead. Locations 6, 7, and 8 are not designated critical habitat for NC steelhead. There would be no effect to NC steelhead at any of these locations.

No avoidance or minimization measures are required.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in a less than significant impact to NC Steelhead with the implementation of the above project features during construction.

Discussion of Essential Fish Habitat

Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”. The components of this definition are interpreted as follows: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Affected Environment

The Upper Eel River at Location 1 and South Fork Eel River at Locations 2 – 11 have been identified by NMFS as EFH for chinook and coho salmon.

Environmental Consequences

Location 7 (PM 78.56):

The culvert at Location 7 would be replaced with a culvert of the same size and RSP would be placed at both the inlet and outlet. RSP at the outlet would not be placed below the OHWM of Rattlesnake Creek. Clearing and/or trimming of approximately 0.009 acre (375 square feet) of riparian vegetation consisting of Douglas fir would occur at this location. The DBH of the trees ranges between 4 - 17.5 inches. Impacts to riparian at this location would be temporary and impacts resulting from tree removal are likely to be insignificant to EFH. The proposed project may affect but is not likely to adversely affect EFH for chinook and coho at this location.

Locations 1 – 6 (PM 63.96 – 78.14) and 8 – 11 (PM R84.68 – R105.88):

Although the work at Locations 1 - 6 and 8 - 11 would remove riparian habitat, the culvert outlets and riparian habitat are outside the impact area (85 - 2,006 feet) for fish bearing creeks and are not in close proximity to chinook and coho EFH. There would be no effect to EFH for chinook and coho at these locations.

The ABMPs from the NMFS PBO listed above in the SONCC coho section would be implemented in the proposed project.

4.2 Climate Change

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 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), and various hydrofluorocarbons (HFCs). CO₂ is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO₂.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with 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). This analysis will include a discussion of both.

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.¹ This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”² 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.

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 most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) 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 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.

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

The U.S. EPA³ in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The current standards require vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. EPA and NHTSA are currently considering appropriate mileage and GHG emissions standards for 2022–2025 light-duty vehicles for future rulemaking.

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 will save up to 2 billion barrels of oil and reduce CO₂ emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

¹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

² <https://www.sustainablehighways.dot.gov/overview.aspx>

³ U.S. EPA’s authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court’s ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six 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.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO 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 Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (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 [H&SC] 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.

EO 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.

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" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) 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.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 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_{2e}).⁴ Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, 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.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands ... is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18, (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

ENVIRONMENTAL SETTING

The proposed project is a rural area of Mendocino County. Zoning within and adjacent to the proposed project location is designated as upland/single-family/rural/suburban residential, Agricultural Land, Inland Limited Industrial, Rural Community, Public Facility, Rangeland, Timberland Production, Forestland, and Rural Community. US 101 serves major north-south

⁴ GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO₂ is the most important GHG, so amounts of other gases are expressed relative to CO₂, using a metric called "carbon dioxide equivalent" (CO_{2e}). The global warming potential of CO₂ is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO₂.

movement in the county for many commuters and recreational trips, and the section in the project area is also part of the Pacific Coast Bike Route. In the project area, US 101 passes through the unincorporated communities of Laytonville, Cummings, Leggett, and Piercy. Surrounding habitat is agricultural lands with developed roadways, non-vegetated staging areas, streams, and riparian habitat. The Mendocino Council of Governments serves as the regional transportation agency (RTPA) and guides transportation development in the project area. The Mendocino County General Plan (2009) does not specifically address greenhouse gases in transportation.

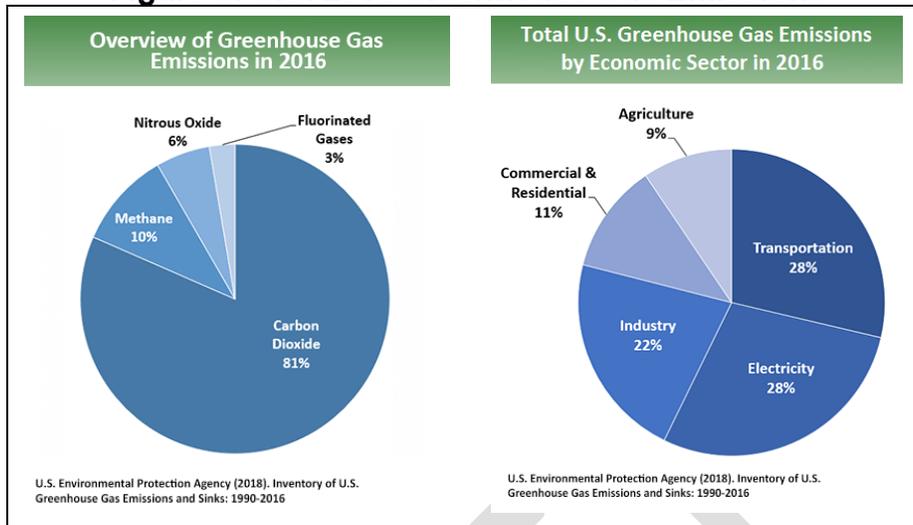
A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO₂ (carbon sequestration). The 1990–2016 inventory found that of 6,511 MMTCO₂e GHG emissions in 2016, 81% consist of CO₂, 10% are CH₄, and 6% are N₂O; the balance consists of fluorinated gases (EPA 2018a).⁵ In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

⁵ U.S. Environmental Protection Agency. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

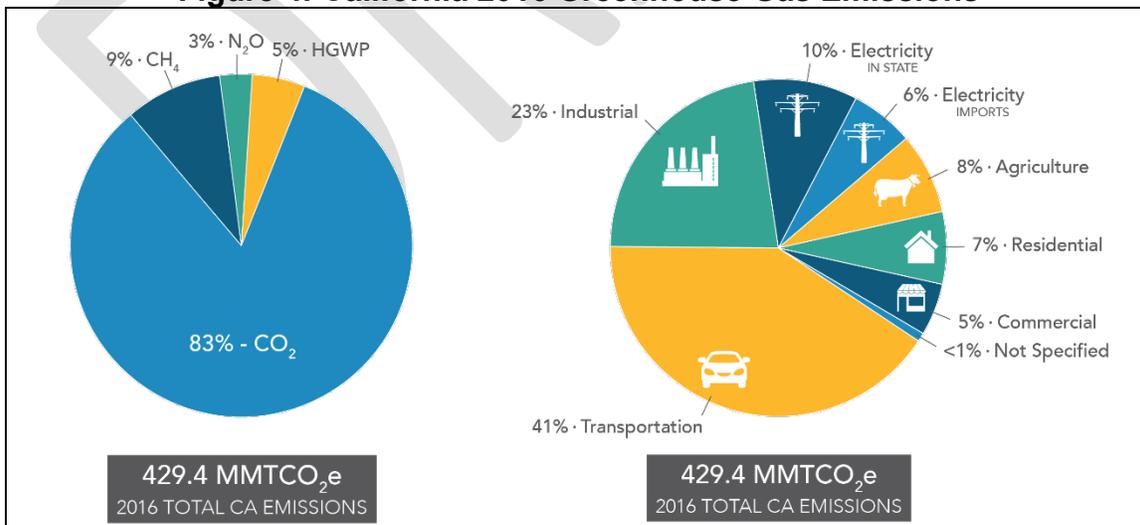
Figure 3: U.S. 2016 Greenhouse Gas Emissions



State GHG Inventory

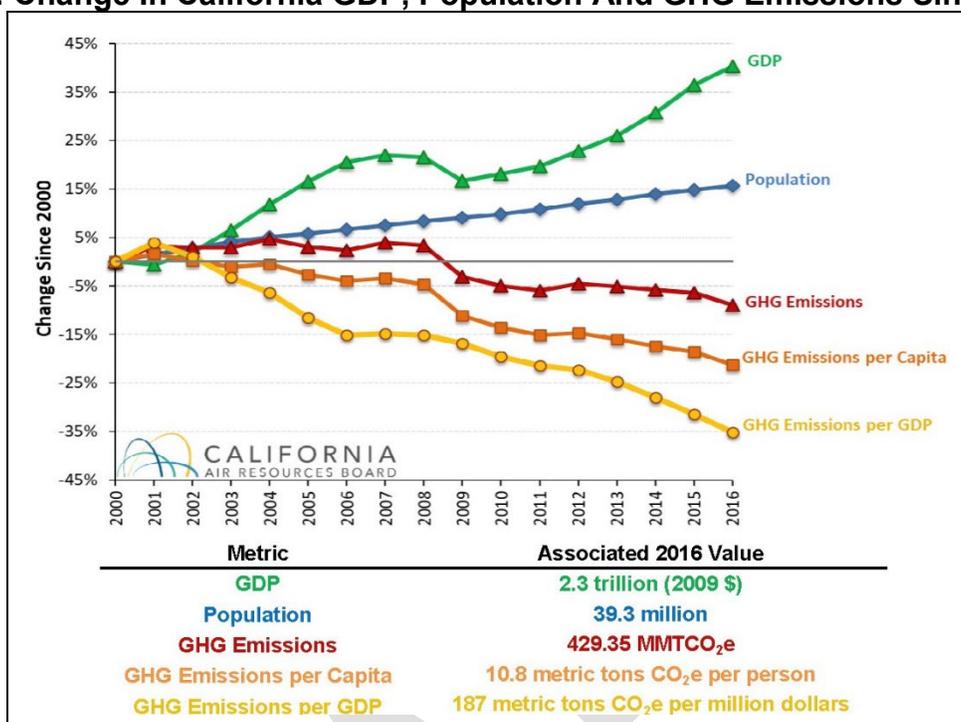
ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state’s progress in meeting its GHG reduction goals. The 2018 edition of the GHG emissions inventory found total California emissions of 429 MMTCO₂e for 2016, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions have declined from 2000 to 2016 despite growth in population and state economic output.⁶

Figure 4: California 2016 Greenhouse Gas Emissions



⁶ 2018 Edition of the GHG Emission Inventory (July 2018). <https://www.arb.ca.gov/cc/inventory/data/data.htm>

Figure 5: Change In California GDP, Population And GHG Emissions Since 2000



AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects 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 will use to reduce GHG emissions.

Regional Plans

The *2017 Mendocino County Regional Transportation Plan* (Davey-Bates Consulting 2018) (RTP) includes policies on climate change and the environment. The RTP offers a comprehensive transportation strategy that, among other things, is intended to reduce GHGs by reducing vehicle miles traveled. Goals include building a more resilient transportation network. While the proposed project is not specifically listed in the RTP, similar Caltrans projects identified for the 2016 SHOPP are included in the RTP Action Plan list of proposed short-range projects.

PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH₄ and N₂O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130)).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The proposed project is a culvert replacement and rehabilitation project. The project would not increase capacity and would not change travel demands or traffic patterns when compared to existing conditions and the no-build alternative. Therefore, an increase in operational GHG emissions is not anticipated.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The Caltrans Construction Emissions Tool version was used to estimate carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from construction activities. Construction is expected to begin in 2021 and last approximately 75 working days. Table 1 summarizes estimated GHG emissions generated by on-site equipment for the project.

Table 1: Total GHG Emissions during Construction (US tons)

Construction Year	CO ₂	CH ₄	N ₂ O
2021 (75 working days)	57	<1	<1

CO₂ = carbon dioxide

CH₄ = methane

N₂O = nitrous oxide

Implementation of the following measures, some of which may also be required for other purposes such as air pollution control, would reduce GHG emissions resulting from construction

activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

- The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.
- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.
- Caltrans Standard Specification 7-1.02C “Emissions Reduction” ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.
- Utilize a traffic management plan to minimize vehicle delays and idling emissions.
- To the extent feasible, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

CEQA CONCLUSION

While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

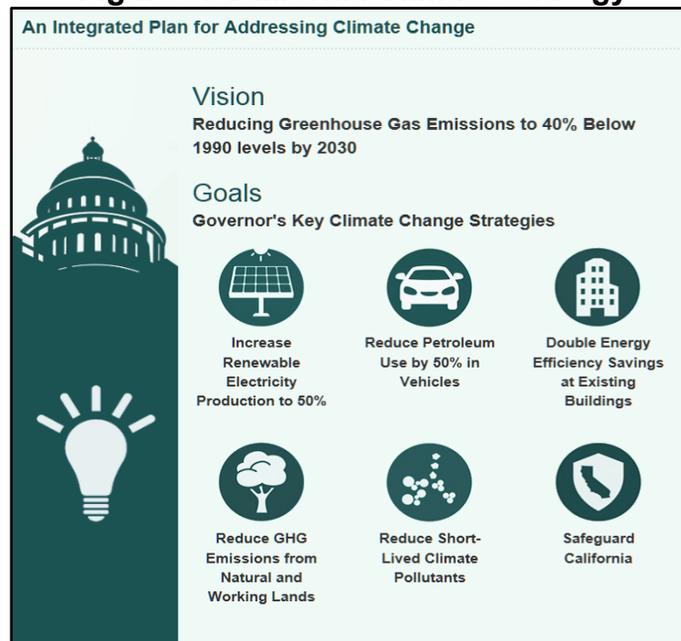
Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (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 farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state’s climate adaptation strategy, *Safeguarding California*.

Figure 6: California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030.

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the 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 an 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. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO₂ reduction goals. It serves as an umbrella document

for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 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 will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- 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 sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

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

- The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.
- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.
- Caltrans Standard Specification 7-1.02C “Emissions Reduction” ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.
- Utilize a traffic management plan to minimize vehicle delays and idling emissions.
- Construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

ADAPTATION

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGRCP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways.” Chapter 12, “Transportation,” presents a key discussion of vulnerability assessments. It notes that “asset owners and operators have

increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime.”

U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation 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.”⁷

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014)⁸ established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems.

FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels.⁹

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's latest effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- Resilience is the “capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.

⁷ https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

⁸ <https://www.fhwa.dot.gov/legregs/directives/orders/5520.cfm>

⁹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality.² Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.¹⁰

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California’s infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available

¹⁰ <http://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/>

science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

CALTRANS VULNERABILITY ASSESSMENTS

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Section 5 **List of Preparers**

The following Caltrans staff contributed to the preparation of this Initial Study.

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Fariar Kohzad, Transportation Engineer. Contribution: Floodplain Evaluation Summary Report.

William Larson, Associate Environmental Planner (Architectural History). Contribution: Cultural Resource Compliance Memo.

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Sheri Rodriguez, Chief, District 1 Office of Traffic Operations. Contribution: Transportation Management Plan Update.

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