

CALPELLA 2 BRIDGE REPLACEMENTS PROJECT

**MENDOCINO COUNTY, CALIFORNIA
DISTRICT 1 – MEN – 20 (Post Miles 33.3 to 34.4)
01-0E090 / 013000123**

Initial Study with Proposed Mitigated Negative Declaration



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



February 2020



General Information about this Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study with proposed Mitigated Negative Declaration (IS/MND) which examines the potential environmental effects of a proposed project on State Route 20 in Mendocino, 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 should you do?

- Please read this document.
- Additional copies of this document and related technical studies are available for review at the following locations:
 - Caltrans District 3 Office at 703 B Street, Marysville, CA 95901
 - Caltrans District 1 Office at 1656 Union St, Eureka, CA, 95501
 - Mendocino County Library at 105 N Main St, Ukiah, CA 95482
 - Willits Library at 390 E Commercial St, Willits, CA 95490
- Attend the public meeting on March 11, 2020 at the following location:
 - Eagle Peak Middle School at 8601 West Road in Redwood Valley, CA 95470 from 5:30 to 8:30 p.m.
- We'd like to hear what you think. If you have any comments about the proposed project, please attend the public meeting and/or send your written comments to Caltrans by the deadline.
- Please send comments via U.S. mail to:
California Department of Transportation
Attention: Michelle Holtz
Environmental Management RM-1 Branch
703 B Street Marysville, CA 95901
- Send comments via e-mail to: michelle.holtz@dot.ca.gov
- Be sure to send comments by the deadline: March 23, 2020

What happens after this?

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 complete the design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Bonnie Kuhn, Public Information Officer, PO Box 3700, Eureka, CA 95502-3700; (707) 441-4678 Voice, or use the California Relay Service TTY number, 711 or 1-800-735-2929.



CALPELLA 2 BRIDGE REPLACEMENTS PROJECT

Replace two bridges with a single bridge on State Route 20 in Mendocino County,
from post miles 33.3 to 34.4 north of Ukiah.

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION

Submitted Pursuant to: Division 13, California Public Resources Code

THE STATE OF CALIFORNIA

Department of Transportation

2/13/20

Date of Approval



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

The following person(s) may be contacted for more information about this document:

Michelle Holtz, North Region Environmental-District 3
703 B Street, Marysville, CA 95901
(530) 741-5532

or use the California Relay Service TTY number, 711 or 1-800-735-2929.

SCH Number: Pending
01-MEN-20-PM 33.3/34.4
01-0E090 / 0113000123



Proposed Mitigated Negative Declaration

Pursuant to: Division 13, California Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to perform a complete bridge replacement of the Russian River Bridge (#10-182) and Redwood Valley Undercrossing (#10-183) on a new alignment, located along State Route (SR) 20 in Mendocino County near Ukiah between post miles (PM) 33.3 to 34.4. To ensure traffic would not be significantly impeded during construction, the existing structures and alignment would remain in place during construction. This would require that the new structure be on a new alignment south of the existing alignment. Additional work such as embankment cut/fill, paving bridge approaches, roadway realignment, and shoulder widening would be involved. This includes the addition of acceleration and deceleration lanes with standard tapers for the intersection of SR-20 and County Road (CR) 144. Currently, the bridge deck has numerous transverse cracks leaving the bridge susceptible to punching shear failure.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an MND for this project. This does not mean that Caltrans' decision regarding the project is final. This MND 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 impact on the environment for the following reasons:

The project would have no effect with regards to agriculture and forest resources, energy, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, utilities and service systems, and wildfire.

The project would have less-than-significant impacts with regard to aesthetics, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, and hydrology and water quality.

With mitigation measures incorporated, the project would have less-than-significant impacts with regard to biological resources.

DRAFT

Table of Contents

Table of Contents.....	i
List of Tables and Figures.....	vii
List of Abbreviated Terms.....	ix
Chapter 1. Proposed Project	1
1.1 Project History	1
1.2 Project Description	1
Project Objectives (Purpose and Need).....	2
General Plan Description, Zoning, and Surrounding Land Uses	10
Alternatives Considered but Eliminated from Further Consideration.....	11
Value Analysis Summary	12
Project Maps	12
1.3 Permits and Approvals Needed	15
1.4 Standard Measures and Best Management Practices	15
1.4.1 Utilities and Emergency Services	15
1.4.2 Traffic and Transportation	15
1.4.3 Visual Aesthetics.....	16
1.4.4 Cultural Resources.....	16
1.4.5 Hydrology and Floodplain	16
1.4.6 Water Quality and Stormwater Runoff	17
1.4.7 Hazardous Waste and Material.....	19
1.4.8 Geology and Seismic/Topography.....	19
1.4.9 Wetlands and Other Waters.....	20
1.4.10 Threatened and Endangered Species	20
1.4.11 Plant Species	21
1.4.12 Animal Species	22
1.4.13 Invasive Species	23
1.5 Discussion of the NEPA Categorical Exclusion	24

Chapter 2 CEQA Environmental Checklist	25
Environmental Factors Potentially Affected	25
Project Impact Analysis Under CEQA for Initial Study.....	26
2.1 Aesthetics.....	29
Regulatory Setting.....	29
Environmental Setting	29
Discussion of Environmental Evaluation Questions 2.1—Aesthetics	30
Mitigation Measures	31
No Build Alternative.....	31
2.2 Agriculture and Forest Resources	32
No Build Alternative.....	33
2.3 Air Quality.....	34
Regulatory Setting.....	34
Environmental Setting	35
Discussion of Environmental Evaluation Questions 2.3—Air Quality	35
Mitigation Measures	36
No Build Alternative.....	36
2.4 Biological Resources.....	37
Regulatory Setting.....	38
Natural Communities.....	38
Wetlands, Other Waters, and Adjacent Riparian Vegetation.....	38
Plant Species	40
Animal Species	41
Threatened and Endangered Species	41
Invasive Species	42
Environmental Setting	43
Natural Communities.....	44
Wetlands, Other Waters, and Adjacent Riparian Vegetation.....	45
Plant Species	50
Animal and Threatened/Endangered Species	55
Invasive Species	74

Discussion of Environmental Evaluation Questions 2.4—Biological Resources	74
Mitigation Measures	116
No Build Alternative.....	119
2.5 Cultural Resources.....	120
Regulatory Setting.....	120
Environmental Setting	121
Discussion of Environmental Evaluation Questions 2.5—Cultural Resources	122
Mitigation Measures	123
No Build Alternative.....	123
2.6 Energy	124
No Build Alternative.....	125
2.7 Geology and Soils	126
Regulatory Setting—Geology and Soils.....	127
Environmental Setting—Geology and Soils	128
Discussion of Environmental Evaluation Questions 2.7 (a-e)—Geology and Soils.....	128
Mitigation Measures—Geology and Soils	129
No Build Alternative—Geology and Soils.....	130
Regulatory Setting—Paleontological Resources	130
Environmental Setting—Paleontological Resources	130
Discussion of Environmental Evaluation Question 2.7 (f)—Paleontological Resources	130
Mitigation Measures—Paleontological Resources	130
No Build Alternative—Paleontological Resources	130
2.8 Greenhouse Gas Emissions	131
Climate Change	131
2.9 Hazards and Hazardous Materials.....	150
Regulatory Setting.....	151
Environmental Setting	151
Discussion of Environmental Evaluation Questions 2.9—Hazards and Hazardous Materials.....	151
Mitigation Measures	153
No Build Alternative.....	153

2.10 Hydrology and Water Quality	154
Regulatory Setting.....	155
Federal... ..	155
State.....	156
Environmental Setting	159
Discussion of Environmental Evaluation Questions 2.10—Hydrology and Water Quality	160
Mitigation Measures	163
No Build Alternative.....	163
2.11 Land Use and Planning.....	164
No Build Alternative.....	164
2.12 Mineral Resources	165
No Build Alternative.....	165
2.13 Noise	166
No Build Alternative.....	167
2.14 Population and Housing	168
No Build Alternative.....	168
2.15 Public Services.....	169
No Build Alternative.....	169
2.16 Recreation.....	170
No Build Alternative.....	170
2.17 Transportation/Traffic.....	171
No Build Alternative.....	172
2.18 Tribal Cultural Resources	173
No Build Alternative.....	174
2.19 Utilities and Service Systems.....	175
No Build Alternative.....	176
2.20 Wildfire	177
No Build Alternative.....	178
2.21 Mandatory Findings of Significance	179
Discussion of Environmental Evaluation Questions 2.21—Mandatory Findings of Significance	179

2.22	Cumulative Impacts.....	180
2.22.1	Aesthetics.....	180
2.22.2	Agriculture and Forest Resources	180
2.22.3	Air Quality.....	180
2.22.4	Biological Resources.....	181
2.22.5	Cultural Resources.....	181
2.22.6	Energy.....	181
2.22.7	Geology and Soils.....	181
2.22.8	Greenhouse Gas Emissions	181
2.22.9	Hazards and Hazardous Materials.....	181
2.22.10	Hydrology and Water Quality	182
2.22.11	Land Use and Planning.....	182
2.22.12	Mineral Resources	182
2.22.13	Noise	182
2.22.14	Population and Housing	182
2.22.15	Public Services.....	182
2.22.16	Recreation	182
2.22.17	Transportation/Traffic.....	182
2.22.18	Tribal Cultural Resources	183
2.22.19	Utilities and Service Systems.....	183
2.22.20	Wildfire	183
Chapter 3.	Coordination and Comments	184
	Coordination with Resource Agencies	184
Chapter 4.	List of Preparers	187
	California Department of Transportation, District 1.....	187
Chapter 5.	References	189
Appendix A.	Title VI Policy Statement	191
Appendix B.	Layouts of Proposed Work	193
Appendix C.	USFWS, NMFS, CNDDB, CNPS Species Lists	195

Appendix D.	Biological Surveys – Species, Personnel, and	
Dates.....		197

List of Tables and Figures

Table 1. Agency Approvals	15
Table 2 – Special Status Plants Potentially Occurring or Known to Occur in the Project Area...	52
Table 3 – Special-status Animals and Critical Habitat Potentially Occurring or Known to Occur in the Project Area	56
Table 4: Results from the June 20, 2018 and July 8, 2019 Sonobat Surveys and species preferred habitat.....	61
Table 5: Impacts to Riparian Communities.....	99
Table 6: Impacts to Non-Riparian Oak Woodlands within ESL.....	103
Table 7: Wetlands Identified within ESL	105
Table 8: Temporary and Permanent Impacts to WOUS/WOS as a Result of Project Activities	111
Table 9: Total GHG Emissions during Construction (US tons)	139
Figure 1. Project Location Map	13
Figure 2. Project Vicinity Map.....	14
Figure 3: Oak Woodlands within ESL.....	45
Figure 4: Riparian Communities within ESL	50
Figure 5: CC Chinook salmon distribution in the Russian River watershed.	66
Figure 6: CCC Coho salmon distribution in the Russian River watershed.	68
Figure 7: Suitable Nesting and Roosting Habitat Identified by USFWS Within and Near Project ESL.....	72
Figure 8: Proposed Riparian Habitat Within the ESL.....	98
Figure 9: Non-Riparian Oak Woodland Impacts Within ESL.....	104
Figure 10: U.S. 2016 Greenhouse Gas Emissions	136
Figure 11: California 2017 Greenhouse Gas Emissions	137
Figure 12: Change In California GDP, Population and GHG Emissions since 2000	137
Figure 13: California Climate Strategy.....	141



List of Abbreviated Terms

Abbreviation	Description
AB	Assembly Bill
ARB	Air Resources Board
BMPs	Best Management Practices
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CH ₄	methane
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CRHR	California Register of Historical Resources
CTP	California Transportation Plan
CWA	Clean Water Act
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GHG	greenhouse gas
H ₂ S	hydrogen sulfide
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
LCFS	low carbon fuel standard
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MMTC02e	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MS4s	Municipal Separate Storm Sewer Systems

Abbreviation	Description
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	Negative Declaration
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OHWM	Ordinary High-Water Mark
OPR	Office of Planning and Research
Pb	lead
PDT	Project Development Team
PM	particulate matter
PM _{2.5}	particles of 2.5 micrometers and smaller
PM ₁₀	particles of 10 micrometers or smaller
PM	post mile
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	Public Resources Code
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
SDC	Seismic Design Criteria
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLR	Sea Level Rise
SO ₂	sulfur dioxide
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDLs	Total Maximum Daily Loads
TMP	Traffic Management Plan
U.S. or US	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle Miles Traveled

Abbreviation	Description
WDRs	Waste Discharge Requirements
WQOs	Water Quality Objectives



Chapter 1. Proposed Project

1.1 Project History

The Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA). Caltrans proposes a bridge replacement project to remove the Russian River Bridge and Redwood Valley Undercrossing and construct a new crossing for State Route (SR) 20 along a new alignment. Figures 1 and 2 indicate the project location and vicinity maps.

The project initially proposed to either replace the bridge deck with widening on the existing alignment or to construct a new bridge(s) to the north or south of the existing alignment. The alternatives that proposed bridge deck replacement required a detour that would re-route SR-20 traffic to local county roads. It was determined that a long-term detour was infeasible due to traffic volumes, truck turning movements through local intersections, detour length, and impacts to surrounding schools. The detour would also involve significant reconstruction of the county roads and was not preferred by both Caltrans or Mendocino County. Consequently, the deck replacement only alternatives have since been eliminated. The only alternatives that meet the purpose and need involve new structures on a new alignment. These new structures on a new alignment are examined in this report. In the Project Scope Summary Report (PSSR) no alterations to the intersection of SR-20 and County Road 144 were proposed. However, due to the SR-20 realignment and to address collision concentrations, the intersection would be reconfigured to include larger radius curves and extended acceleration and deceleration lanes.

1.2 Project Description

Caltrans proposes to perform a complete bridge replacement of the Russian River Bridge (Bridge #10-182) and Redwood Valley Road Undercrossing (UC) (Bridge #10-183) on a new alignment, located along SR-20 in Mendocino County near Ukiah between post miles (PM) 33.3 to 34.4. To insure traffic would not be significantly impeded during construction, the existing structures and alignment would remain in place during construction. This would require that the new structure be on a new alignment south of the existing alignment. The alternatives involve additional work such as embankment cut/fill, paving bridge approaches, roadway realignment, and shoulder widening. Each alternative proposes the addition of acceleration and deceleration lanes with standard tapers for the intersection of SR-20 and County Road (CR) 144. Currently, the bridge deck has numerous transverse cracks leaving the bridge susceptible to punching shear failure.

Project Objectives (Purpose and Need)

The purpose of this project is to improve the bridge deck integrity of the Russian River Bridge and Redwood Valley UC.

The Russian River Bridge has been identified as needing a deck replacement per Structure Maintenance and Investigations Structure Replacement and Improvement Needs recommendation. The composite cast-in-place/reinforced concrete (CIP/RC) deck has numerous transverse cracks, deck repairs are delaminating and failing in multiple locations, and there are numerous transverse soffit cracks with white and brown leachate. The number, pattern, and spacing of the cracks indicates areas of possible future punching shear failures. This project is needed to repair bridge deck deficiencies and reduce possible future punching shear failures. In addition, the shoulders are narrower than the 8-foot requirement.

Proposed Project

Caltrans proposes a bridge replacement project to remove the Russian River Bridge and Redwood Valley UC and construct a new crossing for SR-20 along a new alignment. The project description includes a discussion of the existing facility, preferred alternative, construction methodology, and other alternatives that were considered but have been eliminated from further discussion.

Existing Facility

The existing facility is a conventional 2-lane highway, with 12-foot lanes and 4 to 6-foot shoulders, along a 1300-foot-radius curve and is comprised of two structures separated by a fill prism. The structures are the Russian River Bridge and the Redwood Valley UC. In addition to the structures, the project area encompasses the CR-144 intersection immediately east of the Redwood Valley UC.

The Russian River Bridge was constructed in 1958 and was seismically retrofitted in 1997. The bridge is 440 feet long and spans the Russian River and a segment of the North Coast Rail Authority's (NCRA's) Northwestern Pacific Railroad. The bridge consists of simply-supported 4-span welded steel plate girders, and the deck is a CIP/RC structure. This type of bridge deck is constructed in its operating location, after construction of the piles, by pouring concrete over reinforcing steel rebar. The deck and underside of this bridge have numerous cracks that indicate areas of possible future punching shear failures. If a failure of this type occurs, the deck would be pushed down around the piles by its load (in this case, traveling vehicles). This would give the appearance that the piles punched through the deck.

The Redwood Valley UC was constructed in 1958 and was seismically retrofitted in 1996. It is a single span 4-tee beam bridge. The bridge is 115 feet long and spans Eastside Calpella Road. The bridge deck is a CIP/RC structure that has been recommended for replacement after routine structure health surveys.

Introduction to Project Alternatives

There is one build alternative, one “No Build” alternative, and three rejected alternatives for this project. The build and rejected alternatives are variations of the programmed alternative from the PSSR.

Alternative 1: One New Structure on New Southern Alignment

This alternative proposes to construct a single new bridge along a new alignment to the south of the existing bridges. The existing bridges would remain intact during construction to accommodate traffic and avoid a detour through local and county roads. The bridges would be removed after construction of the new structure. The new alignment would allow for standard acceleration and deceleration lanes at the intersection of SR-20 and CR-144 along with increased sight distance of the intersection.

The new alignment consists of a single 1600-foot radius curve along the bridge with standard superelevation transitions and rates. The profile essentially matches the existing profile but at a slightly higher elevation to achieve bridge clearance and vertical sight distance standards. The alignment provides a standard left-turn pocket taper and deceleration length, and standard acceleration lane taper and length for the intersection of SR-20 and CR-144. The intersection would be reconfigured to conform to the new SR-20 alignment. The turning movement lanes would also be redesigned to provide longer decelerations and acceleration lengths.

The new bridge is 860 feet in length and consists of a 7-span cast-in-place/prestressed concrete structure box girder structure. The spans vary from 105 feet to 145 feet in length. The western most roadway cross section of the bridge is 40 feet wide and consists of two 12-foot lanes and two 8-foot shoulders. The eastern most cross section is 64 feet wide and consists of a 12-foot east bound through lane, a 12-foot east bound left turn lane, a 12-foot west bound through lane, a 12-foot westbound acceleration lane, and two 8-foot shoulders.

The bridge would likely have driven H-piles assumed in 50-foot increments for the abutments and 24-inch cast-in-drilled-hole (CIDH) piles assumed to be in 35-foot increments for piers. Pending the upcoming Foundation Report, there is a high probability that the foundation at the piers would instead be driven piles. The railroad

requires a minimum 25-foot horizontal clearance from the centerline of the track to a pier foundation. The estimated number of structures-related working days for this alternative is 570 days with 442 for structures-related work.

The entire structure would be constructed without significantly impacting mainline traffic. Some stage construction would be required to tie in the new alignment to the existing roadway but traffic in both directions would be maintained during construction. The existing structures would be removed once the new alignment is operational.

The typical pavement structural section would consist of 0.2 feet Rubberized Hot Mix Asphalt-Gap Graded (RHMA-G), 0.35 feet Hot Mix Asphalt-Type A (HMA-A), and 1.55 feet of Aggregate Base (AB). Areas where the RHMA-G would not be applied are: CR-144 intersection, gore area, and CR-144 approach. In these areas an additional 0.2 feet of HMA-A would be used in place of the RHMA-G.

Additional work includes:

- Removing trees and vegetation
- Placing approximately 30,000 cubic yards of embankment fill at the eastern end of the bridge
- Constructing new roadway structural section
- Pavement grinding and overlay
- Reconstructing the CR-144 intersection with improved geometry for deceleration/acceleration lanes
- Installing westbound transition railing, end treatments, and Midwest Guardrail System
- Installing drainage inlets, culverts, over side drains, rock slope protection (RSP), and drainage ditches. This includes reconfiguring drainage patterns based on new alignment.
- Installing new signs and striping including gore striping
- Contour grading and replanting of existing fill prism of the existing roadway
- Repaving and shoulder widening on Eastside Calpella Road within the vicinity of the new bridge
- Removing existing bridges

- Removing base and asphalt concrete (AC) surfacing on the existing road
- Relocating overhead and underground utilities along Eastside Calpella Road
- Repaving and minor shoulder widening on Eastside Calpella Road within the vicinity of the new bridge.
- Removing existing bridges
- Removing the structural section of the existing road
- Relocating overhead and underground utilities along Eastside Calpella Road
- Removing culverts, inlets, and overside drains along the existing alignment
- Installing permanent Best Management Practices (BMPs) such as infiltration areas

Construction Methodology

This section discusses how construction of the project would occur.

Construction Staging and Access Roads

This project would be constructed in two stages. The first stage would construct the new structures, fill prisms, and the CR-144/SR-20 intersection while traffic continues to use the existing structures. The second stage would shift traffic to the new alignment and then demolish the existing Russian River Bridge and the Redwood Valley UC.

Staging areas would be necessary for the proposed bridge construction and demolition. The staging areas would include the large turnouts east of the project site on the south and north side of SR-20, the turnout between the US-101 northbound onramp and SR-20, the existing maintenance area north of the existing fill prism between the existing structures, and a portion of a commercial parcel to the south of the existing alignment of SR-20. The commercial parcel is currently a lumber yard, and access would be acquired through a temporary construction easement.

Currently, the NCRA's Northwestern Pacific Railway is not transporting freight trains. However, the NCRA considers the railway an active line, and during construction, any railway traffic would be able to move through the project site. During construction, a containment platform supported by falsework would be used to protect the railroad. The platform would span the railroad through the project area and allow rail traffic to continue to operate through a falsework opening. The platform would protect the railroad from any construction debris. Throughout the construction of the project, it

would be necessary for heavy equipment and construction vehicles to cross the railroad tracks. To protect the rails from damage from construction equipment, protective material would be placed adjacent to the rails to elevate the tires or treads of the equipment over the tracks, which would prevent the weight of the equipment from being applied directly on the rails.

A 50-foot-wide access road composed of placed rock would be required to construct the pier foundations and falsework. An additional clear distance of 50 feet adjacent to the access road would be required to construct falsework and safely conduct the bridge construction.

An access road would also be required to reach and demolish the piers below the existing Russian River Bridge. The demolition of the existing Redwood Valley UC would be performed from Eastside Calpella Road and the existing fill prisms and would not require new access roads.

Falsework and Trestles

Temporary trestles during construction may be required to provide additional mobility of equipment in the construction area. The exact dimensions, locations, and need for the trestles would be determined by the contractor during the construction phase. The supports for the trestles are assumed to be driven or drilled piles. Driven piles would be installed using an impact hammer attached to a pile driving rig. If the piles are drilled, a cofferdam would be required. The construction of cofferdams would require that sheet piles be vibrated into the river bottom to form a rectangular shape. The cofferdam would then be dewatered. If needed, a seal course of concrete would be placed at the bottom of the cofferdam to prevent intrusion of water into the cofferdam.

As part of the bridge construction process, falsework would be required to support the new bridge during construction. The falsework design would be determined by the construction contractor and would be dependent on the availability of materials and equipment. The falsework may span the Russian River and would require structure supports near or in the river. It is possible that the installation of falsework support locations may require cofferdams. In this case, the same cofferdam process outlined above would be used.

Demolition of Existing Structures

After the construction of the new structure is complete, traffic would be shifted to the new alignment and the existing bridges would be demolished. The removal of the existing bridge decks and girders would be accomplished from the existing bridge decks and an access road from the northern maintenance area. This work would be done

using small hand tools, an excavator mounted hoe ram, and a large crane to handle the steel girders.

The concrete piers and abutments would also be demolished. This work would be performed from the access road. Concrete pier towers are typically knocked to the ground using excavators with concrete rams. Once down, the pier towers would be broken apart and trucked away.

The foundations would be removed using concrete rams on excavators. All foundations would be removed, which would leave only the existing piles at a depth of 3 feet below the ground.

Excavation

Excavation and earth moving activities would be needed for construction of the project. The project would require both the cut of existing material and the fill of new material to construct the CR-144/SR-20 intersection. The intersection would be shifted southwest at approximately the same grade of the existing roadway.

Two new fill prisms that would be constructed for the project are discussed below:

A fill prism would be constructed on the west end of the new Russian River Bridge. This fill prism would be approximately 200 feet long and a maximum of 15 feet taller than the original ground. The south slope of the prism would extend 55 feet horizontally and 25 feet vertically from the new southern edge of pavement before reaching original ground. The north slope would extend approximately 10 feet horizontally and 10 feet vertically from the new northern edge of pavement before reaching original ground.

A fill prism would be constructed on the east end of the new Russian River Bridge. This fill prism would be approximately 250 feet long and a maximum of 35 feet above original ground. At the widest portion of its base, the east end of the new Russian River Bridge, the prism would be 190 feet wide. The prism would taper from its widest portion as it approaches the intersection, reaching a minimum width of approximately 100 feet, before widening again to accommodate the pavement area of the CR-144/SR-20 intersection. The north slope of the prism would extend 60 feet horizontally and 15 feet vertically from the new northern edge of pavement before reaching the existing fill prism east of the existing Redwood Valley UC, and the south slope of the prism would extend 60 feet horizontally and 30 feet vertically from the new southern edge of pavement before reaching original ground.

Some excavation would also be needed for the demolition of the existing structure and the old roadway.

Drainage

Construction of the project would require new drainage facilities as several culverts would be affected. Existing culverts would be relocated, extended, or removed based on the recommendations of Caltrans' hydraulics engineers and the Caltrans' Highway Design Manual. The design of the new stormwater facilities would be finalized during the design phase of the project.

Drainage patterns would remain the same with a slight alteration to a drainage channel to the west of Eastside Calpella Road where a bridge pier would be placed at an existing culvert outlet and channel location. A new culvert, outlet, and approximately 50 feet of new ditch/channel would be constructed to the south of the existing drainage system. The new channel would conform to the existing flow line, maintaining the existing flow patterns and outlet points.

Traffic Management

The project would be constructed off the existing alignment, making it possible for two-way traffic to remain active throughout most of construction. The movement of heavy equipment, work on the CR-144/SR-20 intersection, and the demolition of the two existing bridges could require reversing traffic control, intermittent closure, shoulder closure, and ramp closure on SR-20, CR-144, and Redwood Valley Road. The maximum delay anticipated from reversing traffic control would be 10 minutes, and the maximum delay from intermittent closures would be 20 minutes.

The project would take steps to minimize traffic impacts to the local area. Any emergency service agency whose ability to respond to incidents affected by traffic control would be notified prior to any closure. The local bus system would be notified to minimize impacts to their schedule. The Resident Engineer would provide information to residents and businesses before and during project work that could have a negative impact on commerce and travel. Bicyclists would be accommodated through the work zone, and during reversing traffic control, bicyclists would be instructed to join the vehicle queue.

Utilities

At the proposed project site, utility lines are present in several locations. An underground gas line runs parallel to the Northwest Pacific Railroad south of the project, before crossing under the existing Russian River Bridge at the west abutment. North of the bridges, the gas line turns 90 degrees and heads east, parallel to SR-20. Overhead telecom and electric lines are present in the project area along Eastside Calpella Road, across the existing Redwood Valley UC structure. Another telecom line is attached to

the Northwest Pacific Railroad trestle bridge. Underground water and telecom lines cross the project area near the Redwood Valley UC.

If the utility poles or lines conflict with the proposed work, they would be relocated or protected in place during construction. Caltrans would verify the location of any underground gas, electric, water, or sewer lines within the project area. Caltrans would coordinate with utility owners to relocate or protect utilities prior to construction.

Construction Equipment

Equipment anticipated to be used throughout construction includes the following:

- Excavation of existing material would be accomplished using an excavator. Excavated material would be temporarily removed from the jobsite via dump trucks. It would likely be returned to be repurposed as part of the structure backfill.
- Piles would be driven using a pile driving rig that would be positioned on the roadway prism. The pile rig would consist of a track mounted crane, pile leads, and a diesel hammer.
- CIDH piles would be drilled using a drill rig, baker tanks to supply and circulate polymer drilling slurry, a crane to place the rebar cage, and a concrete pump truck to place the concrete delivered by concrete trucks.
- Pouring the concrete footings, abutments, wingwalls, and columns would require the use of concrete trucks and a concrete pump truck.
- The backfill and grading operation would require the use of dump trucks to bring material in, a loader or excavator to help position the material, and a rolling compactor to compact the material.
- A crane would be needed throughout the process to lift rebar and framework material into place.
- A bidwell machine would be used for the deck pour to help work and finish the concrete. The bidwell machine is a bridge deck finishing machine that runs along tracks at the edge of deck.
- A paving machine would be brought in along with dump trucks carrying asphalt to place the approach asphalt and pave the new CR-144/SR-20 intersection.

Right-of-Way Impacts

The project would require permanent right-of-way (ROW) acquisition from four parcels totaling 2.76 acres (120,225.6 square feet). No displacements would occur. Three temporary construction easements would be required for construction access and equipment staging.

Access to properties adjacent to the project area would be maintained throughout construction.

Complete Streets

Caltrans' Complete Streets Directive promotes a transportation system that safely accommodates bicyclists, pedestrians and transit users. In the project vicinity, SR-20 serves a variety of traffic including local traffic, commuters, interregional freight, and seasonal tourism. All modes of transportation have been included in the proposed design to the extent feasible. The existing facility has 4-to-6-foot-wide shoulders that would be upgraded to standard 8-foot-wide shoulders, improving the functionality and safety of the roadway for motorists, bicyclists, and pedestrians. The increased shoulder width would also provide greater separation from vehicular traffic for both bicyclists and pedestrians; increasing safety for all users.

The proposed improvements account for the needs of everyone using the road, and the project funding, planning, design, maintenance, and operations are aligned with the goals of the Caltrans Complete Streets policy.

General Plan Description, Zoning, and Surrounding Land Uses

The project is located in Calpella, a census designated place in the Ukiah Valley. Land use and development in Calpella is governed by the Ukiah Valley Area Plan (UVAP), a comprehensive and long-range planning document that represents the vision and foresight of the people who live and work in the Ukiah Valley. Land use near the proposed project is designated in the UVAP as Agricultural, Industrial, Commercial, and Rural Residential. According to Mendocino County zoning maps, land near the proposed project is zoned as Public Facilities, Agriculture, Commercial, Industrial, and Rural Residential.

Throughout the project area SR-20 is classified as a two-lane conventional highway and is functionally classified as a Rural Principal Arterial. Rural Principal Arterials serve substantial statewide or interstate travel, and they provide service to all or virtually all urban areas with a population of 50,000 and over and a large majority of those with a population of 25,000 and over. Principal arterials provide an integrated transportation network without interrupted connections.

The project elevation is approximately 717 feet above mean sea level. The climate type is Mediterranean which is typified by wet, mild winters and hot, dry summers.

Habitat surrounding the proposed project is characterized by agricultural lands with developed roadways, non-vegetated staging areas, streams, and riparian habitat.

Alternatives Considered but Eliminated from Further Consideration

Both alternatives 2A and 2B were rejected and therefore eliminated from further study due to the following reasons:

In July 2019, the project development team (PDT) recommended to formally eliminate two northern alignment alternatives. The non-standard geometric features were analyzed and discussed by the PDT functional units and it was decided that the design features such as the smaller curve radius, reversing curves, and intersection configuration associated with the northern alignments were not desirable. The northern alignment creates a smaller radius curve on the structure than currently exists and a short, reversing curve near the US-101 onramp is necessary to connect the new curve to the existing road. Building a structure with a 75 to 100-year design life to non-standard roadway geometry is not preferred. In addition, the northern alignment alternatives require ROW acquisition from a property which would significantly delay project construction.

Alternative 2A: Two New Structures on New Northern Alignment

This alternative proposed to replace both bridges with two new bridges separated by a fill prism along a new alignment to the north of the existing alignment. The existing bridges would remain intact during construction to accommodate traffic and avoid a detour through local and county roads. The existing bridges would be removed after construction of the new structure.

Alternative 2B: One New Structure on New Northern Alignment

This alternative proposed to replace both bridges with a single bridge along a new alignment to the north of the existing alignment. The existing bridges would remain intact during construction to accommodate traffic and avoid a detour through local and county roads. The existing bridges would be removed after construction of the new structure.

Alternative 3: No Build

The third alternative is a no build alternative that would keep the existing structures in place and unchanged. The alternative has been rejected as it does not meet the purpose and need of the project.

Value Analysis Summary

A Value Analysis (VA) study was conducted for the project. The VA study was conducted in May 2019. The purpose of this analysis was to assess the elements of cost, performance, time, and risk as they relate to project value. The VA team identified and developed six VA alternatives and eleven VA design recommendations.

The objectives of the VA study were to:

- Analyze the current project design, estimate, and schedule.
- Provide possible cost and/or schedule-saving recommendations.
- Provide performance improvement recommendations.
- Consider proposed new alignments of bridges and roadways and.
- Consider improvements to traffic operations and roadway safety.

At the completion of the study, the PDT, through executive staff concurrence, selected an alternative for further study and confirmed the rejection of the other five VA alternatives.

The baseline concept for the selected alternative includes six bridge bents. Bents are a type of support for the bridge piles. The alternative concept proposes to consider single column bents in lieu of two column bents where possible. The PDT members determined that additional analysis would be required to determine if the concept is feasible. This work would be done in the design phase.

Project Maps

Figures 1 and 2 provide the project location and vicinity maps. Project layouts can be found in Appendix B.

Figure 1. Project Location Map



1.3 Permits and Approvals Needed

The project would require the following permits, licenses, agreements, and certifications listed in Table 1.

Table 1. Agency Approvals

Agency	Permit/Approval	Status
California Department of Fish and Wildlife (CDFW)	1602 Lake and Streambed Alteration Agreement (LSAA)	Would be completed in the next project phase
North Coast Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification	Would be completed in the next project phase
U.S. Army Corps of Engineers (USACE)	Section 404 Nationwide 14	Would be completed in the next project phase
U.S. Fish and Wildlife Service (USFWS)	Letter of Concurrence (LOC)	In progress
National Marine Fisheries Service (NMFS)	Programmatic Biological Opinion (BO)	In progress

1.4 Standard Measures and Best Management Practices

1.4.1 Utilities and Emergency Services

UE-1: All emergency response agencies in the project area would be notified of the project construction schedule and would have access to SR-20 throughout the construction period.

UE-2: Caltrans would coordinate with the utility providers before relocation of any utilities to ensure potentially affected utility customers would be notified of potential service disruptions before relocations.

1.4.2 Traffic and Transportation

TT-1: Pedestrian and bicycle access would be maintained during construction.

TT-2: The Contractor would be required to reduce any access delays to driveways or public roadways within or near the work zones.

TT-3: A Traffic Management Plan (TMP) would be applied to project.

1.4.3 Visual Aesthetics

VA-1: Riparian and wetland areas impacted by construction would be replanted with regionally appropriate native plants.

VA-2: Any temporary access roads would be restored to a natural contour and revegetated with appropriate native plants. Plant species and locations would be developed by the project landscape architect and biologist.

VA-3: Alterations to the existing contours of any temporary construction staging areas created by the contractor would be graded to previous conditions and revegetated with appropriate native plants.

VA-4: Tree removal would be limited to the maximum extent feasible.

1.4.4 Cultural Resources

CR-1: If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer.

CR-2: If human remains are discovered, State Health and Safety Code § 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner be contacted. Pursuant to CA Public Resources Code (PRC) § 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) who would then notify the Most Likely Descendent (MLD).

At this time, the person who discovered the remains would contact the Environmental Senior and Professionally Qualified Staff so they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC § 5097.98 would be followed as applicable.

1.4.5 Hydrology and Floodplain

HF-1: Bridge soffit elevation would not be lower than the existing bridge in order to maintain the existing freeboard provided and not alter existing hydrology.

HF-2: Existing bridge pilings would be removed, which would provide less resistance and blockage of water moving downstream in a flood event.

1.4.6 Water Quality and Stormwater Runoff

WQ-1: The project would comply with the provisions of the Caltrans' Statewide National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit (Order 2012-0011-DWQ), which became effective July 1, 2013, and the NPDES Construction General Permit (Order 2009-0009-DWQ) which became effective July 1, 2010.

Before any ground-disturbing activities, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) (per the Construction General Permit Order 2009-0009-DWQ) that includes erosion control measures and construction waste containment measures so that waters of the State are protected during and after project construction.

The SWPPP would identify all potential sources of pollutants that may affect the quality of stormwater; including construction site BMPs to control sedimentation, erosion, and potential chemical pollutants; providing for construction materials management; including non-stormwater BMPs; and including routine inspections and a monitoring and reporting plan. All construction site BMPs would follow the latest edition of the Caltrans' *Stormwater Quality Handbooks: Construction Site BMPs Manual* to control and reduce the impacts of construction-related activities, materials, and pollutants on the watershed.

The project SWPPP would be continuously updated to adapt to changing site conditions during the construction phase.

Construction would likely require the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Water would be removed by means of dewatering the individual pipe piles or cofferdams.
- Water generated from the dewatering operations would be trucked off-site to an appropriate facility, treated and used on-site for dust control and/or discharged to an infiltration basin, or used to irrigate agricultural lands.
- Fiber rolls or silt fences would be installed.
- Existing vegetated areas would be maintained to the maximum extent practicable.

- Clearing, grubbing, and excavation would be limited to specific locations, as delineated on the plans, to maximize the preservation of existing vegetation.
- Vegetation reestablishment or other stabilization measures would be implemented on disturbed soil areas, per the Erosion Control Plans.
- Soil disturbing work would be limited during the rainy season.

Additionally, permanent BMPs would be implemented as part of the project and would include erosion control fabric or netting and hydroseeding to stabilize newly graded slopes and climate appropriate landscaping to reduce runoff and promote surface infiltration of runoff.

WQ-2: The project would incorporate pollution prevention and design measures consistent with the 2016 Caltrans' Statewide Stormwater Management Plan to meet Water Quality Objectives (WQOs). This plan complies with the requirements of the Caltrans' Statewide NPDES MS4 Permit (Order 2012-0011-DWQ).

The project design would likely include the following permanent stormwater treatment BMPs:

- Vegetated surfaces would feature native plants and revegetation would use a seed mixture, mulch, tackifier, and fertilizer combination recommended in the Erosion Control Plans prepared for the project.
- Existing roadway and bridge drainage systems currently discharge stormwater to receiving waters through bridge deck drains and/or discharge to vegetated slopes adjacent to the highway facility. The current design for stormwater management, post construction, is to perpetuate existing drainage patterns. Stormwater will continue to sheet flow to vegetated slopes providing stormwater treatment in accordance with Caltrans NPDES MS4 Permit.

WQ-3: A temporary water diversion would be necessary in the Russian River to construct the bridge foundation and cofferdams, which may need to be dewatered during pier retrofit and catcher bent construction. The contractor would be required to prepare and submit a Construction Site Dewatering/Diversion Plan to Caltrans for approval prior to any dewatering. Depending on site conditions, the plan may also require specifications for the relocation of sensitive aquatic species. Water generated from the dewatering operations would be pumped and discharged according to the approved plan and federal, state, or local regulations.

1.4.7 Hazardous Waste and Material

HW-1: Per Caltrans requirements, the contractor would prepare a project-specific Lead Compliance Plan (CCR Title 8, § 1532.1, the “Lead in Construction” standard) to reduce worker exposure to lead-impacted soil. The plan would include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

HW-2: Low levels of aurally 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.”

HW-3: 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”.

HW-4: 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 and guardrail. 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”.

HW-5: The existing structures were originally built in 1958, and it is possible that they were constructed using asbestos containing material and lead containing paint. Later in the project development process, a structural survey would be conducted that would determine whether special materials handling, worker health and safety training, and/or abatement would be required during construction.

1.4.8 Geology and Seismic/Topography

GS-1: The project would be designed to minimize slope failure, settlement, and erosion using recommended construction techniques and BMPs. New slopes would be revegetated to reduce erosion potential.

GS-2: Temporary construction site BMPs including fiber rolls, silt fences, temporary gravel bag berms, stabilized entrances/exits to construction areas, temporary cover for stockpiles, streambed stabilization, and street sweeping would be implemented as necessary to reduce the amount of erosion and topsoil loss. In addition to temporary BMPs, permanent BMPs would be implemented to final slopes and disturbed areas. Erosion control fabric or netting and hydroseed would be used to

stabilize newly graded slopes. Climate appropriate landscaping that reduces runoff and promotes surface infiltration would be planted prior to completion construction.

GS-3: In the unlikely event that fossils were encountered during project excavations, Caltrans' Standard Specification 14-7 would be followed. This standard specification states that if unanticipated paleontological resources were discovered, all work within 60 feet would stop, the area around the fossil would be protected, and the Resident Engineer would be notified.

1.4.9 Wetlands and Other Waters

WW-1: The contractor would be required to place temporary barrier fencing along the boundaries of all riparian, wetland or other environmentally sensitive areas adjacent to the project footprint.

WW-2: Impacts to waters and riparian vegetation would be reduced by incorporating the measures identified in the Biological Resources Section.

WW-3: Caltrans would be required to restore wetland and riparian areas temporarily impacted by construction to pre-existing conditions prior to completion of construction.

1.4.10 Threatened and Endangered Species

TS-1: To protect the most vulnerable life stages of sensitive fish species that occur within the project area, in-stream work would be restricted to the period between June 15 and October 15. Construction activities restricted to this period include any work within the bed, bank or channel.

TS-2: Prior to any construction activities or grading below the Ordinary High-Water Mark (OHWM) of the Russian River or within the associated drainages, a qualified Contractor Supplied Biologist (CSB) would survey the anticipated work area for the presence of foothill yellow-legged frog (FYLF), western pond turtle (WPT), and any other potentially present aquatic species. Any frogs or turtles located would have a temporary disturbance buffer of 25 feet until the animal vacates the area. If the animal is in imminent danger or expected to delay construction, then the animal may be safely relocated to suitable habitat outside the project area.

A qualified biologist would monitor all construction activities in jurisdictional waters, and be present during dewatering activities, drilling, concrete pours, and road grading to ensure adherence to all environmental permit conditions and avoidance and minimization measures during construction.

TS-3: The pre-construction meeting with the contractor would consist of a briefing on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, construction site management, and how to identify and report regulated species within the project areas.

TS-4: Artificial night lighting may be required. The use of artificial lighting would be temporary and of short duration, deflectors would be used, and lighting would be directed away from the channel and focused specifically on the portion of the bridge actively under construction to reduce potential disturbance to sensitive species. To reduce the effects of artificial light on sensitive biological resources, use near watercourses would be limited to critical need (i.e., due to accelerated work schedule to meet permit deadlines or reaching a critical juncture in work at a time when it would be infeasible to stop construction).

TS-5: Hydroacoustic monitoring would be conducted during all construction activities that have the potential to produce impulsive sound waves within the Russian River. This may include work associated with the temporary access route that may require pile driving (land based). Hydroacoustic monitoring would ensure compliance with the terms and conditions resulting from Section 7 consultation with NMFS and provide an opportunity to adopt alternative construction methods to avoid or minimize project impacts where feasible.

A hydroacoustic monitoring plan would be prepared prior to construction that addresses the frequency of monitoring, positions that hydrophones would be deployed, and techniques for gathering and analyzing acoustic data, quality control measures, and reporting activities.

TS-6: Fish relocation would be performed as described under AS-4.

1.4.11 Plant Species

PS-1: After all construction materials are removed, the project area would be revegetated. Replanting would be subject to a plant establishment period as defined by project permits, which would require Caltrans to adequately water plants, replace unsuitable plants, and control pests. Caltrans would implement a program of invasive weed control in all areas of soil disturbance caused by construction to improve habitat for native species in and adjacent to disturbed soil areas within the project limits.

PS-2: The contractor would be required to place temporary barrier fencing along the boundaries of all riparian, wetland or other environmentally sensitive areas to avoid impacts to sensitive habitats that occur adjacent to the project footprint.

1.4.12 *Animal Species*

AS-1: Vegetation removal would be restricted to the period outside the bird breeding season (October 1 through January 31) or, if vegetation removal is required during the breeding season, a nesting bird survey would be conducted within one week of disturbance by a qualified biologist. If an active nest is located, the biologist would coordinate with CDFW to establish appropriate species-specific buffer(s) and any monitoring requirements. The buffer(s) would be delineated around each active nest and construction activities would be excluded from these areas until the nest is no longer occupied.

AS-2: Partially constructed and unoccupied nests within the construction area would be removed and disposed of on a regular basis throughout the breeding season (February 1 to September 30) to prevent their occupation. Nest removal would be repeated weekly under guidance of a qualified biologist to ensure nests are inactive prior to removal. Removed nest material would be prevented from falling into waterways. Exclusionary devices would not be used to prevent birds nesting on the existing bridge structures as these devices have the potential to entrap or harm night roosting bats. A bat exclusion plan would be developed for this project. Exclusion devices would be installed after the maternity season but before hibernation. Exclusion devices would be installed and monitored by a CSB.

AS-3: Pre-construction surveys for active raptor nests within one-fourth mile of the project area would be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed would be limited to those areas subject to increased disturbance because of construction activities (i.e., areas where existing traffic or human activity is greater than or equal to construction-related disturbance need not be surveyed). If any active raptor nests were identified, appropriate conservation measures (as determined by a qualified biologist) would be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities near the active nest site until the nest is no longer occupied.

AS-4: Construction of the temporary water diversion would likely require exclusion, capture, and relocation of aquatic species occurring within the dewatered area. The contractor would be required to include an Aquatic Species Relocation Plan as part

of the Construction Site Dewatering and Diversion Plan to Caltrans for approval prior to any dewatering and diversion. The plan would clearly outline the methods for dewatering and aquatic species relocation. Fish exclusion and relocation would likely be conducted using seining gear, electrofishing gear, or dip nets. If electrofishing is required, it would be performed by a qualified fisheries biologist with appropriate training and experience in electrofishing techniques. Electrofishing for salmonids would comply with *Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act*, and any seining or other capture and removal techniques would adhere to the *California Salmonid Stream Habitat Restoration Manual*.

All salmonids removed from the work area would be relocated to nearby suitable habitat downstream of the diversion. If unexpected life stages are observed (e.g., adults or smolts), or unforeseen injury or mortality of salmonids occurs, project activities would cease and NMFS and CDFW would be contacted immediately. Once aquatic species have been relocated from the work area, the diversion would be constructed. The proposed diversion may consist of one or a series of pipes laid side by side along the west bank of the creek and buried with clean gravel. A combination of plastic liner, gravel bags, a water bladder, and/or other impermeable materials would be used to direct water through the culvert. Because sufficient head flow is anticipated through the diversion, gravity, rather than pumping, would carry water through the pipe(s). To fully assess any fish not captured during initial efforts and to avoid stranding, dewatering drawdown would occur incrementally. The diversion area may be electrofished a second time after the dam is placed and water levels drop to capture any fish that remain. Additional clean gravel may be added to the stream bed over RSP fabric to establish a flat working surface where needed under the bridge.

The plan would also include provisions for a pre-construction survey by a qualified biologist for WPT, and FYLF. Any turtle nests located would be marked for avoidance. Any frogs, tadpoles, and egg masses found during the initial survey would be safely netted and relocated to suitable habitat downstream of the project area by the biologist prior to conducting electrofishing for salmonids or lamprey. Gravel or any other material for construction purposes would be introduced slowly starting upstream, giving frogs an opportunity to escape downstream. The biologist would be present during all phases of in-stream construction to assist with relocation efforts as they arise.

1.4.13 Invasive Species

The standard measures described in PS-1 for restoring the project site post construction are also appropriate for the control of invasive species.

IS-1: After all construction materials are removed, the project area would be restored to a natural setting by grading, placing erosion control, and replanting. Replanting would be subject to a plant establishment period as defined by project permits, which would require Caltrans to adequately water plants, replace unsuitable plants, and control pests. Caltrans would implement a program of invasive weed control in all areas of soil disturbance caused by construction to improve habitat for native species in and adjacent to disturbed soil areas within the project limits.

IS-2: Plant species used for erosion control would consist of native species or non-persistent hybrids that would prevent invasive species from colonizing disturbed area.

IS-3: Gravel and/or fill material to be placed in relatively weed-free areas would come from weed-free sources.

1.5 Discussion of the NEPA Categorical Exclusion

This document contains information regarding compliance with CEQA and other state laws and regulations. Separate environmental documentation, supporting a Categorical Exclusion (CE) determination, would be prepared in accordance with the National Environmental Policy Act (NEPA). When needed for clarity, or as required by CEQA, this document may contain references to federal laws and/or regulations (CEQA, for example, requires consideration of adverse effects on species identified as a candidate, sensitive, or special-status species by the NMFS and the USFWS—in other words, species protected by the Federal Endangered Species Act).

Chapter 2 CEQA Environmental Checklist

Environmental Factors Potentially Affected

The environmental factors noted below would be potentially affected by this project. Please see the CEQA checklist on the following pages for additional information.

Potential Impact Area	Impacted: Yes / No
Aesthetics	Yes
Agriculture and Forestry	No
Air Quality	Yes
Biological Resources	Yes
Cultural Resources	Yes
Energy	No
Geology/Soils	Yes
Greenhouse Gas Emissions	Yes
Hazards and Hazardous Materials	Yes
Hydrology/Water Quality	Yes
Land Use/Planning	No
Mineral Resources	No
Noise	No
Population/Housing	No
Public Services	No
Recreation	No
Transportation/Traffic	No
Tribal Cultural Resources	No
Utilities/Service Systems	No
Wildfire	No
Mandatory Findings of Significance	Yes

The CEQA Environmental Checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the project would indicate there are no impacts to a particular resource. A NO IMPACT answer in the last column of the checklist reflects this determination. The words “significant” and “significance” used throughout the checklist and this document are only related to potential impacts pursuant to CEQA.

The questions in the CEQA 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, as well as standard measures that are applied to all or most Caltrans' projects (such as 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 in the checklist or document.

Project Impact Analysis Under CEQA for Initial Study

CEQA broadly defines “project” to include “*the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment*” (14 CCR § 15378). Under CEQA, normally the baseline for environmental impact analysis consists of the existing conditions at the time the environmental studies began. However, it is important to choose the baseline that most meaningfully informs decision-makers and the public of the project's possible impacts. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record. The CEQA Guidelines require a “statement of objectives sought by the proposed project” (14 CCR § 15124(b)).

CEQA requires the identification of each potentially “significant effect on the environment” resulting from the action, and ways to mitigate each significant effect. Significance is defined as “*Substantial or potentially substantial adverse change to any of the physical conditions within the area affected by the project*” (14 CCR § 15382). CEQA determinations are made prior to and separate from the development of mitigation measures for the project.

The legal standard for determining the significance of impacts is whether a “fair argument” can be made that a “substantial adverse change in physical conditions” would occur. The fair argument must be backed by substantial evidence including facts, reasonable assumption predicated upon fact, or expert opinion supported by facts. Generally, an environmental professional with specific training in a particular area of environmental review can make this determination.

Though not required, CEQA suggests Lead Agencies adopt **thresholds of significance**, which define the level of effect above which the Lead Agency would consider impacts to be significant, and below which it would consider impacts to be less than significant. Given the size of California and its varied, diverse, and complex ecosystems, as a Lead Agency that encompasses the entire State, developing **thresholds of significance** on a state-wide basis has not been pursued by Caltrans. Rather, to ensure each resource is evaluated objectively, Caltrans analyzes potential resource impacts based on their location and the effect of the potential impact on the resource as a whole in the project area. For example, if a project has the potential to impact 0.10 acre of wetland in a watershed that has minimal development and contains thousands of acres of wetland, then a “less than significant” determination would be considered appropriate. In comparison, if 0.10 acre of wetland would be impacted that is located within a park in a city that only has 1.00 acre of total wetland, then the 0.10 acre of wetland impact could be considered “significant.”

If the action may have a potentially significant effect on any environmental resource (even with mitigation measures implemented), then an Environmental Impact Report (EIR) must be prepared. Under CEQA, the lead agency may adopt a negative declaration (ND) if there is no substantial evidence that the project may have a potentially significant effect on the environment (14 CCR § 15070(a)). A proposed negative declaration must be circulated for public review, along with a document known as an Initial Study (IS). CEQA allows for a “mitigated negative declaration” in which mitigation measures are proposed to reduce potentially significant effects to less than significant (14 CCR § 15369.5).

Although the formulation of mitigation measures shall not be deferred until some future time, the specific details of a mitigation measure may be developed after project approval when it is impractical or infeasible to include those details during the project’s environmental review. The lead agency must (1) commit itself to the mitigation, (2) adopt specific performance standards the mitigation would achieve, and (3) identify the type(s) of potential action(s) that can feasibly achieve that performance standard and that would be considered, analyzed, and potentially incorporated in the mitigation measure. Compliance with a regulatory permit or other similar process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards (§15126.4(a)(1)(B)). Per CEQA, measures may also be adopted, but are not required, for environmental impacts that are not found to be significant (14 CCR § 15126.4(a)(3)). Under CEQA, mitigation is defined as avoiding, minimizing, rectifying, reducing, and compensating for any potential impacts (CEQA 15370).

Regulatory agencies may require additional measures beyond those required for compliance with CEQA. Though not considered “mitigation” under CEQA, these measures are often referred to in an Initial Study as “mitigation”, Good Stewardship or BMPs. These measures can also be identified after the IS/ND is approved.

CEQA documents must consider direct and indirect impacts of a project (CAL. PUB. RES. CODE § 21065.3). They are to focus on significant impacts (14 CCR § 15126.2(a)). Impacts that are less than significant need only be briefly described (14 CCR § 15128). All potentially significant effects must be addressed.

2.1 Aesthetics

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Have a substantial adverse effect on a scenic vista?	No	No	No	Yes
Would the project: b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No	No	Yes	No
Would the project: 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?	No	No	Yes	No
Would the project: d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No	No	No	Yes

“No Impact” and “Less Than Significant Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Visual Impact Assessment dated November 5, 2019.

Regulatory Setting

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

Environmental Setting

SR-20 is eligible for designation as a State Scenic Highway from the coast in Fort Bragg to Colusa County. The bridge is located less than half a mile east of the US-101/SR-20 junction and approximately six miles north of Ukiah. The route is generally curvilinear and characterized by mountainous terrain. The land use type is considered

undeveloped land, with some scattered rural residential development, agricultural, and recreational use. The project is in the Northern California Coast Ranges as part of the Section of California Eco-regions. Oak woodlands, chaparral, and grassland border the highway corridor east and west of the bridge. Riparian vegetation and agricultural land along and adjacent to the Russian River are seen north and south of the bridge. A mill yard is located in the southern viewshed from the bridge, and agricultural land is within the northern viewshed. Lake Mendocino, a recreational reservoir, is located two miles southeast of the bridge. The region is characterized by a Mediterranean climate of hot dry summers and cool moist winters.

Discussion of Environmental Evaluation Questions 2.1—Aesthetics

a) SR-20 provides some areas that could potentially be considered a vista point along the main roadway. 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) Within the project area, SR-20 is listed as an Eligible State Scenic Highway. Within the project limits, the most notable scenic resources are the natural roadside vegetation, the Russian River, and views of surrounding hills, vineyards and riparian vegetation along the river. Although the project includes tree and vegetation removal, on- and off-site restoration/mitigation of riparian and oak woodland habitat would occur, reducing the project's visual impact to less than significant. No significant quantities of landscape features would be removed that would potentially affect SR-20's eligibility as a State Scenic Highway.

c) The project corridor travels through oak woodlands, agricultural land, and crosses the Russian River. Within the existing corridor, dense vegetation blocks outward views and therefore the dominant view is of the highway. Though the site would remain an active roadway, the project would remove many of the pattern attributes and characteristics that contribute to the visual experience of the highway. However, the on-site habitat restoration, inclusion of a pattern on the bridge railing, and coloring of the galvanized chain link fencing is expected to reduce permanent visual quality effects. 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 as to not necessitate nighttime illumination sources. Any potential for light and glare would be temporary and all temporary construction activities that require nighttime illumination sources for staging, access, or other construction activities shall comply with Caltrans' Standard Specification 7-1.04, "Public Safety". Fencing is required on the bridge above the railroad tracks, consisting of chain link fence, colored either green,

brown, or black to reduce reflectivity and recede into the landscape. Therefore, no substantial new source of lighting or glare is proposed as part of the project.

Mitigation Measures

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “*No Impact*” would occur.

2.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No	No	No	Yes
Would the project: b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No	No	No	Yes
Would the project: c) Conflict with existing zoning, 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))?	No	No	No	Yes
Would the project: d) Result in the loss of forest land or conversion of forest land to non-forest use?	No	No	No	Yes

Would the project: 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?	No	No	No	Yes
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“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the California Department of Conservation Farmland Maps and Natural Resources Conservation Service Soil Survey. Potential impacts to Agriculture and Forest Resources are not anticipated due to the following:

- a) Although permanent acquisition of land is anticipated as part of this project, no Prime Farmland would be acquired. Land classified as Prime Farmland is located to the north of the existing SR-20 alignment. The proposed alignment would shift SR-20 to the south, away from Prime Farmland. 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) No forest land, timberland, or timberland zoned Timberland Production was identified within the project limits.
- d) No forest land was identified within the project limits, and no conversion of forest land to non-forest use is associated with this project.
- e) There would be no other changes to farmland or forest land.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.3 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.

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Conflict with or obstruct implementation of the applicable air quality plan?	No	No	No	Yes
Would the project: 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?	No	No	No	Yes
Would the project: c) Expose sensitive receptors to substantial pollutant concentrations?	No	No	No	Yes
Would the project: d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No	No	Yes	No

“No Impact” and “Less Than Significant” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Noise, Air Quality, Greenhouse Gas, and Energy Analysis dated July 23, 2019. There would be temporary construction emissions associated with the project. Please see Section 2.8 – Greenhouse Gas Emissions for more information.

Regulatory Setting

The Federal Clean Air Act (CAA), as amended, is the primary federal law that governs air quality, while the California Clean Air Act is its corresponding state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards (CAAQS) have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), which is broken down for regulatory

purposes into particles of 10 micrometers or smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}), and sulfur dioxide (SO₂). In addition, national and state standards exist for lead (Pb) and state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The NAAQS and CAAQS are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA. In addition to this environmental analysis, a parallel “conformity” requirement under the CAA also applies.

The project area is in attainment for federal and state criteria pollutants O₃, PM₁₀, and PM_{2.5}, and is in unclassified status for all other criteria pollutants (Mendocino County Air Pollution Control District).

Environmental Setting

The proposed project is located in Mendocino County. Mendocino County is designated as attainment or is unclassified for all current National Ambient Air Quality Standards.

Discussion of Environmental Evaluation Questions 2.3—Air Quality

a - c) Mendocino County is designated as in attainment or unclassified for all current NAAQS. 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 and therefore, would have no impact to air quality.

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. Fugitive dust, sometimes referred to as windblown dust or PM₁₀, would be the primary short-term construction impact, which may be generated during excavation, grading and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature. Dust and emissions are reduced and controlled according to Caltrans’ 2015 Standard Specifications, under the Section 10-5 “Dust Control”, Section 14-9 “Air Quality” and Section 18 “Dust Palliatives.” Due to the above information, there would be a “Less Than Significant” impact to air quality.

Mitigation Measures

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.4 Biological Resources

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	No	Yes	No	No
Would the project: b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No	Yes	No	No
Would the project: 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?	No	Yes	No	No
Would the project: 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?	No	No	Yes	No
Would the project: e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No	No	Yes	No
Would the project: 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?	No	No	No	Yes

“No Impact,” “Less Than Significant Impact,” and “Less Than Significant with Mitigation” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Natural Environment Study.

Regulatory Setting

Natural Communities

CDFW has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Fish & Game Code, § 1802). CDFW, as a trustee agency under CEQA Guidelines Section 15386, provides expertise in reviewing and commenting on environmental documents and provides protocols regarding potential negative impacts to those resources held in trust for the people of California.

CDFW maintains records of sensitive natural communities in the California Natural Diversity Database (CNDDDB). Natural Communities of Special Concern (NCSC) are those natural communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status taxa and their habitat. High priority NCSC are globally (G) and state (S) ranked 1 to 3, where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. Global and state ranks of 4 and 5 are considered apparently secure and demonstrably secure, respectively. Natural communities with ranks of S1-S3 are to be addressed in the environmental review processes of CEQA and its equivalents.

Wetlands and waters of the U.S. are also considered sensitive by both federal and state agencies, which are discussed in more detail below.

Wetlands, Other Waters, and Adjacent Riparian Vegetation

FEDERAL

Waters of the United States (including wetlands) 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 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. Include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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 USACE with oversight by the U.S. EPA.

The USACE issues two types of 404 permits: General and Individual. There are two 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 two 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 (EO) 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 the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction

and 2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

STATE

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the RWQCBs, and 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 (CFGF) require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would 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. Please see the Hydrology and Water Quality section for additional details.

Plant Species

USFWS and 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). Please see the Threatened and Endangered Species Section in this document for detailed information regarding these species.

This section of the document discusses all the 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 United States Code 16 (USC), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Sections 1900–1913, and CEQA, found at California Public Resources Code, Sections 21000–21177.

Animal Species

Many state and federal laws regulate impacts to wildlife. The USFWS, National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries Service [NMFS]), and 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 Acts. Species listed or proposed for listing as threatened or endangered are discussed in the following section. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining 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

Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is FESA: 16 USC Section 1531, et seq. See also 50 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 FHWA (and Caltrans, as assigned), are required to consult with the USFWS and NMFS to ensure 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 BO with an Incidental Take statement, a Letter of Concurrence, and/or documentation of a no effect finding. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, CESA, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. CDFW is the agency responsible for implementing CESA. Section 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 BO 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.

Invasive Species

On February 3, 1999, President William J. Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that

species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued August 10, 1999, directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the NEPA analysis for a proposed project.

Environmental Setting

US-101 runs in a north/south direction, entering the Russian River basin from the northwest in the area of Forsythe Creek and continuing along the middle reach, crossing over the river as it turns westward, north of Santa Rosa. SR-20 runs along the East Fork and crosses the mainstem south of Redwood Valley. The Calpella Bridge project is located immediately east of the intersection of SR-20 and US-101, approximately 9.5 linear miles south of the northern boundary of the Russian River watershed.

Vegetation composition within the watershed is comprised of coniferous (12%), Montane Hardwood (40%), Grassland (18%), and agricultural (13%). Dominant land uses include urban areas, agriculture, ranching, and gravel mining. Impairments to the watershed include sediment, temperature, nutrients, pathogens, and metals.

At the project location, the active channel of the Russian River is a perennial river that flows beneath the Russian River Bridge (Bridge # 10-182) and consists of low to medium riffles with substrate consisting of primarily cobbles, silt and woody debris. There are a series of lateral ephemeral channels that appear to exhibit flow through much of the winter rainy season and either dry up or pond by early to late spring. This river provides habitat for various species, such as anadromous fish and amphibians.

The project is located in the mountainous terrain of Mendocino County, which is characterized by high rainfall and mixed evergreen, mixed hardwood and redwood forests. The surrounding habitats include hardwoods such as California black oak (*Quercus kelloggii*), Coastal live oak (*Quercus agrifolia*), Oregon oak (*Quercus garryana*), Pacific madrone (*Arbutus menziesii*), big-leaf maple (*Acer marophyllum*), and Oregon ash (*Fraxinus latifolia*); coastal chaparral and scrub such as manzanita (*Arctostaphylos manzanita*), buck brush (*Ceanothus cuneatus* var. *cuneatus*), toyon (*Heteromeles arbutifolia*), and coyote brush (*Baccharis pilularis*); and open grassland areas including various herbaceous plants.

Habitat types within the Environmental Study Limit (ESL) vary greatly, with California black oak and big-leaf maple habitat northwest of the existing bridge;

to riparian habitat extending along the southwest and southeast of the Russian River. Oak woodlands, including manzanita species can be found east of Eastside Calpella Road.

Natural Communities

OAK WOODLANDS

Two oak woodland alliances were observed within the project vicinity, Coast Live Oak (*Quercus agrifolia*) Woodland Alliance and Valley Oak (*Quercus lobata*) Woodland Alliance. One other community identified within the ESL, the California Bay (*Umbellularia californica*) Forest Alliance also contains Coast live oak and California black oak (*Quercus kelloggii*), however, other dominant overstory species present within the community including California bay laurel (*U. californica*) and big-leaf maple (*Acer macrophyllum*) led to the community more closely representing the California Bay Laurel Alliance.

Within the ESL, approximately 10.43 acres of Coast live oak woodlands and 1.97 acres of valley oak woodland were observed. Valley oak dominant communities within the ESL exist largely between the Russian River and Eastside Calpella Road. and most closely identify with a sub-description of valley oak woodlands within the Northern California Interior Coast Ranges, which can occupy riparian benches and terraces. As a result, impacts to areas within the Valley Oak Woodland Alliance are discussed in the Riparian section and are not discussed in the Oak Woodland Project Impacts.



Figure 3: Oak Woodlands within ESL

Wetlands, Other Waters, and Adjacent Riparian Vegetation

WETLANDS

The methodology described in the USACE's *1987 Corps of Engineers Wetlands Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, May 2010, were used to delineate wetlands within the project ESL (portions of the action area outside the ESL were not surveyed for wetlands). The most current estimates of impacts to potentially jurisdictional wetlands, based on non-USACE-verified jurisdictional boundaries and the most current project design, are summarized in the discussion of the CEQA checklist below. A total of 0.69 acre of potentially jurisdictional wetlands were delineated within the project ESL. Access was denied to some portions of the ESL, as a result, additional wetlands may be present within areas of the ESL that have not been surveyed to date. It is anticipated that access would be granted in 2020 and that surveys within these areas would be completed in spring 2020.



Photos 1 and 2: Images taken July 10, 2019 and June 14, 2018, show potentially jurisdictional wetlands identified in the Biological Study Area (BSA) in the northwest and southeast areas, respectively.

Wetlands in the northwest section of the ESL appear to be influenced by irrigation of an orchard, located approximately 150 feet north of potentially jurisdictional wetlands. Potentially jurisdictional wetlands located in the southeast portion of the ESL appear to be influenced by a culvert outlet at PM 33.95 and a downed tree south of the culvert outlet (Photo 3 and 4). It appears a drainage channel existed from the culvert at PM 33.95 to the drainage at Eastside Calpella Road, however, due to excessive siltation and the downed tree, water flowing out of the culvert discharges into the property immediately south of the ROW.



Photos 3 and 4: Images taken February 2019 show the culvert outlet at PM 33.95 and the downed tree west of the culvert outlet.

OTHER WATERS

The Russian River is a perennial river that is approximately 110 miles long with headwaters north of Ukiah that flow southward to Forestville, emptying into the Pacific Ocean in Jenner, CA. At the project location, the active channel of the Russian River is approximately 50 feet wide with average depths ranging from 0.2 to 1.2 m (0.66 to 3.93 feet), although episodic periods of intense flooding do occur. The floodplain immediately west of the active channel of the Russian River extends approximately 94 feet from the west bank of the active channel and contains a series of lateral channels that convey water during high flow and exhibit an OHWM. Substrate within the river consists mainly of cobble, silt, and woody debris.



Photo 5: Image taken May 16, 2019 shows debris approximately three meters higher than the lateral channel west of the Russian River's active channel.

ADJACENT RIPARIAN VEGETATION

Within the ESL, a total of three riparian habitat communities, comprising approximately 2.82 acres were observed. A fourth habitat community, the Fremont Cottonwood Forest, is typically associated with riparian habitats, but was observed outside the riparian area. The community is described below, but is not included in overall riparian impacts. This Forest comprised approximately 0.161 acre within the ESL. Brief discussions of each community are provided below.

Valley Oak Riparian Forest

A Valley Oak riparian community exists east of the left bank of the Russian River to Eastside Calpella Road. This community is found on the north and south sides of the existing alignment, though it extends further south than north of the existing alignment within the ESL (Figure 4). The area south of the existing SR 20, sits at an elevation approximately 3 meters (10ft) higher than the OHWM of the Russian River (Photo 6). This area may experience some flooding during high water years and provides shade to an ephemeral drainage from Eastside Calpella Road that ultimately discharges into the Russian River. Within this community there are small isolated patches of non-native tree species including Osage orange (*Maclura pomifera*) and American elm (*Ulmus americana*).



Photo 6: Image of drop off point from Valley Oak Woodland to active channel of Russian River.

White Alder (*Alnus rhombifolia*) Forest Alliance

White alder is well adapted to many flood regimes. Stands exist usually on seasonally flooded stream banks and channel bars just at or below the bank full level, but they occur sometimes in intermittently flooded floodplains and rarely in permanently saturated seeps.

The white alder forest alliance comprises a majority of the community found within the Russian River floodplain and makes up approximately 0.815 acre of habitat within the ESL. Other dominant overstory and mid-story species observed within this community include Fremont cottonwood (*Populus fremontii*), sandbar willow (*Salix exigua*), black willow (*Salix gooddingii*), and California grape (*Vitis californica*).

Sandbar Willow Thickets

The sandbar willow thicket alliance is widespread and common throughout California, especially along seasonally or temporarily flowing streams and at seeps. It often forms dense clonal stands, though great variation exists regionally in shrub and understory composition, ranging from Sierran mountain meadows to those in Colorado Desert oases.

Although sandbar willow is a component of the other communities described above, this habitat alliance is found specifically on a small island between the active channel of the Russian River and a secondary channel immediately west of the active channel, south of the existing alignment. Within the ESL, this community comprises approximately 0.035 acre.

Fremont Cottonwood (*Populus fremontii*) Forest Alliance

Fremont cottonwood (*P. fremontii*) is a fast-growing, short-lived tree that is shade intolerant. Trees produce copious, wind-dispersed seeds in the spring that are viable for up to 5 days. Seeds germinate on moist alluvium and other recently disturbed sites and successfully establish in areas where subsurface water is available during the growing season. Although cottonwoods are components of other communities within the ESL, this particular community was observed in a non-riparian area, adjacent to a coast live oak community, located approximately 0.07 mile east of the intersection of SR-20 and Eastside Calpella Road. Within the ESL, this community is comprised largely of cottonwoods and arroyo willow (*Salix lasiolepis*) and encompasses approximately 0.16 acre.

This particular community does not appear to be associated with any state or federally jurisdictional areas and was not considered in impact assessment for riparian communities.



Figure 4: Riparian Communities within ESL

Plant Species

The plants listed in Table 2 are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring on site. No species listed in Table 2 were identified within the ESL, however, access was denied to some portions of the BSA until late spring/summer 2019, after all sensitive plant species had senesced. As a result, full floristic surveys for special status plant species could not be completed within the BSA during the appropriate times. It is anticipated that access would be granted in 2020 and that surveys within these previously restricted areas would be completed in spring 2020.

Northern California black walnut (*Juglans hindsii*) was identified within the ESL and is discussed in greater detail below. A list with effects determinations for all plant species with the potential to occur within the area are listed in Table 2.

NORTHERN CALIFORNIA BLACK WALNUT

Two Northern California black walnuts were observed within the ESL. The furthest northern extent of Northern California black is within Napa county, which is south of the project location. It is likely that this tree is outside of its natural distribution and may have originated from the rootstock of one of the local orchards near the project location. Several walnut orchards have been observed near the project site, including one immediately northwest of the project site, and several more along North State Street and County Road A.

Table 2 – Special Status Plants Potentially Occurring or Known to Occur in the Project Area

Scientific Name	Common Name	Federal/ State/ CNPS	Habitat	Present/ Absent	Rationale
Plants					
<i>Cypripedium californicum</i>	California lady's-slipper	-/-/List 4.2	Bogs and fens, lower montane coniferous forest/seeps and streambanks, usually serpentinite.	Absent	No Impact. Suitable habitat not present within ESL
<i>Cypripedium montanum</i>	Mountain lady's-slipper	-/-/List 4.2	Broad-leafed upland forest, Cismontane woodland, lower montane coniferous forest, North Coast coniferous forest.	Absent	No Impact. Species not observed during surveys.
<i>Lasthenia burkei</i>	Burke's goldfields	E/E/List 1B.1	Meadows and seeps (mesic), vernal pools.	Absent	No Effect. Suitable habitat not present within ESL.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	E/-/List 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/mesic.	Absent	No Effect. Suitable habitat not present within ESL.
<i>Limnanthes bakeri</i>	Baker's meadowfoam	-/R/List 1B.1	Meadows and seeps, marshes and swamps (freshwater), valley and foothill grassland (vernally mesic), vernal pools.	Present	No Impact. species not observed during surveys.

<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	-/-/List 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic.	Present	No Impact. Species not observed during surveys.
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	-/-/List 4.2	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools/mesic.	Present	No Impact. Species not observed during surveys.
<i>Sanguisorba officinalis</i>	Great burnet	-/-/List 2B.2	Bogs and fens, broadleafed upland forest, meadows and seeps, marshes and swamps, North Coast coniferous forest, riparian forest/often serpentinite.	Absent	No Impact. Species not observed during surveys.
<i>Trifolium amoenum</i>	Showy Indian clover	E/-/List 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite).	Present	No Impact. Suitable habitat not present within ESL.

¹Status Explanations:

Federal Status (pursuant to the Federal Endangered Species Act of 1973, as amended)

E = endangered. Listed as being in danger of extinction.

T = threatened. Listed as likely to become endangered within the foreseeable future.

P = proposed. Proposed for listing as threatened or endangered, or for delisting.

C = candidate. Candidate that may become a proposed species.

D = delisted.

- = no listing under the Federal Endangered Species Act.

State Status (pursuant to §1904 (Native Plant Protection Act of 1977) and §2074.2 and §2075.5 (California

Endangered Species Act of 1984) of the Fish and Game Code)

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

C = candidate. Candidate that may become threatened, endangered, or delisted.

D = delisted.

- = no listing.

State Status (other listings)

SC = species of special concern. Animals not listed under the Federal Endangered Species Act or the California Endangered Species Act, but which are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist.

FP = Fully Protected. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

WL = Watch List. Species that do not meet the criteria of SC, but for which there is concern and a need for additional information to clarify status.

California Native Plant Society (CNPS)

List 1A = Presumed extinct in California.

List 1B species = Plants rare, threatened, or endangered in California and elsewhere.

List 2 species = Rare, threatened, or endangered in California, but more common elsewhere.

List 3 species = More information is needed about the plant species.

List 4 species = Limited distribution (Watch List).

.1 = seriously endangered in California.

.2 = fairly endangered in California.

.3 = Not very endangered in California

Animal and Threatened/Endangered Species

Animals are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. Bat species, California Coastal chinook salmon (*Oncorhynchus tshawytscha*), Central California Coast coho salmon (*Oncorhynchus kisutch*), Central California Coast steelhead (*Oncorhynchus mykiss*), foothill yellow-legged frog (*Rana boylei*), osprey (*Pandion haliaetus*) western pond turtle (*Emys marmorata*), northern spotted owl (*Strix occidentalis caurina*) and yellow billed cuckoo (*Coccyzus americanus*) have the potential to exist within the ESL and are discussed in greater detail below. A list with effects determinations for all listed and sensitive animal species with the potential to occur within the area are listed in Table 3.

Table 3 – Special-status Animals and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Scientific Name	Common Name	Federal/ State	Habitat	Present/ Absent	Rationale
Amphibians					
<i>Rana boylei</i>	Foothill yellow-legged frog	-/SC	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge.	Present	Minimal Impact. Species observed within project limits. Avoidance and minimization measures would be implemented to avoid impacts and 'take' of the species.
<i>Rana draytonii</i>	California red-legged frog	T/SC	Permanent and semi-permanent aquatic habitats such as creeks and cold-water ponds, with emergent and submergent vegetation.	Present	No Effect. Suitable habitat present within project limits, however, project is outside species distribution. Discussed potential species occurrence with USFWS on 3/14/19.
<i>Taricha rivularis</i>	Red-bellied newt	-/SC	Coastal drainages from Humboldt county south to Sonoma county, inland to Lake county. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean rocky substrate.	Absent	No Impact. Suitable habitat present within ESL, however, project is outside species distribution and species not observed during surveys. The project would not result in take of the species.
Birds					
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	T/SC	Coastal beaches above the normal high tide limit with wood or other debris	Absent	No Effect. Suitable habitat not present within ESL.

			for cover. Inland shores of salt ponds and alkali or brackish inland lakes.		
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	T/E	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak-riparian habitats where scrub jays are abundant.	Present	May effect, not likely to adversely effect. Suitable foraging and nesting habitat is present within ESL, however, species not observed within project area during general biological surveys.
<i>Pandion haliaetus</i>	Osprey	-/WL	Nests in snags, trees, or utility poles near the ocean, large lakes, or rivers with abundant fish populations.	Present	No Impact. Species observed within project limits, however, no nests observed within project limits. Foraging habitat marginal. Project would not result in take of species.
<i>Strix occidentalis caurina</i>	Northern spotted owl	T/T	Dense old-growth or mature forests dominated by conifers with topped trees or oaks available for nesting crevices.	Absent	No Effect. Suitable habitat not present within ESL.
Fish					
<i>Oncorhynchus kisutch</i>	Central California coast (CCC) coho salmon	E/E	Cool freshwater streams and rivers require sand and gravel for spawning.	Present	May affect, not likely to adversely affect. Project would not result in take of species.
<i>Oncorhynchus mykiss</i>	Central California coast (CCC) steelhead	T/-	Spawns in gravel-bottomed, high velocity rivers and streams; migrates to ocean.	Present	May affect, likely to adversely affect. Project would not result in take of species.

<i>Oncorhynchus tshawytscha</i>	California coastal (CC) Chinook salmon	T/-	Ocean and coastal streams.	Present	May affect, likely to adversely affect. Project would not result in take of species.
Mammals					
<i>Erethizon dorsatum</i>	North American porcupine	None	Occupy a variety of habitats including deciduous forests, open tundra, and desert chaparral. Occur in most major regions and habitat types across northern California	Absent	No Impact. Species not observed during surveys.
<i>Pekania pennanti</i>	Fisher	-/Pt	Mature, dense, northern coniferous and mixed forests with greater than 50% canopy closure and denning sites.	Absent	No Effect. Suitable habitat not present within ESL.
Reptiles					
<i>Emys marmorata</i>	Western pond turtle	-/SC	Permanent or mostly permanent waters in a variety of habitats.	Present	No Impact. Species not observed at surveys.
Habitats					
Habitat Name	Habitat Description		Present/ Absent	Rationale	
CCC Coho Critical Habitat	Waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers.		Present	May affect, likely to adversely affect. Minimal vegetation removal would occur within the riparian corridor but outside the active channel. Minimal ground disturbance and vegetation disturbance would occur. AMMs in place to avoid/minimize potential impacts.	

CC Chinook Salmon Critical Habitat	Stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line.	Present	May affect, likely to adversely affect. Minimal vegetation removal would occur within the riparian corridor but outside the active channel. Minimal ground disturbance and vegetation disturbance would occur. AMMs in place to avoid/minimize potential impacts.
CCC Steelhead Critical Habitat	Stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line.	Present	May affect, likely to adversely affect. Minimal vegetation removal would occur within the riparian corridor but outside the active channel. Minimal ground disturbance and vegetation disturbance would occur. AMMs in place to avoid/minimize potential impacts.
Coho EFH	Below OHWM.	Present	May adversely effect. No in-water work proposed.
Chinook Salmon EFH	Below OHWM.	Present	May adversely effect. No in-water work proposed.

¹Status Explanations:

Federal Status (pursuant to the Federal Endangered Species Act of 1973, as amended)

E = endangered. Listed as being in danger of extinction.

T = threatened. Listed as likely to become endangered within the foreseeable future.

P = proposed. Proposed for listing as threatened or endangered, or for delisting.

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State Status (pursuant to §1904 (Native Plant Protection Act of 1977) and §2074.2 and §2075.5 (California

Endangered Species Act of 1984) of the Fish and Game Code)

E = listed as endangered under the California Endangered Species Act.

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State Status (other listings)

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FP = Fully Protected. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

WL = Watch List. Species that do not meet the criteria of SC, but for which there is concern and a need for additional information to clarify status.

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BAT SPECIES

Night time visual and acoustic exit surveys were conducted by Caltrans on June 20, 2018 and July 8, 2019. Results of species observed during the acoustic surveys were analyzed using SonoBat Version 4.2 (Table 4). A total of ten bat species were observed. A separate daytime and nighttime exit survey was conducted by environmental consultants Galloway Enterprises (Consultant) on October 15, 2018 for a bridge deck overlay project on the Russian River bridge. According to the Consultant report, a total of 7 bats of an unknown species were observed exiting a hinge joint within the Russian River bridge. The conclusion of the report was that the Russian River bridge was being utilized as a day roost.

Table 4: Results from the June 20, 2018 and July 8, 2019 SonoBat Surveys and species preferred habitat

Species Identified at Russian River Bridge			Preferred Habitat Type ^{1*}						
Species Code	Scientific Name	Common Name	Bridge	Cave/ Mine	Building	Cliff/ Rock Crevice	Tree Bark/ Hollow	Tree Foliage	Riprap/ Dry Rock Wall
COTO	<i>Corynorhinus townsendii townsendii</i>	Townsend's big-eared bat	2	1	2		3		
EPFU	<i>Eptesicus fuscus</i>	Big brown bat	2	1	2		3		
LABL	<i>Lasiurus blossevillii</i>	Western red bat						1	
LANO	<i>Lasionycteris noctivagans</i>	Silver-haired bat	3				1		
MYCA	<i>Myotis californicus</i>	California myotis	2	2	1	1	2		3
MYLU	<i>Myotis lucifugus</i>	Little brown myotis	2	2	1	2	2		
MYVO	<i>Myotis volans</i>	Long-legged myotis	2	2	2		1		

MYU	<i>Myotis yumanensis</i>	Yuma myotis	1	2	1	3	2		3
MYCI	<i>Myotis ciliolabrum</i>	Western small-footed myotis	2	2		1			
TABR	<i>Tadarida brasiliensis</i>	Mexican free-tailed bat	1	2	1	1	3		

1. Preferred Habitat Type based on values provided in Caltrans Bat Guidance (2019)

* 1 = use frequently; 2 = use sometimes; 3 = use rarely; Blank = not known to use

While the Russian River bridge does provide some suitable habitat for roosting bats, a majority of the bats observed during the 2018 and 2019 Caltrans' surveys appeared to be exiting from a railroad bridge approximately 30 feet below the existing Russian River bridge. In the June 2018 survey, approximately five bats were observed exiting joint seals from the Russian River bridge. Biologists also observed what appeared to be a potential maternal colony of myotis bats exiting the railroad bridge. The assumption was made based on the large size of the myotis bats, short flight duration and slow speed. In the July 2019 survey, no bats were observed exiting the Russian River bridge, nor was there any observation of pregnant myotis bats or pups exiting the railroad bridge. The exact reason for no bats observed exiting the Russian River bridge in 2019 are unknown, however, a possible bat exclusion in one of the joint seals of the Russian River bridge was observed in September 2019 (Photo 7) and could explain why no bats were observed.

The Redwood Valley Road UC was not surveyed using acoustical surveys, but does appear to contain suitable habitat for day roosting and night roosting bats. No evidence of guano or urine staining was observed, however, swallow nests have been observed on the undercrossing and there has been previous evidence that day roosting bats could be found in abandoned swallow nests.



Photo 7: Image of possible bat exclusion on Russian River bridge. Image taken September 2019 by Grant Thornton

Tree roosting bats can roost in foliage, dead and dying trees (e.g., snags), especially beneath loose bark, in tree cavities and hollows or in crevices. The abovementioned structural flaws can commonly be found in conifer snags, and in live, mature cottonwoods (*Populus* spp.), sycamores (*Platanus racemosa*), and oaks (*Quercus* spp.). These tree roosts can occur within the State's ROW, particularly along stream and river corridors.

No bats were observed entering or exiting trees, however, results from the SonoBat surveys found three species with trees identified as their preferred habitat (Rank 1), though an additional three species identified may use trees on occasion (Rank 2). Suitable tree roosting habitat exists within the project BSA and would be impacted by project activities.



Photos 8 and 9: Images of dead trees with multiple snags and tree hollows by Grant Thornton.

CALIFORNIA COASTAL CHINOOK SALMON

Focused surveys were not conducted at the project location, however, critical habitat is present within the BSA; therefore, presence is assumed. At the project location, the active channel of the Russian River is approximately 50 feet wide with average depths ranging from 0.2 to 1.2 meters (0.66 to 3.93 feet). The floodplain immediately west of the active channel of the Russian River extends approximately 94 feet from the west bank of the active channel and contains a series of lateral channels that convey water during high flow events. Substrate within the river consists mainly of cobble, silt, and woody debris.

Two relatively close sources of fish survey data were used to estimate the potential populations of listed salmonid species in the BSA. The closest source of survey data to the BSA is the School Way Bridge Project, a Caltrans Local Assistance project constructed in 2015. This project was located approximately 1.8 miles upstream from the project site on the West Fork of the Russian River. The next closest source of sampling data is the Coyote Valley Fish Facility (CVFF), located on the East Fork of the Russian River approximately 3.3 linear miles south of the BSA. CVFF has made yearly fish count data available to the public.

The closest observations of CC Chinook salmon occur at the CVFF, located approximately 3.3 linear miles south of the project location along the East Fork of the Russian River. In a review of the weekly anadromous fish counts from CVFF, the most recent available data (2012 - 2017) shows that one adult chinook

salmon was observed at CVFF in December 2013. No observations of juveniles were recorded.

The proposed project would occur near the Russian River, which has been designated as critical habitat for CC Chinook salmon. As a result, presence of CC Chinook salmon is assumed.

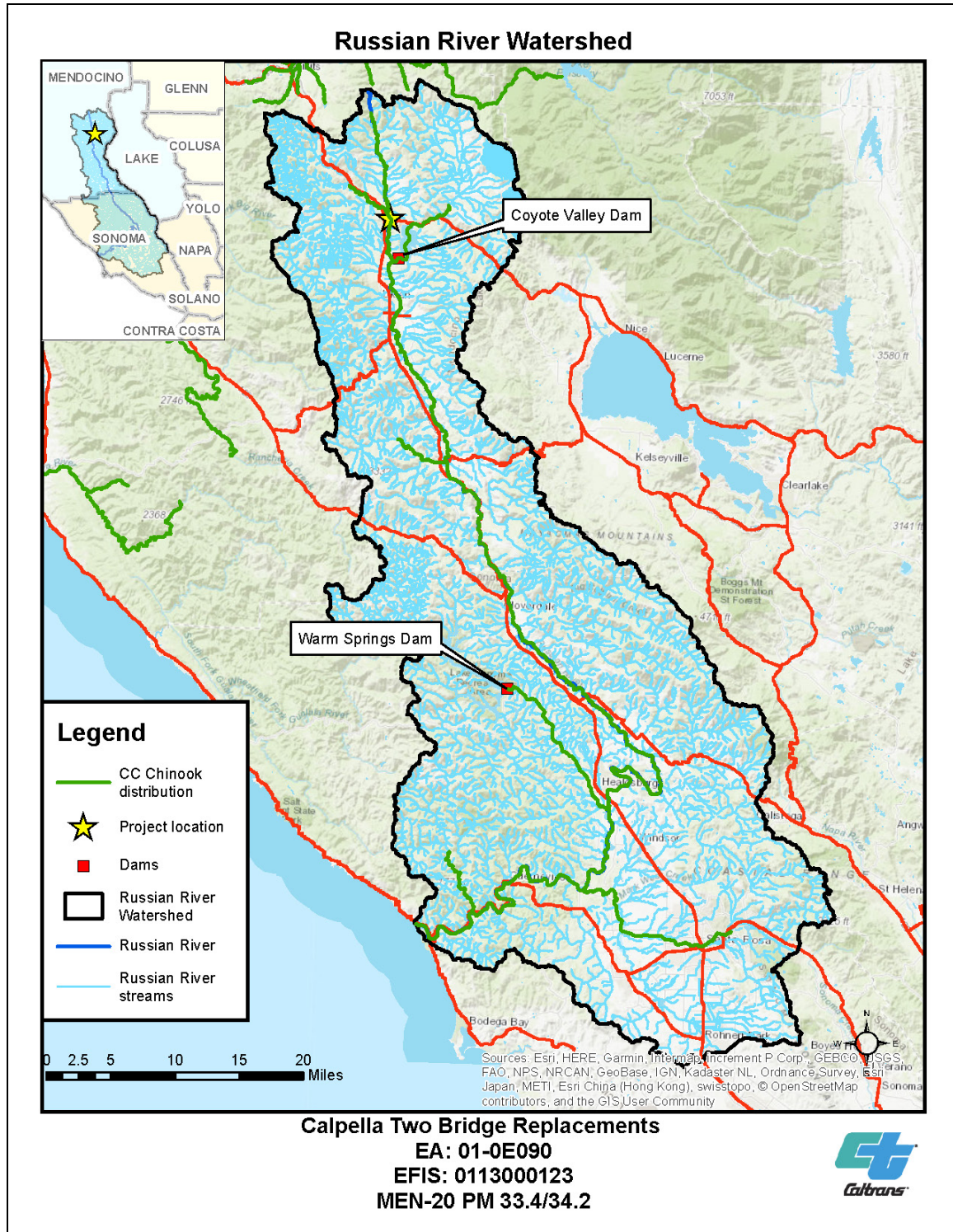


Figure 5: CC Chinook salmon distribution in the Russian River watershed.

CENTRAL CALIFORNIA COAST COHO SALMON

At the project location, the active channel of the Russian River is approximately 50 feet wide with average depths ranging from 0.2 to 1.2 meters (0.66 to 3.93 feet). The floodplain immediately west of the active channel extends approximately 94 feet from the west bank of the active channel and contains a series of lateral channels that convey water during high flow events. Substrate within the river consists mainly of cobble, silt, and woody debris.

The closest observations of CCC coho occur at the CVFF, located approximately 3.3 linear miles south of the project location along the East Fork of the Russian River. In a review of the weekly anadromous fish counts from CVFF the most recent available data (2012-2017), two adult coho were observed at CVFF, one in 2016 and one in 2013. No observations of juveniles were recorded.

The proposed project would occur within and near the Russian River watershed, which has been identified as critical habitat for CCC coho. Coho salmon distribution is currently assumed to be restricted to the lower third of the Russian River watershed, approximately 40 linear miles south of the proposed project location. Due to this restricted distribution, it is assumed that CCC coho salmon would not be present in the action area.

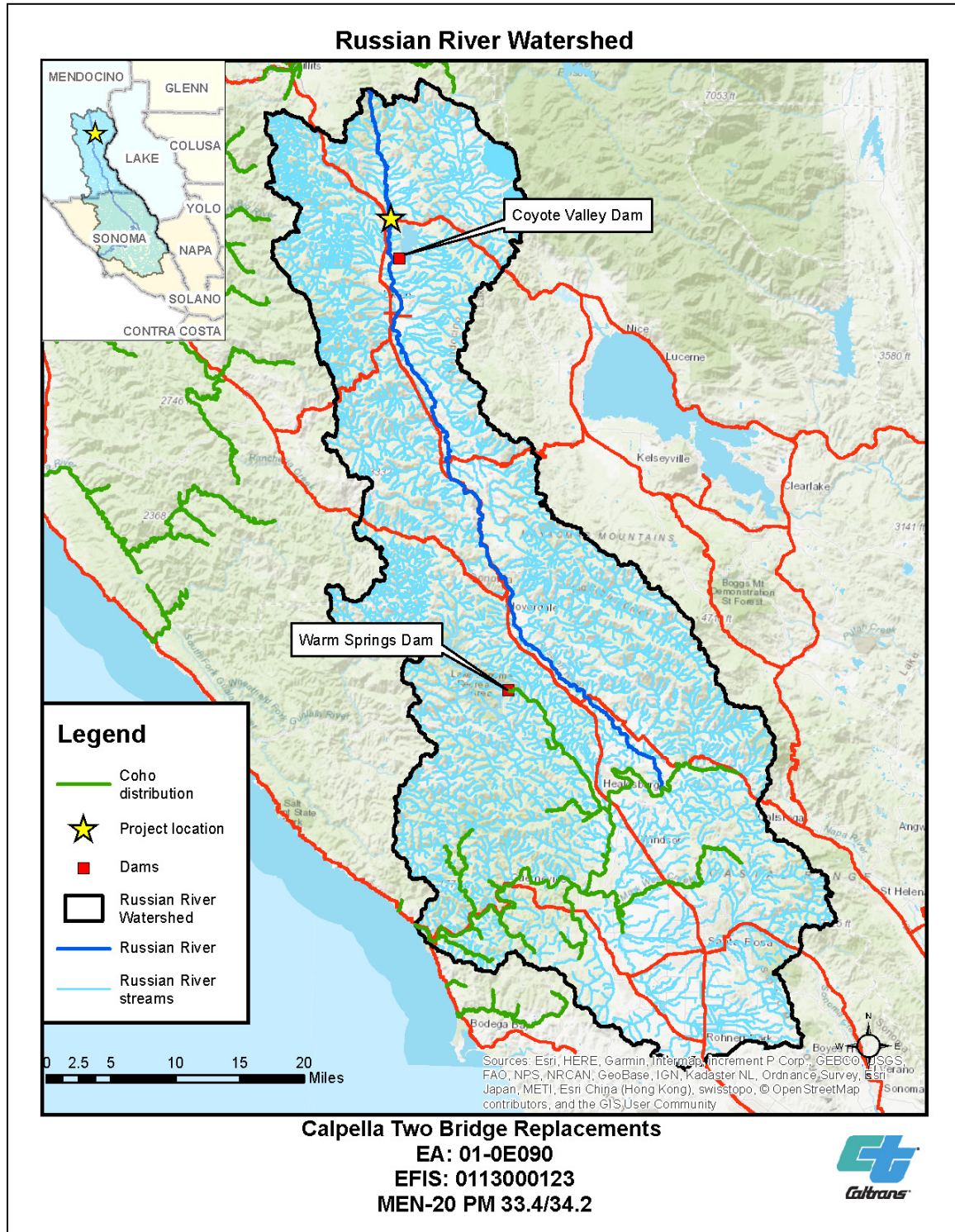


Figure 6: CCC Coho salmon distribution in the Russian River watershed.

CENTRAL CALIFORNIA COAST STEELHEAD

At the project location, the active channel of the Russian River is approximately 50 feet wide with average depths ranging from 0.2 to 1.2 meters (0.66 to 3.93 feet). The floodplain immediately west of the active channel of the Russian River extends approximately 94 feet from the west bank of the active channel and contains a series of lateral channels that convey water during high flow events. Substrate within the river consists mainly of cobble, silt, and woody debris.

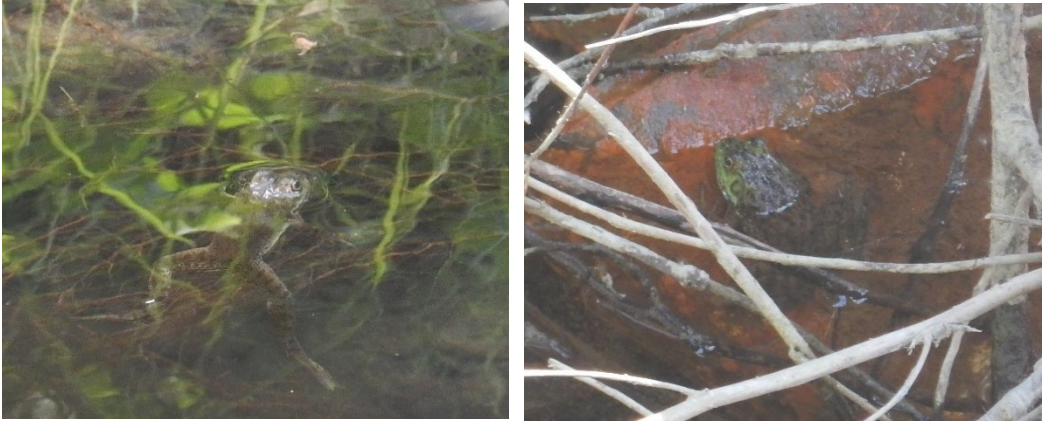
Juvenile salmonids (with parr marks) were observed within the action area during a fish passage assessment study on May 15, 2019. Caltrans assumes these juvenile salmonids were steelhead due to the higher abundance of steelhead from other sources nearby, but identification has not been confirmed. One deceased juvenile steelhead was observed approximately 160 feet downstream of the action area by Caltrans Biologists on June 11, 2019.

The next closest observations of CCC steelhead occur at the CVFF, located approximately 3.3 linear miles south of the project location along the East Fork of the Russian River. In a review of the weekly anadromous fish counts from CVFF the most recent available data (2012-2017), an average of 2,000 adult steelhead were observed each survey season at CVFF. One juvenile observation was recorded in 2016.

The proposed project would occur near the Russian River, which has been designated as critical habitat for CCC steelhead. As a result of the Russian River's critical habitat designation, presence is assumed.

FOOTHILL YELLOW-LEGGED FROG

A field survey was conducted on May 14, 2018 utilizing the visual encounter survey method. Suitable spawning habitat consisting of appropriate cobble substrate and sunny banks with areas of good dispersal habitat is present within the project location. FYLF were observed in an isolated pond approximately 60 feet west of the proposed location for pier 3 (Photo 10). Two bullfrogs (*Lithobates catesbeianus*) were also observed during the FYLF protocol survey and during subsequent general flora/fauna surveys. No further FYLF were noted for the remainder of the 2018 field season. Three additional FYLF visual encounter surveys were completed on May 16, 2019, June 11, 2019, and July 8, 2019. One juvenile FYLF was observed on July 8 in the same location where FYLF were observed the previous year.



Photos 10 and 11: Photo 10 shows FYLF (*R. boylii*) in ponded area within the Russian River floodplain near the proposed location for pier 3. Photo 11 shows a bullfrog (*L. catesbeianus*) located approximately 200 feet northeast of FYLF observation.

OSPREY

Sightings of osprey in flight were noted at the project location, however no nesting sites were observed within the ESL. According to CNDDDB, in 2004 a pair of adult ospreys were observed nesting on a utility pole near the intersection of SR-20 and Road A, north of Lake Mendocino, approximately 1.13 miles from the project location.

WESTERN POND TURTLE

No species-specific surveys were conducted for WPT, however, a possible sighting of WPT was observed on July 8, 2019, north of the existing bridge. Suitable basking and dispersal habitat is present with the ESL, so presence of WPT is assumed.

NORTHERN SPOTTED OWL

No species-specific surveys were conducted for Northern spotted owl (NSO). Two observations have been reported to CDFW's CNDDDB approximately 1.4 miles away from the project location. Shapefiles containing suitable nesting and roosting habitats were provided by USFWS to Caltrans on June 10, 2019 (Figure 7). The data identifying suitable nesting and roosting habitat is based on data from the Classification and Assessment with LANDSAT of Visible Ecological Grouping's (CALVEG) Existing Vegetation (Eveg) data. This Eveg polygon feature class is a CALVEG map product used for vegetation classification. According to the feature class, areas highlighted in Figure 7 have a Society of American Foresters (SAF) cover type of Pacific-Douglas Fir.

Floristic surveys conducted between April 2017 and October 2019 found habitat types within the ESL inconsistent with the Eveg cover type classification. A

combined assessment using alliances developed in “A Manual of California Vegetation” was conducted in September 2019 to identify the vegetation type. It was determined that the vegetation within the area in Figure 7 more appropriately matched the Coast live oak (*Quercus agrifolia*) Woodland Alliance and is consistent with Eveg classifications in other woodland areas within the ESL and surrounding areas. While some conifers were observed within the ESL, observations were sporadic. No Pacific Douglas Fir cover type habitat was observed within the ESL.

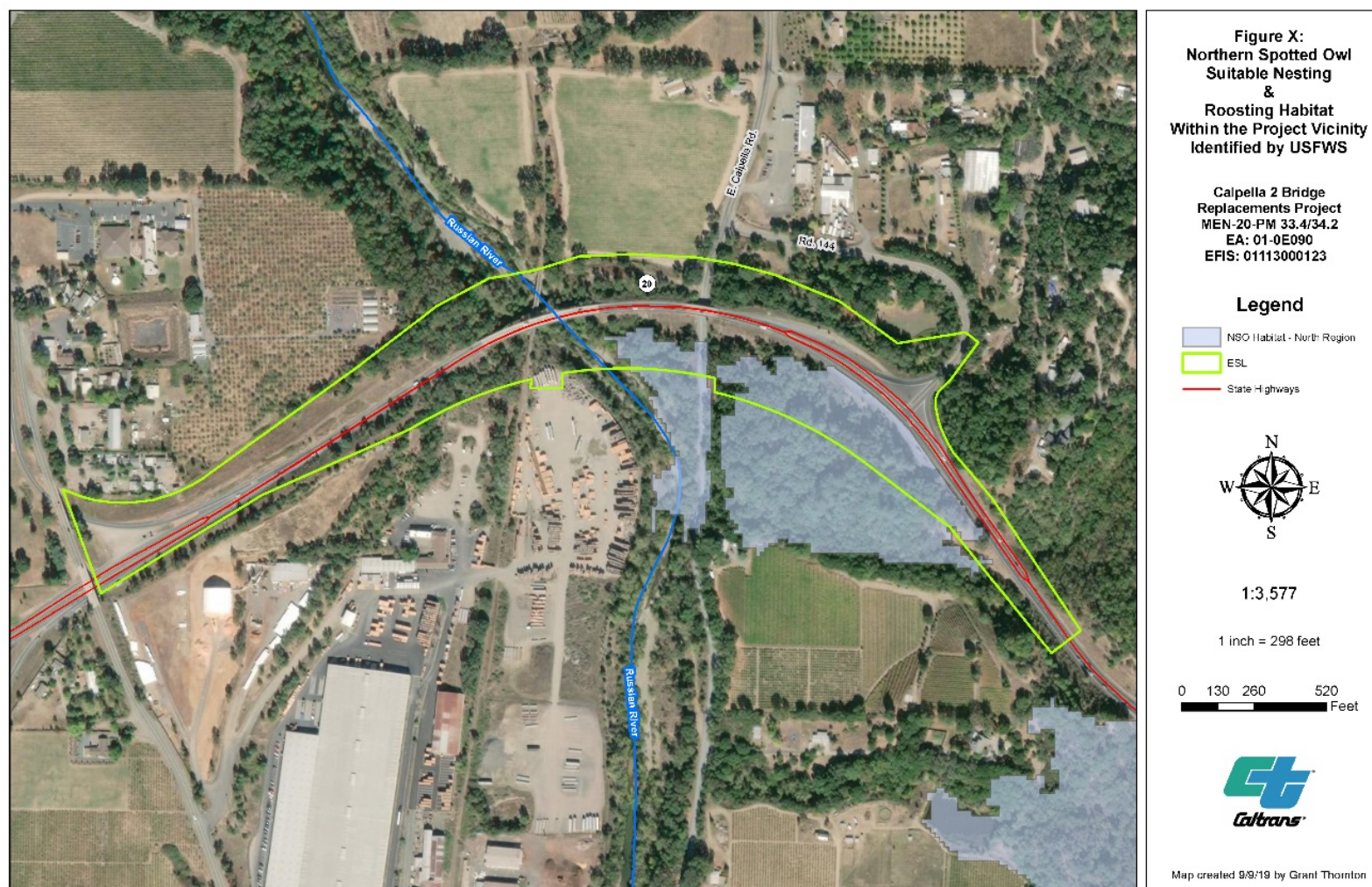


Figure 7: Suitable Nesting and Roosting Habitat Identified by USFWS Within and Near Project ESL.

YELLOW-BILLED CUCKOO

Protocol level surveys to determine presence were not conducted; however, Mendocino County has been identified by USFWS as a location where the yellow-billed cuckoo (YBCU) is known to occur or is believed to occur and is listed as a historical and current county of occurrence. YBCU surveys were conducted near Willits and Clear Lake in June 1977 and no cuckoos were detected. Focused YBCU surveys were not conducted for this project; although, YBCU were not observed during general biological surveys. The closest sighting of YBCU occurred in 1997 within the Navarro River Redwoods approximately 29 miles west of the project location. Presence is unlikely but assumed.

A field visit was conducted on March 14, 2019 with Greg Schmidt, Fish and & Wildlife Biologist for the Endangered Species Program and Caltrans Liaison for USFWS. Although no detections of YBCU have occurred within the project limits, it was determined that the project site contains both suitable nesting and foraging habitat for YBCU, however, the project site does not contain a large block of riparian area which cuckoos prefer. For example, along the Sacramento River, nesting YBCUs occupied home ranges which included 25 acres or more of riparian habitat.

CRITICAL HABITAT FOR CALIFORNIA COASTAL CHINOOK AND CENTRAL CALIFORNIA COAST STEELHEAD CRITICAL HABITAT

The Russian River throughout the BSA has been identified by NMFS as critical habitat for CC Chinook and CCC steelhead. The following Primary Constituent Elements (PCE's) are present within the BSA:

Freshwater spawning sites

Freshwater spawning habitat is present within the BSA.

Freshwater rearing sites

Freshwater rearing sites are present within the Russian River in the action area. There are several downed or overhanging trees, as well as undercut river banks, large boulders, aquatic vegetation and slower/deeper pool environments that could serve as protective cover for juvenile salmonids. Large contributors of shade over the Russian River within the action area are the existing Russian River bridge and the railroad bridge, while the river margins are shaded by overhanging vegetation. Within the action area, there is connection to surrounding riparian habitat, which serves as an important source of woody debris and detritus for the river ecosystem, as well as a supply of riparian invertebrates for juveniles to feed on. During the summer, in-water temperatures can reach near lethal (24°C) temperatures for salmonids with flows

reduced to one or less cubic feet per second (cfs). As a result, areas within the BSA may not be suitable habitat during summer months for rearing.

Freshwater migration corridors

The Russian River is considered a freshwater migration corridor for Chinook and steelhead. A fish barrier assessment was completed by Caltrans biologists in May 2019, and there are no known barriers to fish passage throughout the action area.

CRITICAL HABITAT FOR CENTRAL CALIFORNIA COAST COHO

The Russian River throughout the BSA has been identified by NMFS as critical habitat for CCC coho. The PCE's described above are present within the BSA and discussed further below. Impacts to PCE's for CCC coho are similar to PCE impacts for CC Chinook and CC steelhead.

ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is found within the BSA within the Russian River. More information regarding salmon habitat conditions within the BSA are described under sections for critical habitat for CC Chinook salmon, CCC steelhead, and CCC coho.

Invasive Species

Areas of invasive vegetation occur adjacent to SR-20, largely within the fill prism between the Russian River bridge and Eastside Calpella Road UC and areas west of the Russian River bridge. These areas within the BSA are dominated by annual grasses and forbs including soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), wild oat (*Avena fatua*), yellow starthistle (*Centaurea solstitialis*) and others.

Discussion of Environmental Evaluation Questions 2.4—Biological Resources

The following discusses questions A through F of the CEQA Checklist - Biological Resources section. Each question is discussed individually; however, it should be noted that some resources (e.g., salmonids) fall under more than one question. As such, where necessary, those resources are discussed multiple times throughout this section.

DISCUSSION OF CEQA CHECKLIST QUESTION A

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on species in the project area:

- Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?

Plant Species

Northern California Black Walnut

Based on the current design, existing trees may be impacted by access roads needed for bridge demolition and new bridge construction. Given that removal of these trees cannot be avoided and mitigation would be addressed in the 1600 permit, a determination was made that the project would have a “Less Than Significant Impact with Mitigation Incorporated” on the Northern California Black Walnut.

Animal Species

Bat Species

Impacts to Bridge Roosting Bats

Of the ten bat species identified during surveys (Table 4), two species have bridges identified as their preferred habitat (Rank 1) with an additional six species that may use bridges on occasion (Rank 2). In the 2018 surveys, approximately five bats were visually observed exiting joint seals in the Russian River bridge, while a majority of the bats were seen exiting the railroad bridge, located underneath the Russian River bridge. In the 2019 survey, no bats were seen exiting the Russian River bridge, which could be due to exclusion devices left in place after a bridge deck rehabilitation project was completed in fall 2018. Like 2018, in 2019, a majority of bats were seen exiting the railroad bridge. The Russian River bridge would remain in place until the new bridge is completed and demolished shortly thereafter. The railroad bridge would not be impacted as a result of project activities, and a containment structure would be placed above or around the railroad bridge during construction and demolition to avoid damage to the structure. The containment structure would not be sealed, so it is not anticipated the containment structure would negatively impact bats roosting in the railroad bridge.

Highway construction noise (e.g., heavy equipment, blasting, and pile-driving) can potentially affect bats, particularly those species that roost in bridges, culverts, or other highway infrastructure or in nearby buildings, trees, or rock outcroppings. Sudden, loud noises can potentially disturb bats and cause abandonment of roosts. Although it has yet to be studied, if loud and sudden enough, such noise can potentially cause temporary or permanent hearing loss in bats. Chronic disturbance may also alter

important colony activity patterns, particularly during the breeding season, and disrupt critical torpor cycles of hibernating/overwintering bats, forcing them to overuse critical energy resources.

While a majority of the general construction activities are not anticipated to create sound levels that could cause negative impacts to bat colonies, pile driving would be needed for the installation of falsework, trestling, and pier columns. It is anticipated that these activities could generate estimated sound levels of 96 to 106 decibels (dB) at 50 feet. Based on the current project design, piers two and three of the proposed bridge are located approximately 43 feet west and 64 feet east, respectively of the existing railroad bridge. Each pier contains two 6-foot wide columns with 20-foot (approximate) wide footings. Each footing would require 16, HP 10X57 H-piles (approximately 10-inches in diameter), resulting in 64 piles within approximately 80 feet of the railroad bridge.

In addition, pile driving may be needed for the installation of trestling and falsework near the railroad bridge. It is estimated that one-to-three bents may be located near the railroad bridge. Each trestle bent would require approximately 7-12 piles per bent. Each falsework bent would require approximately 16 piles. As a result, sound levels from pile driving for the installation of trestling, falsework, and pier column footings are loud enough to exceed most background noise and could be a source of potential disturbance for bats in an active roost.

There are few data sources that suggests that substrate vibrations affect bats and little is known about this type of impact. At a bridge project in Sonoma County, pile driving within 300 feet of an active maternity colony did not disturb roosting Yuma myotis and Mexican free-tailed bats enough to result in their departure. At another bridge site in Tulare County, the initiation of pile driving resulted in the disturbance of a maternity colony, which moved to the opposite end of a bridge; however, it is noteworthy that the bats did not leave the bridge structure.

With the removal of the existing Russian River bridge, the project would result in the permanent removal of potential bat habitat. These impacts have the potential to prevent the return of any potential roosting colonies that may inhabit either the Russian River bridge or Redwood Valley Road UC. However, suitable habitat would continue to be available throughout the duration of construction within the railroad bridge and nearby vacant buildings.

Impacts to Tree Roosting Bats

Tree removal would be necessary for staging, access, and construction of the new bridge as well as access roads for the demolition of the existing bridge. No bats were observed entering or exiting trees, however, focused surveys specifically for tree

roosting bats were not conducted. Results from the SonoBat surveys found three bat species with trees identified as their preferred habitat (Rank 1), though an additional three species identified may use trees on occasion (Rank 2). Suitable tree roosting habitat exists within the project ESL and BSA and would be impacted by project activities.

Within the non-riparian oak communities, approximately 3.024 acres of oak woodlands would be impacted. This represents approximately 28% of the non-riparian oak woodlands within the ESL. Within the designated riparian areas, approximately 1.17 acre and 0.27 acre of valley oak riparian and floodplain communities (sandbar willow and white alder alliances) would be impacted, respectively. This would represent approximately 60% of the valley oak riparian community and 31% of the floodplain community identified within the ESL. It is important to note, however, that this is not the community in its entirety, only within the ESL. Each of these communities extend well beyond the project limits. It is possible that tree removal could impact potential bat roosting habitat, though suitable habitat would remain within the ESL and surrounding areas pre- and post-construction. With the incorporation of avoidance and minimization measures discussed below, direct impacts to individual bats and colonies would not be anticipated.

Bat Avoidance/Minimization Efforts

If bats are present in the ESL during the construction period, impacts would be avoided or minimized with the incorporation of both standard measures and the following measures listed below:

Construction Activities around Railroad Bridge

The following avoidance and minimization measures were adapted from the Caltrans Bat Mitigation Guidance and would apply for work conducted around the railroad bridge:

1. Airspace access to and from the bridge should not be severely restricted.
2. The area around the bridge roost should be designated as an Environmentally Sensitive Area (ESA).
3. Vehicles and equipment (including generators and pumps) with internal combustion engines are not to be parked or operated under the railroad bridge.
4. Construction personnel should not be present under the colony, especially during the evening exodus.
5. Clearing and grubbing of vegetation under and around roosts should be minimized wherever possible.

Bridge Demolition

Work Window: To avoid impacts on the maternity colonies and hibernating bats, the bridge would be demolished after the maternity season and prior to hibernation, generally between September 15 and October 31, unless exclusionary devices are first installed. If pallid bats or any other special-status bats are roosting on the bridge during the pre-installation surveys, exclusion devices would be installed to preclude these bats. If bats can be successfully excluded between September 15 and October 31, the bridge may be demolished after the devices are installed and as long as exclusion devices are monitored and maintained. Presence of the maternity colonies, or any bats would preclude demolition until the end of summer (September 15).

Installation of Exclusion Devices: Installation of exclusion devices, if feasible, would occur after the maternity season and prior to hibernation (between September 15 and October 31) to preclude bats from occupying a roost site during demolition. When it is not feasible to establish recommended buffer zones, bats should be excluded from work areas prior to April 15 of the construction year. Exclusion should be done selectively, and only to the extent necessary. Exclusionary devices would only be installed by or under the supervision of a bat biologist with experience installing exclusion devices on bridges. The bat biologist would be contacted several months ahead of demolition to evaluate the bridge and determine the feasibility of installing exclusion devices.

Pre-installation Surveys: If exclusion devices would be installed, a minimum of two daytime surveys and two evening emergence surveys would be conducted prior to installation of exclusion devices to confirm known roosting sites and identify additional roosting sites. These surveys should be no more than one week prior to exclusion installation.

Monitoring of Exclusion Devices: If exclusion devices are installed, they would be checked every two weeks and maintained such that they do not allow bats to re-enter known roosting sites before demolition.

Other Deterrence Measures: Other measures to deter bat roosting, such as using lights or acoustic disturbance, may be used if developed in coordination with and approved by CDFW.

Tree Removal

Potential Habitat Trees: Potential bat habitat trees, identified by a qualified bat biologist, shall only be removed between September 1 through October 15, or prior to evening temperatures dropping below 45°F and onset of rainfall greater than 0.5 inches in 24 hours.

Tree Removal: Bat habitat trees should only be removed during seasonal periods of bat activity as described above, and only after;

1. Two-step tree removal over two consecutive days (e.g. Tuesday and Wednesday, or Thursday and Friday). With this method, small branches and small limbs containing no cavity, crevice or exfoliating bark habitat on habitat trees, as identified by a qualified bat biologist are removed first on Day 1, using chainsaws only (no dozers, backhoes, etc.). The following day (Day 2), the remainder of the tree is to be removed. The disturbance caused by chainsaw noise and vibration, coupled with the physical alteration of the tree, has the effect of causing colonial bat species to abandon the roost tree after nightly emergence for foraging. Removing the tree the next day prevents re-habitation and reoccupation of the altered tree.
2. Trees containing suitable potential habitat must be trimmed with chainsaws on Day 1 under initial field supervision by a qualified bat biologist to ensure that the tree cutters fully understand the process, and avoid incorrectly cutting potential habitat features or trees. After tree cutters have received sufficient instruction, the qualified bat expert does not need to remain on the site.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on bats with the implementation of the above avoidance and minimization efforts.

California Coastal Chinook Salmon and Central California Coast Steelhead

Hydroacoustic Impacts: Due to the need for impact pile driving for trestle, falsework, and pier columns during construction, there would be elevated levels of underwater noise generated by pile strikes. If present, juvenile salmonids would be exposed to this direct stressor due to the timing of the action (anticipated between June 15 - October 15). Russian River channel habitat within the action area would be exposed to hydroacoustic stressors.

The maximum impact zone for the 187 dB and 183 dB cumulative sound exposure level (SEL) criteria during construction of the temporary work trestle and falsework is estimated to extend from the pile to bends in the river, located approximately 73 meters (240 feet) upstream and 134 meters (440 feet) downstream of the project location. The typical peak levels for unattenuated impact driving the trestle piles is expected to remain below the 206 dB peak injury criteria. The distance to the 206 dB peak criteria is estimated to be <10meters (32.8feet) from the pile.

Sound generated by impact pile driving has the potential to impact fish in a range of ways, including altering behavior, physical injury, or mortality. Damage to fish depend on a variety of factors, including repetition rate of the sound, pressure level, frequency and duration of the sound, as well as the size of the fish. Peak sound pressure levels of 206 dB can cause injuries in all sizes of fish. Cumulative SEL of 187 dB can cause injuries in fish 2 grams or larger and cumulative SEL of 183 dB can cause injuries in fish 2 grams or smaller. The response of fish to hydroacoustic stressors within the action area depend on the frequency, intensity, and severity of the noise.

Hydroacoustic impacts may impact the habitat suitability of the action area during impact driving activities due to possible change in salmonid behavior, and threat of physical injury or mortality. However, this is expected to be a temporary impact (occurring only during the time for active pile driving between June 15 and October 15).

Sedimentation/Turbidity: Due to the soil disturbance associated with project activities such as constructing access roads, clearing and grubbing, there is a chance of sediment loading in the river channel, which would cause an increase in turbidity in the water flowing through the action area and in deposited fine sediment within the gravel. Salmonid eggs and juveniles would primarily be exposed to this indirect stressor. Sediment would potentially be traveling from disturbed upland and riparian areas and depositing into the Russian River channel within the action area.

Fine sediment can coat gills of aquatic species, decreasing respiratory abilities. Sediment loading can also reduce stream depth heterogeneity, which can negatively impact pool-dwelling species. An increase in fine sediment in the river is considered an indirect effect, and may cause a loss of spawning habitat, decreased survival of salmonid eggs, as well as a loss of cover and food source for juvenile salmonids. Increased levels of sediment may cause filling in of interstitial spaces within spawning gravel. Fine sediment filling interstitial spaces within the river's gravel would potentially impact salmonid egg-to-fry survival, since this would reduce the circulation of cold, clean, oxygenated water to the eggs.

Increased sedimentation in rivers can lead to increased turbidity, scouring, and abrasion of stream substrates. Sedimentation can also reduce primary production and reduce substrate suitability for periphyton and biofilm production. Sediment can fill interstitial habitats, which can be detrimental to crevice-occupying stream invertebrates and gravel-spawning fish. Depending on the source of sediment loading, the stressor can be present temporarily or chronically if not properly addressed. Work in the Russian River channel would be limited to the June 15 and October 15 work windows, which is a season in which only juvenile salmonids would be expected to be within the action area. Measures to control sediment erosion and dust from entering in water would be

implemented in order to avoid increasing sediment levels in the river, both during the active construction and post construction.

Loss of Riparian Vegetation: Due to the need for staging and access for construction of the new bridges as well as access for demolition of the existing bridge, removal of riparian vegetation would occur. The closer a tree is to the area for new bridge construction, trestles and falsework, and access roads, the more likely the tree will be completely removed (including roots). It is largely up to the discretion of the contractor to choose to leave roots and stumps in place in the rest of the riparian and oak woodland impact areas. Approximately 54 riparian trees over 4-inch diameter at breast height (DBH) providing shade to the Russian River will be removed. Overstory species include Arroyo willow (*Salix lasiolepis*), Goodding's willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), Oregon ash (*Fraxinus latifolia*), Pacific madrone (*Arbutus menziesii*), and white alder (*Alnus rhombifolia*). Removing riparian trees will reduce the amount of vegetative cover within the stream. This in turn can increase temperatures along the river margins where the cover is removed, a change in food availability, and change organic/inorganic inputs within the action area. However, the larger size of the new bridge will increase the shade of the river by 0.035 acres. All life stages of salmonids will be exposed to this indirect stressor.

Removing riparian vegetation would reduce the available shaded cover for salmonids. Salmonids depend on riparian vegetation for shaded cover for protection from predation. The reduction of shaded cover may temporarily degrade habitat suitability for juvenile salmonids, leaving them more vulnerable to predation. This may lead to a changed behavioral response from juvenile salmonids in the action area, possibly by avoiding areas without vegetative cover within the action area.

Removing riparian vegetation from river habitats reduces shading, which causes increases in stream temperatures, light penetration, and primary production in rivers. Without the root structure in place, removing riparian vegetation decreases bank stability, leaving the river more susceptible for bank and channel erosion, which leads to all of the impacts of increased sedimentation discussed previously. Loss of riparian also decreases allochthonous organic matter such as leaf litter and large woody debris, which can impact nutrient cycling in rivers and alter food chains. Riparian areas act as natural filters for river systems, and without them, it decreases removal of nutrient and contaminant runoff and sediment trapping from upland runoff.

Riparian trees providing shade to the active channel of the Russian River were mapped within impact areas. In total, there will be a removal of approximately 54 trees along the banks of the Russian River that would provide shade to the active channel, as well as a small island comprised of willow below OHWM. The closer any trees are to the new bridge construction and access roads (total width of 75 to 100 feet), the more likely it is

that the contractor will need to remove the entire tree (including roots and stumps) for grading and structure construction. Trees farther away from these areas within the impact footprint are more likely to be left with stumps and roots intact. The majority of the riparian trees contributing shade to the Russian River within the impact areas are within or very close to the bridge construction areas and access roads. For the purposes of this analysis, it is likely that the contractor would need to completely remove (including roots and stumps) all 54 shade trees within the riparian impact areas.

Loss of Channel Habitat: Due to construction of new bridge piers, temporary trestles, and falsework bents, there would be an alteration of channel morphology (new fill would be introduced to the channel and old fill would be removed from the channel). All life stages of salmonids would be exposed to this indirect stressor, since the trestles and falsework may remain in the Russian River over the winter season.

Losing potential spawning gravel habitat within the Russian River channel may lead to behavioral changes for adults in choosing different available spawning sites. This would also potentially lead to changes in spatial occupancy of juvenile salmonids due to the changes and positioning of artificial fill in the Russian River channel.

During construction, there would be both permanent and temporary loss of channel habitat. Trestles and falsework would be considered temporary fill, while the new bridge piers would be considered permanent fill. The old bridge pier removal would be considered permanent removal.

Alteration of Channel Hydrology: Due to construction of new bridge piers, temporary trestle and falsework bents, there would be a temporary alteration of channel hydrology stemming from the need to dewater areas of the channel. Dewatering will likely occur with use of cofferdams around the work areas, and the cofferdams would likely cover a footprint of approximately 10 feet around the new pier footprints. In total, there is anticipated to be an approximate dewatered footprint of 250 linear-feet of Russian River channel.

This would cause a temporary change in areas of suitable habitat within the channel, a temporary change in available food (stream invertebrates), and possibly a temporary change in water temperature on a small spatial scale within the action area. Juvenile salmonids would primarily be exposed to this indirect stressor due to the timing of the action.

During water diversion and dewatering activities, fish would be relocated and excluded from the action area. This will cause a temporary disruption in habitat connectivity in the action area within the Russian River channel.

In general, changes in hydrology can lead to changes in channel dynamics such as changes in erosion, flooding, and transport of nutrients, sediment, and contaminants can degrade channel habitats. However, the change in hydrology associated with this project would be minimal and isolated to temporary water diversions and dewatering activities associated with bridge construction within the action area. Activities in the Russian River channel would be limited to seasonal low flow conditions (June 15 to October 15) so that it would have fewer impacts on salmonids and the channel habitat. The dewatering activities would temporarily degrade habitat within a portion of the action area.

California Coastal Chinook and Central California Coast Steelhead Avoidance/Minimization Efforts

To avoid and minimize effects to salmonids and their habitats, Caltrans will implement the following general measures:

1. Work window: All work within suitable aquatic habitat for salmonids would occur between June 15 and October 15 during the summer low-flow period to minimize potential exposure of juveniles to pile driving noise/vibration.
2. Night work: All nighttime construction would be minimized to the greatest extent practicable.
3. Night lighting: Artificial lighting of the action area during nighttime hours would be minimized to the maximum extent practicable.
4. Water diversion structures: Cofferdam and/or water diversions would be constructed to exclude construction activities from adversely impacting the water quality of Russian River while maintaining flow through the project area. The contractor would submit a water diversion plan to appropriate regulatory agencies for approval 60 days prior to construction.
5. Work area isolation for in-water construction:
 - a. The work area would be isolated within the wetted channel from the active stream, or other waterbody, whenever FESA-listed fish are reasonably certain to be present.
 - b. Engineering design plans for work area isolation would include all isolation elements and fish release areas.
 - c. The project would use a coffer dam and a bypass culvert or pipe, or a lined, non-erodible diversion ditch to divert flow around the dewatered area. Flow

energy would be dissipated to prevent damage to riparian vegetation or stream channel and provide for safe downstream reentry of fish, preferably into pool habitat with cover. Push-up dams composed of stream substrate would not be an acceptable isolation method.

d. Where gravity feed is not possible, water would be pumped from the work site, including any seepage water, to avoid re-watering the isolated area and to sustain stream flow.

e. Seepage water would be pumped to a temporary storage and treatment site, or into upland areas, to allow water to percolate through soil or to filter through vegetation before reentering the stream channel with a treatment system comprised of either a hay bale basin or other sediment control device.

f. Monitoring would be conducted downstream of the construction site to prevent stranding of aquatic organisms.

g. When construction is complete, the construction site would be re-watered slowly to prevent loss of surface flow downstream, and to prevent a sudden increase in stream turbidity.

h. Whenever a pump is used to dewater the isolation area and FESA-listed fish may be present, a fish screen would be used that meets the most current version of NMFS' fish screen criteria (NMFS 2011b or most recent).

6. Environmentally Sensitive Areas: ESAs within the action area will be delineated with staking, flagging, or high-visibility fencing to avoid impacts during construction.
7. Permits: Caltrans will include a copy of the all relevant permits within the construction bid package of the proposed Project. The Resident Engineer or their designee will be responsible for implementing the Conservation Measures and Terms and Conditions of the USFWS LOC, NMFS BO, and all other permits.
8. Biological monitor: NMFS-approved biologists would be on-site during dewatering and initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in project permits. The biologists would keep copies of applicable permits in their possession when on-site. Through the Resident Engineer or their designee, the agency-approved biologists shall be given the authority to communicate either verbally, by telephone, email or hardcopy with all project personnel to ensure that take of listed species is minimized and permit requirements are fully implemented.

9. Biological monitor approval: Caltrans would submit the names and qualifications of the biological monitor(s) for NMFS approval prior to initiating construction activities for the proposed project. Biological monitors must have expertise in anadromous salmonid biology, including handling, collecting, and relocating salmonids.
10. Worker environmental awareness training: All construction personnel would attend a mandatory environmental education program delivered by an agency-approved biologist prior to working on the project.
11. Vehicle use: Project employees would be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.
12. Trash control: All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once a day from the work area.
13. Firearms: No firearms would be allowed in the action area except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
14. Pets: To prevent harassment, injury or mortality of sensitive species, no pets would be permitted on the Project site.
15. Pre-construction surveys: Prior to any ground disturbance, pre-construction surveys would be conducted by an agency-approved biologist for listed species.
16. Listed species on-site: The Resident Engineer would immediately contact the agency-approved project biologist(s) in the event that a coho, Chinook, or steelhead is observed within the construction zone. The Resident Engineer would suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.
17. Fish relocation plan: A fish relocation plan would be developed by NMFS-approved contractor supplied biologists. Caltrans would submit this monitoring/relocation plan to NMFS for review and approval 60 days prior to installation of the dewatering system. The plan would include the methodology of capturing and relocating fish.
18. Fish capture and release:

- a. If practicable, fish would be removed before dewatering; otherwise fish would be removed from an exclusion area as it is slowly dewatered with methods such as hand or dip-nets, seining, or trapping with minnow traps (or gee-minnow traps).
- b. Isolation areas would be managed in a manner to avoid multiple salvage events (e.g., do not let water or fish into the isolation during non-work times).
- c. Fish capture would be supervised by a qualified fisheries biologist, with experience in work area isolation and competent to ensure the safe handling of all fish.
- d. Fish capture activities would occur during periods of the day with the coolest air and water temperatures possible, normally early in the morning to minimize stress and injury of species present.
- e. Block nets would be monitored frequently enough to ensure they stay secured to the banks and free of organic accumulation.
- f. Electrofishing would be used during the coolest time of day, only after other means of fish capture are determined to be not feasible or ineffective.
- g. Biologists would not electrofish when the water appears turbid, e.g., when objects are not visible at depth of 12 inches.
- h. Biologists would not intentionally contact fish with the anode.
- i. Biologists would follow NMFS (2000 or most recent) electrofishing guidelines.
- j. Biologists would begin electrofishing with a minimum pulse width and recommended voltage, then gradually increase to the point where fish are immobilized.
- k. Biologists would immediately discontinue electrofishing if fish are killed or injured, i.e., dark bands visible on the body, spinal deformations, significant de-scaling, torpid or inability to maintain upright attitude after sufficient recovery time. Biologists would recheck machine settings, water temperature and conductivity, and adjust or postpone procedures as necessary to reduce injuries.
- l. If buckets are used to transport fish:

- i. The amount of time that fish would be in a transport bucket would be minimized.
 - ii. Buckets would be kept in shaded areas or, if no shade is available, covered by a canopy.
 - iii. The number of fish within a bucket would be limited; fish would be of relatively comparable size to minimize predation.
 - iv. Aerators would be used or water would be replaced in the buckets at least every 15 minutes with cold clear water.
 - v. Fish would be released in an area upstream with adequate cover and flow refuge; downstream would be acceptable provided the release site is below the influence of construction.
 - m. Fish presence, handling, and injury would be monitored and recorded during all phases of fish capture. Even if no fish are caught, a fish salvage report would be submitted to the NMFS Santa Rosa Office within 60 days of capture (or isolation) that documents date, time of day, fish handling procedures, air and water temperatures, and total numbers of each FESA-listed fish injured or killed.
19. Fish screening: All water pumping or withdrawal from the river must comply with NMFS *Fish Screening Criteria for Anadromous Salmonids* to avoid the entrainment of fish.
20. Vibratory driving: Any piles driven into the river channel would be installed using vibratory driving if feasible.
21. Hydroacoustic monitoring: Prior to construction, an acoustical monitoring plan to evaluate the sound levels during pile driving activities would be prepared by a qualified biologist. The acoustical monitoring plan must receive approval from NMFS prior to in-channel work and would be implemented during all vibratory and impact pile driving activities.
22. Storm water pollution prevention plan: The SWPPP is a document that addresses water pollution control for a construction project. The contractor would be required to prepare and implement a SWPPP that includes erosion control BMPs and construction waste containment measures to ensure that waters of the U.S. and State are protected during and after project construction. The SWPPP would include sedimentation, siltation, turbidity, and non-visual pollutant monitoring, and outline a sampling and analysis strategy, monitoring and reporting schedule, and inspection schedule.

23. Spill prevention control and countermeasure plan (SPCCP): To minimize the potential for accidental spills of materials hazardous to the aquatic environment, a SPCCP would be prepared.
24. Caltrans standard BMPs: Protective measures would be included in the contract, including, at a minimum:
 - a. No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses.
 - b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.
 - c. Concrete wastes that are collected in washouts and water from curing operations would be collected and disposed of and not allowed into water courses.
 - d. Dust control would be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
 - e. Appropriate erosion control would be installed along or at the base of slopes during construction to capture sediment and temporary organic hydro mulching would be applied to all unfinished disturbed and graded areas.
 - f. Work areas where temporary disturbance has removed the vegetation would be restored and re-seeded with a native seed mix.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on CC Chinook salmon and CCC steelhead.

Per FESA, Caltrans anticipates the proposed project “may affect, and is likely to adversely affect” CC Chinook salmon and CCC steelhead. The project would not result in “take” of either species.

Central California Coast Coho Salmon

Due to the limited distribution of CCC coho salmon to the lower third of the Russian River watershed, Caltrans anticipates that there is low potential for juvenile coho to be present within the action area. There is low potential for handling juvenile coho by the contractor-supplied biologists for the fish relocation program since the action area is outside of current species distribution within the Russian River watershed. There is also

a low potential for coho exposure to elevated levels of turbidity in the water and sediment in gravel since the action area is outside of current species distribution within the Russian River watershed.

Please refer to the section above under CC Chinook and CCC steelhead impacts for more information regarding hydroacoustic impacts, sedimentation/turbidity, loss of riparian vegetation, loss of channel habitat, and alteration of channel hydrology for CCC coho.

Central California Coast Coho Avoidance/Minimization Efforts

To avoid and minimize effects to salmonids and their habitats, Caltrans would implement the general measures described in the above section for CC Chinook salmon and CCC steelhead.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on CCC coho salmon.

Per FESA, Caltrans anticipates the proposed project “may affect, but is not likely to adversely affect” CCC coho salmon. The project would not result in “take” of the species.

Foothill Yellow-Legged Frog

Suitable habitat and observations of FYLF occur within and beyond the project limits. Surveys in 2018 and 2019 found a total of three FYLFs within the project limits. It is possible that relocation of species during construction may be necessary, although with incorporation of the avoidance and minimization measures outlined below, it is not anticipated the project would result in 'take' of the species.

Potential breeding habitat may be temporarily impacted by project activities for the installation of trestles and falsework. It is not anticipated that the installation of pier columns would result in permanent impacts to breeding habitat.

Foothill Yellow-Legged Frog Avoidance/Minimization Efforts

If FYLF are present in the ESL during the instream construction period, impacts would be avoided or minimized with incorporation of standard measures and the following measures listed below:

1. Conduct a Pre-Construction Survey: Within 3 to 5 days prior to entering or working at the project site, a qualified biologist shall examine the project site 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. Prior to commencing work, Caltrans shall provide to CDFW for review preconstruction survey notes and observations.

2. If FYLF are found during the pre-construction survey, Caltrans shall:
 - a. 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;
 - b. Either propose site-specific measures that would be utilized to avoid take, or obtain an incidental take permit (ITP) if take of FYLF cannot be avoided. In stream work shall not commence until CDFW has provided written approval of the proposed avoidance measures or an ITP has been issued.
3. 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.
4. 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.
5. 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.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on FYLF.

Osprey

Suitable nesting habitat was not observed within the project limits, however, osprey may forage within the Russian River. Still, it is not anticipated that the project would result in impacts to osprey.

Osprey Avoidance/Minimization Efforts

The following measures would be implemented to avoid potential impacts to osprey:

- Preconstruction surveys would be conducted no less than 14 days and no more than 30 days before the project starts.
- If an active nest is found, a qualified biologist would monitor the active nest during construction activities to ensure that no interference with the osprey's breeding activities occurs.
- Removal of any trees within the ESL should be done outside of the nesting season, however, if a tree in the ESL needs to be removed during nesting season a qualified biologist would inspect the tree prior to removal to ensure that no nests are present.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on osprey.

Western Pond Turtle

Due to the temporary nature of construction and the abundance of suitable habitat in the project vicinity for which turtles could relocate if necessary, no impacts to western pond turtle from this project are anticipated. Additionally, the staging and access road locations would be surveyed for signs of nesting before they are graded and, if present, would be marked for avoidance. Given this, the project would be expected to have minimal, if any, impact on WPT.

Western Pond Turtle Avoidance/Minimization Efforts

If WPT are present in the ESL during the in-stream construction period, impacts would be avoided or minimized with incorporation of standard measures and the following measure listed below:

- Focused surveys would be conducted for WPT 48 hours prior to the initiation of project construction. If WPT are discovered at any time, they would be relocated downstream in the appropriate habitat.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on WPT.

Northern Spotted Owl

Suitable habitat for NSO is not present within the ESL.

Northern Spotted Owl Avoidance/Minimization Efforts

No avoidance and minimization measures are proposed. Caltrans has determined that the project would have no effect to NSO.

Yellow-Billed Cuckoo

Up to 1.43 acres of temporary and permanent impacts to riparian vegetation are anticipated. This would include vegetation that YBCU may use for foraging and nesting.

Yellow-Billed Cuckoo Avoidance/Minimization Efforts

The following list of project features have been considered and would be implemented in the proposed project:

1. Work outside of the June 1 to August 31 nesting season, or,
2. Start work on the project prior to June 1.
 - a. If work is proposed during the nesting season, vegetation removal should be conducted prior to June, before nesting of YBCU would occur.
 - b. For construction conducted between April 1 and August 31, a USFWS-approved biologist would conduct passive surveys within a minimum of 500 feet of proposed activities to determine the presence of cuckoos. Nesting surveys would be conducted in accordance with the recommended timing, methodology, and/or protocol for Western YBCU. A Natural History Summary and Survey Protocol for the Western YBCU Population.
 - c. Surveys would be conducted within 14 days prior to the start of construction. If there is a break in construction of one week or more, surveys would be conducted prior to the re-initiation of construction. If birds or nests are located within this buffer, USFWS would be contacted for further guidance to ensure birds or nests are not disturbed.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on YBCU.

Per FESA and as a result of the field visit with USFWS on March 14, 2019, Caltrans anticipates the proposed project “may affect, not likely to adversely affect” YBCU. The project would not result in “take” of the species. Informal consultation with USFWS for potential project effects to YBCU would be conducted in spring 2020.

Critical Habitat for California Coastal Chinook, Central California Coast Steelhead, and Central California Coast Coho

Sedimentation/Turbidity: Due to soil disturbance associated with project activities such as constructing access roads and clearing and grubbing, there is a chance of sediment loading in the river channel, which would cause an increase in turbidity in the water flowing through the BSA and in deposited fine sediment within the gravel. Salmonid eggs and juveniles would primarily be exposed to this indirect stressor.

Fine sediment can coat gills of aquatic species, decreasing respiratory abilities. Sediment loading can also reduce stream depth heterogeneity, which can negatively impact pool-dwelling species. An increase in fine sediment in the river is considered an indirect effect, and may cause a loss of spawning habitat, decreased survival of salmonid eggs, as well as a loss of cover and food source for juvenile salmonids. Increased levels of sediment may cause filling in of interstitial spaces within spawning gravel. Fine sediment filling interstitial spaces within the river’s gravel would potentially impact salmonid egg-to-fry survival, since this would reduce the circulation of cold, clean, oxygenated water to the eggs.

Increased sedimentation in rivers can lead to increased turbidity, scouring, and abrasion of stream substrates. Sedimentation can also reduce primary production and reduce substrate suitability for periphyton and biofilm production. Sediment can fill interstitial habitats, which can be detrimental to crevice-occupying stream invertebrates and gravel-spawning fish. Depending on the source of sediment loading, the stressor can be present temporarily or chronically if not properly addressed.

Work in the Russian River channel would be limited to the June 15 to October 15 work windows, which is a season in which only juvenile salmonids would be expected to be within the action area. Measures to control sediment erosion and dust from entering in water would be implemented in order to avoid increasing sediment levels in the river, both during the active construction and post construction.

Loss of Riparian Vegetation: Due to the need for staging and access for construction of the new bridge, as well as access for demolition of the existing bridge, removal of riparian vegetation would occur. The closer a tree is to the area for new bridge construction, trestles and falsework, and access roads, the more likely the tree will be completely removed (including roots). It is largely up to the discretion of the contractor to choose to leave roots and stumps in place in the rest of the riparian impact areas. Removing riparian trees would reduce the amount of vegetative cover within the stream. This in turn can increase temperature along the river margins where the cover is removed, a change in food availability, shaded cover for protection from predation, and change allochthonous inputs within the BSA. However, the larger size of the new bridge would increase the shade of the river by 0.035 acres (1,524 square feet) over the active channel. All life stages of salmonids would be exposed to this indirect stressor.

In addition, the removal of mature riparian vegetation may result in a reduction of bank stability, leaving the river more susceptible for bank and channel erosion. This could lead to increased sedimentation, and the impacts associated with it. Loss of riparian habitat also decreases allochthonous organic matter such as leaf litter and large woody debris, which can impact nutrient cycling in rivers and alter food chains. Riparian areas act as natural filters for river systems, and without them, it decreases removal of nutrient and contaminant runoff and sediment trapping from upland runoff.

Riparian trees providing shade to the active channel of the Russian River were mapped within impacts areas. In total, there would be a removal of approximately 54 trees along the banks of the Russian River that would provide shade to the active channel, as well as a small island comprised of willow below OHWM. The closer any trees are to the new bridge construction and access roads (total width of 75 to 100 feet), the more likely it is that the contractor would need to remove the entire tree (including roots and stumps) for grading and structure construction. Trees farther away from these areas within the impact footprint are more likely to be left with stumps and roots intact. The majority of the riparian trees contributing shade to the Russian River within the impact areas are within or very close to the bridge construction areas and access roads. For the purposes of this analysis, it is likely that the contractor would need to completely remove (including roots and stumps) all 54 shade trees within the riparian impact areas.

Loss of Channel Habitat: Due to construction of new bridge piers and temporary trestles and falsework bents, there would be an alteration of channel morphology (new fill would be introduced to the channel and old fill would be removed from the channel). All life stages of salmonids would be exposed to this indirect stressor, since the trestles and falsework may remain in the Russian River over the winter season, and from additional bridge pier columns placed within and near the Russian River.

Losing potential spawning gravel habitat within the Russian River channel may lead to behavioral changes for adults in choosing different available spawning sites. This would also potentially lead to changes in spatial occupancy of juvenile salmonids due to the changes and positioning of artificial fill in the Russian River channel.

During construction, there would be both permanent and temporary loss of channel habitat. Trestles and falsework would be considered temporary fill, while the new bridge piers would be considered permanent fill. The existing bridge has one column (Photo 12 and 13) located within OHWM. The new bridge design requires two columns per pier. The proposed dimensions of the new pier footing for each column is approximately the same width as the old pier footings. As a result, although one pier would be removed when the existing bridge is demolished, two piers would be located within OHWM of a channel that runs lateral to the Russian River, and a third column footing would partially be below OHWM of the active channel on the left bank. Overall, it is anticipated there would be a net loss of approximately 0.008 acre of Russian River channel habitat within the action area, due to the creation of new bridge pier columns.



Photos 12 and 13: Pier 3 of existing bridge. Photo 12 taken 2/28/19. Photo 13 taken 4/30/19.

Alteration of Channel Hydrology: Due to construction of new bridge piers, temporary trestle and falsework bents, there would be a temporary alteration of channel hydrology stemming from the need to dewater areas of the channel. Dewatering would likely occur with use of cofferdams around the work areas, and the cofferdams would likely cover a footprint of approximately 10 feet around the new pier footprints. In total, there is anticipated to be an approximate dewatered footprint of approximately 250 linear feet of Russian River channel for the construction of the new bridge.

This would cause a temporary change in areas of critical habitat within the channel, a temporary change in available food (stream invertebrates), and possibly a temporary change in water temperature on a small spatial scale within the action area. Juvenile

salmonids would primarily be exposed to this indirect stressor due to the timing of proposed construction.

During water diversion and dewatering activities, fish would be relocated and excluded from the action area. This may cause a temporary disruption in habitat connectivity in the action area within the Russian River channel.

In general, changes in hydrology can lead to changes in channel dynamics such as changes in erosion, flooding, and transport of nutrients, sediment, and contaminants can degrade channel habitats. However, the change in hydrology associated with this project would be minimal and isolated to temporary water diversions and dewatering activities associated with bridge construction within the action area. Activities in the Russian River channel would be limited to seasonal low flow conditions (June 15 to October 15) so that it would have fewer impacts on salmonids and the channel habitat. The dewatering activities would temporarily degrade habitat within a portion of the action area.

Avoidance/Minimization Efforts for Critical Habitat for Chinook, Steelhead, and Coho

To avoid and minimize effects to critical habitat for CC Chinook, CCC steelhead, and CCC coho, Caltrans would implement the general measures described in the above section for CC Chinook and CCC steelhead.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on critical habitat for CC Chinook, CCC steelhead, and CCC coho.

Per FESA, Caltrans anticipates the proposed project “may affect, likely to adversely affect” critical habitat for CC Chinook, CCC steelhead, and CCC coho.

Essential Fish Habitat

A determination that the proposed action may adversely affect EFH for Chinook salmon and coho salmon. Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions. Adverse effects to EFH would be avoided and minimized to the greatest extent practicable. However, this does not eliminate temporary and permanent impacts to the river channel and associated riparian habitat.

- The Russian River and surrounding area is designated as essential fish habitat for Chinook salmon and coho salmon.
- The project would include two seasons of in-water work.
- There would be a temporary loss of approximately 0.25 acres or 250 linear feet of in-channel habitat below OHWM in the Russian River from dewatering activities and work area isolation. Within this dewatered footprint there would be approximately 0.168 acres of temporary impacts from bridge construction activities that would be captured in other applicable permits (1602, 401, 404).
- There would be a permanent loss of 0.004 acres of in-channel habitat below OHWM in the Russian River.
- The project activities may cause temporary turbidity levels to rise above baseline conditions, which may temporarily degrade EFH during juvenile occupation of the action area.
- There would be a temporary loss of 1.376 acres of riparian, which includes 1.125 acres of valley oak riparian and 0.251 acres of floodplain riparian.
- There would be a permanent loss of 0.057 acres of riparian, which includes 0.042 acres of valley oak riparian and 0.015 acres of floodplain riparian.
- Potentially harmful noise levels from pile driving could lead to temporary conditions of unsuitable habitat within the action area, due to risk of harassment, injury, or death of salmonids.

Avoidance and Minimization Efforts for Essential Fish Habitat

To avoid and minimize effects to essential fish habitat, Caltrans would implement the general measures described in the above section for CC Chinook and CCC steelhead.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on essential fish habitat.

Per FESA, Caltrans anticipates the proposed project “may adversely affect” essential fish habitat.

DISCUSSION OF CEQA CHECKLIST QUESTION B

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on natural communities:

- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Adjacent Riparian Vegetation

Based on the current project design, it is anticipated the project would result in approximately 1.376 acres of temporary impacts and 0.057 acre of permanent impacts. For the purpose of this assessment, temporary impacts were considered for areas impacted by staging and access, and areas underneath the proposed structure that would not receive permanent fill. Permanent impacts are considered to be areas where impacts would result in permanent loss of a potentially jurisdictional area. This includes



Figure 8: Proposed Riparian Habitat Within the ESL

the placement of new piers, and any cut and/or fill needed for the construction of the abutments and new highway alignment.

Within the BSA, the Russian River becomes a braided channel, and is comprised of an active channel and two lateral channels that convey waters during periods of moderate and high flow. Between these channels, riparian habitat overlaps the OHWM of the secondary channels. Based on vegetation mapping and OHWM delineations, the floodplain of the Russian River extends approximately 90 to 150 feet west of the left

bank of the Russian River active channel. Impacts to the floodplain are discussed in the paragraph below.

Within the Russian River floodplain, it is anticipated that the project would result in approximately 0.251 acre of temporary impacts and 0.015 acre of permanent impacts (Table 5). Temporary impacts would occur as a result of staging and access, while permanent impacts would occur from the placement of two columns that would comprise pier 3. Additional permanent impacts would occur from the removal of the existing pier 3, which would be excavated three feet below original grade and backfilled with native material. Although this impact is permanent, it would provide a benefit to the overall community by removing a barrier within the floodplain, providing additional spawning habitat.

Immediately east of the left bank of the Russian River, the vegetation community transitions from predominately white alder and willow communities within the floodplain to a valley oak woodland. South of the existing alignment, the valley oak woodland community extends from the left bank of the Russian River to Eastside Calpella Road and provides shading to the Russian River as well as an ephemeral drainage that extends from a hillside northeast of the BSA and discharges directly to the Russian River.

Within the valley oak woodland, it is anticipated that the project would result in approximately 1.125 acres of temporary impacts and 0.042 acre of permanent impacts (Table 5). Temporary impacts would occur as a result of staging and access, while permanent impacts would occur from the placement columns for piers 4 - 7.

Table 5: Impacts to Riparian Communities

LOC_ID	Location	Area (Acres)	Type	Impact
RF_2	Floodplain west of Russian River	0.060	Floodplain	Temporary
RF_3	Willow island	0.022	Floodplain	Temporary
PIER_3a	Pier 3, Column 1	0.004	Floodplain	Permanent

PIER_3b	Pier 3, Column 2	0.004	Floodplain	Permanent
RF_1	Staging and Access - South of Pier 3, Column 2	0.093	Floodplain	Temporary
RF_1	Staging and Access - Between New and Old Bridge	0.015	Floodplain	Temporary
POWUS_8,9,10	Staging and access north of existing bridge	0.026	Floodplain	Temporary
PIER_3	Demolition of old pier 3	0.006	Floodplain	Permanent
GRAVEL_1	Staging and Access- South of Pier 4, Column 2	0.035	Floodplain	Temporary
RW_5	Staging and Access	0.060	Riparian	Temporary
RW_4	Staging and Access	0.055	Riparian	Temporary

PIER_4a- PIER7b	Piers 4-7	0.042	Riparian	Permanent
RW_1	Bridge Alignment	0.410	Riparian	Temporary
RW_2	Staging and Access South of Proposed Bridge Alignment	0.600	Riparian	Temporary
Total Temporary Floodplain		0.251		
Total Permanent Floodplain		0.015		
Total Temporary Riparian		1.125		
Total Permanent Riparian		0.042		
Total Temporary (Floodplain + Riparian)		1.376		
Total Permanent (Floodplain+ Riparian)		0.057		
Grand Total		1.433		

Permanent impacts to riparian vegetation would be reduced to the greatest extent practicable with incorporation of the measures outlined below. These standard measures would ensure that applicable BMPs are used to stabilize all bare soil areas over both the short and long term and to minimize adverse effects to water quality, aquatic habitat, and aquatic species. BMPs include treatment controls, soil stabilization practices, and weather-appropriate scheduling. High-visibility temporary fencing would be used to limit ground disturbance to the project footprint, and debris containment plans would be implemented if needed to ensure construction debris does not enter adjacent waters.

The following measures would be implemented during construction:

- Upon completion of project, areas of disturbance on streambanks shall be stabilized with wattles and straw.
- Hay and/or straw used in erosion control application shall be certified weed-free or weed-seed free.
- 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).
- The areas outside of permitted construction areas would be designated as ESAs. Where feasible, highly visible ESA fencing would be installed to delineate the permitted area. No project activities would occur within jurisdictional areas outside the delineated construction area.
- Existing slash shall be piled onsite before construction activities. Upon completion of project, slash piles shall be spread out or chipped onsite.
- Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction activities. Where possible, trees would be trimmed instead of removed to gain access to the work sites and flagging would be used to delineate the work area. Any debris and sediment would be contained within the project site and disposed of appropriately off-site.
- Caltrans would also implement a program of invasive weed control in all areas of soil disturbance caused by construction to improve habitat for native species in and adjacent to disturbed soil areas within the project limits. Caltrans would also prepare a project-specific revegetation plan.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact with Mitigation” on riparian habitat.

Oak Woodlands

Based on the current project description, it is anticipated the proposed project would result in approximately 0.359 acre of temporary impacts and 2.653 acres of permanent impacts to coast live oak woodlands (Table 6).

Table 6: Impacts to Non-Riparian Oak Woodlands within ESL.

ID	Location	Acreage	Impact Type
OAK_11	Cut/Fill North of new alignment	0.225	Permanent
OAK_8	New alignment E. of E. Calpella Rd._1	0.615	Permanent
OAK_7	New alignment E. of E. Calpella Rd._2	0.140	Permanent
OAK_6	New alignment E. of E. Calpella Rd._3	0.030	Permanent
OAK_14	Cut/Fill South of new alignment_1	0.442	Permanent
OAK_13	Cut/Fill South of new alignment_2	0.156	Permanent
OAK_12	Cut/Fill South of new alignment_3	0.163	Permanent
OAK_1	Staging and Access South of new alignment	0.328	Temporary
OAK_9	Cut/Fill and Staging North of proposed alignment	0.330	Permanent
OAK_5	Proposed Alignment	0.310	Permanent
OAK_4	Staging south of proposed alignment and Cut/Fill	0.018	Permanent
OAK_10	Fill prism between proposed alignment and southern staging area	0.224	Permanent
OAK_2	Access for demo of old bridge	0.003	Temporary
OAK_3	Access for demo of old bridge	0.028	Temporary

	Total Temporary Impacts	0.359	
	Total Permanent Impacts	2.653	
	Grand Total	3.012	

Temporary impacts would largely occur as the result of developing staging and access for the proposed alignment and access for demolition of the existing bridge. Permanent impacts would occur in areas of the proposed bridge alignment and the development of fill prisms necessary to contour the new alignment (Figure 9).



Figure 9: Non-Riparian Oak Woodland Impacts Within ESL

To avoid and minimize effects to oak woodlands, Caltrans would implement the following general measures:

- Restrict Timing of Vegetation Removal
 - Vegetation removal would occur outside the migratory bird breeding season (from October 1 to January 31). 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 are found during preconstruction 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.

- Minimize Disturbance
 - Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Where possible, trees would be trimmed instead of removed to gain access to the work sites.

Based on the above, a determination was made that the project would have a “Less Than Significant Impact” on oak woodlands.

DISCUSSION OF CEQA CHECKLIST QUESTION C

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on wetlands and waters:

- Would the project 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?

Wetlands

The most current project design was analyzed against biological resources that were surveyed and mapped during the 2018-2019 survey seasons (final plans, specifications, and estimates have not been developed for this project). A list of jurisdictional wetlands within the BSA is provided in Table 7. Based on surveys completed to date, the proposed project would result in approximately 0.030 acre of permanent impacts to wetlands as a result of the fill prism for the new SR-20 alignment east of Eastside Calpella Road. No temporary impacts to wetland were identified.

Table 7: Wetlands Identified within ESL

Location	Acreage	Impacted?	Impact	Impact Type
Wetland 1, East of E. Calpella Rd on Held Property	0.021	Yes	Permanent	New bridge alignment

Wetland 1, East of E. Calpella Rd on Held Property	0.004	Yes	Permanent	Fill for new bridge alignment
Wetland 2 E. of E. Calpella Rd on Held Property	0.005	Yes	Permanent	New bridge alignment
Northwest of Russian River, north of SR 20	0.005	No	N/A	N/A
Northwest of Russian River, north of SR 20	0.034	No	N/A	N/A
Total Wetlands in BSA	0.069			
Total Temporary Impacts	0.00			
Total Permanent Impacts	0.030			

Consistent with the regulations under Section 404 of the Clean Water Act, the determination of permanent and temporary adverse impacts to jurisdictional waters of the United States were based upon any “discharges of dredged or fill material”, and were calculated as discussed below:

Permanent Impacts

Any jurisdictional waters receiving a new permanent fill including, but not limited to any new permanent fills placed for roadways and associated embankments (cut and fill areas). As well as any new permanent fills associated with new drainage features/structures including the extension of existing culverts, as well as any permanent instream structures including culvert end treatments such as rock slope protection, flared end sections, headwalls, and endwalls, were considered permanent impacts.

Based on the current project description, a total of 0.030 acre of wetlands would be permanently impacted as a result of construction activities. These areas would be permanently impacted by the eastern bridge abutment and fill prism needed to create the new SR-20 alignment.

Temporary Impacts

Temporary Fills: Any jurisdictional waters receiving any fill that would be removed from the jurisdictional waters before or upon project completion, including, but not limited to any backfills for geotechnical borings and coffer-dams or temporary diversion structures that may be required for de-watering activities when working in a flowing stream were considered as temporary impacts.

Additionally, any jurisdictional waters that would be temporarily disturbed by construction activities or by equipment access and operation that would be re-contoured to as close to pre-project condition, stabilized and re-vegetated with appropriate native species as soon as feasible at the conclusion of construction activities, would be considered as temporary impacts. No temporary impacts to wetlands were identified.

To avoid and minimize effects to wetlands, Caltrans would implement the following general measures:

1. Establish Environmentally Sensitive Areas: Additional direct and indirect impacts to sensitive biological resources throughout the project area would be avoided or minimized by designating these features outside of the construction impact area as ESAs on project plans and in project specifications. ESA information would be shown on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not necessarily limited to, the use of temporary orange (high-visibility) fencing to identify the proposed limit of work in areas adjacent to sensitive resources or to locate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs would be prohibited (including the staging/operation of heavy equipment or casting of excavated materials). ESA provisions would be implemented as a first order of work and remain in place until all construction activities are complete.
2. Containment Measures / Construction Site Best Management Practices: The Contractor shall implement mitigation measures so as to contain construction related material, in manageable locations, and prevent debris from entering surface waters during in-water work and for construction operations outside of receiving waters.

BMPs utilized for erosion control would be implemented and in place prior to, during, and after construction to ensure that no silt or sediment enters receiving waters. Areas where a disturbance of soil has occurred would be stabilized appropriately and approved by the North Coast RWQCB (NCRWQCB) prior to filing the NPDES Construction General Permit Notice of Termination. BMPs options and the selected mitigation measures deployed, which relate to in-water work, would be considered, evaluated, and dependent on factors such as field

conditions, changes to construction strategies, and regulatory requirements in order to protect the beneficial uses of receiving waters. The project design team may specify BMPs to be utilized during construction in addition to, or in place of, other temporary measures selected by the Contractor.

Compliance with all construction site BMPs, specified in the approved SWPPP and any other permit conditions, is mandatory to minimize the introduction of construction related contaminants and sediment to receiving waters. In order to achieve this and reduce the potential for discharge, the Contractor would follow all applicable guidelines and requirements in the 2018 Caltrans Standard Specifications (2018 CSS), Section 13, regarding water pollution control and general specifications for preventing, controlling, and abating water pollution in streams, waterways, and other bodies of water. Project specific BMPs shall address (among other things) soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-storm water management, and waste management practices and would be based on the best conventional and best available technology. Caltrans staff and the Contractor shall perform routine inspections of the construction area to verify that field BMPs are properly implemented, maintained, and are operating effectively and as designed. BMPs and mitigation measures selected must meet the standards and objectives to minimize water pollution impacts set forth in the 2018 CSS and shall include (but not be limited to) the following:

- Use only equipment in good working order and free of dripping or leaking engine fluids.
- Conduct any necessary equipment washing where water is prevented from flowing into municipal drainage conveyance systems and receiving waters.
- In case of an accidental spill, an “emergency response plan” would be prepared and submitted to the NCRWQCB and USACE for review and approval at least 14 days prior to conducting any construction work. A spill prevention control and countermeasures plan would be onsite and in place to handle any topside spills. The plan would include strict on-site handling rules to keep construction and maintenance materials from entering the river, including procedures related to refueling, operating, storing, and staging construction equipment, as well as preventing and responding to spills. The plan also would identify the parties responsible for monitoring the spill response. During construction, any spills would be cleaned up immediately according to the spill prevention and countermeasure plan.

- BMPs for spill containment measures (plastic sheeting, absorbent pads and/or other containment devices) would be utilized during all-over water/trestle-mounted construction activities. BMPs would be deployed around and beneath all over-water/ trestle-mounted construction equipment. Supplemental equipment would be on-site to collect and remove any spills.
 - Prevent discharge of turbid water to the Russian River during any construction activities including, but not limited to de-watering activities, by filtering the discharge first using a filter bag, diverting the water to a settling tank or infiltration areas, and/or treating the water in a manner to ensure that discharges conform to the water quality requirements of the waste discharge permit issued by the NCRWQCB prior to entering receiving waters.
3. Environmental Awareness Training for Construction Personnel: Before any work occurs in the project area, including grading and tree removal, Caltrans' contractors would retain a qualified biologist to conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training would be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects to sensitive biological resources (e.g., riparian vegetation, wetlands, special-status species, nesting birds, and protected trees) adjacent to construction areas and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist would inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the BO or other authorizing document (e.g., letter of concurrence). Proof of this instruction would be submitted to the project proponent, and other overseeing agencies (i.e., CDFW, USACE, and/or NCRWQCB), as appropriate. The environmental training also would cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. General restrictions and guidelines that would be followed by construction personnel are listed below:
- Project-related vehicles would observe the posted speed limit on hard-surfaced roads and a 10 mile-per-hour speed limit on unpaved roads or access areas during travel within the project limits.
 - Project-related vehicles and construction equipment would restrict off-road travel to the designated construction area.

- Vegetation clearing and construction operations would be limited to the minimum necessary.
 - All food-related trash would be disposed of in closed containers and removed from the project site at least once a week during the construction period. Construction personnel would not feed or otherwise attract wildlife to the project site.
 - No pets or firearms would be allowed on the project site.
 - To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel would not service vehicles or construction equipment outside designated staging areas.
 - The training also would include identifying the BMPs written into construction specifications for avoiding and minimizing the introduction and spread of invasive plants.
4. Limit Vegetation Removal: Vegetation removal shall be limited to the absolute minimum amount required for construction.
5. Restore/Revegetate Temporarily Affected Areas Onsite

EO 11990, Protection of Wetlands (1977), calls for no net loss of wetlands, and established a national policy to avoid adverse effects to wetlands whenever there is a practicable alternative. Given the project would replace the bridges on a southern alignment, the identified alternative was determined to be the most practicable alternative that would meet the project's objective (purpose and need) while also limiting the acreage of wetlands that could potentially be affected.

Based on the scope of the project, the project's anticipated effect on the resource, and the permanent nature of the disturbance, a determination was made that the project would result in a "Less Than Significant with Mitigation" impact to wetlands.

Other Waters

Permanent Impacts

Any jurisdictional waters receiving a new permanent fill including, but not limited to any new permanent fills placed for roadways and associated embankments (cut and fill areas), as well as any new permanent fills associated with any other new drainage features/structures including the extension of existing culverts, as well as any

permanent instream structures including culvert end treatments such as rock slope protection, flared end sections, headwalls and endwalls, were considered permanent impacts.

Based on the current project description, a total of 0.004 acre of Waters of the United States/Waters of the State (WOUS/WOS) would be permanently impacted as a result of project activities. This would occur in areas of new pier column placement below the OHWM (Table 8).

Temporary Impacts

Temporary Fills: Any jurisdictional waters receiving any fill that would be removed from the jurisdictional waters before or upon project completion, including, but not limited to any backfills for geotechnical borings and coffer-dams or temporary diversion structures that may be required for de-watering activities when working in a flowing stream were considered as temporary impacts.

Additionally, any jurisdictional waters that would be temporarily disturbed by construction activities or by equipment access and operation that would be re-contoured to as close to pre-project condition, stabilized and re-vegetated with appropriate native species as soon as feasible at the conclusion of construction activities, would be considered temporary impacts.

Based on the current project description, a total of 0.245 acre of WOUS/WOS would be temporarily impacted as a result of project activities (Table 8). Impacts would occur largely for the purposes of staging and access below OHWM. In addition, impacts were assumed at all potentially jurisdictional drainage channels that would be impacted (re-established) as a result of roadway widening at Eastside Calpella Road, realignment of SR-20, or reconnecting the culvert at PM 33.95 to the drainage channel at Eastside Calpella Road.

Table 8: Temporary and Permanent Impacts to WOUS/WOS as a Result of Project Activities

Location	Acreage	Impact Type
Culvert inlet at PM 33.95	0.002	Temporary
Culvert outlet at PM 33.95	0.002	Temporary
Channel from area South of SR 20 to E. Calpella Rd. Drainage	0.018	Temporary

Culvert inlet at E. Calpella Rd.	0.002	Temporary
Culvert outlet at E. Calpella Rd.	0.002	Temporary
Drainage channel parallel to E. Calpella Rd.	0.016	Temporary
Channel from E. Calpella Rd. to Russian River 1 Realignment under bridge	0.011	Temporary
Channel from E. Calpella Rd. to Russian River 2 Staging and access	0.023	Temporary
OHWB of Russian River	0.064	Temporary
Lateral channel west of Russian River	0.012	Temporary
Staging and Access- South of Pier 4, Column 2	0.022	Temporary
Staging and Access - South of Pier 3, Column 2	0.040	Temporary
Staging and Access Between New and Old Bridge	0.010	Temporary
Staging and access north of existing bridge	0.020	Temporary
Pier 3, Column 1	0.002	Permanent
Pier 3, Column 2	0.001	Permanent
Pier 4, Column 2	0.001	Permanent
Total Temporary	0.245	
Total Permanent	0.004	
Grand Total	0.248	

To avoid and minimize effects to other waters, Caltrans would implement the measures described for wetlands in the section above.

Based on the scope of the project, the project's anticipated effect on the resource, and the temporary and permanent nature of the disturbance, a determination was made that the project would result in a "Less Than Significant with Mitigation" impact to other waters.

DISCUSSION OF CEQA CHECKLIST QUESTION D

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on any plant and animal species:

- Would the project 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?

Bat Species

Please reference Section 2.4 "Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A." Based on the discussion of bat species in Question A, a determination was made that the project would have a "Less Than Significant Impact" impact on bat species and their habitats.

California Coastal Chinook Salmon

Please reference Section 2.4 "Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A." Based on the discussion of CC Chinook salmon in Question A, a determination was made that the project would have "Less Than Significant Impact" on CC Chinook salmon.

Per FESA, Caltrans anticipates the proposed project "may affect, likely to adversely affect" CC Chinook salmon. The project would not result in "take" of the species.

Central California Coast Coho Salmon

Please reference Section 2.4 "Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A." Based on the discussion of central CCC coho salmon in Question A, a determination was made that the project would have a "Less Than Significant Impact" on CCC coho salmon.

Per FESA, Caltrans anticipates the proposed project "may affect, not likely to adversely affect" CCC coho salmon. The project would not result in "take" of the species.

Central California Coast Steelhead

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of central CCC steelhead in Question A, a determination was made that the project would have a “Less Than Significant Impact” on CCC Steelhead.

Per FESA, Caltrans anticipates the proposed project “may affect, likely to adversely affect” CCC steelhead. The project would not result in “take” of the species.

Foothill Yellow-Legged Frog

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of FYLF in Question A, a determination was made that the project would have a “Less Than Significant Impact” on FYLF.

Osprey

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of osprey in Question A, a determination was made that the project would have a “Less Than Significant Impact” on osprey.

Western Pond Turtle

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of WPT in Question A, a determination was made that the project would have a “Less Than Significant Impact” on WPT.

Northern Spotted Owl

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of NSO in Question A, a determination was made that the project would have “No Effect” on NSO.

Yellow-Billed Cuckoo

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Question A.” Based on the discussion of YBCU in Question A, a determination was made that the project would have a “Less Than Significant Impact” on YBCU.

Per FESA and as a result of the field visit with USFWS on March 14, 2019, Caltrans anticipates the proposed project “may affect, not likely to adversely affect” YBCU. The project would not result in “take” of the species.

Critical Habitat for California Coastal Chinook and Central California Coast Steelhead

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Questions A.” Based on the discussion of critical habitat for CC Chinook salmon and CCC steelhead in Questions A, a determination was made that the project would have a “Less Than Significant Impact” on critical habitat for CC Chinook and CCC steelhead.

Per FESA, Caltrans anticipates the proposed project “may affect, likely to adversely affect” critical habitat for CC Chinook and CCC steelhead.

Critical Habitat for Central California Coast Coho

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Questions A.” Based on the discussion of critical habitat for CCC coho in Questions A, a determination was made that the project would have a “Less Than Significant Impact” on critical habitat for CCC coho.

Per FESA, Caltrans anticipates the proposed project “may affect, likely to adversely affect” critical habitat for CCC coho.

Essential Fish Habitat

Please reference Section 2.4 “Discussion of Environmental Evaluation Questions 2.4 – Biological Resources – Questions A.” Based on the discussion of EFH in Questions A, a determination was made that the project would have a “Less Than Significant Impact” on EFH.

Per FESA, Caltrans anticipates the proposed project “may adversely affect” EFH.

DISCUSSION OF CEQA CHECKLIST QUESTION E

The following CEQA Checklist item was used to evaluate conflicts with any local policies or ordinances:

- Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Oak Woodlands

The *Mendocino County General Plan*, adopted in 2009, has several policies which outline oak woodland protection. The policies include; Policy RM-24, Policy RM-25, and Policy RM-28.1. The proposed project would impact 4 acres of oak woodland.

Mendocino County has an estimated 580,416 acres of oak woodland present within county lines. The approximately 4 acres of impacted oak woodland accounts for 0.0009% of Mendocino County's 580,416 acres; therefore, there would only be a less than significant impact given the abundant oak woodland present.

DISCUSSION OF CEQA CHECKLIST QUESTION F

The following CEQA Checklist item was used to evaluate conflicts with the provisions of an adopted Conservation Plan:

- Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

A "No Impact" determination in this section is based on the location of the proposed project. The 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.

Mitigation Measures

Wetlands

For impacts that cannot be restored on-site and areas where permanent loss has occurred (ie., placement of piers and abutments) mitigation for permanent impacts to wetland habitat would be offset by mitigation determined during the permitting phase of this project. If off-site restoration were implemented, the appropriate measures would be identified and coordinated through the USACE, NCRWQCB, CDFW, and any other administering agencies.

Other Waters

Temporary Impacts

After completion, all materials used for the temporary access roads, cofferdams and/or trestle piles would be completely removed from the site. The site would then be restored

to a natural setting by regrading and revegetating with native plants, as required by the final approved revegetation plan and erosion control plans.

Permanent Impacts

For impacts that cannot be restored on-site and areas where permanent loss has occurred (i.e., placement of piers and abutments) mitigation for permanent impacts to riparian habitat would be offset by mitigation determined during the permitting phase of this project. If off-site restoration were implemented, the appropriate measures would be identified and coordinated through the USACE, NCRWQCB, CDFW, and any other administering agencies.

Adjacent Riparian Vegetation

Temporary Impacts

After completion, all materials used for the temporary access roads, cofferdams and/or trestle piles would be completely removed from the site. The site would then be restored to a natural setting by regrading and revegetating with native plants, as required by the final approved revegetation plan and erosion control plans.

Permanent Impacts

For impacts that cannot be restored on-site and areas where permanent loss has occurred (i.e., placement of piers and abutments) mitigation for permanent impacts to riparian habitat would be offset by mitigation determined during the permitting phase of this project. If off-site restoration were implemented, the appropriate measures would be identified and coordinated through the USACE, NCRWQCB, CDFW, and any other administering agencies.

Oak Woodlands

No compensatory mitigation is proposed for non-riparian oak woodlands. To address the loss of non-riparian oak woodland communities impacted by project activities, Caltrans proposes to plant areas within the existing Caltrans ROW near the project location, and re-plant areas of the old SR-20 alignment and existing fill prism with oaks that are of the same species impacted by project activities.

Critical Habitat for California Coastal Chinook and Central California Coast Steelhead

Any impacts to critical habitat for CC Chinook and CCC steelhead would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Critical Habitat for Central California Coast Coho

Any impacts to critical habitat for CCC coho would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Essential Fish Habitat

Any impacts to EFH would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Northern California Black Walnut

The Northern California black walnuts are within an area considered to be jurisdictional riparian habitat. As a result, any impacts to the trees would be addressed in the 1600 permit and compensatory mitigation for impacts to riparian habitat may be required.

Bat Species

No compensatory mitigation is proposed for bats.

California Coastal Chinook Salmon

Any impacts to CC Chinook salmon would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Central California Coast Coho Salmon

Any impacts to CCC coho salmon would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Central California Coast Steelhead

Any impacts to CCC steelhead would be addressed under proposed mitigation for loss of OWUS/WOS and associated riparian habitat.

Foothill Yellow-Legged Frog

No compensatory mitigation is proposed for FYLF.

Osprey

No compensatory mitigation is proposed for osprey.

Western Pond Turtle

No compensatory mitigation would be required given impacts to WPT would be avoided or minimized through implementation of the standard measures designed to protect aquatic organisms.

Northern Spotted Owl

No compensatory mitigation is proposed for NSO.

Yellow-Billed Cuckoo

No compensatory mitigation is proposed for YBCU.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	No	No	Yes	No
Would the project: b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No	No	Yes	No
Would the project: c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No	No	No	Yes

“No Impact” and “Less Than Significant” determinations in this section are based on the scope, description, and location of the proposed project, as well as information provided by the project Archaeologist on December 19, 2019 from the draft Historic Property Survey Report (HPSR). The HPSR is currently in progress and would be completed prior to finalizing this document.

Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 CFR 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the FHWA, the ACHP, the California State Historic Preservation Officer (SHPO), and the

Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California PRC Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU)¹ between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA would satisfy the requirements of PRC Section 5024.

Environmental Setting

Record searches and literature reviews identified one cultural resource within the project limits: the mainline of the Northwestern Pacific Railroad. Other cultural resources

¹ The MOU is located on the SER at http://www.dot.ca.gov/ser/vol2/5024mou_15.pdf

have been previously documented in the project vicinity, but not within the project limits. The Native American Heritage Commission search determined that no tribal cultural resources have been identified in the project area. Furthermore, pedestrian surveys were conducted by archaeologists from Pacific Legacy, Incorporated on March 13-14, 2018. Studies identified three historic-era archaeological sites (CA-MEN-3784H, P-23-006195, and Calpella 1), and three built environment resources (CA-MEN-3111H/P-23-003663, Bridge No. 10-0182, and Bridge No. 10-0183) within the project Area of Potential Effects (APE).

Discussion of Environmental Evaluation Questions 2.5—Cultural Resources

a - b) Studies identified three historic-era archaeological sites (CA-MEN-3784H, P-23-006195, and Calpella 1), and three built environment resources (CA-MEN-3111H/P-23-003663, Bridge No. 10-0182, and Bridge No. 10-0183) within the project APE.

Investigations at site Calpella 1 identified the ruins of a late 19th to mid-20th century farmstead. Due to property access issues, this site has not been evaluated for the NRHP or the CRHR. The evaluation of, effects analysis for, and potential mitigation for this resource would follow the stipulations of the project-specific Programmatic Agreement (Project PA) and associated Cultural Resources Management Plan (CRMP) that has been developed for this project. The California SHPO would concur with the final Project PA.

CA-MEN-3784H – This site is assumed eligible for the NRHP for the purposes of this project only due to a limited potential to effect in accordance with PA Stipulation VIII.C.3. CSO is reviewing this recommendation for approval. It was determined that the project would not adversely affect this site. The California SHPO is reviewing this determination. No further work at this site should be necessary.

P-23-006195 – This site is assumed eligible for the NRHP for the purposes of this project only due to a limited potential to effect in accordance with PA Stipulation VIII.C.3. The Cultural Studies Office (CSO) is reviewing this recommendation for approval. It was determined that the project would not adversely affect this site. The California SHPO is reviewing this determination. No further work at this site should be necessary.

CA-MEN-3111H/P-23-003663 – Northwestern Pacific Railroad consists of the mainline of the railroad and its bridge over the Russian River. The railroad was constructed in 1901 as part of the California Northwestern Railway, which later merged with several other railroads to form the Northwestern Pacific Railroad. This resource was recommended as eligible for listing in the NRHP and the CRHR as a historic district in

2004. No formal eligibility determination has been made. No further work at this site should be necessary, as it would be protected in its entirety during construction.

Bridge No. 10-0182, the Russian River Bridge/Overpass, was previously evaluated as a part of Caltrans' California Historic Bridge Inventory and determined ineligible for listing in the NRHP. No further work at this site is necessary.

Bridge No. 10-0183, the Redwood Valley Road UC, was previously evaluated as a part of Caltrans' California Historic Bridge Inventory and determined ineligible for listing in the NRHP. No further work at this site is necessary.

c) No indicators 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.

Mitigation Measures

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, "No Impact" would occur.

2.6 Energy

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	No	No	No	Yes
Would the project: b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Noise, Air Quality, Greenhouse Gas, and Energy Analysis dated July 23, 2019. Potential impacts to energy are not anticipated due to the following:

- a - b) The proposed project would not increase capacity or provide congestion relief when compared to the no-build alternative. It may contribute to roadway improvement that would improve vehicles’ fuel economies and thus affecting project energy consumption.

The basic procedure for analyzing direct energy consumption from construction activities is to obtain fuel consumption projections in gallons from the CAL-CET2018, version 1.2. CAL-CET outputs fuel consumption based on project-specific construction information.

The proposed project does not include maintenance activities which would result in long-term indirect energy consumption by equipment required to operate and maintain in the roadway. Thus, it is unlikely to increase indirect energy consumption though increased fuel usage.

Proposed project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. As indicated above, energy use associated with proposed project construction is estimated to result in the total short-term consumption of 55,888 gallons from diesel-powered equipment and 35,741 gallons from gasoline-powered equipment. This represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete.

Moreover, 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.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.7 Geology and Soils

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Directly or indirectly cause 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.	No	No	No	Yes
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: ii) Strong seismic ground shaking?	No	No	Yes	No
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction?	No	No	Yes	No
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iv) Landslides?	No	No	No	Yes
Would the project: b) Result in substantial soil erosion or the loss of topsoil?	No	No	Yes	No
Would the project: 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?	No	No	Yes	No

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: 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?	No	No	Yes	No
Would the project: 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?	No	No	No	Yes
Would the project: f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No	No	No	Yes

“No Impact” and “Less Than Significant” determinations in this section are based on the scope, description, and location of the proposed project, as well as the California Geological Survey Regulatory Maps, the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Lake County, the Probabilistic Seismic Hazard Map for the North Coast from the California Seismic Safety Commission, and USDA Natural Resources Conservation Service Web Soil Survey.

Regulatory Setting—Geology and Soils

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under CEQA.

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

information, please see Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Environmental Setting—Geology and Soils

The project area is located approximately one mile east of the Maacama Fault and 18.7 miles from the Bartlett Springs Fault. The Maacama Fault is considered the northernmost segment of the Hayward Fault subsystem of the San Andreas Fault zone. The Bartlett Springs Fault is located in the vicinity of Lake Pillsbury running northwest and southeast from the lake approximately 12 miles in each direction. Liquefiable soils are present within the project site. Preliminary review of existing published geologic maps of the area show that sandy gravelly loam soils could be encountered at the project site. No active faults cross the project site and the project is not located in an area at high risk of landslides.

Discussion of Environmental Evaluation Questions 2.7 (a-e)—Geology and Soils

- a) i: The project area is not within a delineated Alquist-Priolo Earthquake Fault Zone. No active faults cross the project site. Therefore, the project would not rupture a known earthquake fault, and there would be no impact.
- a) ii-iii: Although the project site is not located in an Alquist-Priolo Earthquake Fault Zone, the project area is approximately 1 mile east of the Maacama Fault and 18.7 miles from the Bartlett Springs 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. The Bartlett Springs Fault is located in the vicinity of Lake Pillsbury running northwest and southeast from the lake approximately 12 miles in each direction. The Bartlett Springs Fault is less likely to affect the project area due to the distance between the fault and the project area.

Due to the presence of liquefiable soils within the project site, there is a potential for seismic-related ground settlement and lateral spreading. Bridge structures are designed using Caltrans' Seismic Design Criteria, which provide the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification would determine its seismic performance level and which methods would be used to estimate the seismic demands and structural capabilities. The proposed project would not expose people to injury or harm. The proposed project would replace poor-condition, aging structures with a new structure that is designed to the appropriate design criteria, and therefore would potentially reduce the existing risk from seismic events. A final foundation report

would outline the required design measures to reduce the risks from liquefaction, settlement, and lateral spreading. The project would have a less than significant impact to seismic-related risks.

- a) iv: The proposed project is not located in an area that is at a high risk of landslides, so there would be no impact from landslide hazards.
- b) Considerable earth-moving activities would be necessary to construct the project. Construction would include the construction of access roads and staging areas, placing of fill prisms, excavation of cut material, excavation of existing pavement, excavation for structures work, and excavation for drainage work. Earth-moving activities have the potential to cause soil erosion and 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 would be implemented as necessary to reduce the amount of erosion and topsoil loss.

In addition to temporary BMPs, permanent BMPs would be implemented after construction. Erosion control fabric or netting and hydroseeding would be used to stabilize newly graded slopes, and climate appropriate landscaping that reduces runoff and promotes surface infiltration would be planted after construction. The project would have a less than significant impact from soil erosion and the loss of topsoil.

- c - d) Based on preliminary review of existing published geologic maps of the area, sandy gravelly loam soils could be encountered. Sandy gravelly loam soils are susceptible to liquefaction and expansion under certain conditions. If future geotechnical investigations determine this soil type to be present, it would be addressed appropriately through design features. The project would be constructed to meet Caltrans safety and seismic standards, which would reduce the risk from unstable soils to people and structures.
- e) The proposed project does not include the use of septic tanks or alternative waste water disposal systems. Therefore, there would be no impact.

Mitigation Measures—Geology and Soils

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative—Geology and Soils

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

Regulatory Setting—Paleontological Resources

Several sections of the California Public Resources Code protect paleontological resources. Section 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

Environmental Setting—Paleontological Resources

The project is not located in an area that would contain unique geologic features, therefore the project would have no impact on those features. Geology in the project area is associated with the Pleistocene and Pliocene geologic eras.

Discussion of Environmental Evaluation Question 2.7 (f)—Paleontological Resources

f) The project is not located in an area that would contain unique geologic features, therefore the project would have no impact on those features. Geology in the project area is associated with the Pleistocene and Pliocene geologic eras. Geology from these eras could contain paleontological resources, however only pile driving would reach a soil disturbance depth that would disturb any paleontological resources. It would be difficult if not impossible to recover any resources that were disturbed, because the disturbance would occur at a considerable depth below the surface and the driving activities would likely render any resource unidentifiable. Although improbable, any unanticipated find of a paleontological resource would follow Caltrans’ standard specifications for paleontological resources. No impact is anticipated to paleontological resources because of project activities.

Mitigation Measures—Paleontological Resources

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative—Paleontological Resources

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.8 Greenhouse Gas Emissions

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	No	No	Yes	No
Would the project: b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No	No	Yes	No

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." GHG 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 would 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 NEPA (42 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 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 (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (FHWA n.d.). 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. EPA 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. Fuel efficiency standards directly influence GHG emissions.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and 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 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 would 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 (MMTCO₂e).² 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.

² 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” (CO₂e). The global warming potential of CO₂ is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO₂.

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.

EO 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.

EO N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

ENVIRONMENTAL SETTING

The proposed project is located in Calpella, a census designated place in the Ukiah Valley. Land use and development in Calpella is governed by the Ukiah Valley Area Plan (UVAP), a comprehensive and long-range planning document that represents the vision and foresight of the people who live and work in the Ukiah Valley. Land use near the proposed project is designated in the UVAP as Agricultural, Industrial, Commercial, and Rural Residential. According to Mendocino County zoning maps, land near the proposed project is zoned as Public Facilities, Agriculture, Commercial, Industrial, and Rural Residential.

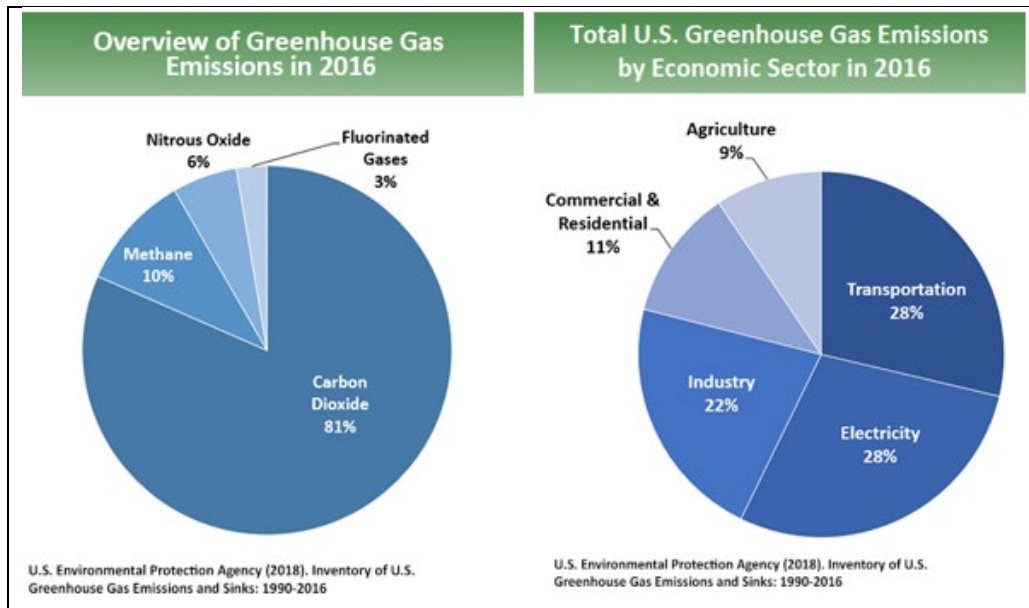
Throughout the project area, SR-20 is classified as a two-lane conventional highway and is functionally classified as a Rural Principal Arterial. It is listed as an eligible State Scenic Highway. The Mendocino Council of Governments (MCOG) guides transportation development in the project area with the 2017 Mendocino County Regional Transportation Plan (RTP), adopted in February 2018.

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

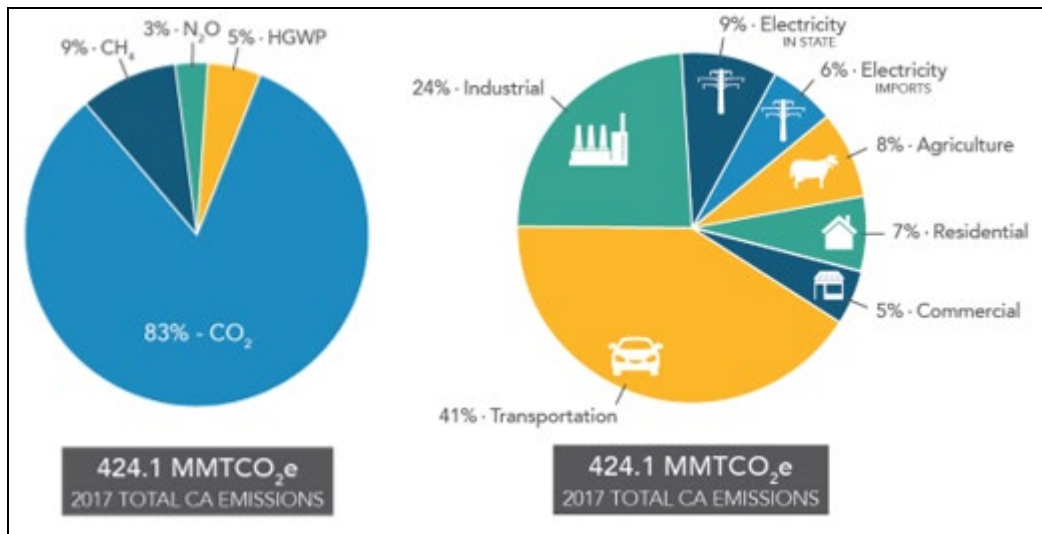
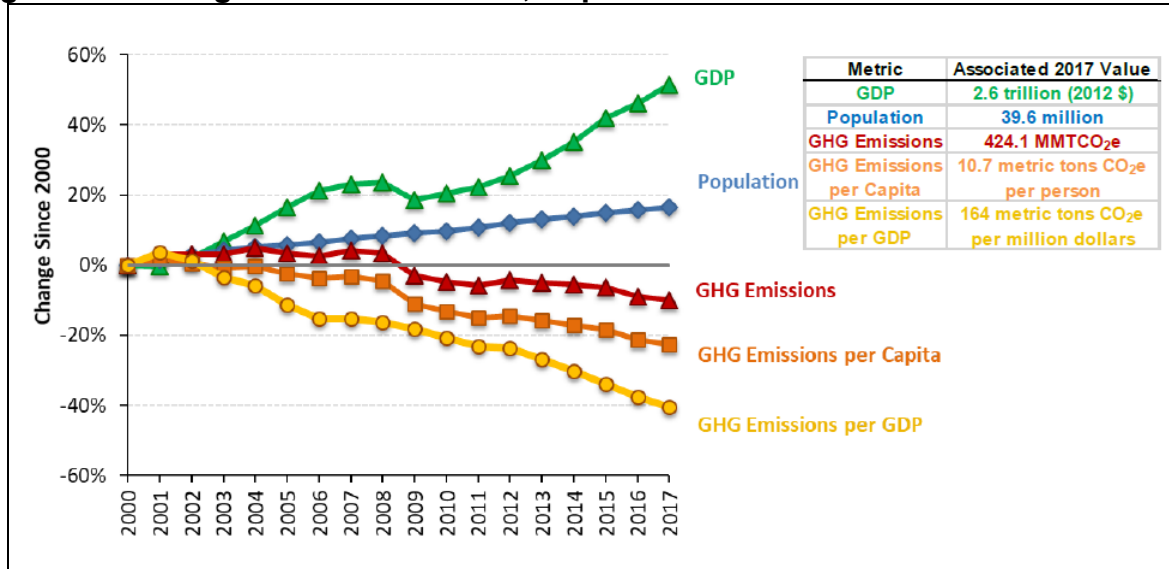
The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO₂, CH₄, 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 (U.S. EPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

Figure 10: 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 2019 edition of the GHG emissions inventory found total California emissions of 424.1 MMTCO₂e for 2017, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

Figure 11: California 2017 Greenhouse Gas Emissions**Figure 12: Change In California GDP, Population and GHG Emissions since 2000**

Source: ARB 2019b

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 proposed project is within the jurisdiction of the Mendocino Council of Governments, the regional transportation planning agency. The *2017 Mendocino County Regional Transportation Plan* (Davey-Bates Consulting 2018) 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. The City of Ukiah's climate action plan includes a goal to improve bicycle and pedestrian infrastructure (ESA 2014).

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 GHG 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 GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The proposed project is a bridge replacement project. The new bridge 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 would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The Caltrans Construction Emissions Tool (CAL-CET2018 version 1.2) was used to estimate carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs) emissions from construction activities. Construction is expected to begin in 2021 and last approximately 570 working days. Table 9 summarizes estimated GHG emissions generated by on-site equipment for the project.

Table 9: Total GHG Emissions during Construction (US tons)

Construction Year	CO ₂	CH ₄	N ₂ O	HFC
2021	336	<1	<1	<1

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

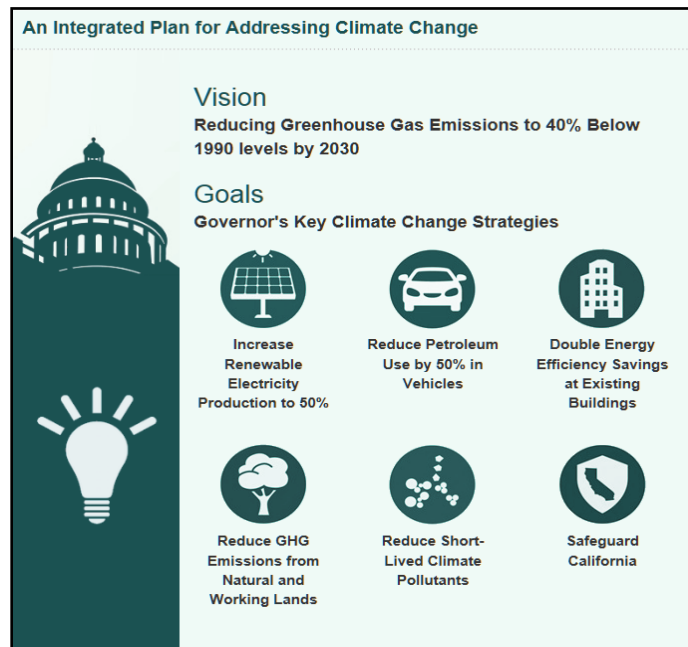
While the proposed project would result in GHG emissions during construction, it is anticipated that the project would not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the 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 13: 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 (State of California 2019).

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.
- Anticipated traffic control has an estimated maximum delay of 10 minutes during reversing control and 20 minutes during intermittent closure. During k-rail placement and tie-in construction operations, public traffic may be stopped in both directions for periods not to exceed 5 minutes. After each closure, all accumulated traffic must be allowed to pass through the work zone before another closure is made.
- Caltrans' Standard Specification 7-1.02C "Emissions Reduction" ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California ARB.
- 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.
- The existing bridge would remain open during construction, avoiding lengthy detours.

- The new bridge's upgraded 8-foot-wide shoulders would improve functionality of the roadway for bicyclists and pedestrians. The increased shoulder width would also provide greater separation from vehicular traffic for both bicyclists and pedestrians, increasing safety for all users to support active transportation.

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 would 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" (USGCRP 2018).

U.S. Department of Transportation (DOT) Policy Statement on Climate Adaptation in June 2011 committed the federal DOT to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation

infrastructure, services and operations remain effective in current and future climate conditions” (U.S. DOT 2011).

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014) 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 (FHWA 2019).

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.
- *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. 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.

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 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.

Project Adaptation Analysis

SEA-LEVEL RISE

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

FLOODPLAINS

The Russian River Bridge (No. 10-0182) carries SR 20 across the river at PM 33.63. The project area receives an average of about 46 inches of precipitation annually, mostly from November to March. The roadway at the project location is approximately

725 feet above mean sea level in a Federal Emergency Management Agency (FEMA) Zone AE floodplain. The FEMA Zone AE floodplain is defined as a Special Flood Hazard Area in a 100-year floodplain. Base flood elevations range from 678 feet at the downstream limit to 681 feet at the upstream limit. Portions of the project span the regulatory floodway; another small portion, at the western limit, falls within the FEMA Zone X (Shaded) floodplain with 0.2% or less annual chance flood hazard and the rest of the project area falls within Zone X, defined as an area of minimal flood hazard.

Climate change is expected to bring fewer but potentially heavier individual precipitation events in the project region. The Caltrans August 2019 Hydraulic Recommendation memo cites NOAA Atlas 14 data on historic 100-year rainfall intensity as 4.39 inches per hour, and 2-year 24-hour rainfall depth as 3.55 inches. The Caltrans District 1 Climate Change Pilot Study (2014) estimated the potential increase in average daily precipitation in the project region could be more than 10% by 2099 under a wet global climate model, compared to the 1970–1999 historic period (Caltrans and Humboldt County Association of Governments 2014). However, different models produce different results, ranging from increasing to decreasing rainfall. The report explains that “Rainfall and runoff changes varied depending upon models. Models predicting increased rainfall were used as a conservative measure to assess asset exposure.” Adding to the uncertainty, many other factors (such as riverbed geology, geography, and slopes) influence the potential effects of higher rainfall on a river and how it interacts with roadway infrastructure.

The replacement bridge would be designed to well exceed the minimum freeboard of 2 feet required in the Highway Design Manual. The bridge substructure elements are designed to be stable for scour caused by 100-year flows. The project would also include upgrading the existing stormwater system to accommodate the new hydrologic footprint of the project area. Hydraulic recommendations include enlarging a cross-culvert at PM 33.95 from its current effective diameter of 20 inches to 30 inches. Temporary and permanent BMPs such as streambank stabilization and climate-appropriate landscaping would reduce runoff and promote surface infiltration of runoff.

The structure would have a design life of 75 years. Considering that information along with its construction completion year of 2024, its elevation above the river, and protective features included in the project, the new bridge is likely to withstand hydrologic changes that may occur under climate change through design year 2099.

WILDFIRE

The proposed project is located in state and local responsibility areas of moderate fire hazard severity. Design features that would help prevent spread of wildfire and protect the asset from harm include steel guardrail posts (instead of wood), concrete weed

mats for guardrail, and non-plastic culverts. Widening the intersection of SR-20 and CR-144 would improve the intersection's use as a firebreak if necessary.

2.9 Hazards and Hazardous Materials

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No	No	Yes	No
Would the project: 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?	No	No	Yes	No
Would the project: c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No	No	No	Yes
Would the project: 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?	No	No	No	Yes
Would the project: e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No	No	No	Yes
Would the project: f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No	No	No	Yes
Would the project: g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No	No	No	Yes

“No Impact” and “Less Than Significant” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Initial Site Assessment dated July 23, 2018.

Regulatory Setting

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act (RCRA) in the state.

California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

Environmental Setting

The proposed project, which is not located within or impacting any sites on the Cortese List, is located in an area where geologic evaluations indicate that altered ultramafic bedrock, alluvium derived from ultramafic rock, or other rock commonly associated with naturally occurring asbestos may be present. This project includes work on existing structures which may contain asbestos containing material or lead containing paint.

Discussion of Environmental Evaluation Questions 2.9—Hazards and Hazardous Materials

- a - b) This project would not create a significant hazard to the public. Five minor hazardous waste issues that may be or are confirmed at the project location are naturally occurring asbestos, aerially deposited lead, thermoplastic paint, treated wood waste, and asbestos and/or lead in the existing bridge structures.

After a review of geologic maps and reports from the California Geological Survey and the United States Geological Survey, it was identified that naturally occurring asbestos may be present, because altered ultramafic bedrock, alluvium from ultramafic rock, or other rocks associated with naturally occurring asbestos

may be present. Standard Special Provisions or a Non-Standard Special Provision would be implemented to avoid or minimize exposure to this minor hazard.

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

The existing structures were originally built in 1958, and it is possible that they were constructed using asbestos containing material and lead containing paint. Later in the project development process, a structural survey would be conducted that would determine whether special materials handling, worker health and safety training, and/or abatement would be required during construction.

The proposed project would have a less than significant impact on public exposure to hazards. The project features mentioned above would be implemented if appropriate, and impacts would be further reduced.

- c) 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.
- 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, so there would be no impact from such sites.
- e - f) 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. The project would not

result in a safety hazard for people residing or working in the project area due to airport hazards, so there would be no impact.

- g) This project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, so there would be no impact.

Mitigation Measures

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.10 Hydrology and Water Quality

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	No	No	No	Yes
Would the project: b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No	No	Yes	No
Would the project: 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;	No	No	Yes	No
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	No	No	Yes	No
(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	No	No	Yes	No
(iv) impede or redirect flood flows?	No	No	Yes	No
Would the project: d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No	No	No	Yes
Would the project: e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No	No	No	Yes

“No Impact” and “Less Than Significant” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Water Quality Assessment Report dated March 2019 and the Floodplain Evaluation Report Summary prepared October 4, 2019.

Regulatory Setting

Federal

CLEAN WATER ACT

In 1972, Congress amended the federal Water Pollution Control Act, making the addition of pollutants to waters of the United States from any point source³ unlawful unless the discharge is in compliance with a NPDES permit. This act and its amendments are known today as the CWA. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. The following are important CWA sections.

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge would comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by USACE.

³ A *point source* is any discrete conveyance such as a pipe or a human-made ditch.

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

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

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

According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent⁴ standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States. In addition, every permit from the USACE, even if not subject to the Guidelines, must meet general requirements. See 33 CFR Part 320.4.

State

PORTER-COLOGNE WATER QUALITY CONTROL ACT

California’s Porter-Cologne Water Quality Control Act (Porter-Cologne Act), enacted in 1969, provides the legal basis for water quality regulation in California. This act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. The act predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the United

⁴ The EPA defines *effluent* as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”

States, such as groundwater and surface waters not considered waters of the United States. Additionally, the Porter-Cologne Act prohibits discharges of “waste” as defined and this definition is broader than the CWA definition of “pollutant.” Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

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

STATE WATER RESOURCES CONTROL BOARD AND REGIONAL WATER QUALITY CONTROL BOARDS

The SWRCB administers water rights, sets water pollution control policy, issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Section 402(p) of the CWA requires issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater.” The SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans’ MS4

Permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES MS4 permits for five years, and permit requirements remain active until a new permit has been adopted.

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

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges; and
3. Caltrans' stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs, to the maximum extent practicable, and other measures the SWRCB determines necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including selection and implementation of BMPs. Further, in recent years, hydromodification control requirements and measures to encourage low impact development have been included as a component of new development permit requirements. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

CONSTRUCTION GENERAL PERMIT

Construction General Permit (CGP) (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The CGP was amended by 2010-0014-DWQ and 2012-0006-DWQ on February 14, 2011, and July 17, 2012, respectively. The permit regulates stormwater discharges from construction sites that result in a disturbed soil area (DSA) of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP.

Operators of regulated construction sites are required to develop SWPPPs; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

The 2009 CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters and whether the receiving water has been designated by the SWRCB as sediment-sensitive. SWPPP requirements vary according to the risk level. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring and certain BMPs, and, in some cases, before-construction and after-construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Program rather than a SWPPP is necessary for projects with a DSA of less than 1 acre.

SECTION 401 PERMITTING

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project would be in compliance with state water quality standards. The most common federal permits triggering a 401 Certification are CWA Section 404 permits issued by USACE. The 401 Certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a Section 404 permit.

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

Environmental Setting

The Project is located on SR-20 from post mile (PM) 33.3 to PM 34.2 in the unincorporated area of Calpella in Mendocino County. The Project is within the Russian River Hydrologic Unit (HU), Upper Russian River Hydrologic Area (HA), Forsythe Creek Hydrologic Subarea (HSA, #114.33) from approximately PM 33.3 to PM 34.1, and Ukiah Hydrologic Subarea (HSA, #114.31) from approximately PM 34.1 to PM 34.2.

The Russian River crosses SR-20 at PM 33.63, Bridge Number 10-0182. The major tributaries of the Russian River near the Project area are Forsythe Creek and the East Fork of the Russian River. Forsythe Creek merges with the Russian River north of Calpella, and the East Fork of the Russian River joins with the Russian River north of Ukiah. The East Fork of the Russian River created Lake Mendocino (a reservoir located between Redwood Valley and Ukiah Valley).

The Department of Water Resources (DWR) Bulletin 118, describes the Project as being within the Ukiah Valley Groundwater Basin (Basin #: 1-025), located in the southeast area of Mendocino County. The Ukiah Valley groundwater basin is 22 miles long and 5 miles wide at its widest point. The surface area of the basin is approximately 37,500 acres (59 square miles).

The elevation at the project site is approximately 725 feet. The average annual precipitation for this area is 32 to 47 inches. The majority of precipitation occurs from November to March. The average annual maximum temperature is 73.5°F and the average annual minimum temperature is 43.6°F.

Discussion of Environmental Evaluation Questions 2.10—Hydrology and Water Quality

- a) The proposed project is within the Russian River Hydrologic Unit, Upper Russian River Hydrologic Area, Forsythe Creek Hydrologic Subarea from approximately PM 33.3 to PM 34.1, and Ukiah Hydrologic Subarea from approximately PM 34.1 to PM 34.2. Within the project area, drainage systems channel roadside runoff to the Russian River.

Forsythe Creek is impaired for sedimentation/siltation and temperature, while the Russian River is impaired for aluminum, sedimentation/siltation, and temperature. Potential temporary impacts to water quality could result from active construction areas, which could lead to the release of fluids, concrete material, construction debris, sediment, and litter beyond the perimeter of the site.

This project would not violate any water quality standards or waste discharge requirements. The proposed project would comply with the conditions of the California SWRCB CGP. The CGP requires that the construction contractor prepare a project specific SWPPP, which identifies temporary construction site BMPs to reduce construction impacts on receiving water quality based on potential pollutants and pollutant sources. There would be no impact.

- b) Construction activities within the Russian River would require dewatering, which could result in a drawdown in groundwater. De-watering would be performed by

constructing cofferdams around pier locations. The construction of cofferdams would require that sheet piles be vibrated into the river bottom to form a rectangular shape. The cofferdam would then be dewatered. If needed, a seal course of concrete would be placed at the bottom of the cofferdam to prevent intrusion of water into the cofferdam.

Temporary impacts to groundwater levels may occur but would be minimal and limited to the construction period; therefore, impacts are expected to be less than significant. No permanent impacts are anticipated.

- c) The proposed project would alter the drainage pattern of the project area through the placement of new cut fill, addition of new impervious surfaces, and temporary alteration of the Russian River's course.

At both ends of the structure, new fill prisms would be constructed. Additional cut and fill would be needed to shift the alignment of the CR-144/SR-20 intersection to accommodate the new alignment of SR-20. New impervious surfaces would be placed at the redesigned CR-144/SR-20 intersection and the new, wider bridge structure. The construction of cofferdams to perform bridge pier work would result in the temporary rerouting of the Russian River during construction.

The project would upgrade the existing stormwater system to accommodate the new hydrologic footprint of the project area. The stormwater system would be designed based on recommendations from Caltrans' hydraulics engineers and the Caltrans' Highway Design manual. The design for the stormwater system would be finalized in the design phase of the project.

The project would require the contractor to prepare a SWPPP to minimize pollution and stormwater runoff during construction. The SWPPP would include appropriate temporary BMPs such as the use of silt fences, gravel bags, fiber rolls, streambank stabilization methods, street sweeping, dust-control, construction mobilization locations, and temporary construction entrances and exits.

Additionally, permanent BMPs would be implemented as part of the project and would include erosion control fabric or netting and hydroseeding to stabilize newly graded slopes and climate appropriate landscaping to reduce runoff and promote surface infiltration of runoff.

The project would be required to implement post-construction stormwater controls under the Caltrans' MS4 permit and the Section 401 Water Quality

Certification from the NCRWQCB. The treatment controls would address potential post-construction stormwater impacts by reducing pollutant loads in runoff prior to reach receiving waters downstream. The treatment controls would be evaluated during the design phase and would be located and sized in accordance with Caltrans' design guidance and the MS4 permit.

- i. Erosion and siltation on- or off-site would be controlled by the temporary and permanent BMPs described above. A less than significant impact is expected.
- ii. The increase in runoff, caused by a change in drainage patterns and the increase in impervious surfaces would not be substantial and would not cause substantial flooding with the construction of the new stormwater system of the project area and the application of temporary and permanent BMPs described above. The impact from an increase in surface runoff is expected to be less than significant.
- iii. The new stormwater systems would accommodate the new hydrologic footprint of the project area. The stormwater system would be designed based on recommendations from Caltrans' hydraulics engineers and the Caltrans' Highway Design manual. The design for the stormwater system would be finalized in the design phase of the project. Additional polluted runoff resulting from the project's construction would be managed by the temporary and permanent BMPs described above. The impact from additional stormwater and additional sources of polluted runoff is expected to be less than significant.
- iv. As part of the construction of the new bridge structure, piers would be placed within the floodplain of the Russian River. These impacts to the floodplain are expected to be reduced to a less than significant level with the removal of the existing bridge's columns.
- d) The proposed project is not in an area that is at risk of seiches or tsunamis. In the event of a catastrophic flood, the project area could be at risk of inundation. However, the project would not store pollutants and would not be constructed with hazardous materials that would pose a threat to the public if disturbed by a flood event. Therefore, no impact is expected.
- e) The project would not conflict with or obstruct the implementation of any water pollution control plan or sustainable groundwater management plan. Therefore, no impact is expected.

Mitigation Measures

Based on the determinations made in the CEQA Checklist, mitigation measures have not been proposed for the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.11 Land Use and Planning

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Physically divide an established community?	No	No	No	Yes
Would the project: b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to land use and planning are not anticipated due to the following:

- a) The existing structures connect the rural area to the east with the communities of Calpella and Ukiah as well as the other communities along US 101 to the north and south. During the construction of the proposed bridge, the existing bridges would remain open to two-way traffic, and no community division is anticipated. The construction of the proposed bridge would limit the risk that the community could become divided should either existing structure fail. There would be no impact from physically dividing an established community.
- b) The project complies with the stated goals of the Ukiah Valley Area Plan, which includes goals for transportation, pedestrian access and safety, and freight rail.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.12 Mineral Resources

Question:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No	No	No	Yes
Would the project: 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?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the mineral resource maps from the California Department of Conservation. Potential impacts to mineral resources are not anticipated due to the following:

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

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.13 Noise

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project result in: 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?	No	No	No	Yes
Would the project result in: b) Generation of excessive groundborne vibration or groundborne noise levels?	No	No	No	Yes
Would the project result in: 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?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as Noise, Air Quality, Greenhouse Gas, and Energy Analysis dated July 23, 2019. Potential impacts to mineral resources are not anticipated due to the following:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies is not anticipated.

Based on the scope of work, this project is considered a Type III project. Traffic noise impact is not predicted to occur from the proposed project; therefore, noise abatement is not considered.

During construction, noise may be generated from the contractors’ equipment and vehicles. Caltrans requires the Contractor to conform to the provisions of Caltrans’ Standard Specification, Section 14-8.02 “Noise Control” which states “Control and monitor noise from work activities.” And “Do not exceed 86 dBA LMax at 50 feet from the job site activities from 9 p.m. to 6 a.m.”

- b) The project is not expected to generate excessive groundborne vibration or groundborne noise. Vibration levels could be perceptible and cause disturbances at residences near the project area 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.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.14 Population and Housing

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Induce substantial unplanned 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)?	No	No	No	Yes
Would the project: b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to the population and housing are not anticipated due to the following:

- a) The proposed project would not increase capacity or access; therefore, the proposed project 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. There would be no impact.
- 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. There would be no impact.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.15 Public Services

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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:	No	No	No	Yes
Fire protection?	No	No	No	Yes
Police protection?	No	No	No	Yes
Schools?	No	No	No	Yes
Parks?	No	No	No	Yes
Other public facilities?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to public resources are not anticipated due to the following:

- a) During construction any emergency service agency whose ability to respond to incidents may be affected by traffic control would be notified prior to any closure. All emergency vehicles would be accommodated through the work area. There would be no impact to emergency services resulting from the project.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.16 Recreation

Question	Potentially Significant Impact	Less Than Significant with Mitigation	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?	No	No	No	Yes
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?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to recreation are not anticipated due to the following:

- 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. There would be no impact to neighborhood or regional parks.
- 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. There would be no impact from the construction of recreational facilities.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.17 Transportation/Traffic

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No	No	No	Yes
Would the project: b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? <i>NOTE: While public agencies may immediately apply Section 15064.3 of the updated Guidelines, statewide application is not required until July 1, 2020. In addition, uniform statewide guidance for Caltrans projects is still under development. The PDT may determine the appropriate metric to use to analyze traffic impacts pursuant to section 15064.3(b). Projects for which an NOP will be issued any time after December 28, 2018, should consider including an analysis of VMT/induced demand if the project has the potential to increase VMT (see page 20 of OPR's updated SB 743 Technical Advisory), particularly if the project will be approved after July 2020.</i>	No	No	No	Yes
Would the project: c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No	No	No	Yes
Would the project: d) Result in inadequate emergency access?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Transportation Management Plan dated November 28, 2018. Potential impacts to transportation/traffic are not anticipated due to the following:

- a) The project is not anticipated to conflict with a program, plan, ordinance, or policy addressing the circulation system; therefore, there would be no impact.
- b) The proposed project would not conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b). There would be no impact.

- c) The preferred alternative would increase the curve radius of the roadway from the existing 1300 feet to 1600 feet, thus creating a more gradual curve that would be geometric design feature that would reduce hazards. The project would also increase sight distance and acceleration lane lengths at the CR-144 intersection which would reduce road hazards. Therefore, the project would have no impact.
- d) Two-way traffic would be maintained during most construction activities. However, for some activities reversing traffic control, intermittent closure, shoulder closure, and ramp closure could be necessary for SR-20, CR-144, and Eastside Calpella Road. Emergency vehicles would be notified in advance of any closures. Access for emergency vehicles would be maintained throughout the duration of construction; therefore, the project would have no impact on emergency access.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.18 Tribal Cultural Resources

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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: 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	No	No	No	Yes
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.	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as information provided by the project Archaeologist on December 19, 2019 from the draft Historic Property Survey Report (HPSR). The HPSR is currently in progress and would be completed prior to finalizing this document. Potential impacts to tribal resources are not anticipated due to the following:

- a - b) The California Native American Heritage Commission (NAHC) was contacted to request a search of the sacred lands file and an updated list of Native American contacts for the project area. Consultation letters were mailed to representatives of the Cahto Tribe, the Coyote Band of Pomo Indians, the Guidiville Rancheria of California, the Hopland Band of Pomo Indians, the Pinoleville Pomo Nation, the

Potter Valley Tribe, the Redwood Valley Band of Pomo, the Round Valley Indian Tribes of the Round Valley Reservation, and the Sherwood Valley Band of Pomo. The tribes that responded to these letters did not express any concerns with the project.

The NAHC search determined that no tribal cultural resources were identified within the project study limits. Therefore, there would be no impacts to tribal cultural resources.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.19 Utilities and Service Systems

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities—the construction or relocation of which could cause significant environmental effects?	No	No	No	Yes
Would the project: b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No	No	No	Yes
Would the project: 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?	No	No	No	Yes
Would the project: 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?	No	No	No	Yes
Would the project: e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to tribal resources are not anticipated due to the following:

- a) The utilities expected to be encountered are described in Section 1.2 of this document. If the utility poles or lines conflict with the proposed work, then they would be relocated or protected in place during construction. Caltrans would verify the location of any underground gas, electric, water, or sewer lines within the project area. Caltrans would coordinate with utility owners to relocate or

protect utilities prior to construction. Utility relocation plans would be finalized in the design phase of the project. A less than significant impact to the environment is anticipated from utility relocations.

- b) The project would have sufficient water supplies during construction and would not have an effect on water supplies for future developments. There would be no impact.
- c) The project would not have a demand for wastewater treatment, so there would be no impact.
- d - e) The project would comply with all statutes and regulations related to the disposal of solid waste generated during construction, so there would be no impact.

No Build Alternative

The existing condition would remain; therefore, per CEQA, “No Impact” would occur.

2.20 Wildfire

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No	No	No	Yes
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: 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?	No	No	No	Yes
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: 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?	No	No	No	Yes
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: 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?	No	No	No	Yes

“No Impact” determinations in this section are based on the scope, description, location, and CalFire Fire Hazard Severity Zone Maps of the proposed project. Potential impacts to wildfire are not anticipated due to the following:

- a) The proposed project is in both a state responsibility area of moderate fire hazard severity and a local responsibility area of moderate 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. Therefore, there would be no impact.

- b) The proposed project would incorporate design features to prevent the uncontrolled spread of a wildfire within the project area. These design features would include steel posts as opposed to wood for guardrail, concrete weed mats for guardrail, and non-plastic culverts. In addition, the project would widen the existing intersection of SR-20 and CR-144, which would improve the intersection's use as a firebreak if needed. There would be no impact.
- c) The proposed project is an infrastructure project, and 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 project is not located in an area that has a high landslide risk, so no impact is anticipated from fire related landslides. Although the project would place fill in a 100-year floodplain, the project would comply with all pertinent regulations, and the project would not expose people or structures to fire related flooding.

No Build Alternative

The existing condition would remain; therefore, per CEQA, "No Impact" would occur.

2.21 Mandatory Findings of Significance

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially 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?	No	Yes	No	No
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)?	No	Yes	No	No
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	No	No	Yes	No

Discussion of Environmental Evaluation Questions 2.21—Mandatory Findings of Significance

The CEQA of 1970 requires preparation of an Environmental Impact Report (EIR) when certain specified impacts may result from construction or implementation of a project. The analysis indicated the potential impacts associated with this project would not require an EIR. Mandatory Findings of Significance are not required for projects where an EIR has not been prepared.

2.22 Cumulative Impacts

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

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

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

2.22.1 Aesthetics

Given that the project would result in low visual impacts and those impacts would be addressed by the implementation of standard measures, the project would not be expected to have a cumulative impact on aesthetics.

2.22.2 Agriculture and Forest Resources

Given that the project would result in no impacts on agriculture and forest resources, the project would not be expected to have a cumulative impact on agricultural or forest resources.

2.22.3 Air Quality

Given that the project would result in low air quality impacts and those impacts would be addressed by the implementation of standard measures, the project would not be expected to have a cumulative impact on air quality.

2.22.4 Biological Resources

Records were searched on the California State Clearinghouse website for activities near the proposed project. There were no projects listed within the project vicinity for future construction. Records were also searched on the Caltrans' North Region Data Library for past and future projects that could occur within the BSA. The Library identified two projects within the BSA that have been identified as future construction within the project limits. These include one asphalt maintenance project and a lighting upgrade project. Caltrans does not anticipate cumulative effects on any of the species or habitats as a result of the proposed actions.

2.22.5 Cultural Resources

Given that the project would result in low impacts to cultural resources and those impacts would be addressed by the implementation of standard measures, the project would not be expected to have a cumulative impact on cultural resources.

2.22.6 Energy

Given that the project would result in no impacts to energy, the project would not be expected to have a cumulative impact on energy.

2.22.7 Geology and Soils

Given that the project would result in low impacts to geology and soils and those impacts would be addressed by the implementation of standard measures, the project would not be expected to have a cumulative impact on geology and soils.

2.22.8 Greenhouse Gas Emissions

Please see Greenhouse Gas Emissions, Section 2.8.

2.22.9 Hazards and Hazardous Materials

Given that the project would result in low impacts to hazards and hazardous materials and those impacts would be addressed by the implementation of standard measures, the project would not be expected to have a cumulative impact on hazards and hazardous materials.

2.22.10 *Hydrology and Water Quality*

Given the small scale of potential effects and the design features and standard measures to offset these effects, the proposed project would not be expected to result in a cumulative impact on hydrology or water quality.

2.22.11 *Land Use and Planning*

Given that the project would result in no impacts on land use and planning, the project would not be expected to have a cumulative impact on land use and planning.

2.22.12 *Mineral Resources*

Given that the project would result in no impacts on mineral resources, the project would not be expected to have a cumulative impact on mineral resources.

2.22.13 *Noise*

Given that the project would result in no impacts on noise, the project would not be expected to have a cumulative impact on noise.

2.22.14 *Population and Housing*

Given that the project would result in no impacts on population and housing, the project would not be expected to have a cumulative impact on population and housing.

2.22.15 *Public Services*

Given that the project would result in no impacts on public services, the project would not be expected to have a cumulative impact on public services.

2.22.16 *Recreation*

Given that the project would result in no impacts on recreation, the project would not be expected to have a cumulative impact on recreation.

2.22.17 *Transportation/Traffic*

Given that the project would result in no impacts on transportation/traffic, the project would not be expected to have a cumulative impact on transportation/traffic.

2.22.18 Tribal Cultural Resources

Given that the project would result in no impacts on tribal resources, the project would not be expected to have a cumulative impact on tribal resources.

2.22.19 Utilities and Service Systems

Given that the project would result in no impacts to utilities and service systems, the project would not be expected to have a cumulative impact on utilities and service systems.

2.22.20 Wildfire

Given that the project would result in no impacts on wildfire, the project would not be expected to have a cumulative impact on wildfire.

Chapter 3. Coordination and Comments

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including PDT meetings and interagency coordination meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

The following agencies, organizations, and individuals were consulted in the preparation of this environmental document.

Coordination with Resource Agencies

Cultural:

- Consultation letters were mailed to representatives of the Cahto Tribe, the Coyote Band of Pomo Indians, the Guidiville Rancheria of California, the Hopland Band of Pomo Indians, the Pinoleville Pomo Nation, the Potter Valley Tribe, the Redwood Valley Band of Pomo, the Round Valley Indian Tribes of the Round Valley Reservation, and the Sherwood Valley Band of Pomo.

Biology:

Coordination

- NMFS Fish Biologist Mike Kelly was contacted for Technical Assistance on December 26, 2017.
- A site visit was conducted with CDFW Senior Environmental Scientist JoAnn Loehr on March 20, 2018.
- A site visit was conducted with NCRWQCB Senior Environmental Scientist Brandon Stevens and CDFW Senior Environmental Scientist JoAnn Loehr from CDFW on May 15, 2018.

-
- Greg Schmidt, Fish and & Wildlife Biologist for the Endangered Species Program and Caltrans Liaison for USFWS was contacted for Technical Assistance on February 5, 2019.
 - A site visit was conducted with Caltrans Agency Liaison Rob Meade and USFWS Biologist Greg Schmidt to determine project effects from Geotech drilling to federally listed species on March 14, 2019.
 - A site visit was conducted with CDFW Senior Environmental Scientist Jamie Jackson, NMFS Fishery Biologist Elena Meza, and NCRWQCB Senior Environmental Scientist Brandon Stevens to determine project effects from Geotech to state and federally listed species as well as impacts to jurisdictional areas on April 10, 2019.
 - A phone conference with CDFW Senior Environmental Scientist Jamie Jackson and Caltrans Senior Environmental Planner Stephanie Frederickson was conducted on May 23, 2019 regarding the need for a 1600 permit for Geotech. It was determined in the meeting that a 1600 permit for Geotech drilling was not needed.
 - A site visit was conducted with CDFW Senior Environmental Scientist Jamie Jackson and USACE Senior Regulatory Project Manager Daniel Breen on July 8, 2019 to discuss project impacts to jurisdictional areas.
 - A site visit was conducted with NCRWQCB Senior Environmental Scientists Brandon Stevens and Susan Stewart on July 24, 2019 to discuss project impacts to jurisdictional areas.
 - A phone conference with Caltrans NMFS Liaison and Fishery Biologist Elena Meza was conducted on August 8, 2019 to discuss avoidance and minimization measures and general questions pertaining to the submittal of the Biological Assessment.
 - Agency phone conference with representatives from CDFW, NMFS, and USFWS concerning project impacts conducted on August 29, 2019.
 - Agency phone conference with representatives from CDFW, NCRWQCB, NMFS, USACE, and USFWS concerning potential offsite mitigation locations conducted on October 7, 2019.

-
- Agency site visit with representatives from CDFW, NCRWQCB, NMFS, USACE, and USFWS to the Jacobs Property, a potential offsite mitigation location was conducted on October 16, 2019.

Consultation

- Formal consultation with the NMFS pursuant to Section 7 of the Endangered Species Act of 1973 for the federally listed CC Chinook salmon, CCC coho salmon, and CCC steelhead
- Informal consultation with the USFWS pursuant to Section 7 of the Endangered Species Act of 1973 for the federally listed YBCU

Chapter 4. List of Preparers

The following individuals performed the work on the project:

California Department of Transportation, District 1

Alex Arevalo	Transportation Engineer/NPDES Coordinator Contribution: Water Quality Assessment Report
Joan Fine	Associate Environmental Planner (Architectural History) Contribution: Built Environment Evaluation
Michelle Holtz	Associate Environmental Planner (Project Coordinator) Contribution: Project Coordinator and Document Preparer
Laura Lazzarotto	Landscape Architect Contribution: Visual Impact Assessment
Cathy McKeon	Project Manager Contribution: Project Management
Mark Melani	Associate Environmental Planner (Hazardous Waste) Contribution: Initial Site Assessment
Adele Pommerenck	Environmental Branch Chief Contribution: Senior Environmental Planner
Celeste Redner	Transportation Engineer Contribution: Floodplain Evaluation Summary Report
Jamie Lusk	TMP Coordinator Contribution: Transportation Management Plan
Matt Smith	Transportation Engineer Contribution: Project Design
Ian Springer	Associate Environmental Planner (Archaeology) Contribution: Cultural Studies
Wesley Stroud	Environmental Office Chief Contribution: Supervising Environmental Planner

Grant Thornton	Associate Environmental Planner (Natural Sciences) Contribution: Natural Environment Study
Saeid Zandian	Transportation Engineer Contribution: Traffic Noise and Air Quality Impact Assessment and Greenhouse Gas Construction Emissions Analysis

Chapter 5. References

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Appendix A. Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov



*Making Conservation
a California Way of Life.*

May 2019

**NON-DISCRIMINATION
POLICY STATEMENT**

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *“No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”*

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page: <http://www.dot.ca.gov/obeo/TitleVI.html>.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Original signed by

LAURIE BERMAN
Director

Appendix B. Layouts of Proposed Work

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL TOTAL SHEETS
01	Men	020	33.3/34	

REGISTERED CIVIL ENGINEER DATE _____
 Month Day, Year
 PLANS APPROVAL DATE _____

THE STATE OF CALIFORNIA OR ITS OFFICERS
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR
 THE ACCURACY OR COMPLETENESS OF SCANNED
 COPIES OF THIS PLAN SHEET.

PRELIMINARY DESIGN
 REVIEW ONLY

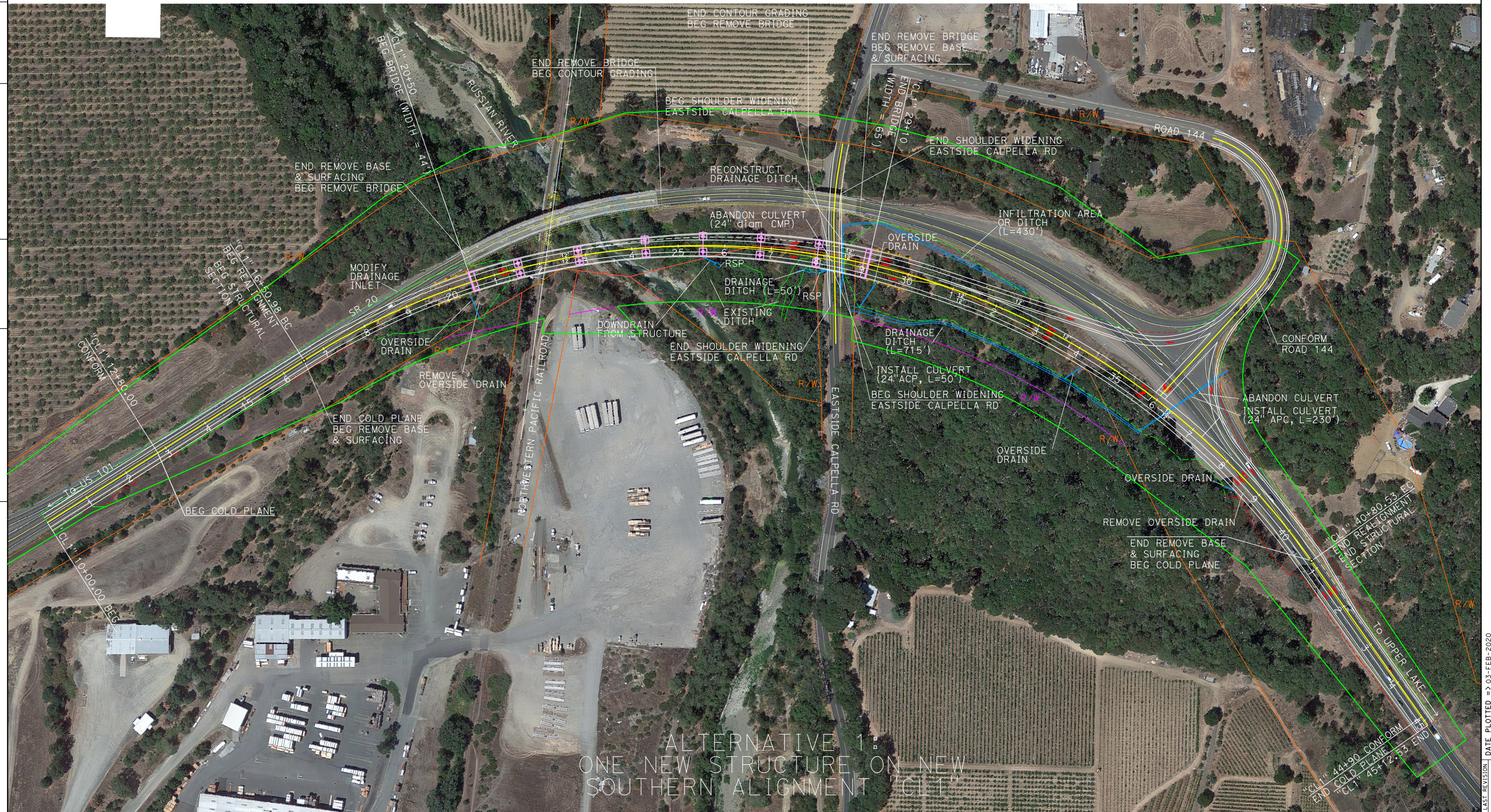
REGISTERED PROFESSIONAL ENGINEER
 No. _____
 Exp. _____
 CIVIL
 STATE OF CALIFORNIA

LEGEND

- R/W AQUISITION
 — EXISTING RIGHT OF WAY
 - - - CUT AREA
 - - - FILL AREA
 — ESL

CALPELLA BRIDGES
DECK REHABILITATION
01-0E090 (01 1300 0123)
MEN-020-PM 33.3/34.2

SCALE: 1" = 100'



ALTERNATIVE 1:
ONE NEW STRUCTURE ON NEW
SOUTHERN ALIGNMENT "CL1"

TIME PLOTTED => 15:48

Appendix C. USFWS, NMFS, CNDDB, CNPS Species Lists



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:

October 09, 2019

Consultation Code: 08EACT00-2018-SLI-0062

Event Code: 08EACT00-2020-E-00030

Project Name: 01-0E090 Calpella Bridge Replacement

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

(707) 822-7201

Project Summary

Consultation Code: 08EACT00-2018-SLI-0062

Event Code: 08EACT00-2020-E-00030

Project Name: 01-0E090 Calpella Bridge Replacement

Project Type: TRANSPORTATION

Project Description: Replacement of 2 bridges along SR 20 near Calpella and SR 101

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.2420771525188N123.20312501012774W>



Counties: Mendocino, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Fisher <i>Pekania pennanti</i> Population: West coast DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3651	Proposed Threatened

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Showy Indian Clover <i>Trifolium amoenum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

From: [NMFSWCRCA Specieslist - NOAA Service Account](#)
To: [Thornton, Grant@DOT](#)
Subject: Re: Caltrans EA: 01-0E090 Calpella 2-Bridge Replacement
Date: Wednesday, October 9, 2019 3:41:52 PM

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600

From: [Thornton, Grant@DOT](mailto:Thornton.Grant@DOT)
To: nmfswhrcra.specieslist@noaa.gov
Subject: Caltrans EA: 01-0E090 Calpella 2-Bridge Replacement
Date: Wednesday, October 9, 2019 3:41:00 PM

To whom it may concern:

The project is located within the Ukiah 7.5-minute USGS quadrangle. The search results from the California Species Lists Tools website is provided below.

Non-federal agency name and address:

California Department of Transportation
703 B Street
Marysville, CA 95901

Point of Contact:

Grant Thornton
Grant.thornton@dot.ca.gov
(530) 741-4133

Quad Name **Ukiah**

Quad Number **39123-B2**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) - **X**

CC Chinook Salmon ESU (T) - **X**

CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

CC Chinook Salmon Critical Habitat - **X**

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat - **X**

SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Ukiah (3912322)) AND County IS (Mendocino)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i> Raiche's manzanita	PDERI041G2	None	None	G3T2	S2	1B.1
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Lasthenia burkei</i> Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
<i>Limnanthes bakeri</i> Baker's meadowfoam	PDLIM02020	None	Rare	G1	S1	1B.1
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S4	WL
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC

Record Count: 9

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

7 matches found. *Click on scientific name for details*

Search Criteria

Found in Mendocino County, Found in Quad 3912322

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Listing Status	Federal Listing Status
Cypripedium californicum	California lady's-slipper	Orchidaceae	perennial rhizomatous herb	Apr-Aug(Sep)	4.2		
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	4.2		
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	1B.1	CE	FE
Limnanthes bakeri	Baker's meadowfoam	Limnanthaceae	annual herb	Apr-May	1B.1	CR	
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1		
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2		
Sanguisorba officinalis	great burnet	Rosaceae	perennial rhizomatous herb	Jul-Oct	2B.2		

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 09 October 2019].

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[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalPhotos](#)

Questions and Comments

Appendix D. Biological Surveys – Species, Personnel, and Dates

<u>Date</u>	<u>Participants</u>	<u>Purpose</u>
April 27, 2017	Caltrans Biologists Lori Price, Alex Laughtin, and Grant Thornton.	Botanical surveys
June 26, 2017	Caltrans Biologists Lori Price, Grant Thornton, and Mindy Trask.	Botanical surveys
February 6, 2018	Caltrans Biologists Grant Thornton, Alex Laughtin, Michelle Holtz, Hannah Clark, Jennifer Greslik and Reed Crane. Caltrans Archaeologist Ian Springer.	OHHM mapping and botanical surveys
March 20, 2018	Caltrans Biologists Grant Thornton, Michelle Holtz, and Jennifer Greslik. Caltrans Archaeologist Ian Springer. Caltrans Project Manager Cathy McKeon. CDFW Senior Environmental Scientist JoAnn Loehr.	Geotechnical field review
May 14, 2018	Caltrans Biologists Grant Thornton, Jennifer Greslik, Hannah Clark and Allison Kunz.	Botanical and FYLF surveys
May 15, 2018	Caltrans Biologist Grant Thornton. Caltrans Coordinator Max Lammert. Caltrans Project Manager Cathy McKeon. Caltrans Senior Engineering Geologist Christopher Ridsen. CDFW Senior Environmental Scientist JoAnn Loehr. NCRWQCB Senior Environmental Scientist Brandon Stevens.	Geotechnical field review
June 20, 2018	Caltrans Biologists Grant Thornton, Reed Crane, and Jennifer Greslik.	Vegetation mapping and nighttime bat exit survey
March 14, 2019	Caltrans Biologists Grant Thornton and Jennifer Greslik. Caltrans Revegetation Specialists Loriel Caverly and Desiree Davenport. Caltrans	Field visit with USFWS. Identify

	Agency Liaison Rob Meade. USFWS Biologist Greg Schmidt.	revegetation and mitigation needs.
April 10, 2019	Caltrans Biologists Grant Thornton and Jennifer Greslik. Caltrans Coordinator Max Lammert. Caltrans Archaeologist Ian Springer. Caltrans Engineering Geologists Matt Gaffney and Christopher Ridsen. Caltrans Bridge Construction Engineer Bryan Bet. CDFW Senior Environmental Scientist Jamie Jackson. NMFS Fishery Biologist Elena Meza. NCRWQCB Senior Environmental Scientist Brandon Stevens.	Field visit with state and federal agencies to identify impacts from Geotech drilling.
May 14, 2019	Caltrans Biologists Grant Thornton and Hannah Clark	FYLF Survey, wetland delineation, and habitat mapping
July 8, 2019	Caltrans Biologists Grant Thornton, Emerald Remund, Michelle Holtz, and Jennifer Greslik. Caltrans Revegetation Specialist Loriel Caverly. Caltrans Mitigation Specialist Desireé Davenport. Caltrans Senior Environmental Planner Rob Meade. Caltrans Project Manager Cathy McKeon. Caltrans Resident Engineer Matt Smith. Caltrans Bridge Construction Engineer Bryan Bet. CDFW Senior Environmental Scientist Jamie Jackson. USACE Senior Regulatory Project Manager Daniel Breen.	Field visit with CDFW, USACE, and members of PDT. Wetland delineations, FYLF survey, botanical surveys, and Night time bat exit survey
July 24, 2019	Caltrans Biologists Grant Thornton and Hannah Clark. NCRWQCB Senior Environmental Scientists Brandon Stevens and Susan Stewart	Field visit to discuss project impacts to jurisdictional waters.